University of Nebraska-Lincoln

Graduate Studies Bulletin 2008-2009
Policies and Courses

Welcome to the 2008-2009 Graduate Bulletin

The Graduate Studies Bulletin contains information about all programs of graduate study offered at the University of Nebraska-Lincoln. The dynamic bulletin found here will be changing periodically throughout the year as needed for updating policies, faculty and curriculum. To access the 2008-2009 static version or previously published bulletins, click on this link.

Graduate Policies

- General Information
- Admission Policies of UNL Graduate Studies
- Funding
- Registration
- Graduate Degrees Offered
- Masters Degree Requirements

- Doctoral Degree Requirements
- Requirements for Graduate Certificates
- Academic Credit/Academic Progress Policies
- Probation, Termination and Appeals
- Guidelines for Good Practice in Graduate Education
- University Resources

Academic Colleges

Areas of Study

Courses

General Information

Contents

- 1 The University
- 2 Heritage
- 3 Enrollment
- 4 Role and Mission
- 5 The Missions of the University of Nebraska-Lincoln
- 6 Accreditation
- 7 UNL Graduate Studies Calendar
- 8 Nondiscrimination Policy
- 9 Student Privacy Policy
- 10 Sexual Harassment Policy
- 11 Student Responsibility
- 12 Student Honor Code
- 13 Governance
  - 13.1 The Board of Regents
    - 13.1.1 Elected Members
    - 13.1.2 Student members

  - 13.2 The University of Nebraska Administration

- 13.3 The University of Nebraska-Lincoln Administration
- 13.4 The University of Nebraska-Lincoln Deans
- 13.5 Graduate Studies Governance
- 13.6 Graduate Committees
- 13.7 Emeriti Graduate Faculty Rights and Privileges

The University

The University of Nebraska-Lincoln—Nebraska's largest, most comprehensive university—has offered quality education for more than 130 years. Nebraska has grown into one of the great Midwestern universities and a major international research center, offering 148 undergraduate majors and 114 graduate programs.

The University is a diverse, cosmopolitan community. While 75 percent of NU's nearly 23,000 students come from Nebraska, students from every state and over 100 countries choose the University for its comprehensive programs and reputation for quality. Fifty percent of the graduate student enrollment comes from beyond Nebraska's borders.

Nebraska's nationally and internationally recognized faculty is its most important resource. Over 1,500 teachers and scholars bring to UNL's students the knowledge and experience they have gained from research at the world's finest universities. Experts in their fields, Nebraska's professors bring the most current knowledge and technology to their classrooms.

Nebraska's facilities are equally impressive. UNL's Biological Collections, George W. Beadle Center for Genetics and Biomaterials Research, Center for Biotechnology, Morrison Life Sciences Research Center, Humanities Research Facility, Midwest Center for Mass Spectrometry, Sheldon Memorial Art Gallery, Devaney Sports Center, Tractor Testing Laboratory, Behlen Observatory, and Behlen Physics Laboratory are among the nation's best. Nebraska offers modern computer facilities and the state's major research library. The University of Nebraska-Lincoln's 616-acre campus contains 75 major academic buildings.

Lincoln, Nebraska's capital and second largest city, surrounds the University. Home to nearly 250,000, this All-American City sports a rejuvenated, tree-lined downtown with retail stores, restaurants, theaters, parks, and a convenient bus system. Interstate 80 passes just north of the University and Lincoln can be reached by major airlines, bus systems, and Amtrak.

The University of Nebraska-Lincoln's Web site is available at www.unl.edu.

Heritage

The University of Nebraska was chartered by the Legislature in 1869 as the state's public university and land-grant institution. Founded in Lincoln, the University of Nebraska was expanded in 1968 into a state educational system under the guidance of a Board of Regents and a central administration.

The University's flagship campus, the University of Nebraska-Lincoln (UNL), includes the agricultural components organized within the Institute of Agriculture and Natural Resources. Other campuses of the system include the University of Nebraska at Omaha (UNO), the University of Nebraska Medical Center (UNMC) in Omaha, and the University of Nebraska at Kearney (UNK).

Instruction is organized within individual colleges and schools on each of the four campuses. In addition to bachelors and professional degrees, the University offers masters, specialist, and doctoral degrees, which are granted by a system-wide Graduate College.

The University of Nebraska Graduate College was the first established west of the Mississippi River. Graduate instruction began as early as 1886 when the Board of Regents established the residency and thesis requirements for earning the masters degree. Within four years, the PhD degree was authorized. By 1896 a Graduate School was organized with a designated faculty under the leadership of a dean. Within a year, with more than 100 graduate students, the University of Nebraska qualified as the first university west of the Mississippi to formally establish a Graduate School. An amendment to the charter of the University was passed by the Legislature in 1909 to change the designation of the school to the Graduate College.

In 1968 the University of Omaha was merged with the University of Nebraska, and in 1971, at the direction of the Board of Regents, the Graduate College of the University of Nebraska and the Graduate College of the University of Nebraska at Omaha were merged to form one University-wide Graduate College with one Graduate Faculty.

Most recently, Kearney State College became the fourth campus of the University of Nebraska system. In 1991, the Board of Regents approved the addition of the University of Nebraska at Kearney.

In 1978 the Legislature assigned to the University of Nebraska, through its University-wide Graduate College, sole state-wide responsibility among the public institutions for all doctoral programs and for all masters and specialist programs outside the field of teacher education.

Today, more than a century later, the University of Nebraska-Lincoln Graduate College offers the graduate student resources no other college or university in the state of Nebraska or in many other states can match.

Enrollment

The total 2007-2008 first (fall) semester enrollment at the University of Nebraska-Lincoln was 22,973 students. Of the 4,418 graduate students, 53.1 percent were female and 46.9 percent were male. Eighty percent of graduate students during Fall 2007 were U.S. citizens; 20 percent originated from other countries.

Role and Mission

The University of Nebraska-Lincoln, chartered by the Legislature in 1869, is that part of the University of Nebraska system which serves as both the land-grant and the comprehensive public University for the State of Nebraska. Those responsible for its origins recognized the value of combining the breadth of a comprehensive University with the professional and outreach orientation of the land-grant University, thus establishing a campus which has evolved to become the flagship campus of the University of Nebraska. UNL works cooperatively with the other three campuses and Central Administration to provide for its student body and all Nebraskans the widest array of disciplines, areas of expertise, and specialized facilities of any institution within the state.

Through its three primary missions of teaching, research, and service, UNL is the state's primary intellectual center providing leadership throughout the state through quality education and the generation of new knowledge. UNL's graduates and its faculty and staff are major contributors to the economic and cultural development of the state. UNL attracts a high percentage of the most academically talented Nebraskans, and the graduates of the University form a significant portion of the business, cultural, and professional resources of the state. The quality of primary, secondary, and other post-secondary educational programs in the state depends in part on the resources of UNL for curricular development, teacher training, professional advancement, and enrichment activities involving the University's faculty, museums, galleries, libraries, and other facilities. UNL provides for the people of Nebraska unique opportunities to fulfill their highest ambitions and aspirations, thereby helping the state retain its most talented youth, attract talented young people from elsewhere, and address the educational needs of the non-traditional learner.

The University of Nebraska-Lincoln has been recognized by the Legislature as the primary research and doctoral degree granting institution in the state for fields outside the health professions. UNL is one of a select group of research universities which hold membership in the American Association of Universities (AAU). Through its service and outreach efforts the University extends its educational responsibilities directly to the people of Nebraska on a state-wide basis. Many of UNL's teaching, research and service activities have an international dimension in order to provide its students and the state a significant global perspective.

The Missions of the University of Nebraska-Lincoln

Teaching, research, and service take on a distinctive character at the University of Nebraska-Lincoln because of its status as a comprehensive land-grant university. These traits provide opportunities for the integration of multiple disciplines permitting students more complete and sophisticated programs of study. Its land-grant tradition ensures a commitment to the special character of the state and its people.

The faculty is responsible for the curricular content of the various programs, and pursues new knowledge and truths within a structure that assures academic freedom in its intellectual endeavors. The curricula are designed to foster critical thinking, the re-examination of accepted truths, a respect for different perspectives, including an appreciation of the multiethnic character of the nation, and a curiosity that leads to life-long learning. Additionally, an environment exists whereby students can develop aesthetic values and human relationships, including tolerance for differing viewpoints.

Teaching The people of Nebraska created UNL to provide its citizens with the highest quality of post-secondary education. Therefore, a fundamental mission of the University of Nebraska-Lincoln is teaching. The distinctiveness of the teaching mission of the University of Nebraska-Lincoln lies in its range of undergraduate majors, the character and quality of the faculty, and the extracurricular environment. The University provides students with a wide choice of courses and career options, which often expands the scope of their dreams and ambitions. The size and diversity of the University permits students to mature and to develop their own sense of self-confidence and individual responsibility. The course work is enriched by a faculty that is engaged in active research and creative activity and whose frame of reference is the national and international community of scholars. Having created the first graduate college west of the Mississippi River, the University of Nebraska-Lincoln has historically recognized graduate education to be a central and unique component of its mission. Thus, UNL has primary responsibility in the State for graduate education, especially at the doctoral and professional levels. UNL is unique in possessing the scope of programs necessary for multidisciplinary instruction at the graduate level, a faculty involved in research necessary to support graduate education, and the libraries, laboratories, computer facilities, museums, galleries, and other ancillary resources required for graduate instruction.

Research Basic and applied research and creative activity represent a major component of UNL's mission, a component that is recognized in Nebraska legislative statutes, and in its status as both a land-grant and an AAU research university. The quest for new knowledge is an essential part of a research university; it helps define and attract the type of faculty necessary to provide a university education; it distinguishes the quality of the undergraduate students' classroom experience; and it is the necessary component of graduate instruction. As part of its research mission, UNL is dedicated to the pursuit of an active research agenda producing both direct and indirect benefits to the state. The special importance of agriculture, environment, and natural resources is addressed in its research priorities. In addition, UNL conducts a high level of research and creative activities that address in specific ways the issues and problems that confront Nebraska. Through their research and creative activities, faculty at UNL interact with colleagues around the world and are part of the network of knowledge and information that so influences our society. As a consequence, the University serves as the gateway through which Nebraska participates in and shares the gains from technological and cultural developments.

Service The land-grant tradition creates for the University of Nebraska-Lincoln a special state-wide responsibility to serve the needs of Nebraska and its citizens. In addition, many of its service aspects extend to regional, national, and international clientele. Special units such as the Cooperative Extension Division have specific responsibilities to bring the teaching and research resources of the University to a wider clientele. Through Cooperative Extension's partnership with federal, state, and county agencies, UNL has an outreach program in each county in the state. Moreover, all units of the University have a service and outreach mission. To help accomplish this mission, UNL delivers educational services through diverse ways, including telecommunications methods and as a participant in the development of regional educational centers, especially in those areas where it has state-wide responsibilities. The University recognizes its obligation to extend the resources of the University beyond the campus and throughout the state. Serving the needs of Nebraska requires more than responding to the felt needs of the time. UNL must be visionary in its planning and must help the citizens of the state prepare for the future, as well as deal

with the present.

Accreditation

The University of Nebraska-Lincoln has been accredited by the North Central Association of Colleges and Secondary Schools since the association first began accrediting colleges and universities in 1913. The University has been a member of the Association of American Universities since 1909. In addition, various colleges, schools, and departments are accredited by their respective professional accrediting agencies.

UNL Graduate Studies Calendar

The University of Nebraska-Lincoln operates on a semester system. The first (fall) semester begins in August and ends in December; the second (spring) semester begins in January and ends in May. UNL also conducts four summer sessions from May through August. Please refer to the current schedule of classes for the UNL academic calendar.

Nondiscrimination Policy

It is the policy of the University of Nebraska that students on each campus shall be admitted to and enjoy the programs and privileges of the University without regard to individual characteristics other than qualifications for admission, academic performance, and conduct in accordance with NU policies and rules and laws applicable to student conduct.

In addition, employees on each campus of the University of Nebraska shall be employed and equitably treated in regard to the terms and conditions of their employment without regard to individual characteristics other than qualifications for employment, quality or performance of duties and conduct in regard to their employment in accordance with University policies and rules and applicable state and federal laws.

The University of Nebraska-Lincoln reaffirms its desire to create an environment for all students and employees that is fair and responsible--an environment where distinctions are made on the basis of ability and performance. To that end, it is the policy of UNL to administer all of its educational and employment programs and related supporting services in a manner which does not discriminate because of an individual's race, color, gender (including sexual harassment), religion, national origin, age (40 and over, for employees only), disability, marital status, sexual orientation, or political affiliation.

Student Privacy Policy

The University of Nebraska-Lincoln defines the following student information as public directory information:

Student name, local address, permanent addresses, telephone numbers, year at the University (i.e. Freshman, Sophomore, etc.), dates of attendance, academic college and major field of study, enrollment status, (e.g. undergraduate or graduate; full-time or part-time), participation in officially recognized activities and sports, degrees, honors and awards received and most recent education agency or institution attended.

Directory information will be available to the public upon request and may be included in student directories published electronically and in hard copy. However, students have the right to have directory information withheld from the public, if they so desire. During the first two weeks of any semester, a student who wants all or any directory information to be withheld shall so indicate by completing a form obtained from the the Office of Registration and Records, 107 Canfield Administration Building South, (402) 472-3635. The student's request will be processed within a reasonable amount of time. Directory information already included in hard copy publications will be removed at the next printing of the hard copy publication.

You can view the official notice about the Family Educational Rights and Privacy Act (FERPA) at the following link: click here

Sexual Harassment Policy

The University of Nebraska-Lincoln reaffirms that all women and men--administrators, faculty, staff and students--are to be treated fairly and equally with dignity and respect. Any form of sexual harassment is prohibited.

Sexual harassment is unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of sexual nature when:

1. submission to such conduct is made either explicitly or implicitly a term of condition of an individual's employment or academic standing;

2. submission to, or rejection of, such conduct by an individual is used as the basis for employment decisions or academic decisions affecting such individual, or

3. such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working/academic environment.

Sexual harassment will not be condoned during the work or school day, nor will acts of sexual harassment be permitted outside the work or school environment if such acts affect the normal work environment or student/teacher relationship. UNL provides grievance procedures for violations of this policy. For further information, contact:

Equity, Access, and Diversity Programs
128 Canfield Administration Building
PO Box 880437
Lincoln, NE 68555-0437

(402) 472-3417

Appropriate corrective action will be taken in those instances where the foregoing policies have been violated. Any student or employee who is found to have violated any of the aforementioned policies will be subject to disciplinary action.

Further, UNL commits itself to a program of affirmative action to encourage the enrollment of minority and female students; to identify and eliminate the effects of any past discrimination in the provisions of educational and related services; and to establish organizational structures of procedures which assure equal treatment and equal access to the facilities and educational benefits of the institution for all students.

UNL complies with all applicable laws promoting equal educational and employment opportunity prohibiting unlawful discrimination, including those addressing the obligations of the institution under Title VII of the Civil Rights Act of 1964, as amended, Title IX of the Education Amendments of 1972, as amended, and Sections 503 and 504 of the Rehabilitation Act of 1973.

Information concerning violations of the policy and inquiries regarding UNL compliance with equal opportunity mandates, affirmative action, and other inclusions should be directed to:

Equity, Access, and Diversity Programs
University of Nebraska-Lincoln
128 Canfield Administration Building
PO Box 880437
Lincoln, NE 68588-0437
(402) 472-3417 U.S. and Canada
(800) 742-8800 (toll-free)

A formal discrimination grievance procedure is available at UNL for those seeking redress. Copies of the EEO Grievances Procedures are available from the Equity, Access and Diversity Programs Office and in most departments. Those wishing to file formal complaints outside UNL may contact the Equity, Access and Diversity Programs Office for appropriate names and addresses of external agencies to which such communications may be directed. Students who believe that discrimination occurred within the educational setting may also contact:

Director, Office for Civil Rights
Department of Education
Washington, DC 20202

Student Responsibility

It is the responsibility of the student to be familiar with the information presented in this bulletin, and to know and observe all regulations and procedures relating to the program he/she is pursuing. In no case will a regulation be waived or an exception granted because a student pleads ignorance of, or contends that he/she was not informed of, the regulations or procedures. A student planning to graduate should be familiar with the dates relating to application for graduation and other pertinent deadlines.

A student may expect to satisfy the requirements of the bulletin in force at the time the student is admitted to, and begins course work in, a degree program; or the student may, with the consent of his/her adviser, graduate under a subsequent bulletin provided the student complies with all requirements of the later bulletin.

The University of Nebraska-Lincoln expressly reserves the right to: 1) add or delete courses from its offerings and to change times or locations; 2) change academic calendars without notice; 3) cancel any course for insufficient registrations; 4) modify, consolidate, or delete any program; 5) revise or change rules, charges, fees, schedules, courses, requirements for degrees, and any other regulation affecting students including, but not limited to, evaluation standards, whenever considered necessary or desirable.

Responsibility for following all policies and meeting all requirements and deadlines for graduate programs rests with the student.

Student Honor Code

The **University of Nebraska** is a unified community, and we are proud of our heritage. As we look with optimism towards the future, we strive to adhere to the following code:

I will be **respectful** towards all others, their thoughts and aspirations, and will look upon them with equality and fairness.

I will be **compassionate,** always mindful of those less fortunate than I.

I will be **honest** with whom I interact, practicing integrity in my daily decisions.

I will be **mindful** of the investments others have made in the University, realizing my own responsibilities in life.

And I will always be **dignified** in who I am, striving for excellence in all I do.

Ratified by the ASUN Senate on April 2, 1997.

Governance

The Board of Regents

An eight-member board serves as the governing board for the University of Nebraska-Lincoln, the University of Nebraska Medical Center, the University of Nebraska at Omaha, and the University of Nebraska at Kearney, the four institutions that comprise the University of Nebraska system. Members of the board are elected from representative districts and serve six-year terms. The four campus student body presidents serve as nonvoting members of the board for one-year terms.

Elected Members

Term expires January 2009

Howard Hawks, Omaha (District 2)

Charles S. Wilson, M.D., Lincoln (District 1)

Term expires January 2011

Bob Phares, North Platte (District 7)

Kent Schroeder, J.D., Kearney (District 6)

Term expires January 2013

Randolph M. Ferlic, M.D., Omaha (District 8)

Chuck Hassebrook, Lyons (District 3)

Jim McClurg, Ph.D., Lincoln (District 5)

Bob Whitehouse, Ed.S., Papillion (District 4)

Student members

Tim Hruza, University of Nebraska at Kearney

Curtis McKnight, University of Nebraska Medical Center

Lucas Seiler, University of Nebraska at Omaha

Emily Zimmer, University of Nebraska-Lincoln

The University of Nebraska Administration

James B. Milliken, J.D., President

Linda R. Pratt, Ph.D., Executive Vice President and Provost

Donal J. Burns, Ph.D., Associate Executive Vice President and Provost, Corporation Secretary

David E. Lechner,B.S.B.A., Vice President for Business and Finance

Joel D. Pedersen, J.D., Vice President and General Counsel

Peter G. Kotsiopulos, B.S., Vice President for University Affairs

The University of Nebraska-Lincoln Administration

Harvey S. Perlman, J.D., Chancellor

Barbara A. Couture, D.A., Senior Vice Chancellor for Academic Affairs

Juan N. Franco, Ph.D., Vice Chancellor for Student Affairs

Christine A. Jackson, M.B.A., Vice Chancellor for Business and Finance

John C. Owens, Ph.D., Vice Chancellor for the Institute of Agriculture and Natural Resources

Prem S. Paul, D.V.M., Ph.D., Vice Chancellor for Research and Economic Development

Linda R. Crump, J.D., Assistant to the Chancellor for Equity, Access and Diversity Programs

M. Colleen Jones, Ph.D., Assistant to the Chancellor for Organizational Development

Margaret Lauerman, Ph.D., Director of University Communications

William J. Nunez, Ph.D., Director of Institutional Research and Planning

Susan Poser, J.D., Associate to the Chancellor

Michelle Waite, B.S., Assistant to the Chancellor for Community Relations

The University of Nebraska-Lincoln Deans

David H. Allen, Ph.D., Dean of the College of Engineering

Alan L. Cerveny, M.S., Dean of Admissions

Gary Cunningham, Ph.D., Dean and Director of the Agricultural Research Division

Elbert C. Dickey, Ph.D., Dean and Director of the Cooperative Extension Division

R. Wayne Drummond, F.A.I.A., Dean of the College of Architecture

Joan R. Giesecke, D.P.A., Dean of University Libraries

Matthew J. Hecker, Ph.D., Dean of Students

Rita Kean, Ph.D., Dean of Undergraduate Studies

Marjorie J. Kostelnik, Ph.D., Dean of the College of Education and Human Sciences

David Manderscheid, Ph.D., Dean of the College of Arts and Sciences

Cynthia H. Milligan, J.D., Dean of the College of Business Administration

Will Norton, Jr., Ph.D., Dean of the College of Journalism and Mass Communications

Giacomo M. Oliva, Ed.D., Dean of the Hixson-Lied College of Fine and Performing Arts

Steven S. Waller, Ph.D., Dean of the College of Agricultural Sciences and Natural Resources

Ellen M. Weissinger, Ph.D., Dean for Graduate Studies

Steven L. Willborn, J.D., Dean of the College of Law

Graduate Studies Governance

Graduate studies at UNL are organized and conducted according to the rules and bylaws of the Graduate College of the University of Nebraska. The Dean of Graduate Studies is responsible for coordinating and administering graduate-level programs and policies at the University of Nebraska-Lincoln. The UNL Dean of Graduate Studies also maintains a close liaison relationship with the Executive Dean of the Graduate College of the University of Nebraska. The governance of graduate programs that are principally lodged at UNL is by and through the graduate program committees and the UNL Graduate Council, in accordance with the policies and regulations of the University-wide Graduate College.

The UNL Graduate Council serves as an advisory body to the Dean of Graduate Studies. The Council is composed of eight Graduate Faculty and two graduate students from the University of Nebraska-Lincoln.

Graduate Committees

Each administrative unit authorized to offer major work leading to the masters or doctoral degree has a Graduate Committee consisting of not fewer than three Graduate Faculty, one of whom is designated as a chair of the Graduate Committee.

Membership of the Graduate Committee is recommended by the administrative unit through its departmental chair, chair of the interdepartmental area, director, or academic dean, as appropriate, for appointment by the Dean of Graduate Studies, University of Nebraska-Lincoln.

Each new graduate student should consult the chair of the Graduate Committee of his/her major department for assignment to an adviser. General supervision over graduate studies in each department is vested in the Graduate Committee.

Emeriti Graduate Faculty Rights and Privileges

Graduate faculty who have been appointed to emeritus status may retain the rights and privileges associated with their membership on the Graduate Faculty. These rights and privileges include permission to teach graduate courses, to serve as members of graduate programs, or to co-chair the supervisory committees of doctoral students with a resident member of the Graduate Faculty.

Admission Policies of UNL Graduate Studies

Contents

- 1 Policies
- 2 Admission of International Students
  - 2.1 Funding Requirements
  - 2.2 English Proficiency Requirement
  - 2.3 International Teaching Assistant Institute
  - 2.4 Intensive English Program
- 3 Admission Categories

- 3.1 Degree Objective
- 3.2 Non-Degree, Post-Baccalaureate
- 3.3 Express Non-degree Post-baccalaureate Admission
- 3.4 Non-Degree, Visiting Graduate
- 3.5 Intercampus Admission/Intercampus Registration
- 3.6 Changing from Non-degree to Degree Status

- 4 Admission of Faculty Members
- 5 Admission of UNL Seniors
- 6 Admission to a Double Major
- 7 Veterans
- 8 Admission of Applicants from Schools without Regional Accreditation

Policies

1. The Graduate College (UNL Graduate Studies) is open to graduates of all colleges of this University and to graduates of other universities and colleges of recognized standing whose requirements for graduation are substantially the same as those in the corresponding colleges of this University. The University of Nebraska is a public university committed to providing a quality education to a diverse student body. Students are selected on the basis of academic preparation, ability, and the availability of space in the desired academic program.

It is the policy of the University of Nebraska-Lincoln not to discriminate based on gender, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin, or sexual orientation.

This policy is applicable to all University administered programs including educational programs, financial aid, admission policies and employment policies.

2. All materials submitted become the permanent property of the Office of Graduate Studies and will not be photocopied for individual use, returned, or forwarded to other agencies.

3. Information given falsely or withheld will affect the decision on an application and may make the applicant ineligible for admission and/or enrollment.

4. Persons who have been dismissed from another institution for academic dishonesty or violations of student codes of conduct are not eligible for admission to UNL Graduate Studies.

5. Acceptance for admission to a program leading to a masters degree, a doctoral degree, an educational specialist degree or a certificate is determined by the Graduate Committee within the academic unit and the Dean of Graduate Studies. This decision is based upon the applicant's record, experience, personal qualifications, and proposed area of study. Departmental or area Graduate Committees make recommendations on all degree applications, but the final admission decision is the responsibility of the Dean of Graduate Studies.

6. Notification of acceptance by a department Graduate Committee or faculty member is advisory only. Admission is granted solely by the Office of Graduate Studies and is confirmed by the issuance of a Certificate of Admission. Academic departments will notify applicants concerning awards of financial assistance.

7. Negative admission decisions are not appealable.

8. Most applicants will apply formally and be admitted to only one graduate degree program at a time. It is possible, however, to apply to two degrees simultaneously. In order to do so, one must treat each application as a completely separate entity, supplying for each one an application, an application fee, a set of transcripts, and any departmental materials. If accepted by both programs, the applicant must select only one program to enter since admission is limited to one program at a time (unless admission is to a dual-degree program).

There are dual degree programs available in cooperation with the College of Law and certain participating programs in UNL Graduate Studies.

If an enrolled student plans to move on to a new degree program upon completion of another, it is advisable to apply for admission to the new program early in the semester in which one plans to graduate.

9.Entry into UNL Graduate Studies is valid for the specific semester indicated on the Certificate of Admission. However, a student may defer enrollment by one or two terms if he or she meets certain Graduate College requirements and if the department in which graduate study would be pursued consents to the delay. (There is no guarantee of an offer of an assistantship if there is a request for postponement of enrollment.)

The Office of Graduate Studies retains the right to revoke the earlier admission on the basis of new information or limited resources. International students may be required to provide current financial information in order to receive a valid I-20 or DS-2019 immigration form if they wish to delay their initial enrollment. Students who are admitted but who neither defer nor subsequently enroll must reapply.

10. A graduate student, formerly or currently enrolled, who wishes to pursue a degree objective other than the one originally sought, must initiate a formal application for the new program by filing a new graduate application form, supplementing existing records, and fulfilling any departmental requirements prior to review by the departmental Graduate Committee and the College.

Current admission information and access to UNL's online graduate application is available at: (http://www.unl.edu/gradstudies).

Admission of International Students

The University of Nebraska-Lincoln welcomes students from all countries as part of the student body and the Office of Graduate Studies encourages applications from qualified students throughout the world. It is recognized that educational systems in other countries differ from that of the United States. Comparability of international course work and degrees will be determined by departmental Graduate Committees and by the Office of Graduate Studies. Generally, a four-year first university degree from an academic institution outside the U.S. will be accepted as comparable to the U.S. bachelors degree if the degree grants eligibility for graduate study at institutions within the same country.

Application materials from international students must include two official or certified copies of all college- or university-level transcripts or mark sheets (records of courses and marks earned), with certificates, diplomas, and degrees plus certified English translations. Photocopies of certified records cannot be used. Students enrolled in other U.S. institutions may have certified copies of all foreign records sent directly to the Office of Graduate Studies by their current schools.

It is recommended that applicants outside the U.S. begin applying approximately one year in advance of the desired first enrollment. The following dates are suggested to have all materials on file: March 1 for first semester (beginning in August); September 1 for second semester (beginning in January); and February 1 for summer (beginning in June).

All international applicants seeking F-1 student visas must apply for degree programs rather than non-degree, post-baccalaureate status.

Funding Requirements

Evidence of adequate financial resources for tuition and living expenses is required of all international students seeking F-1 or J-1 visas, including those who received their baccalaureate degrees at UNL. Students should not assume funds or work opportunities will be available at a later date, and should be prepared to have their living and educational expenses increase annually. University-wide fellowships may be sought after one year of graduate study in the U.S. More information is available to eligible candidates from the Office of Graduate Studies.

English Proficiency Requirement

Applicants to the Graduate College whose native language is not English are required to submit a Test of English as a Foreign Language (TOEFL) score of at least 500 (173 on the computer-based TOEFL; 61 on the Internet-based TOEFL) or an International English Language Testing System (IELTS) score of at least 6. **Most departments require higher scores for admission.**

Non-native speakers who have received a baccalaureate or higher degree from a U.S. university or a university outside the U.S. in which English is the official language of instruction are exempt from the TOEFL requirement for admission.

Newly admitted students subject to the TOEFL requirement must complete on-campus English Placement Examinations conducted by English as a Second Language (ESL) program staff. The results of the examinations determine if ESL courses will be required in order to complete the English proficiency requirement. Newly admitted students with TOEFL scores of at least 600 (250 on the computer-based TOEFL or 100 on the Internet-based TOEFL) or IELTS scores of 7 must complete only the writing component of the examination.

International Teaching Assistant Institute

New holders of teaching assistantships who are non-native speakers of English must attend the International Teaching Assistant Institute. The summer Institute, a concentrated 90 hour program, is held the last week of July and the first two weeks of August. For more information about the availability of assistantships and the Institute, contact your program's Graduate Committee chair.

Intensive English Program

UNL's Intensive English Program (IEP) welcomes graduate students who wish to study English intensively prior to enrolling in a graduate program.

For information and applications, contact:

Dr. Mike Harpending
Program in English as a Second Language
Department of English
University of Nebraska-Lincoln
513 East Nebraska Hall
901 N 17th Street
PO Box 880507
Lincoln, NE 68588-0507
(402) 472-1884
(402) 472-4636 Fax
esl2@unl.edu

Admission Categories

Graduate students may be admitted into one of the following categories:

Degree Objective

Admission to the Graduate College as a degree-seeking student requires application to both Graduate Studies and the Graduate

Committee within an academic unit. Applicants to a degree program must send an application, application fee, two official transcripts from all post-secondary schools attended, and fulfill any additional requirements the department specifies, such as statement of goals, test scores, portfolios, etc. Specific requirements for each department may be found at: (http://www.unl.edu/gradstudies/prospective/majors.shtml).

Non-Degree, Post-Baccalaureate

Non-degree, post-baccalaureate admission to the Graduate College is completed through the Graduate Studies office. Applicants are reviewed for minimum standards upon receipt of an application, application fee and one official baccalaureate or higher degree transcript.

Those seeking another undergraduate degree should contact Undergraduate Admissions at (402) 472-2023 for advising and assistance. Students seeking a non-degree admission for an initial teacher certification, renewal of a teacher certification, or additional teaching endorsements should contact the College of Education and Human Sciences Student Services Center at (402) 472-5333.

Limitations to a non-degree, post-baccalaureate admission: **1) It is not a guarantee of future admission to a degree program.** Students must apply formally through Graduate Studies for acceptance into a degree program; 2) Students will not qualify for assistantships or fellowships in this category. Financial aid in the form of student loans is limited to those taking only undergraduate hours as prerequisites for admission to a specific graduate or professional program. The Office of Scholarships and Financial Aid can supply further information about the availability of these loans; 3) This admission is not available to international students on F-1 student visas.

Express Non-degree Post-baccalaureate Admission

An Express Admission allows a student to register for classes without waiting for Graduate Studies to receive transcripts. The admission may be extended beyond one term only upon receipt of an official degree transcript. Applicants requesting an Express Admission must be eligible for non-degree post-baccalaureate admission and have earned a bachelors or higher degree with a cumulative GPA of at least 2.50 on a 4.00 scale.

Non-Degree, Visiting Graduate

Admission is available to applicants who are actively pursuing graduate studies at U.S. institutions other than the University of Nebraska campuses, and requires submission of an application, application fee, and letter of good standing from the home institution. Enrollment is limited to two consecutive terms (semesters and/or full summer enrollment).

Intercampus Admission/Intercampus Registration

UNO, UNMC and UNK graduate students will use an online application for intercampus registration to register for courses at UNL and will retain their admission at their degree-objective campus. To apply for this admission category, contact the Office of Research and Graduate Studies at your home campus or access this application online at: intercampus.nebraska.edu/pre_inter_campus.aspx.

Changing from Non-degree to Degree Status

Any non-degree student who seeks admission to a degree program must apply to the Office of Graduate Studies and be recommended for admission by the departmental or area Graduate Committee. There is no guarantee of ultimate admission to a degree program from non-degree status, nor is there any guarantee that credits earned as a non-degree student will be applied toward a graduate degree. Admission to a degree program must be gained prior to the accumulation of half of the hours required under each of the degree options. Some graduate-level hours completed by non-degree post-baccalaureate students prior to degree program enrollment may be included in a program of studies at the discretion of the major and/or minor department and with the approval of the Dean of Graduate Studies. *It is imperative to check with your desired department to obtain information about the maximum number of hours that may be completed prior to admission to their program.*

Admission of Faculty Members

A member of the faculty in an instructional department who holds the rank or equivalent rank of assistant professor or above, or who holds an appointment for a specific term, or a member of the administrative staff holding the rank of assistant professor or above, may pursue an advanced degree in the Graduate College only after receiving special permission from the cognizant academic dean or administrative supervisor and from the campus Graduate Council responsible for the program which the faculty member wishes to pursue. The advanced degree cannot be in the faculty member's own department or in a closely-related department or area. Whether a second department or area is too closely related to the person's own department shall be determined by the Dean of Graduate Studies of the campus involved in consultation with the Graduate Committees of the two departments or areas. Permission may be granted to pursue an advanced degree in the equivalent department on another campus of the University of Nebraska.

Persons who are Graduate Faculty will have their status suspended upon receiving permission to pursue an advanced degree in the Graduate College. However, such persons shall be eligible, with permission of the appropriate campus Dean of Graduate Studies and the appropriate Graduate Committee, to continue to teach graduate courses, supervise graduate students at a level commensurate with their former rank in the Graduate Faculty, and serve on graduate supervisory and examining committees. Upon completing or withdrawing from an advanced degree program, the original Graduate Faculty status shall be reinstated upon recommendation by at least two-thirds of the Graduate Faculty of the department or area if the person returns to the same department in which they held an appointment originally. A change of appointment to another department requires that the person follow the established procedure for obtaining Graduate Faculty status.

Members of the university community employed on a permanent full-time basis and holding the rank of Assistant Professor or above may be admitted on a non-degree basis to take courses for personal and professional growth by supplying an Application for Graduate Admission and the application fee. All other staff members are eligible for admission to all graduate admission categories

and are subject to standard admission requirements.

Admission of UNL Seniors

Refer to Academic Credit Policies.

Admission to a Double Major

The professional/scholastic goals of some masters students may be enhanced substantially by acquiring more knowledge of a second field than is currently provided by the option of earning a minor, yet they may not need a dual degree (i.e., two masters degrees in separate majors, typically 60+ credit hours).

The UNL Graduate Council has approved the concept of providing masters degree students with the option of attaining a double major within the same degree (e.g., master of arts in two different majors).

Applicants choosing the double major will submit one application and fee and clearly specify that they are seeking a double major. In addition, the applicant must specify which department/area is to consider the application first and whether or not they are applying for support from one or both departments. The graduate committee of the first department/area will pass the application to the second graduate committee with the results of its decisions (recommendation for acceptance with support, recommendation for acceptance without support, denial of admission). The prospective student should be aware that a decision to recommend admission by one of the graduate committees does not affect the decision of the other. The criteria for acceptance may differ between programs; admission to one or both of the department's programs does not guarantee acceptance for a double major masters degree. Final approval of all applications rests with the Dean of Graduate Studies.

If a student is already pursuing a major in a degree program, then decides he or she would like to obtain a second major, a new application is required. The new application must be approved by the original graduate committee prior to review by the second graduate committee. However, once the masters degree is conferred, a second major cannot be attained. Students then would be required to apply for admission to a second masters degree program, and upon acceptance, complete all requirements of a full independent program.

Veterans

All men and women planning to attend the University affected by the educational assistance and vocational rehabilitation laws administered by the Veterans Administration should inquire at the Office of Registration and Records, 107 Canfield Administration Building, before they register to make sure that all necessary steps have been taken. See Veteran Resources

Admission of Applicants from Schools without Regional Accreditation

Any applicant from an institution which is not regionally accredited is required to take the Graduate Record Examination (GRE) prior to consideration for admission. The Subject section of the test may be required of applicants seeking admission to advanced degree programs. Non-degree applicants, or applicants entering programs not covered by a relevant Subject Test, need to submit scores from the General Test of the GRE. All other application requirements are standard. Records from schools without verifiable accreditation cannot be used to satisfy eligibility requirements for admission.

Funding

Contents

- 1 Funding Information
  - 1.1 Fellowships
  - 1.2 Tuition Fellowships
  - 1.3 Full Support Fellowship Awards.
  - 1.4 Partial Support Fellowship Awards
  - 1.5 Teaching and Research Assistantships
  - 1.6 Types of Graduate Assistantships
  - 1.7 Policy Statement for Hiring Graduate Assistants
    - 1.7.1 General Responsibilities Associated with Graduate Assistantships
    - 1.7.2 Criteria for the Evaluation of Assistants' Performance
    - 1.7.3 Appeals
    - 1.7.4 Academic Freedom of Graduate Teaching Assistants
  - 1.8 Loans and Need-Based Application Process

Funding Information

Fellowships

Fellowships are awarded on a competitive basis in recognition of a student's demonstrated scholarship, scholastic and creative promise, and/or financial need. There is no service or work requirement associated with fellowship awards. A student holding a fellowship or a traineeship must be a full-time student during the period of appointment.

Current information about UNL and externally-funded fellowships is available at: http://www.unl.edu/gradstudies

To be eligible a student must be admitted to a department or area with a specific graduate degree objective and must be enrolled in graduate academic course work. *Students enrolled in certificate-only programs with no degree objective are ineligible for fellowships.*

International students must have completed one year of study at a US institution of higher education to be eligible for any of the fellowships. Employees of the University of Nebraska, other than graduate assistants, are not eligible to receive a fellowship.

Fellowships are awarded in two categories: Tuition Fellowships and Fellowship Stipend Awards. Qualifying students may hold both types of fellowships simultaneously.

Tuition Fellowships

These fellowships remit tuition for the full or partial cost of graduate courses according to the specific fellowship guidelines for the term of the award. Recipients of tuition fellowships are responsible for university program and facilities fees unless specifically included in the award announcement. Recipients must be admitted to a graduate program with a specific graduate degree objective.

Full Support Fellowship Awards.

These fellowships provide stipend payments for recipients of these awards. Fellowship recipients are required to be full-time students (at least 9 credit hours or have an approved full-time graduate status form) during the period of appointment and may hold another major fellowship. They may not engage in remunerative employment, including a graduate assistantship or traineeship.

Partial Support Fellowship Awards

Some fellowships provide partial support; students with these fellowships may hold other fellowships and assistantships.

The fellowship award should not in any way affect the amount of a graduate assistantship salary unless there is an accompanying real decrease in the teaching or research assignment and the corresponding FTE. Because of the potential appearance of a possible conflict of interest, employees of the University of Nebraska (other than graduate assistants) are ineligible for fellowship stipend awards.

Continuation of graduate fellowships may be denied to recipients under the following conditions: a) failure to satisfy Scholastic Grade Requirements as specified in the UNL Graduate Studies Bulletin; b) violations of the Code of Conduct as specified in the UNL Graduate Studies Bulletin; or c) failure in qualifying examinations, preliminary examinations, comprehensive examinations or failure to make satisfactory progress in a graduate program.

Teaching and Research Assistantships

Approximately 1,800 teaching and research assistantships are available to qualified graduate students during the regular academic year in various departments within the university. The assistantships typically require 13 to 20 hours of service per week. During the fall and spring terms, graduate assistants may not work more than 20 hours per week, all jobs considered.

Types of Graduate Assistantships

A teaching assistantship in an academic department provides a stipend to a student who is typically required to spend 13-20 hours per week (.33 to .49 FTE) during the academic year assisting in the teaching program of a department. The teaching assistant is expected to continue working towards the advanced degree while being a teaching assistant.

The Graduate Council recommends that all departments require graduate teaching assistants to participate in workshops for teaching assistants. Graduate assistants may be expected to provide their academic adviser with a written report of their academic progress at the conclusion of the period for which the teaching assistantship is awarded.

Because of the potential for the exploitation of graduate students, any assignment of responsibilities, such as teaching a course, must be associated with a fair and reasonable compensation. This principle precludes a graduate student from “volunteering” for any significant service to the department without an appropriate stipend.

A research assistantship in an academic department is provided to a student from an external grant or departmental or university funds to enable a student to work towards the advanced degree. Students receiving research assistantships may be expected to provide their academic adviser with a written report of their academic progress at the conclusion of the period for which the research assistantship is awarded. Work required by the graduate research assistantship that is not directly related to the student's own program shall not exceed 13-20 hours per week (.33 to .49 FTE).

Other graduate research assistantships provide a stipend to a student who is typically required to spend 13-20 hours per week (.33 to .49 FTE) assisting in either academic or nonacademic departmental activities. These graduate assistantships occur across campus and may involve diverse duties covering a wide variety of functions. Students receiving such assistantships in non-academic departments may be expected to provide their academic adviser with a written report of their academic progress at the conclusion of the period for which the graduate assistantship is awarded.

The responsibilities of the graduate assistant and the method by which the student will be evaluated should be provided in writing to the student by the immediate supervisor at the beginning of the assistantship.

Individual departments make assistantship appointments. Students interested in being considered for assistantships in their major should indicate that on the Application for Admission. Further inquiries should be directed to the graduate chair or the chair of the student's prospective department.

To hold a graduate assistantship a student must be admitted to a department or area with a specific graduate degree objective and must be enrolled for credit during the tenure of the assistantship.

All international graduate students who wish to be employed as teaching assistants at UNL must attend the International Teaching Assistant Institute after passing the SPEAK test. The Institute, a concentrated 90-hour program, is held the last week of July and the first two weeks of August. For more information on the availability of assistantships and the International Teaching Assistant Institute,

contact the graduate committee of the appropriate department.

Tuition remission of up to 12 hours per semester is provided as a benefit of eligible assistantship employment with the presumption that the benefit will remit tuition on courses which will prepare the student for successful completion of the degree program. Upon review, use of the benefit for frivolous or ancillary courses which do not meet this guideline could result in loss of the tuition benefit for such courses. Students holding eligible assistantships are provided basic individual student health insurance coverage with related benefits. Details at http://www.unl.edu/health/insurance/benefits. The University subsidizes the student health insurance premium for eligible graduate assistants.

Departments may differentiate graduate teaching assistantship stipends by graduate student status (master's or doctoral-level, first year or experienced) or by number of hours of work required by the assistantship. Within departments and within each level of differentiation, stipends should generally be equivalent. Guidelines used to determine stipend levels should be available to students through the department or graduate committee chair.

Eligibility for assistantship benefits must meet all of the following criteria: the appointment is continuous and for four full months within the semester dates, the stipend meets the minimum salary level set by the University, and the assistantship or combination of assistantships in one or more departments totals at least 13.33 hours per week employment.

If a graduate assistant resigns or terminates the assistantship during the semester before four full months of service, all tuition benefits will be lost. The student then is responsible for the total tuition payment and health insurance premiums.

If a graduate assistant, while on an appointment during both semesters of the preceding academic year, was paid a stipend meeting the minimum qualification for summer tuition, the student is not charged tuition for the first 6 hours during the summer sessions. If such a stipend met the next level of qualification, the student is not charged tuition for the first 12 hours during the summer sessions. (Specific dollar amounts are available each year from the Office of Graduate Studies.)

A student on an ineligible appointment as a graduate teaching assistant or research assistant is allowed to pay tuition at resident rates if the stipend received is equal to, or greater than, the total of the amount set by the University for the relative summer session.

Correspondence courses do not qualify for tuition remission benefits and are billed directly to the student. Use of tuition remission for courses that do not directly contribute to degree completion may lead to loss of the tuition benefit for those courses.

Policy Statement for Hiring Graduate Assistants

General Responsibilities Associated with Graduate Assistantships

The purpose of a graduate assistantship is to provide financial support for a graduate student for a set period of time during which the student is expected to pursue activities towards the advanced degree. To hold a graduate assistantship, a student must be admitted to a department or area with a specific graduate degree objective and must be enrolled during the period of the assistantship. Each department or unit shall establish its own documented procedures for recruitment, selection, retention and dismissal of graduate assistants in accordance with UNL graduate policy and Affirmative Action/Equal Opportunity guidelines. These procedures shall be made available to each graduate student and posted in the department. Individual departments may establish a required minimum course load for funded students. Consideration should be given to the table under the “Certification of Benefits” section of this bulletin. Departments must provide students with an official signed letter of award, informing them of assistantship expectations, responsibilities, and compensation. The University of Nebraska-Lincoln is a signatory to the Council of Graduate Schools policy regarding the offering and acceptance of financial aid. Specifically, students are under no obligation to respond to offers of financial support for the coming academic year prior to April 15. In those instances in which a student accepts an offer before April 15, and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made.

Duties of the graduate assistant are assigned by the departmental chair/head, graduate committee chair, administrative supervisor, or others. Graduate assistants are expected to be assigned relevant professional work that may include, among other tasks, teaching or assisting in a course (under the supervision of a director or mentor), grading for a course, working in a department-sponsored laboratory or instructional center, assisting a professor on a research project, professional conference development, tutoring, or development of administrative skills. All projects must be supervised by a member of the graduate faculty or administrative staff. No graduate assistant should be assigned to a project which is primarily clerical or housekeeping. A portion of any project may have clerical elements, but all projects should incorporate decision-making, judgment, analysis and evaluation skills. Although students on graduate assistantships may not have employment exceeding 20 hours per week from all sources both on and off campus during the period of the assistantship, there is no limit to time spent on studies and research relating to the advanced degree. Recipients of graduate assistantships may qualify for additional funding through competitive fellowship awards. No additional service or work requirement is associated with fellowship awards.

Criteria for the Evaluation of Assistants' Performance

Assistantships without a fixed term specified in the initial letter of offer may, at the discretion of the department, be renewed if the following criteria are met: 1) funding is available; 2) departmental guidelines for funding duration of a student are met; 3) the student is making satisfactory academic progress; and 4) the student's assistantship performance is judged to be satisfactory by his or her supervisor. Where the number of years of funding is within those specified in the initial letter of offer, an assistantship must be renewed if these four criteria are met.

The faculty member or staff person who supervises the assistant's work should conduct a timely written evaluation of the student's performance and provide a copy of that evaluation to the student and to the chair/director for placement in the student's file. This evaluation should take the following criteria into account: 1) prompt, efficient, and accurate completion of assigned tasks; 2) ability to

work independently once tasks are explained; 3) ability to analyze problems and find solutions; 4) good student evaluations for instructional and tutoring assignments in courses, laboratory and clinical settings; 5) cooperation with mentor, director, and other assistants; and 6) professional and ethical behavior in all assigned tasks and duties including course studies and research.

Evaluations of performance shall not be influenced on the basis of sex, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin, or sexual orientation, nor shall they be influenced by students' exercise of their First Amendment freedoms of expression and association.

Appeals

Students who believe their evaluation or dismissal in an assistantship has been prejudiced or capricious or who believe that their stipend is not commensurate with that of other graduate students having the same status in their department must first attempt to resolve the matter with the faculty/staff responsible for the assistantship.

If unsuccessful, the student may then file a written appeal to the graduate chair for consideration by the appropriate graduate committee. This appeal must be filed within 60 days of the evaluation or dismissal. A written determination of the appeal shall be presented to the student and supervisor. If the assistantship is not in an academic program, the UNL Dean of Graduate Studies would consider the appeal. If no action is taken on the appeal within 30 days of its filing or if the matter is not resolved to the student's satisfaction, the student may present the original appeal and documentation to the UNL Dean of Graduate Studies. If the dean determines that the appeal may have merit, the dean will request a review by a subcommittee of the Graduate Council. Upon subcommittee recommendation, the full Graduate Council will meet and serve as the final level of appeal.

During the appeal process, if an evaluation or assistantship renewal or dismissal is overturned, the supervisor or graduate committee has the right of appeal, in writing, to the next level of review.

Academic Freedom of Graduate Teaching Assistants

The academic freedom of graduate teaching assistants (GTAs) is not necessarily coextensive with that of faculty. All GTAs are engaged in supervised teaching or instruction. Supervisors are responsible for defining the nature, scope and manner of instruction to be used for each course. Supervisors should communicate the extent to which GTAs have discretion to introduce additional material. Graduate teaching assistants should follow the instructions of the supervisor. Graduate teaching assistants may not be penalized for expressing their own views on matters within the scope of the course, provided they adequately represent these views as their own.

In interpreting teaching evaluations, supervisors shall make every effort to distinguish legitimate critiques of the course from negative evaluations due to a) prejudice against the GTA on the basis of race, sex, sexual orientation, religion or other protected status, or b) disagreement with viewpoints expressed by the GTA or by students in the class.

Loans and Need-Based Application Process

The Office of Scholarships and Financial Aid (OSFA) does not participate in the granting of fellowships or assistantships but does maintain current information on other forms of financial support available to students. To apply for Federal Work-Study, Federal Perkins Loans, Federal Stafford Loans, Unsubsidized Federal Stafford Loans, submit a Free Application for Federal Student Aid (FAFSA) to the processing center as soon as possible after January 1. Federal Perkins Loans and Federal Work-Study are awarded on a first-come, first-serve basis to domestic students with a completed financial aid file as long as funds are available. (International students are ineligible to apply for federal loans.)

To have a completed file, a student must:

- Submit a FAFSA to the processing center.
- Be admitted to a degree program (contact OSFA for exceptions).
- If you are transferring to UNL or if you attended another postsecondary school as an undergraduate, submit a financial aid transcript to OSFA from all schools attended. A financial aid transcript is required even if you did not receive financial aid.
- Submit all documentation requested by OSFA as required for verification.

For additional information, contact:

Office of Scholarships and Financial Aid
University of Nebraska-Lincoln
17 Canfield Administration Building
PO Box 880411
Lincoln, NE 68588-0411
(402) 472-2030
www.unl.edu/scholfa

Registration

Contents

- 1 Graduate Student Registration
  - 1.1 Auditing a Course
  - 1.2 Tuition and Fees
    - 1.2.1 Refunds
    - 1.2.2 Residency Status for Tuition Purposes

- 1.2.3 University Staff Exemption
- 1.3 Employment and Registration
- 1.4 Full-time Status
- 1.5 Certification for Benefits

Graduate Student Registration

All students must register for classes prior to the first day of the semester. Newly admitted graduate students are encouraged to arrive early, so they can be on campus to meet with their advisers prior to registration. Registration for the first (fall) semester and for the summer sessions begins in mid-March; registration for the second (spring) semester begins in mid-October.

The Schedule of Classes contains information about procedures and dates pertaining to registration. Additional questions concerning graduate registration procedures should be referred to the Office of Graduate Studies, 1100 Seaton Hall, (402) 472-2875.

Students admitted to UNL Graduate Studies are not required to obtain the signature of the Graduate Dean during registration periods or for drops and adds (refer to "Drop and Add" for additional information), but they are required to consult with an adviser. Non-degree students must obtain the permission of the instructor of the class and may not enroll in masters thesis credits, doctoral dissertation credits, or doctoral seminars without permission of the Dean of Graduate Studies.

Doctoral students who have advanced to candidacy status must be registered every academic semester until they graduate. Failure to maintain registration may result in the termination of the student's program.

Formerly enrolled graduate students who have not attended classes for three consecutive terms must submit a new online application in order to reactivate their eligibility to register for classes.

Undergraduate students are not permitted to register at the 800 or 900 level except with the permission of the Dean of Graduate Studies. If the course is to be used for graduate credit, a Hold for Graduate Credit slip must be completed in the Office of Graduate Studies.

Auditing a Course

Auditing gives a currently enrolled student (or currently admitted student) the privilege of attending class, but credit is not earned and a grade is not assigned when auditing a class. All persons wishing to audit a course must be admitted and eligible to enroll in classes for the term in which they audit. Courses involving extensive laboratory work are generally not open to auditors.

Students who wish to audit a class must first register for the class. Pick up a Permit to Audit Card at Registration and Records, 107 Canfield Administration Building. Obtain the instructor's permission to audit the course by having him or her sign the Permit to Audit Card. Turn in the signed Permit to Audit Card at Registration and Records, 107 Canfield Administration Building, no later than the last day to add a class for the term.

Audited classes carry no credit and do not count toward full-time status. All audit cards for a term must be returned to Registration and Records, 107 Canfield Administration Building, no later than the last day to add a class. Audit cards turned in after the deadline will not be honored and the student will be subject to a grade. The fee for auditing a course is the same as the regular resident or non-resident tuition for the term, and both UPFF and other course fees apply to the class.

To have an audit recorded on your academic record with an AU designation, request that your instructor submit a Change of Student Record Form to Registration and Records, 107 Canfield Administration Building, indicating the course was an audit and that you did attend.

Tuition and Fees

Tuition and fee rates are subject to change at the direction of the Board of Regents. For the current tuition and fees charges in effect, visit the UNL Student Accounts homepage at http://stuaccts.unl.edu.

Refunds

Students who elect to withdraw from the University within the first four weeks of a semester, or within the first two weeks of a summer session, may be entitled to a fractional refund of tuition. The conditions of eligibility for refunds are subject to change. The current conditions are set forth in each issue of the *Schedule of Classes.*

Residency Status for Tuition Purposes

Regulations pertaining to resident status for tuition purposes are established by the Board of Regents. Initial determination of resident status is made at the time of admission and is noted on the Certificate of Admission. If a non-resident student wishes to change status, it is necessary to file an application with the Office of Graduate Studies, 1100 Seaton Hall. Full information on the requirements for resident status and the application forms are available at the Office of Graduate Studies and can also be downloaded from http://admissions.unl.edu/applications/Residencyapp.pdf

University Staff Exemption

Members of the academic-administrative, managerial-professional, and office-service staffs employed full time may be permitted to register for 15 credit hours each academic year (August through July). Participants are required to be fully admitted and to pay $1 per credit hour plus technology fees.

Part-time staff members and those employed only for the summer session must pay regular fees.

Employment and Registration

Graduate students holding any fellowship(s) are required to be enrolled as a full-time student as defined in the Graduate Studies Bulletin. Students with external or departmental fellowships must follow the specific granting agency requirements. This applies in fall, spring or summer terms.

Graduate students holding a traineeship are required to be enrolled full-time or be full-time certified during the tenure of their traineeship. Other remunerative employment must follow the granting agency requirements. This applies in fall, spring or summer terms.

A student who holds a graduate assistantship may not work more than half time, or 20 hours per week, all jobs considered, including assistantship(s) and paid internships. Internships are considered work in a training environment related to the student's educational career for which they receive pay. Therefore, an assistantship and an internship may not be held by a student simultaneously if the total hours between the two equal more than 20 hours per week. This applies in fall and spring semesters only.

Graduate students who are not employed, or graduate research assistants who are performing duties that are 100 percent thesis related, may register for a maximum of 15 credit hours during an academic year semester, 6 credit hours during one five-week summer session, 9 credit hours during one eight-week summer session, or 3 credit hours during the pre-session.

Graduate students who are employed are advised not to exceed the following registration guidelines established by the Graduate Council.

	Maximum Registration Guidelines (credit hours)			
Hours Employed per wk	Academic Year Semester	8-week Summer Session	5-week Summer Session	*3-week Summer Pre-session
0	15	9	6	3
8-16	12	8	5	2
17-20	10	6	4	2
Full-time	6	4	3	1

- One course permitted for a maximum of 3 credit hours.

These guidelines reflect the fact that graduate-level course work serves mainly as a guide for independent, scholarly study. Graduate students are expected to master subjects and to devote substantial time in independent library and laboratory investigation beyond minimum credit hour requirements.

For courses offered within a summer session, a general guideline is a maximum registration of 1 credit hour per week of instruction.

Full-time Status

Graduate students requiring certification as full-time students must be enrolled for at least 9 credit hours during an academic semester or at least 6 credit hours during summer sessions, whether or not the student holds a graduate assistantship. With approval of the Dean of Graduate Studies, students in a thesis-option masters degree program (i.e., Option I) or candidates for doctoral degrees, registered for fewer than the minimum hours required for a full program may be granted full-time status provided they are not employed more than 20 hours per week (half time). Form available at http://www.unl.edu/gradstudies/current.

In order to be eligible to utilize the full-time certification, the student must have been registered at least half time (i.e., at least 4 credits) in the fall and spring terms prior to the initiation of the full-time certification status. Masters students may utilize the full-time certification not longer than 12 months; doctoral candidates may utilize the full-time certification not longer than 24 months.

Certification for Benefits

Registration Requirements for Full/Part-time Status	
Academic Year	
Full-time (F)	9 cr hrs
3/4-time (T)	6-8 cr hrs
1/2-time (H)	4-5 cr hrs
Less than 1/2-time (L)	1-3 cr hrs
Summer	
Full-time (F)	6 cr hrs
3/4-time (T)	4-5 cr hrs
1/2-time (H)	3 cr hrs
Less than 1/2-time (L)	1-2 cr hrs

Registration Requirements for Financial Aid	
Academic Year	
Full-time (F)	9 or more cr hrs
3/4-time (T)	6-8 cr hrs
1/2-time (H)	4-5 cr hrs
Summer	
Full-time (F)	8 or more cr hrs
3/4-time (T)	6-7 cr hrs
1/2-time (H)	4-5 cr hrs

NOTE: Minimum registration required for financial aid during the summer is 4 credit hours of enrollment. These credits can be taken in different summer sessions; however, financial aid is disbursed during the session the student reaches half-time enrollment.

Graduate Degrees Offered

The University of Nebraska-Lincoln offers 38 programs leading to doctoral degrees, 75 leading to masters degrees, and one leading to the educational specialist degree. A complete and up-to-date listing is available online at: http://www.unl.edu/gradstudies/prospective/majors.shtml.

Contents

- 1 Graduate Areas of Specialization
- 2 Masters Degree with Double Major
- 3 Second Masters Degree
- 4 Dual Degree Programs
- 5 Individualized Joint Graduate Programs

Graduate Areas of Specialization

Areas of specialization are available in some departments. An area of specialization is a subdivision of a major in which strong graduate-level curriculum is available. Once they are approved by the Graduate Council, these areas of specialization are indicated after the major on official records and transcripts.

Masters Degree with Double Major

Students accepted into a double major must meet, at least, the minimum requirements for each of the majors. This includes graduate work of no less than 18 to 24 credit hours in each of the two disciplines, but never fewer than 18 credits, excluding cross-listed courses in the second major. The precise number of credits may vary depending on the total required hours for a particular major. For each of the two majors, students must take at least 8 credits in courses open only to graduate students (900 level or *800 level), excluding thesis hours.

The student is required to successfully satisfy the comprehensive examination schedule (written and/or oral examination(s)) administered for each major. The examination committee for students electing for the double major masters shall consist of two graduate faculty members from each of the major departments/areas. The committee shall be co-chaired by a faculty member from each of the major departments. All professors on the examining committee must either be on the graduate faculty or be non-graduate faculty approved to perform specified graduate faculty duties. At least one of the two members from each department must be on the graduate faculty.

For admission criteria, see “Admission to a Double Major.”

Second Masters Degree

Normally, no graduate student may be a degree-seeking student in more than one graduate program at the University of Nebraska, unless enrolled in an approved dual-degree program (see Dual Degree Programs below). Any exceptions must have prior approval of every Graduate Program Committee and every campus Dean for Graduate Studies through which the programs are administratively assigned. When a student has received an approved simultaneous matriculation for two masters programs, the same course credit will not be accepted for more than one degree without prior approval of every Graduate Program Committee and every campus Dean for Graduate Studies through which the programs are administratively assigned.

Students who have earned a previous graduate degree such as a masters degree at any institution including the University of Nebraska may seek additional masters degrees. The subsequent masters degree(s) may be in the same discipline as the previously earned degree(s), or in a different discipline. However, no graduate credits will be accepted as transfer credit toward a subsequent masters program if the course work has been applied toward a previously completed graduate degree at any accredited institution, including UNL. Graduate course work not previously applied toward a degree may be considered for transfer to a subsequent masters if the graduate credits were earned within 10 years of completing the masters degree at UNL.

Dual Degree Programs

The professional program leading to the juris doctor degree is provided through the University of Nebraska College of Law. A number of dual degree programs are offered in cooperation with the College of Law and the Office of Graduate Studies. Presently, joint law/graduate degree programs exist with the departmental areas of accountancy; business administration; community and regional planning; economics; educational studies; political science; and psychology. Students must be accepted separately by the College of

Law and by the Graduate College of the University.

In addition, a dual-degree program is offered by the departments of architecture (MArch) and community and regional planning (MCRP); architecture (MArch) and business (MBA); MArch/MEng with construction emphasis; civil engineering (MS) and community and regional planning (MCRP); and Legal Studies (MLS) and Psychology (PhD). Students must be accepted separately by each degree program, with the knowledge and approval of the Graduate Dean. For more information, refer to the dual program descriptions in this bulletin under the appropriate departmental entry.

Individualized Joint Graduate Programs

With approval of the Dean of Graduate Studies, individualized joint masters or doctoral programs may be proposed. The individualized joint program must be proposed by the participating graduate faculty members, and must be approved by all relevant departmental/area Graduate Committees prior to seeking approval from the Dean. Interested faculty members should contact the Office of Graduate Studies for more information.

Masters Degree Requirements

Contents

- 1 Requirements for the Masters Degree
  - 1.1 Options for the Masters Degree
  - 1.2 Option I.
  - 1.3 Option II.
  - 1.4 Option III.
  - 1.5 Residency and Time Requirements
  - 1.6 Memorandum of Courses
  - 1.7 Admission to Candidacy
  - 1.8 Masters Thesis
    - 1.8.1 Examinations
    - 1.8.2 Procedure Summary for the Masters Degree

Requirements for the Masters Degree

Options for the Masters Degree

The Graduate College, except in a few departments where such a choice is not feasible, offers the degrees of master of arts and master of science under three options. Limitations concerning options for the masters degree in the individual majors are shown in the beginning portion of each department's requirements in the *Courses of Instruction* section of this bulletin. In choosing an option a student should be guided by the type of training desired. A masters degree student may change his/her declared Option at any time during the program of study with written approval from the adviser, the Chair of the Graduate Committee in the student's major and the Dean for Graduate Studies. **The only exception to this policy is that students may not change from Option I to any other Option if certification of full time status has been utilized.**

The major for the masters degree under any option may be met with approved courses selected from those offered in any department which has been approved to offer a program leading to the masters degree, refer to http://www.unl.edu/gradstudies/prospective/majors.shtml.

A minor for the masters degree under any option must consist of at least 9 semester hours and may be taken in any one department or interdepartmental area which has been approved to offer a major leading to a masters degree. In addition, the minor may, in certain departments, be completed in a subdivision of the administrative department. Approved fields of study, which may be selected within each administrative department, must be approved by the Graduate Council for use as a minor and are indicated in this bulletin in the sections of the program for the respective departments.

Approved fields of specialization are listed under those sections of this bulletin which pertain to the departments concerned.

Option I.

The masters degree under Option I should be chosen by those who are preparing for careers in research and scholarly work or in college or university teaching. Under this option a student must earn a minimum of 30 semester hours of credit, consisting of 20 to 24 semester hours of regular course work, and present a thesis equivalent to 6 to 10 semester hours. At least one-half of the required work, including thesis, must be taken in one major subject (at least 18 hours for the master of education degree). The remaining work may be in supporting courses or in a minor consisting of at least 9 semester hours. Eight hours credit, in addition to the thesis, must be earned in courses open exclusively to graduate students (900 level or 800 level without 400 or lower counterparts).

The subject of the thesis should be chosen from the candidate's field of major interest and must be approved by the departmental Graduate Committee. The thesis should reveal a capacity to carry on independent study or research and should demonstrate the student's ability to use the techniques employed in her/his field of investigation. **Research activities involving human subjects or live vertebrate animals may not be conducted at the University of Nebraska-Lincoln (UNL) unless the research activities have been reviewed and approved by the appropriate board or committee. The Institutional Review Board (IRB) reviews projects involving human subject research and the Institutional Animal Care and Use Committee (IACUC) reviews the use of animals in research. These reviews are in accordance with Federal regulations and UNL assurance documents to the Office for Human Research Protections (OHRP). The IRB New Protocol Submission form must be completed on-line at**

http://nugrant.unl.edu; the Application to Use Animals is available at http://research.unl.edu/orr/ga.shtml. Note that the IRB and IACUC will not review projects already in progress; approval must be secured prior to the initiation of the research. Evidence of IRB/IACUC approval must be submitted at the time the final version of the thesis or dissertation is filed. The thesis must conform in style and form to specimens which may be examined in Love Memorial Library. A copy of the thesis and abstract must be presented for preliminary review to the Office of Graduate Studies at least two weeks (one week in the summer sessions) before the date for the Candidate's oral examination. A Candidate is not eligible for the oral examination until the thesis is completed and approved by the major adviser. When the thesis has been accepted, one copy must be supplied to the major department and two copies must be deposited with the Dean of University Libraries.

Option I is not open for the master of professional accountancy degree.

Option II.

The masters degree under Option II is offered in certain departments upon the advice and the approval of the major adviser, the Graduate Committee, and the Dean of Graduate Studies. This option encourages a wider range of courses than is permissible under Option I. Students who have taken the masters degree under Option II and later elect to continue in graduate work for the degree of doctor of philosophy must give evidence of ability to carry on independent research.

Under this option a student must earn a minimum of 36 semester hours of credit in courses representing a major and either one or two minors. A thesis is not required. A program consisting of a major and one minor must include not fewer than 18 hours in the major and 9 hours in the minor. If two minors are elected, the major must total at least 15 hours and the minors at least 9 hours each. Although most departments stipulate that all course work towards the minor must be taken within the department or interdepartmental area, at the discretion of the minor department up to one-third of the courses required for a minor may be transferred from other institutions. In either case, at least 12 of the 36 hours must be earned in courses open exclusively to graduate students (900 or 800 level without 400 or lower counterparts).

In work for the master of education degree, at least 6 semester hours selected from education courses outside the major must be included and supporting work may be substituted for the minor(s).

Option II is not open for the master of professional accountancy degree.

Option III.

The masters degree under Option III is designed especially for the student who plans to continue scholarly work in a chosen field past the masters level. It permits the substitution of more intensive work in advanced courses for the thesis or minor. Under this option, the student must earn a minimum of 36 semester hours of credit, at least 18 of which must be earned in courses open exclusively to graduate students (900 or 800 level without 400 or lower counterparts). The program must include not fewer than 18 hours in the major.

Option III is not open for the master of education degree.

Students pursuing the master of professional accountancy degree must earn at least 20 semester hours of credit in courses open exclusively to graduate students. At least 15 semester hours of these graduate-only courses must be in Accounting.

Residency and Time Requirements

A candidate for an Option I masters degree must complete 10-12 semester hours of the required credit in regularly scheduled campus courses, excluding credit in thesis research; candidates for Option II or III masters degrees must complete at least 18 hours in regularly scheduled campus courses. At least one-half of the work for a masters degree must be in the department or area constituting the student's major.

The work required for a masters degree must be completed within ten consecutive years. Course work exceeding ten years will not apply toward the partial fulfillment of the degree requirements for masters degrees at the University of Nebraska-Lincoln.

Memorandum of Courses

The Memorandum of Courses must be filed before the student has received grades (letter grades, no reports or incompletes) in more than one-half of the prescribed program. It must also be approved by the student's adviser, the departmental or area Graduate Committee, the Graduate Committee in the student's minor, and by the Dean of Graduate Studies. **A student may NOT file a Memorandum of Courses and graduate in the same semester or summer session.** See Master's Degree Forms and Deadlines on the Graduate Studies website http://www.unl.edu/gradstudies/current/masters.shtml.

Admission to Candidacy

A student is admitted to Candidacy for the masters degree when admission deficiencies have been removed and when the ability to perform satisfactorily in graduate studies has been demonstrated, by filing a Memorandum of Courses in the Office of Graduate Studies.

Masters Thesis

The masters thesis and abstract in preliminary form must be approved by the adviser prior to applying for the final oral examination or for its waiver (at least four weeks prior to the examination). A copy of the thesis and abstract in preliminary form must be submitted to the Office of Graduate Studies for approval at least **two weeks** (one week in summer) prior to the final oral examination. This copy will be reviewed by the masters degree specialist and returned to the student. The preliminary copy may be submitted electronically to the masters specialist.

The thesis and abstract should be double spaced. The margins should be at least one-and-one-half inches (1.5") at the left and one

inch (1") on each of the other three sides. If plates or folded tables are included, they should have exactly the same margins as the text, or should be folded to come within them. Footnotes should be single spaced and should be placed at the bottom of the page to which they pertain unless special instructions are given by the department concerned.

The thesis must be typed. Acceptable type includes a dark print from a letter quality printer. All final copies must be either printed or copied on 20 lb. (minimum) white, 25 percent cotton watermarked bond paper not designed for easy erasure.

Following successful completion of the oral examination, the student should submit two final unbound copies of the masters thesis (including abstract) and one additional abstract to the masters degree specialist in the Office of Graduate Studies, 1100 Seaton Hall. The thesis and two copies of the abstract will be stamped for approval and returned to the student for depositing in 318 Love Library. Masters theses are available for interlibrary loan through the University Libraries.

The student should consult her/his major adviser about the number of additional copies of the thesis which should be prepared, and also about the binding of these copies. One copy must be filed in the departmental office of the major and ordinarily one copy is furnished to the major adviser who directed the study.

Examinations

Within 24 months prior to the date of graduation, a comprehensive (written and/or oral) examination is (are) required to cover the student's approved program of study, as specified by the appropriate departments. The comprehensive examination in the minor field(s) (written and/or oral) may be waived subject to the approval of the minor department(s) provided all grades in the minor department are as least a B or pass.

If an oral examination is required, the examining committee, approved by the Office of Graduate Studies on recommendation of the major department, will consist of at least three members representing the major department and the minor department (if applicable). If the degree is being earned under Option I without a final oral examination, the thesis must be approved in writing by a Graduate Faculty member in addition to the major adviser. All professors on the examining committee must either be on the Graduate Faculty, or be non-Graduate Faculty approved to perform specified Graduate Faculty duties. If a member of the examining committee other than the chair leaves the employ of the University, or retires, a replacement should be appointed. In certain circumstances where a special and needed continuing expertise is involved and the faculty member is willing to continue serving, the departing faculty member may continue as a member or co-chair of the committee, with approval of the department Graduate Committee and the UNL Dean of Graduate Studies.

In the event that members of an oral examining committee are not unanimous regarding passing a Candidate, the student is to be approved for the degree if only one examiner dissents. However, in each case, the dissenting member of the committee will be expected to file a letter of explanation in the Office of Graduate Studies.

If a student fails to pass the final oral or written examination for an advanced degree, their committee must file a report on the failure in the Office of Graduate Studies and indicate what the student must do before taking another examination. Another examination may not be held during the same semester or the same summer session in which the student failed.

Procedure Summary for the Masters Degree

This outline of procedure should be studied carefully in connection with the deadlines published in the UNL Graduate Studies calendar. See Master's Degree Forms and Deadlines on the Graduate Studies website
http://www.unl.edu/gradstudies/current/masters.shtml

1. Admission to UNL Graduate Studies.

2. Registration by consultation with the chair of the Graduate Committee and the major adviser and with the approval of the Dean of Graduate Studies.

3. Removal of admission deficiencies.

4. Memorandum of Courses, required for Candidacy, must be filed before grades (letter grades, no reports or incompletes) have been received in more than one-half of the program and on recommendation of the major and minor departments and approval of the Dean of Graduate Studies.

5. Application for advanced degree at the Graduation Services Office, 109 Canfield Administration Building, at the outset of the semester or session in which graduation is planned.

6. The Final Examination Report for the masters degree must be received in the Office of Graduate Studies at least four weeks (three weeks in summer) before the final examination, if required, but in no case later than four weeks before the final date for oral examinations. The report will be accepted after all course work on the program of studies has been completed, or is in progress, and any outstanding incompletes have been removed.

7. The presentation of a preliminary copy of the thesis and abstract to the Graduate Studies Office, two weeks (one week in summer) prior to the oral examination, if required. If the oral examination is waived, the preliminary copy of the thesis and abstract must be presented to the Office of Graduate Studies no later than two weeks before the final date for oral examinations for any given session.

8. Passing of written examinations, if required, in major and minor fields at least one week prior to the time the oral examination is to be taken.

9. Passing of an oral examination, if required, administered by the examining committee.

10. Deposition of two complete copies of the thesis and abstract in proper form, along with the Final Examination Report Form

signed by the examining committee, to the Office of Graduate Studies to be stamped. They are then delivered to the Dean of University Libraries, and the binding fee is paid to the Bursar's Office. Upon receiving the signatures of the Library and the cashier on the Final Examination Report Form, it is returned to the Office of Graduate Studies.

Doctoral Degree Requirements

Contents

- 1 Requirements for the Doctor of Philosophy Degree
  - 1.1 Academic Residency Requirements
  - 1.2 Appointment of Supervisory Committee
  - 1.3 Changes to the Supervisory Committee
  - 1.4 Program of Studies
  - 1.5 Language and Research Tool Requirement
  - 1.6 Comprehensive Examination and Admission to Candidacy
  - 1.7 Final Examination
  - 1.8 Dissertation
  - 1.9 Reading Committee
  - 1.10 Depositing the Dissertation
  - 1.11 Summary of Procedure for the Doctor of Philosophy Degree
- 2 Requirements for the Degree of Doctor of Musical Arts
  - 2.1 Procedure Summary for the Doctor of Musical Arts Degree
- 3 Requirements for Doctor of Education Degree
  - 3.1 Academic Residency Requirements
  - 3.2 Hours of Credit
  - 3.3 Qualifying Procedure
  - 3.4 Summary of Procedure for Doctor of Education Degree
- 4 Requirements for Educational Specialist Degree
  - 4.1 Hours of Credit
  - 4.2 Qualifying Procedure
  - 4.3 Supervisory Committee
  - 4.4 Program of Studies
  - 4.5 Comprehensive Examinations
- 5 Requirements for Certificate of Specialization in Educational Administration and Supervision

Requirements for the Doctor of Philosophy Degree

Academic Residency Requirements

The Office of Graduate Studies has established an academic residency requirement for the purpose of ensuring that the doctoral program should be reasonably compact, continuous, and cohesive; and that a substantial portion be in fact done at and under close supervision by the University. The academic residency requirement is part of the student's approved program.

For a student beginning a doctoral program in the University of Nebraska system with a bachelors degree, the academic residency requirement for the PhD is 27 hours of graduate work within a consecutive 18-month period or less, with the further provision that 15 of these 27 hours must be taken after receiving the masters degree or its equivalent.

For a student beginning a doctoral program in the University of Nebraska system with a masters degree, the academic residency requirement for the PhD is 27 hours of graduate course work within a consecutive 18-month period or less.

For 1) a member of the University staff who is engaged at least half time in instruction or research in their major area, or 2) a person employed in their major field, the residency requirement is 24 credit hours of graduate work within a consecutive two-year period with the further provision that they take at least 12 of these after receiving the masters degree or its equivalent. For important restrictions, refer to "University Staff Exemption."

In exceptional circumstances, where it is clear that the purpose of residency will be fulfilled although the above formal conditions are not met, the student's supervisory committee may, with the approval of the Dean of Graduate Studies, designate an alternative procedure for satisfying the residency requirements.

A minimum of three full years of graduate study is normally required to complete a program for the degree of doctor of philosophy. Neither the courses taken nor the time spent in study determines the granting of the degree. It is given primarily for high attainment in some special field of scholarship and for demonstrated power of independent research in a subdivision of this field.

The time limit on granting the doctoral degree is eight years from the time of filing the student's program of studies in the Office of Graduate Studies. The Supervisory Committee will determine what course work taken prior to filing of a program of studies, including hours earned toward the masters degree(s), will be accepted as part of the 90-hour program. The Committee is not obligated to reduce the doctoral program of studies by applying course work taken toward a previously earned masters degree(s). Prior course work should be assessed in relation to its contribution to framing a research foundation for the doctorate. Each course accepted must be determined to be current and relevant in relation to the desired degree.

Students who have earned a previous doctoral degree at any institution, including the University of Nebraska, may seek additional doctoral degrees. The subsequent doctoral degree(s) may be in the same discipline as the previously earned degree(s), or in a different discipline. However, no graduate credits will be accepted as transfer credit toward a subsequent doctoral program if the course work has been applied toward a previously completed doctoral degree at any institution, including UNL. Course work applied toward a previously earned masters degree may be considered for transfer to a subsequent doctorate at the discretion of the Supervisory Committee.

Appointment of Supervisory Committee

In order to assure that students are under careful advisement and mentoring throughout their careers, a **Supervisory Committee is established before a doctoral student has accumulated 45 credit hours** including any transfer hours but excluding research or language tools. Upon recommendation of the departmental or area Graduate Committee in the student's major, the Dean of Graduate Studies appoints, for each student, a supervisory committee of at least four Graduate Faculty. All professors on the supervisory committee must either be on the Graduate Faculty or be non-Graduate Faculty approved to perform specified Graduate Faculty duties. At least one Graduate Faculty member external to the academic department or area in which the doctorate is to be granted must be included on the committee responsible for supervising the student's doctoral program of studies. The representative of the minor department on the committee may serve as the outside representative. The establishing of a supervisory committee is based upon the student's:

1. Demonstrated ability in the fundamental subject matter of his/her major field, and
2. Professional promise. The minor or related fields, if applicable, will be represented on the committee.

See Doctoral Degree Forms and Deadlines on the Graduate Studies website: http://www.unl.edu/gradstudies/current/doctoral.shtml

Changes to the Supervisory Committee

If the chair of a PhD supervisory committee leaves the employ of the University or retires, the Office of Graduate Studies must be notified immediately and a change in the supervisory committee made as follows:

a. Graduate Faculty who have retired and been appointed to emeritus status may co-chair the supervisory committees of doctoral students with a resident Graduate Faculty member.

b. Retired faculty members not appointed as emeritus, relinquish their Graduate Faculty status and must be replaced on doctoral supervisory committees.

c. If the student has already achieved Candidacy, the former chair who has left the employ of the University (not through retirement) may be permitted to continue as co-chair of the supervisory committee, with the concurrence of the departmental Graduate Committee and the UNL Dean of Graduate Studies. A second co-chair must be appointed who is a resident Graduate Faculty member.

d. If the student has not yet achieved Candidacy, a new chair of the supervisory committee who is a resident Graduate Faculty member must be appointed immediately, with the concurrence of the departmental Graduate Committee and the UNL Dean of Graduate Studies.

If a member of the supervisory committee other than the chair leaves the employ of the University or retires, a replacement should normally be appointed who is a resident Graduate Faculty member. Faculty who have been appointed to emeritus status may continue as committee members. In certain circumstances where a special and needed continuing expertise is involved and the staff member is willing to continue serving, he/she may continue as a member of the supervisory committee, with the approval of the Supervisory Committee Chair and the concurrence of the UNL Dean of Graduate Studies.

Occasionally a doctoral student's supervisory committee may believe that the participation of a graduate faculty member from another university would enhance the quality and direction of the dissertation. Faculty from other universities with special expertise may be enlisted, with the approval of the Graduate Dean, to serve in a courtesy association on the supervisory committee of a doctoral candidate. Such individuals would serve without official vote but would be empowered to sign the dissertation approval document and be duly acknowledged by the student in the dissertation.

Program of Studies

Within the semester of its appointment the committee will meet to designate and subsequently to file in the Office of Graduate Studies a complete program of studies, including any language or research tool requirements, and the general area of research for the dissertation. The student's program of study must conform with one of the following plans:

1. The student chooses a major from the list of approved doctoral programs. At least half of the graduate work, including the dissertation, will be done in this field. The remaining work, subject to the approval of the supervisory committee, may include either:
    a. supporting courses in the same or in related departments, or
    b. a minor field of study outside of the major department. The minor must include at least 15 semester hours with 6 hours in courses open exclusively to graduate students (900 level or 800 level without 400 level or lower counterparts). It may be taken in any department which has been approved to offer a major leading to a masters degree. In addition, the minor for the PhD may, in certain departments, be completed in a subdivision of the administrative department. Approved fields of study, which may be selected within each administrative department, must be approved by the Graduate Council for use as a minor and are indicated in this bulletin in the sections of the programs for the respective departments.

2. The student may select a field of study which integrates material offered in two or more departments without meeting the specific major requirements as outlined under 1. Such a program of study must be in an approved interdepartmental area for

which a special area Graduate Committee representing the departments concerned has been appointed by the Dean of Graduate Studies.

The committee is not obligated to accept credits beyond the masters degree which were completed prior to its appointment. At least half of the total program of courses and dissertation research must be completed following submission of the program to the Office of Graduate Studies. Any subsequent change in the program or in the dissertation topic is approved by the supervisory committee and the action reported to the Office of Graduate Studies.

The minimum amount of graduate credit is 90 semester hours, including a dissertation. **Not fewer than 45 semester hours must be completed at the University of Nebraska after the filing of the program of studies.** The PhD program will normally include a minimum of 12 hours and a maximum of 55 hours of dissertation research. The time limit on granting the doctoral degree is eight years from the time of filing the student's program of studies in the Office of Graduate Studies.

See Doctoral Degree Forms and Deadlines on the Graduate Studies website http://www.unl.edu/gradstudies/current/doctoral.shtml.

Language and Research Tool Requirement

There is no uniform language or research tool requirement for UNL Graduate Studies. However, certain departments have specific research tool requirements and/or language requirements, which are explained in the sections of this bulletin describing the program in the department or interdepartmental area.

Prior to admission to Candidacy and at least seven months before the final oral examination the student must have satisfied the language and research tool requirements for their department as noted in the bulletin.

Comprehensive Examination and Admission to Candidacy

When a student has substantially completed studies in the doctoral program (PhD, EdD, DMA), he/she must pass a written comprehensive examination, in major and minor or related fields. The written comprehensive examination is not a repetition of course examinations but is an investigation of the student's breadth of understanding of the field of knowledge of which their special subject is a part.

At the discretion of the supervisory committee, the student may also be required to pass an oral comprehensive examination. The oral examination may include the minor or related fields in addition to the major field of study. The supervisory committee arranges for written or oral examinations.

When the student has passed the comprehensive examination, satisfied language and research tool requirements of her/his approved program, and removed any provisional admission requirements, the committee will recommend to the Office of Graduate Studies the doctoral student's admission to Candidacy by filing the Application for Admission to Candidacy for the doctoral degree, noting the dates of completing the comprehensive examination(s). **The application must be filed at least seven months prior to the final oral examination** (dissertation defense).

Following admission to Candidacy the student must register for at least one credit hour during each academic-year semester until he/she receives the doctoral degree, even if the student has already met the total dissertation hours on their approved program of study. Failure to register during each academic-year semester will result in termination of the program of study.

NOTE: Should the Supervisory Committee determine the student has failed the comprehensive examination, a letter must be submitted by the chair of the supervisory committee to the Dean of Graduate Studies stating the conditions under which the student may attempt another examination, or part thereof, not earlier than the following academic term. Typically, but upon the discretion of the supervisory committee, only two attempts to pass the comprehensive examination will be permitted.

For the Application for Admission to Candidacy form, see doctoral deadlines and forms at http://www.unl.edu/gradstudies/current/doctoral.shtml

Final Examination

The final examination for the doctoral degree is oral and open to members of both the University community and the public. During the dissertation presentation and general questioning all persons may be present. However, at the end of the public hearing there will be a closed questioning portion of the examination where all persons except the Candidate, doctoral supervisory committee, and invited faculty must be excused. It is given by the supervisory committee after the Candidate's studies have been completed and the dissertation accepted. The committee also determines its character and length. The examination may be devoted to the special field of the dissertation or to the Candidate's general knowledge, or it may be designed to test judgment and critical powers.

The final oral examination for the PhD will not be scheduled unless the chair of the supervisory committee and at least two other members of the committee are available for the examination. Exceptions may be made only by permission of the Dean of Graduate Studies. In any event, the supervisor of the dissertation must have seen and approved the completed dissertation before the examination will be scheduled.

The final oral examination over the dissertation may be waived only with the unanimous consent of the supervisory committee. The committee reports the results of the final oral examination or the reason for its waiver to the Office of Graduate Studies.

In the event that members of an oral examining committee are not unanimous regarding passing a Candidate, the student is to be approved for the degree if only one examiner dissents. However, in each case, the dissenting member of the committee will be expected to file a letter of explanation in the Office of Graduate Studies.

If a student fails to pass the final oral examination for an advanced degree, his/her committee must file a report on the failure in the

Office of Graduate Studies and indicate what the student must do before taking another examination. Another examination may not be held during the same semester or the same summer session in which the student failed.

See Doctoral Degree Forms and Deadlines on the Graduate Studies website: http://www.unl.edu/gradstudies/current/doctoral.shtml

Dissertation

The dissertation is of no fixed length. It should treat a subject from the Candidate's special field, approved by the supervisory committee. It should show the technical mastery of the field and advance or modify former knowledge, i.e., it should treat new material, or find new results, or draw new conclusions, or it should interpret old material in a new light. Each candidate for the degree shall submit with the dissertation an abstract of the same, not exceeding 350 words in length including the title. A guidebook for dissertation preparation is available on the Office of Graduate Studies Web site. For specific formatting guidelines, the Guidebook should be consulted.

Research activities involving human subjects or live vertebrate animals may not be conducted at the University of Nebraska-Lincoln (UNL) unless the research activities have been reviewed and approved by the appropriate board or committee. The Institutional Review Board (IRB) reviews projects involving human subject research and the Institutional Animal Care and Use Committee (IACUC) reviews the use of animals in research. These reviews are in accordance with Federal regulations and UNL assurance documents to the Office for Human Research Protections (OHRP). The IRB New Protocol Submission form must be completed on-line at http://nugrant.unl.edu; the Application to Use Animals is available at http://research.unl.edu/orr/qa.shtml. Note that the IRB and IACUC will not review projects already in progress; approval must be secured prior to the initiation of the research. Evidence of IRB/IACUC approval must be submitted at the time the final version of the thesis or dissertation is filed.

Reading Committee

The dissertation and abstract are reviewed by a reading committee of two members from the supervisory committee, excluding the chair/co-chair. The manuscripts must be presented to members of the reading committee in time to permit review and approval, which must be indicated at least three weeks in advance of the final oral examination. The application for the final oral examination and a rough draft of the title page and abstract must be presented to the doctoral program specialist in the Office of Graduate Studies for preliminary review at least three weeks before the final oral examination.

Depositing the Dissertation

Following the successful completion of the oral examination, the student should consult the instructions received at the time of filing the Application for Final Oral Exam before submission of required items in the Office of Graduate Studies, 1100 Seaton Hall.

Only abstracts/dissertations that meet all published requirements can be approved and stamped for depositing in 318 Love Library. The student must also present to the Dean of University Libraries a signed agreement for the publication of the abstract and processing of the dissertation.

Before the degree is granted, each Candidate pays a processing fee and a fee to cover the cost of publication of the abstract in Dissertation Abstracts International.

Summary of Procedure for the Doctor of Philosophy Degree

This summary of procedure should be studied carefully in connection with the Graduate College calendar. See Doctoral Degree Forms and Deadlines on the Graduate Studies website
http://www.unl.edu/gradstudies/current/doctoral.shtml.

1. Admission to UNL Graduate Studies by the evaluation of official transcripts presented in person or by mail before registration.

2. Registration after consultation with advisers in major and minor departments.

3. Submission to the Office of Graduate Studies of an Appointment of the Supervisory Committee form approved by the departmental or area Graduate Committee before 45 hours of credit have been accumulated toward the degree.

4. Submission to the Office of Graduate Studies of a Program of Studies form approved by the supervisory committee setting forth the complete plan of study for the degree with a minimum of 45 hours exclusive of language and/or research tools remaining to be taken. The time limit on granting the doctoral degree is eight years from the time of filing a student's program of studies in the Office of Graduate Studies.

5. Satisfactory completion of foreign language or research tool requirements set forth in the approved program and passing of comprehensive examinations in major and minor or related fields when the student's program of courses is substantially completed.

6. Admission to Candidacy for the PhD degree by filing an application in the Office of Graduate Studies of the passing of the comprehensive examinations and the completion of language and research tool requirements (at least seven months before the final oral examination).

7. Filing of an application for the degree at the Office of Registration and Records, 107 Canfield Administration Building. This application is effective during the current term only. It must be renewed at the appropriate time if requirements for graduation are not completed until a later term.

8. Presentation of the dissertation and the abstract to the members of the reading committee in sufficient time for review and approval, which must be obtained at least three weeks before the final examination.

9. At least three weeks prior to the date of the oral examination, presentation to the Office of Graduate Studies of the application for

final oral examination and a copy of the title page and abstract for preliminary review.

10. Passing of any required final oral examination.

11. Deposition of the required documents as detailed in the instructions received at the time of filing the application for Final Oral Exam with the Dean of University Libraries after approval by the doctoral programs specialist in the Office of Graduate Studies. Delivery of the Report on the Completion of the Doctoral Degree form, signed by members of the supervisory committee, the Dean of University Libraries, and the Comptroller, to the Office of Graduate Studies. In addition, one bound copy of the dissertation is to be deposited with the student's major department.

Requirements for the Degree of Doctor of Musical Arts

The residency and time requirements and the regulations pertaining to appointment of supervisory committees and submission of programs of studies for the doctor of musical arts are the same as those for the doctor of philosophy degree, refer to "Requirements for the Doctor of Philosophy Degree." Establishing the supervisory committee will depend upon the student's demonstrated ability in the fundamental subject matter of his or her field and on professional promise.

After admission requirements have been fulfilled, conferral of the DMA degree is contingent on a high level of attainment in the candidate's major area. In composition this will include performances of compositions composed after acceptance into the doctoral program. Work submitted for approval must include one work for chamber ensemble and one work for orchestra or its equivalent. In performance this will include three full recitals and one lecture recital. The literature performed at these recitals must be representative of all major schools and styles within the performer's chosen discipline.

In addition, proficiency in music scholarship must be demonstrated by the completion of a doctoral document or, as determined by the composition faculty, other options for composition students. Proficiency in the reading of at least one foreign language must be acquired as well as completion of academic studies in music.

When a substantial amount of course work and the language requirement have been completed, the student may petition for comprehensive examinations, which will be both written and oral. When these are completed with distinction, the student is admitted to Candidacy for the degree. For further information, see "Comprehensive Examination and Admission to Candidacy" section. The presentation of the final recital or composition will take place after admission to Candidacy. The completion of the abstract and the doctoral document and its defense will complete requirements for the degree.

Procedure Summary for the Doctor of Musical Arts Degree

This summary of procedure should be studied carefully in connection with the Graduate College calendar. See Doctoral Degree Forms and Deadlines on the Graduate Studies website http://www.unl.edu/gradstudies/current/doctoral.shtml

1. Admission to the UNL Graduate Studies by the evaluation of official transcripts presented in person or by mail before registration.

2. Registration after consultation with advisers in major and minor departments.

3. Submission to the Office of Graduate Studies of an Appointment of the Supervisory Committee form approved by the departmental or area Graduate Committee.

4. Submission to the Office of Graduate Studies of a program approved by the supervisory committee setting forth the complete plan of study for the degree with a minimum of 45 hours exclusive of language and/or research tools remaining to be taken.

5. Satisfactory completion of foreign language or research tool requirements set forth in the approved program and passing of comprehensive examinations in major and minor or related fields when the student's program of courses is substantially completed.

6. Admission to Candidacy for the DMA degree by filing a report in the Office of Graduate Studies of the passing of the comprehensive examinations and the completion of language and research tool requirements (at least seven months before the final oral examination). See "Comprehensive Examination and Admission to Candidacy" section.

7. Filing of an application for the degree at the Office of Registration and Records, 107 Canfield Administration Building. This application is effective during the current term only. It must be renewed at the appropriate time if requirements for graduation are not completed until a later term.

8. Presentation of the doctoral document and the abstract to the members of the reading committee in sufficient time for review and approval, which must be obtained at least three weeks before the final examination.

9. At lease three weeks prior to the date of the oral examination, presentation to the Office of Graduate Studies of the application for final oral examination and a copy of the dissertation and abstract for preliminary review.

Requirements for Doctor of Education Degree

The emphasis here is upon the application of theory to the improvement of educational practice. The test of knowledge is the ability to demonstrate applicability to a variety of educational situations. Emphasis is upon the development of decision-oriented inquiry skills in which the educator applies theory and knowledge to the solution of educational problems. The person holding the doctor of education degree is a practitioner of education, but one whose practice is drawn from a highly developed, scholarly study of educational theory coupled with skills of analysis which permit direct application of that theory.

Academic Residency Requirements

The academic residency requirements for the EdD are the same as those for the PhD.

Hours of Credit

The minimum amount of graduate credit for the EdD is 96 hours, including both dissertation or field investigation and language or research tools, which will normally be at least 6 hours of credit.

Qualifying Procedure

The student who expects to become an applicant for a doctoral degree in education must: 1) have a bachelors degree from a regionally accredited institution with the same general requirements as those indicated for masters degree candidates; 2) show evidence of the scholastic ability necessary for the successful pursuit of advanced work; and 3) for the EdD give evidence of at least two years of successful professional experience or of a program of professional experience approved by the adviser.

Summary of Procedure for Doctor of Education Degree

Refer to Summary of Procedure for the Doctor of Philosophy Degree for the procedure to be followed for the doctor of education degree. It should be carefully studied in connection with the UNL Graduate Studies calendar. This information also covers the preparation of the dissertation or field investigation.

Requirements for Educational Specialist Degree

The EdS degree prepares educational practitioners for specialized positions in public and private schools. It is especially appropriate for those individuals who wish preparation beyond the masters degree level, but who are not interested in doctoral work with its emphasis on research. The EdS degree is a terminal degree and should not be viewed as a substitute for the doctorate nor as work completed toward it. See Educational Specialist Degree Forms and Deadlines on the Graduate Studies website http://www.unl.edu/gradstudies/current/specialist.shtml

Hours of Credit

A minimum of 66 semester hours beyond the baccalaureate degree is required for the EdS degree. While specific requirements are determined by departmental units, in general 40 to 50 hours will be in core courses within the unit or closely related units, 3 hours or more will be research, 6 hours or more will be practicum, and 6 or more hours will be electives.

Qualifying Procedure

Applicants for the EdS program should: 1) have a bachelors degree from a regionally accredited institution, and 2) take qualifying examinations as required by the field of specialization. Applications will be reviewed by faculty in the field of specialization and admission decisions made by the departmental graduate committee on the basis of academic and professional promise.

Supervisory Committee

Students admitted into a specialist program should contact the head of the Graduate Committee of the department to make arrangements for appointment of members of the supervisory committee, including the chair. Supervisory committees for the EdS consist of three Graduate Faculty.

Program of Studies

The program of studies for the EdS consists of core courses, research, practica, and electives. Appointment of the supervisory committee and approval of the program of studies by the Dean of Graduate Studies establishes the program of studies. **The student must complete at least 24 hours subsequent to approval of the program of studies.** The time limit on granting the EdS degree is six years from the time of filing the student's plan of studies in the Office of Graduate Studies.

Comprehensive Examinations

A written comprehensive examination, developed by the supervisory committee, will be administered when the program is substantially complete. The committee determines the nature and duration of the examinations and will report the results to the Office of Graduate Studies.

Requirements for Certificate of Specialization in Educational Administration and Supervision

The Department of Educational Administration offers a graduate-level administrator preparation program leading to a certificate of specialization in educational administration and supervision. The minimum requirement is 66 semester credit hours, in a program of studies specified by the Department.

All students seeking the certificate of specialization must be admitted to an appropriate program in the Department of Educational Administration. Information concerning application procedures and admission requirements may be obtained from the chair of the Department's Graduate Committee.

If the person is seeking a recommendation from the Department of Educational Administration for state administrator certification and/or endorsement, then at least one-half of the minimum number of semester credit hours in educational administration courses required in the program leading to that certification and/or endorsement must be earned through the Department of Educational Administration at the University of Nebraska-Lincoln.

For the certificate of specialization, a minimum of 30 semester credit hours of approved graduate credit must be earned after the completion of a masters degree program or equivalent requirements; of these 30 hours, at least 21 must be earned at the University of Nebraska-Lincoln. At least 15 semester hours of approved graduate credit must remain to be completed at the time the program is filed with the Office of Graduate Studies. The certificate must be completed within six consecutive calendar years from the time of the student's acceptance into the program by the Department. At the time of completion, none of the semester credit hours approved may be more than ten years old, except that for credit hours earned in a previous degree program there is no limit.

In addition to the course work, there are two other requirements: 1) completion of a formal research paper, which may be met by a masters degree thesis or Option II paper and other comparable research papers that may be approved; and 2) successful completion of a comprehensive written examination, which must be taken within the ten calendar months prior to graduation. A portfolio may be produced in lieu of fulfilling requirements 1 and 2.

Requirements for Graduate Certificates

Certificates are available in a variety of disciplines and interdisciplinary areas. For more information, refer to Graduate Studies Web site.

Academic Credit/Academic Progress Policies

Contents

- 1 Academic Credit Policies
  - 1.1 Courses with Graduate Credit
  - 1.2 Graduate Credit for Seniors
  - 1.3 Transfer of Credit
  - 1.4 Credit by Examination
  - 1.5 Grading System
  - 1.6 Scholastic Grade Requirements
  - 1.7 Incompletes
  - 1.8 Drop and Add
  - 1.9 Correction of Registration Errors
  - 1.10 Withdrawal

Academic Credit Policies

Courses with Graduate Credit

Courses numbered in the 800 and 900 series offer graduate credit. Courses in the 900 series and those in the 800 series without counterpart 400 or lower series numbers are open exclusively to graduate students except by permission of the Dean of Graduate Studies. These 800-series courses are identified in this bulletin with an asterisk (*).

Courses numbered in the 500s, 600s and 700s are professional (law, dentistry, and architecture) level and carry graduate credit only if the letter "G" follows the course number.

Courses numbered 400 or lower are undergraduate level and cannot be applied towards a graduate degree.

The general prerequisite for courses in the 800 series is at least 12 hours of work in the same department or in approved courses in allied departments. The general prerequisite for courses in the 900 series is at least 18 hours in the same department which may include approved courses in allied departments.

A student who enrolls in a course must have completed the general prerequisite, including any specific prerequisite indicated for the course. According to policies governing graduate-level courses, there is a required differentiation of faculty expectation regarding student performance and therefore grading criteria.

Graduate Credit for Seniors

Seniors at UNL may be permitted up to 12 hours of credit for graduate courses taken in addition to the courses necessary for their undergraduate degree, provided that these credits are earned the calendar year prior to receipt of the baccalaureate. Before registering for graduate courses, seniors must obtain approval from the Dean of Graduate Studies on the Hold for Credit Form, available in 1100 Seaton Hall. Holding graduate credit keeps a senior registered as a member of an undergraduate college and allows one to continue any undergraduate scholarship or financial aid awarded. Courses taken before one graduates do not always transfer as graduate credit to other institutions nor can there be a guarantee from the Office of Graduate Studies that these courses would apply toward a particular graduate program.

If someone on another University system campus wishes to take graduate level classes at UNL, an intercampus form should be used, and any arrangement to hold for graduate credit would have to be made at the student's home campus. UNL will not be able to certify graduate credit except for those students graduating at UNL. Students from schools outside of the University of Nebraska system will have to wait to receive graduate credit until they can qualify as graduate students.

In most situations it is best to hold credit (as noted in the first paragraph). However, under certain circumstances UNL seniors who are within 9 hours of graduation may apply, provide a Senior Check, and if accepted into a degree program, may be granted admission to UNL Graduate Studies. This admission would be contingent upon receipt of the baccalaureate within the calendar year. It would make one ineligible to continue any undergraduate scholarship or financial aid, but would allow one to apply for any financial support, fellowships, or assistantships open to graduate students.

Seniors in the University Honors Program are encouraged to consider taking 400/800-level courses at the 800 level with the concurrence of their adviser and permission of the instructor and Dean of Graduate Studies.

Transfer of Credit

No graduate credits will be accepted as transfer credit toward a masters program at UNL if the course work is 10 years or older or if the course work has been applied toward a previous masters degree at UNL or any other accredited institution. Similarly, no graduate credits will be accepted as transfer credit toward a subsequent doctoral program if the course work has been applied toward a previously completed doctoral degree at any institution, including UNL.

All graduate credits to be counted toward the satisfaction of postbaccalaureate degree requirements, including all transfer credits, must be recommended by the cognizant graduate committee of the student's major department or area. Not less than 50 percent of the course work (excluding thesis) of the minimum number of graduate credits required for any subdoctoral graduate degree must be completed at the University of Nebraska. No graduate credits will be accepted as transfer credits unless earned at an institution fully accredited to offer graduate work in the field of the student's major; nor should the student expect any graduate credits to be transferred unless the graduate committee evaluates the quality and suitability and determines that they are equal to or superior to offerings available at the University of Nebraska-Lincoln.

Approval of the Office of Graduate Studies is required for the transfer of graduate work taken elsewhere to a graduate degree program at the University of Nebraska-Lincoln. It is the responsibility of the student to insure that official transcripts of graduate work taken elsewhere are sent by the institution where the work was completed and received by the Office of Graduate Studies well before the student plans to complete all other requirements for the graduate degree. Official transcripts should be sent to:

Dean of Graduate Studies
University of Nebraska-Lincoln
1100 Seaton Hall
PO Box 880619
Lincoln, NE 68588-0619

Credit by Examination

Credit by examination cannot be earned in graduate level courses or applied to graduate degree programs.

Grading System

The University uses an A through F grading system. The letter grades with point value (in parentheses) are: A+ (4.0), A (4.0), A- (3.67), B+ (3.33), B (3.0), B- (2.67), C+ (2.33), C (2.0), C- (1.67), D+ (1.33), D (1.0), D- (0.67), and F (0). Grades of W (dropped/withdrew), I (incomplete), P (pass/C or better), and N (no pass) may also be given. W, I, P, and N are not assigned grade points.

Students taking undergraduate classes for deficiencies generally have a grade requirement set by the department. However, if no specific standard has been set, the graduate student is required to meet the same standard an undergraduate would be held to. That is, if the class is taken Pass/No pass, pass is the equivalent of a C or better.

Scholastic Grade Requirements

Credit in graduate-level courses is attained as follows:

1. A minimum grade of B is required for graduate credit in 800-level courses with 400 or lower counterparts within the student's major department or area. A grade of B- is not acceptable.

2. A minimum grade of C or P (pass) is required for graduate credit in 800-level courses in minor, collateral, or supporting areas of work. A grade of C- is not acceptable. **NOTE:** A grade of B- or lower received in a minor course will result in a minor comprehensive being required.

3. A minimum grade of C or P (pass) is required for graduate credit in 900-level courses, or 800-level courses without 400 or lower counterparts.

When applied toward an advanced degree program, only courses at the 900 level, or 800 level **without** 400 or lower counterparts, **in the major department or interdepartmental area** may be taken on a pass/no pass (P/N) basis. In **minor, collateral, or supporting areas of work** 800-level courses with 400 or lower counterparts can be taken on a P/N basis.

A student failing to receive a minimum acceptable grade for graduate-level credit may not continue his/her program of studies without permission of the supervisory group or the departmental graduate committee concerned, which may require a special examination to determine the student's qualifications for further work.

Incompletes

Students taking graduate courses should check with their instructor on what their responsibilities are to remove an incomplete. Normally there is no time limit for graduate students to remove an incomplete. However, the instructor does have the option of determining the requirements for completing the course and requisite date for removal of incompletes. It is helpful to have these requirements in writing to ensure there is no miscommunication between the instructor and student. Typically, thesis and dissertation credit hours are graded following the defense of these projects.

Drop and Add

Students may drop or add classes from the beginning of priority registration through the last day on which classes may be added for a term. Dates are published each semester in the Schedule of Classes or the Summer Sessions Bulletin. Students who do not initially register for classes until after the beginning of the term will be charged a late registration fee. No course may be added to a student's record after the end of the add period (as published in the Schedule of Classes) without the permission of the instructor and the Office of Graduate Studies.

A course drop becomes effective for tuition and grade purposes on the date the transaction is processed by the student. Tuition liability for a course begins after the add period for a term.

A graduate student may drop a course without the instructor's permission 3/4 of the way through the course. Any graduate student wishing to drop one or more classes after the 3/4 point of the term can do so only with the permission of the Office of Graduate Studies. The Dean of Graduate Studies will consult with the course instructor prior to approval. All courses dropped after the second week of the term are noted on the student's academic record (transcript) with a "W" (withdrawn) grade designation.

For complete procedures, dates and regulations, refer to the current semester's Schedule of Classes or the Summer Sessions Bulletin.

Correction of Registration Errors

A graduate student who has registered in error (for example, enrollment in the undergraduate level of a 400/800 course) should correct the error through the normal drop and add process during the term in which the error occurred. In the event the error is not recognized until a grade is posted, the student may appeal for correction of registration within sixty days of the posting of the grade report in the Records Office. Changes to a student registration record will not be made more than sixty days after grades are posted in the Records Office.

Withdrawal

If a student wishes to drop all courses being taken in the term, this is considered a withdrawal. Withdrawals may be accomplished through the eNRoll system or by filing a Cancellation/Withdrawal form with the Registration Office, 107 Canfield Administration Building. Students may withdraw from classes, regardless of circumstance, from the first day of classes through the 3/4-point of the term. Withdrawals that occur after the second week (or 2/16th) of the term but before the 3/4-point will be noted by automatic entry of a "W" grade for all uncompleted courses.

Any withdraw from classes after the 3/4 point of the term must be for extraordinary circumstances and will be granted only by petition through the Office of Graduate Studies. The Dean of Graduate Studies will consult with the course instructor prior to approval. The result of a successful petition will be posting of a grade of "W" on the transcript for the respective course(s). If the petition is denied the grade submitted by the instructor will be posted to the transcript.

If after the census date or the last day to add classes in each term the student decides to drop a course or courses and/or withdraw from the University, it is highly recommended that the student contact the Office of Scholarships and Financial Aid to discuss the implication the action may have on future eligibility to receive financial assistance.

If the student is on an assistantship, the student should contact the department Graduate Chair to discuss the ramifications of the withdrawal before actually withdrawing from the course work.

For complete procedures, dates and regulations refer to the current semester's Schedule of Classes or the Summer Sessions Bulletin.

Probation, Termination and Appeals

Contents

- 1 Probation and Termination
  - 1.1 Grounds for Probation and Termination of UNL Graduate Students
  - 1.2 General Appeal Procedures for Academic Matters Concerning Graduate Students
    - 1.2.1 Appeal of General Academic Matters Related to Student Programs
    - 1.2.2 Appeal of Grades in Graduate-level Courses

Probation and Termination

Grounds for Probation and Termination of UNL Graduate Students

Graduate students at the University of Nebraska-Lincoln are expected to maintain a high level of achievement in their graduate studies. Accordingly, students who do not maintain satisfactory progress may be subject to being placed on probation, being terminated from a degree program, or being denied permission to continue graduate studies in the University. Except in cases of dismissal because of violations of the Student Code of Conduct, upon termination from a graduate degree program and/or dismissal from the Graduate College, students may apply for admission to another degree program or admission as a non-degree seeking student only with the approval of the Dean for Graduate Studies. No student on probation may receive a graduate degree.

Probation or termination recommendations may be made by the student's adviser (masters students), the Supervisory Committee (doctoral students), and must be approved by the Graduate Committee overseeing the student's major. The Graduate Committee overseeing the student's major must communicate the probation or termination recommendation in writing to the campus Dean for Graduate Studies. A copy of the recommendation must be sent to the student.

For all graduate students at UNL, probation or termination recommendations may be made under the following conditions: a) violations of the "Student Code of Conduct" listed in this bulletin, b) failure to satisfy "Scholastic Grade Requirements" also listed in this bulletin, c) failure in qualifying examinations, preliminary examinations, comprehensive examinations or final degree examinations, d) failure to master the methodology and content of one's field in a manner that is sufficient to complete a successful thesis or dissertation, or e) in fields leading to licenser or certification, ethical misconduct or lack of professional promise in the professional field. Termination recommendations may also be made if a student fails to satisfy conditions required for removal of probationary status or provisional admission. Graduate Committees wishing to adopt additional conditions for probation or termination must specify these conditions in writing and inform all students affected by these conditions.

General Appeal Procedures for Academic Matters Concerning Graduate Students

(Approved by the Executive Graduate Council, December 11, 1980.)

Appeal of General Academic Matters Related to Student Programs

A. Graduate students holding admission with unclassified status in the Graduate College, admission with a masters objective, or admission with a doctoral objective (but prior to the appointment of a doctoral supervisory committee) should appeal as follows:

1. Initially, the appeal should be submitted to the student's adviser.
2. If denied, the appeal may be submitted to the departmental or interdepartmental area Graduate Committee administratively responsible for the student's graduate program.
3. If denied, an appeal may be made to the Graduate Council for the campus administratively responsible for the student's graduate program. Normally, this will be the final appeals body (for exceptions, see paragraph E).

B. Graduate students holding admission with a doctoral objective in the Graduate College and for whom a doctoral supervisory committee has been appointed should appeal as follows:

1. Initially, the appeal should be submitted to the student's adviser.
2. If denied, the appeal may be submitted to the student's supervisory committee.
3. If denied, the appeal may be submitted to the departmental or interdepartmental area Graduate Committee administratively responsible for the student's graduate program.
4. If denied, an appeal may be made to the Graduate Council for the campus administratively responsible for the student's graduate program. Normally, this will be the final appeals body (for exceptions, see paragraph E).

C. When a student's graduate program consists of registration essentially or entirely on one campus, the Graduate Council of the campus administratively responsible for the program will constitute the appeal board. When a student's graduate program includes substantial registrations on a campus other than the one administratively responsible for the program, three members of the Graduate Council for the other campus will be designated by the Dean of Graduate Studies on that campus to augment the Graduate Council on the campus administratively responsible for the program. In this case, the augmented Council will constitute the appeal board. The decision concerning augmentation of a campus Graduate Council for a specific appeal involving registrations on a campus other than the one administratively responsible for the student's program will be made by the Deans of Graduate Studies on the campuses involved.

D. In all cases, appeals should be made in writing to the appropriate adviser, committee, or council. In those cases where the appeal concerns graduate-level qualifying examinations, comprehensive examinations, or final examinations, the following deadlines must be observed. It is the responsibility of the student to make reasonable efforts to ascertain the results of the examination within 30 days after its completion. The initiation of the appeal, in writing, by the student must be filed within 30 days following the student's receipt of notification of the evaluation.

In those cases involving an appeal of termination of program, initiation of the appeal, in writing, by the student must be filed within 30 days following the student's receipt of the official written notification by the Office of Graduate Studies.

E.

1. There is no absolute right of appeal to the Executive Graduate Council. The Executive Graduate Council will accept appeals only in those cases where in the exercise of its sole discretion it shall first find that one or more of the following grounds for accepting the appeal exist:
    a. That the campus Graduate Council has violated some element of fair procedure (i.e., has failed to allow the parties concerned to present their cases fully to their campus Graduate Council);
    b. That the campus Graduate Council has failed to examine or give adequate weight to important evidence relevant to one party's position;
    c. That the campus Graduate Council has given undue weight to evidence not pertinent to the case; or
    d. That some gross miscarriage of justice would be perpetrated if the decision of the campus Graduate Council is allowed to stand.

    A decision by the Executive Graduate Council not to accept jurisdiction of an appeal shall be final and is not subject to further appeal.

2. Appeals to the Executive Graduate Council must be made in writing and must specifically outline the grounds for the appeal. Such appeal must be made within 20 working days of the day the decision of the campus Graduate Council is received (working days shall not include those days the University is not in session).
3. The Executive Graduate Council must make a decision to hear the appeal or not to hear the appeal within 30 working days after receipt of the appeal. Acceptance or denial of jurisdiction over the appeal will be made in writing.
4. The decision of the Executive Graduate Council on the merits of the case will be made and transmitted to the concerned parties

within 40 working days after the decision to hear the appeal.
5. No person who was a member of the department or campus Graduate Council involved in the case will be eligible to participate in the decisions of the Executive Graduate Council either to decide whether the case should be heard or to decide the merits of the case. However, the Dean for Graduate Studies may replace members of the Executive Graduate Council not eligible for participation in the decision to hear the appeal or in the appeal itself.

Appeal of Grades in Graduate-level Courses

(Approved by UNL Graduate Council, March 9, 1993.)

Appeal of grades in graduate-level courses shall be made through the graduate student grade appeal procedures for the campus through which the grade was awarded.

Students who believe their evaluation in a course has been prejudiced or capricious must first attempt to resolve the matter with the course instructor.

If unsuccessful, the student may then file a written appeal to the Graduate Chair for consideration by the Graduate Committee responsible for the administration of the course. This appeal must be filed within sixty days of the posting of the grade report by the UNL Records Office. If the department does not have a graduate program, the standing grade appeal committee of the department would consider the appeal. A written determination of the appeal shall be presented to the student and instructor.

If the matter is unduly delayed or not resolved, the student may present the original appeal documentation to the UNL Dean of Graduate Studies who shall request a review by a subcommittee of the Graduate Council. A last appeal may be made to the full Graduate Council, if it agrees to hear the case.

Since awarding grades in courses occurs at the individual campus level, the decision of the UNL Graduate Council shall be final and is not subject to further appeal beyond the campus.

During the appeal process, if the instructor's grade is overturned, the instructor of record has the right of appeal, in writing, at successive levels of review.

Guidelines for Good Practice in Graduate Education

Faculty and Graduate Students

A primary purpose of graduate education at the University of Nebraska is to instill in each student an understanding of and capacity for scholarship, independent judgment, academic rigor, and intellectual honesty. It is the joint responsibility of faculty and graduate students to work together to foster these ends through relationships which encourage freedom of inquiry, demonstrate personal and professional integrity, and foster mutual respect.

Graduate student progress toward educational goals at the University of Nebraska is directed and evaluated by an adviser, the relevant graduate committee, and the student's supervisory committee. The adviser and the individuals on the committee provide intellectual guidance in support of the scholarly/creative activities of graduate students. The adviser, the supervisory committee, and the graduate committee also are charged with the responsibility of evaluating a graduate student's performance in scholarly/creative activities. The graduate student, the adviser, the supervisory committee, and the graduate committee comprise the basic unit of graduate education at an institution. It is the quality, breadth, and depth of interaction within this unit that largely determines the outcome of the graduate experience.

High quality graduate education depends upon the professional and ethical conduct of the participants. Faculty members and graduate students have complementary responsibilities in the maintenance of academic standards and the creation of high quality graduate programs. Excellence in graduate education is achieved when both faculty and students are highly motivated, possess the academic and professional backgrounds necessary to perform at the highest level, and are sincere in their desire to see each other succeed.

Graduate students must be viewed as early-stage professionals, not as students whose interest is guided by the desire to complete the degree. Graduate students have made a career choice and must be viewed and treated as the next generation of professionals.

To accomplish this, it is essential that graduate students:

- Conduct themselves in a mature, professional, ethical, and civil manner in all interactions with faculty and staff in accordance with the accepted standards of the discipline and University of Nebraska policies governing discrimination and harassment.
- Recognize that the faculty adviser provides the intellectual and instructional environment in which the student conducts research, and may, through access to teaching and research funds, also provide the student with financial support.
- Expect that their research results, with appropriate recognition, may be incorporated into progress reports, summary documents, applications for continuation of funding, and similar documents authored by the faculty adviser, to the extent that the student's research is related to the faculty adviser's research program and the grants which support that research.
- Recognize that faculty have broad discretion to allocate their own time and other resources in ways which are academically productive.
- Recognize that the faculty adviser is responsible for monitoring the accuracy, validity, and integrity of the student's research. Careful, well conceived research reflects favorably on the student, the faculty adviser, and the University of Nebraska.
- Exercise the highest integrity in taking examinations and in collecting, analyzing, and presenting research data.
- Acknowledge the contributions of the faculty adviser and other members of the research team to the student's work in all publications and conference presentations; acknowledgment may mean co-authorship when that is appropriate.
- Recognize that the faculty adviser, in nearly every case, will determine when a body of work is ready for publication and an

acceptable venue, since the faculty adviser bears responsibility for overseeing the performance of the students and ensuring the validity of the research.
- Maintain the confidentiality of the faculty adviser's professional activities and research prior to presentation or publication, in accordance with existing practices and policies of the discipline.
- Take primary responsibility to inform themselves of regulations and policies governing their graduate studies and the University of Nebraska.
- Recognize that faculty and staff have many professional responsibilities in addition to graduate education.

Correspondingly, it is imperative that faculty:

- Interact with students in a professional and civil manner in accordance with the accepted standards of the discipline and the University of Nebraska policies governing discrimination and harassment.
- Impartially evaluate student performance regardless of religion, race, gender, sexual orientation, nationality, or other criteria that are not germane to academic evaluation.
- Serve on graduate student committees without regard to the religion, race, gender, sexual orientation, or nationality of the graduate student candidate.
- Prevent personal rivalries with colleagues from interfering with their duties as graduate advisers, committee members, or colleagues.
- Excuse themselves from serving as advisers, on graduate committees or supervising assistantship work when there is a familial or other relationship between the faculty member and the student that could result in a conflict of interest.
- Acknowledge student contributions to research presented at conferences, in professional publications, or in applications for copyrights and patents.
- Not impede a graduate student's progress and completion of his/her degree in order to benefit from the student's proficiency as a teaching or research assistant.
- Create in the classroom, lab, or studio, supervisory relations with students that stimulate and encourage students to learn creatively and independently.
- Have a clear understanding with graduate students about their specific research responsibilities, including time lines for completion of research and the thesis or dissertation.
- Provide oral or written comments and evaluation of student's work in a timely manner.
- Discuss laboratory and/or departmental authorship policy with graduate students in advance of entering into collaborative projects.
- Ensure an absence of coercion with regard to the participation of graduate students as human research subjects in their faculty adviser's research.
- Refrain from requesting students to do personal work (mowing lawns, baby-sitting, typing papers, etc.) with or without appropriate compensation.
- Familiarize themselves with policies that affect their graduate students.

Graduate education is structured around the transmission of knowledge at the highest level. In many cases, graduate students depend on faculty advisers to assist them in identifying and gaining access to financial and/or intellectual resources which support their graduate programs. In addition, faculty advisers, program chairs, etc. must apprise students of the "job market" so that students can develop realistic expectations for the outcomes of their studies.

In some academic units, the student's specific adviser may change during the course of the student's program, either because of faculty or student wishes. The role of advising may also change and become a mentoring relationship.

The reward of finding a faculty adviser implies that the student has achieved a level of excellence and sophistication in the field, or exhibits sufficient promise to merit the more intensive interest, instruction, and counsel of faculty:

To this end, it is important that graduate students:

- Devote an appropriate amount of time and energy toward achieving academic excellence and earning the advanced degree.
- Be aware of time constraints and other demands imposed on faculty members and program staff.
- Take the initiative in asking questions that promote understanding of the academic subjects and advances in the field.
- Communicate regularly with faculty advisers, especially in matters related to research and progress within the graduate program.

Correspondingly, faculty advisers should:

- Provide clear maps of the requirements each student must meet, including course work, languages, research tools, examinations, and thesis or dissertation, and delineating the amount of time expected to complete each step.
- Evaluate student progress and performance in regular and informative ways consistent with the practice of the field.
- Help students develop interpretive, writing, oral, and quantitative skills, in accordance with the expectations of the discipline.
- Assist graduate students in the development of grant writing skills, where appropriate.
- Take reasonable measures to ensure that graduate students who initiate thesis or dissertation research/creative activity do so in a timely fashion, regardless of the overall demands of the laboratory/studio.
- When appropriate, encourage graduate students to participate in professional meetings or display their work in public forums and exhibitions.
- Stimulate in each graduate student an appreciation of teaching, and promote the acquisition of teaching skills where appropriate.
- Create an ethos of collegiality so that learning takes place within a community of scholars.
- Prepare students to be competitive for employment which includes portraying a realistic view of the field and the job market and making use of professional contacts for the benefit of their students, as appropriate.

- Create an environment of the highest ethical standards and insist that the student behave ethically in all their professional activities.

In academic units, faculty advisers support the academic promise of graduate students in their program. In some cases, academic advisers are assigned to entering graduate students to assist them in academic advising and other matters. In other cases, students select faculty advisers in accordance with the disciplinary interest or research expertise. Advising is variant in its scope and breadth and may be accomplished in many ways.

A student's academic performance and a faculty member's scholarly interest may coincide during the course of instruction and research/creative activity/performance. As the faculty-graduate student relationship matures and intensifies, direct collaborations may involve the sharing of authorship or rights to intellectual property developed in research or other creative activity. Such collaborations are encouraged and are a desired outcome of the mentoring process.

This document was approved for distribution on September 16, 1997 by the University of Nebraska-Lincoln Graduate Council. It was revised from the document entitled "University of Nebraska Medical Center Guidelines for Good Practice in Graduate Education" which was approved by their Graduate Council on July 18, 1996. Materials are used by permission.

The University of Nebraska Medical Center document benefited from the work of the Graduate Council at the University of Oregon; the Graduate School at the University of California-Davis; the Graduate College and Graduate Council at the University of Arizona ("Mentoring: The Faculty-Graduate Student Relationship," Cusanovich and Gilliland, 1991); the Office of Graduate Studies at the University of Southern California; and the Graduate School at North Carolina State University.

University Resources

Contents

- 1 Graduate Student Association
- 2 Summer Sessions
- 3 Extended Education and Outreach
- 4 International Affairs
- 5 Student Services
  - 5.1 University Housing
  - 5.2 University Police
  - 5.3 OASIS
  - 5.4 University Health Center
  - 5.5 Nebraska Unions
  - 5.6 Student Involvement
  - 5.7 Student Technology Training
  - 5.8 Career Services Center
  - 5.9 Services for Students with Disabilities
  - 5.10 University Bookstores
  - 5.11 Campus Recreation
  - 5.12 ASUN Student Government
  - 5.13 Daily Nebraskan
- 6 Resources and Facilities
  - 6.1 Athletic Department
  - 6.2 Centers for the Performing Arts
  - 6.3 The Lied Center for Performing Arts
  - 6.4 Kimball Recital Hall
  - 6.5 The Temple Building
  - 6.6 The Bob Devaney Sports Center
  - 6.7 Information Services
  - 6.8 Libraries
  - 6.9 Museums and Galleries
  - 6.10 Sheldon Memorial Art Gallery and Sculpture Garden
  - 6.11 Eisentrager-Howard Gallery
  - 6.12 Great Plains Art Collection
  - 6.13 University of Nebraska State Museum
  - 6.14 Robert Hillestad Textiles Gallery
  - 6.15 International Quilt Study Center
  - 6.16 Lentz Center for Asian Culture
  - 6.17 Nebraska State Historical Society
  - 6.18 University of Nebraska-Lincoln Television
  - 6.19 University of Nebraska Press
- 7 Office of Research

Graduate Student Association

The Graduate Student Association (GSA) exists to serve and represent graduate students--a unique and important population of students at the University of Nebraska-Lincoln. GSA promotes the intellectual community of graduate education; sponsors

opportunities for professional development; creates opportunities for social interaction among graduate students; and advocates for issues relevant to graduate students and graduate education. The GSA, as a recognized student organization, works in cooperation with the Office of Graduate Studies and University administration to create a quality educational and professional experience for graduate students.

Summer Sessions

UNL's Summer Sessions is a great way to begin, continue, or advance one's education through more than 1,400 courses offered by 70 departments. It provides options and flexibility by offering courses in a three-week pre-session, an eight week session, and two five-week sessions.

Students take summer courses to meet entrance requirements, to shorten the time to graduation, to lighten the course load required in other terms, to concentrate on areas of study that need full-time attention, and to overcome academic deficiencies.

Although Summer Sessions maintains the same high standards of quality education as the regular academic year, it does tend to be less formal, with smaller classes and more accessible instructors. For information about course offerings or enrolling during Summer Sessions contact:

Summer Sessions Office
University of Nebraska-Lincoln
208 Canfield Administration Building
PO Box 880421
Lincoln, NE 68588-0421
(402) 472-3567
(800) 562-1035 (toll-free)
http://summer.unl.edu

Extended Education and Outreach

The Office of Extended Education and Outreach facilitates lifelong learning and supports the educational needs of distance learners.

http://extended.unl.edu/

International Affairs

Students and scholars from over 100 countries are served by International Affairs (IA). Through a wide range of programs and services, IA staff contribute to their adjustment to academic life at UNL and consequently to the international learning environment of the University.

Additionally, IA promotes and facilitates study, research, and teaching abroad by UNL students and faculty.

http://www.unl.edu/iaffairs/

Student Services

University Housing

University Housing provides options which reflect the diversity of the student body, including residence hall rooms for single students and apartments for families. In addition to the numerous living arrangements offered by University Housing, students can find many affordable apartments close to campus.

http://housing.unl.edu/

University Police

Campus safety and security are coordinated by University Police Services. Officers patrol both Lincoln campuses 24 hours a day and work closely with the Lincoln Police Department and county, state and federal authorities on law enforcement matters.

http://police.unl.edu/

OASIS

The Office of Academic Support and Intercultural Services (OASIS) supports all UNL students, with emphasis on supporting students of color. Its student staff and program coordinators are familiar with the special needs of students of color on a predominantly white campus.

http://www.unl.edu/oasis_culturecenter/

The Office of Trio Programs offers a comprehensive series of unique support services for students whose ethnic background is African American, Hispanic/Latino, Native American, or Asian American, as well as qualified students who are low-income or first-generation.

http://www.unl.edu/trioprog/

University Health Center

The University Health Center provides quality, convenient and affordable health care to students at UNL. Clinical services include

primary medical care, access to specialist evaluations, counseling and psychological services, dental care, physical therapy and nutritional counseling. Students also have access to pharmacy, laboratory and radiology services plus a wide range of health education programs.

http://www.unl.edu/health/

Nebraska Unions

The Nebraska Union, Nebraska East Union, and Culture Center are full-service community centers designed for use by everyone at the University--students, faculty, staff, alumni and visitors.

http://www.unl.edu/neunion/

Student Involvement

Student Involvement serves as headquarters for student activities at UNL. Student Involvement coordinates services for student organizations, maintains an activities calendar and a resource library, and sponsors several UNL programs.

http://si.unl.edu/

Student Technology Training

This division of information services offers free software workshops to UNL students as part of their Student Technology Fee. For more information please visit the web site.

http://training.unl.edu/

Career Services Center

Career Services helps students clarify and achieve career goals. The Center provides individual career counseling, a Career Resource Library, job listings, an online resume system, and several career-related programs and events.

http://www.unl.edu/careers/

Services for Students with Disabilities

NU offers opportunities for all students to take full advantage of its programs and facilities. Services for Students with Disabilities provides services that help disabled students become integrated into the mainstream academic life. The SSD office provides test accommodations, note takers, taped textbooks, interpreters, C Print services, brailled materials, assistance with accessible classroom identification, and other needed accommodations.

http://www.unl.edu/ssd/

University Bookstores

The University Bookstores are owned by the University and operated by the Follett Higher Education Group. Both bookstores carry textbooks and school supplies, gift items, sundries, University memorabilia, and Club Red clothing. Both also provide optional free textbook reservation and can save students money through the used textbook program.

http://www.unebraska.bkstr.com/

Campus Recreation

Campus Recreation provides students, faculty and staff with a variety of recreational facilities and programs, including weight training and conditioning equipment, multipurpose sport courts, swimming pool, indoor climbing wall, running track, indoor turf field, massage therapy center, and more.

http://www.unl.edu/crec/

ASUN Student Government

The Association of Students of the University of Nebraska (ASUN) functions as the primary representative body for UNL students, and much of its work is conducted by committees and commissions open to any interested UNL students. ASUN also sponsors a Student Legal Services Center, a prepaid legal advising, counseling, and limited litigation service funded by student fees.

http://www.unl.edu/asun/

Daily Nebraskan

The Daily Nebraskan, a prominent student voice in campus life, is staffed by students in advertising, editing and reporting positions. Any student is eligible to apply for openings on its staff, the makeup of which changes each semester.

http://www.dailynebraskan.com/

Resources and Facilities

Athletic Department

As a member of the Big 12 Conference, UNL fields and hosts many of the finest NCAA teams, and the Athletic Department maintains sports facilities which rank among the best in the nation.

http://www.huskers.com/

Centers for the Performing Arts

The Lied Center for Performing Arts

serves students and the wider community by bringing the world's finest arts and entertainment to its stage. It's 2,278-seat hall was designed for the staging of major musical, theatrical and dance events, and meet the needs of regional, national and international touring companies.

http://www.liedcenter.org/

Kimball Recital Hall

provides acoustically-sound performance space for students and faculty.

The Temple Building

houses all theatre classes as well as the administrative offices and performance spaces of the Department of Theatre Arts.

The Bob Devaney Sports Center

with its 13,500-seat arena, is a multi-sport complex for the Nebraska Cornhuskers. It also hosts performances by national recording stars.

Information Services

Information Services offers a broad range of computing and telecommunications services designed to meet the information technology needs of the diverse University of Nebraska-Lincoln community. Services and facilities include public computer labs, laser printing and scanning, free electronic mail accounts, consulting and a computer shop for sales and repairs. The Instructional Technology Group and the New Media Center provide support to instructors seeking to integrate digital media technologies into their teaching methods.

http://is.unl.edu/

Libraries

The University's library system and services are extensive, including 2.5 million volumes and thousands of active periodicals and serials. Supplementing traditional services, the Innovative Research Information System (IRIS) offers the Library's electronic catalog, general and specialized journal indexes, full-text electronic journals, and access to Internet resources.

http://iris.unl.edu/

Museums and Galleries

Sheldon Memorial Art Gallery and Sculpture Garden

One of the nation's most respected university art museums, with a permanent collection of over 12,000 objects.

http://sheldon.unl.edu/

Eisentrager-Howard Gallery

Contemporary artwork by local, national, and international artists.

http://www.unl.edu/art/facilities_eisentrager-howard.shtml

Great Plains Art Collection

Over a thousand sculptures, paintings, drawings, prints and photographs.

http://www.unl.edu/plains/gallery/gallery.shtml

University of Nebraska State Museum

World famous for its mounted skeletons of elephants and their close fossil relatives surrounded by exhibits on Nebraska paleontology, cultural diversity and biological diversity.

http://www.museum.unl.edu/

Robert Hillestad Textiles Gallery

From art to apparel, from the Occident to the Orient, from past to present, and from emerging artists to the acclaimed.

http://textilegallery.unl.edu/

International Quilt Study Center

Dedicated to the collection, preservation, exhibition, study and to promoting discovery of quiltmaking traditions, the Center holds the world's largest collection of quilts numbering more than 2300 from over 24 countries.

http://www.quiltstudy.org

Lentz Center for Asian Culture

Enriching knowledge and understanding of Asia through exhibitions, lectures, and musical events.

http://www.unl.edu/lentz/

Nebraska State Historical Society
Interpretive museum exhibits illustrating Nebraska's past.

http://www.nebraskahistory.org/

University of Nebraska-Lincoln Television
University of Nebraska-Lincoln Television, station KUON-TV, is recognized nationally for its quality programs, produced for Nebraska audiences and for regional and national distribution, and for its development of innovative program services involving new telecommunications technologies.

Nebraska Educational Telecommunications: http://net.unl.edu/

University of Nebraska Press
The University of Nebraska Press is a nonprofit book publisher and the state's chief publisher of scholarly and regional books. All new books published by the Press are referred by scholars in appropriate fields and approved by the Press Advisory Board. Publishing 155 new books a year, the Press is the third-largest public university press in the nation.

http://nebraskapress.unl.edu/

Office of Research
Research plays an integral role in the mission of the University of Nebraska-Lincoln. By encouraging the discovery of new knowledge and supporting scholarly initiative in all fields of study, the University constantly brings innovative ideas, techniques, and perspectives into UNL classrooms. Please visit the Web site of the UNL Office of Research at http://research.unl.edu/.

Academic Colleges
- College of Agricultural Sciences and Natural Resources
- College of Architecture
- College of Arts and Sciences
- College of Business Administration
- College of Education and Human Sciences
- College of Engineering
- Hixson-Lied College of Fine and Performing Arts
- College of Journalism and Mass Communications
- College of Law

College of Agricultural Sciences and Natural Resources

Since the establishment of the University of Nebraska in 1869 and its commitment to the terms of the land-grant college act, instruction in agriculture and natural resources has provided opportunities for undergraduate and graduate students to develop intellectually and meet the challenges of their era. In 1887 research programs were established and in 1914 the cooperative extension service was created. In 1974 the Institute of Agriculture and Natural Resources was formed, bringing under one roof the varied agricultural and natural resources programs--College of Agricultural Sciences and Natural Resources, Agricultural Research Division, Cooperative Extension and numerous departments and centers.

The College of Agricultural Sciences and Natural Resources offers academic programs challenging undergraduate and graduate students to explore and discover through new technologies, ways to conquer the complex changes in agriculture, life sciences, natural resources, the environment, the economy, society, and geopolitical structures and to bring about solutions to the demands and issues of tomorrow's exciting world. The School of Natural Resources was formed in August 1997 and coordinates the college's programs in natural resources.

Through the College's tradition of scholarly excellence, in conjunction with the versatility of undergraduate and graduate study programs, students are able to pursue educational studies that will prepare them for competitive careers. The College promotes undergraduate and graduate programs that bring students and faculty members together in inquiry, discovery and integration of learning, application and problem-solving across the disciplines of the College and the University. Highly qualified faculty members, dedicated to learning and recognized for their scholarly activity in teaching, research, and extension, provide instruction and advising to undergraduate and graduate students.

The Agricultural Research Division is the research component of the Institute of Agriculture and Natural Resources. Most of the research faculty are on joint appointments as teaching faculty in the College. Research scientists are located on the East Campus of the University of Nebraska-Lincoln as well as at research and extension centers throughout the State. A broad range of modern research laboratories, greenhouses, and land is used for investigation. World-class resources add to other facilities in food science and technology, a Food Science Processing Center and an Animal Science Complex. Opportunities are available for assistantships and fellowships for qualified graduate students.

The College of Agricultural Sciences and Natural Resources (CASNR) offers the following distance education courses and degree programs: master of agriculture, master of agriculture with focus in community development, master of business administration with a specialization in agribusiness, and master of science in entomology. A graduate certificate in food safety and defense is also available.

Graduate programs leading to the masters of science degree and/or doctor of philosophy degree are offered through the Departments of Agricultural Economics; Agricultural Leadership, Education and Communication; Agronomy and Horticulture; Animal Science; Biochemistry; Biological Systems Engineering; Entomology; Food Science and Technology; Statistics; Veterinary and Biomedical Sciences; the School of Natural Resources; and in numerous programs and areas of specialization such as Plant Pathology.

College of Architecture

Contents

- 1 About the College
- 2 Facilities
- 3 Architecture Library.
- 4 Computer Facility.
- 5 Architecture Gallery.
- 6 Hyde Program of Visiting Professionals.
- 7 Hyde Chair of Excellence.

About the College

The College of Architecture is the visible manifestation of an architectural tradition that has served Nebraska for a hundred years. From the first identified architectural program in 1894 to the establishment of the Department of Architecture in 1930, to the creation of the School of Architecture in 1964, to the founding of the School of Environmental Development in 1970, to the formation of the College of Architecture in 1974, and to the establishment of the Professional Program in Architecture in 1994, the College's programs in architecture, interior design, and community planning, have a proud tradition of excellence in education, research, and service to the State of Nebraska.

Architecture Hall, the symbolic and sentimental home of architecture at the University of Nebraska-Lincoln, stands as a monument not only to an historic style of architecture, but also to the progress of a University and the thousands of students who ascended the famous wooden staircase to design studios. A student of 1894 would feel at home today in Architecture Hall, its exterior facade and basic layout little changed from its earliest days as a proud new library building. Only the nature of the architectural programs has changed with time. There has been a long, steady progression towards excellence in architectural education and development of programs appropriate to the needs of society.

Today, the College of Architecture is a busy and exciting place. Some 600 students are enrolled in classes, learning with a faculty of 30 to explore the past, present, and future of our communities. From gallery displays and provocative seminars, to the quiet of the Architecture Library, the bustle of the design studio, and the excitement of a community town hall meeting, the College of Architecture is at work. It is the epitome of our land-grant university commitment to education, research, and service in the State of Nebraska and the Great Plains Region.

Nebraska has only one College of Architecture. Its services are unique to this state and to several other states in this region that lack adequate courses of study and services. Lewis Mumford once noted that the quality of a society is marked by the nature of its cities. Nebraska is proud of its "good life" and a great measure of that goodness is reflected in its architecture. A quick look at the documents and pamphlets used to describe this state, and at the photographs visitors take away, reveal content richly endowed in pleasing architecture, efficient community design, and attractive park systems.

The College of Architecture, through its programs in architecture planning, landscape architecture, and interior design offers a broad educational research base for the study of the directions of a changing world. Even though the architecture and related programs address the classical heritage of our culture, they must also deal with the problem of tomorrow as it begins to emerge. Students and faculty of the College of Architecture seek the best of the past to carry through today into the uncertainty of tomorrow. This is the challenge for education.

Architects, planners, landscape architects and interior designers are professionals with responsibilities to help communities anticipate and deal with change, thus ensuring that desirable change is achieved. Students today strive to identify and design preferred futures, rather than react to probable events. Education at the College of Architecture is characterized by a quest for the means of improving the quality of life for all people on "the spaceship earth" but especially for the residents of the Great Plains of the United States.

Students pursue studies on an interdisciplinary basis through the professional staff within the College and also through organized, coordinated study programs involving professional, scientific, and academic staff from many departments within the University.

Interdisciplinary research and community service are important in the College of Architecture. Emphasis is placed on the generation of new knowledge and the application of concepts and quantitative methods from the behavioral and social sciences to the current practical problems of communities and the environment. Funded projects sponsored by local, state, and federal governments, as well as segments of the design and construction industries, provide students, especially in the advanced professional programs, with opportunities for practical laboratory experiences. The same community design planning and research projects provide faculty members with opportunities for continuing professional development.

The College is co-participant in the administration of the nationally recognized Nebraska Community Improvement Program (NCIP). The NCIP is a community recognition program involving some 200 Nebraska communities and neighborhoods a year. The College provides educational programs, technical assistance, and assists communities in identifying their needs, developing strategies, and carrying out community economic development. Through this program, University faculty have had opportunities to work with hundreds of Nebraska communities in assisting them in solving problems.

The College of Architecture is a member of the Architectural Research Centers Consortium. The Consortium seeks to strengthen the

contributions of architecture to the solution of critical national problems by undertaking large-scale research projects. Established by the American Institute of Architects Research Corporation and leading university-based research centers, the Architectural Research Centers Consortium provides a significant research dimension to the College of Architecture.

The College of Architecture is also a co-participant in the Associated Design Professions, working with the American Institute of Architects, American Planning Association, American Institute of Certified Planners, American Society of Interior Designers, American Society of Landscape Architects and International Institute Interor Desginer Association to bring continuing professional education programs to the Midwest region.

The College of Architecture's interdependent programs of education, research, and public service are intensive, relevant, dynamic, and rewarding. The College is dedicated to the continued development and improvement of programs that enhance the ability of the architect and the planner to create a better world environment.

Facilities

The College is headquartered in Architecture Hall. All facilities of this unique and historic complex are located within the southwestern "fine arts" quadrant of the campus, with convenient access to the Lincoln central business district for both pedestrian and vehicular traffic. College lecture classrooms; design and planning studios; computer, media, and shop facilities; the professional library; exhibit spaces; and other ancillary facilities are arranged and equipped for student convenience. This 91,000-square-foot complex provides students and faculty with one of the finest facilities in the nation for the study of architecture and planning.

Architecture Library.

Located in Architecture Hall and operated as a branch facility of the University Libraries, the Architecture Library maintains collections pertinent to the fields of architecture, planning, urban design, interior design, landscape architecture, community development, and building technology. In addition to a collection of approximately 45,000 volumes, the library receives 310 national and international magazines and journals in its subject areas. Available construction documents, indexes, and other materials provide technical reference resources to both the student and the practicing professional.

Computer Facility.

The computer facility in the College of Architecture is used by students and faculty for educational, research, and public service activities. The facility includes graphics and printer terminals, as well as a number of microcomputers. Several makes of microcomputers are linked to digitizers, graphics tablets, and plotters for use in computer-aided design work, as well as production of maps and charts. Extensive software is available for student and faculty use. The terminals are linked into the University Computing Resource Center for expanded mainframe capabilities. Micromodems are used to link the College of Architecture computer systems to external sources of data and computing programs. The College also has several computer-aided design systems, as well as a digital design laboratory featuring Computer Numeric Control (CNC), a laser cutter and 3D printing. The College of Architecture offers a number of courses in computer applications for design and planning.

Architecture Gallery.

A vital part of architecture is communication to the public. An architectural educational institution is in an excellent position to communicate (through exhibits and shows) the purpose and services of the environmental design professions. To this end seminars and displays of general interest to the public are featured in the gallery area of Architecture Hall. The gallery also provides a space for formal and informal student, faculty, and public programs.

Hyde Program of Visiting Professionals.

This memorial program was established in 1979 in grateful recognition of Mr. A. Leicester Hyde, AIA, 1902-1976. He graduated from the University of Nebraska in architectural engineering in 1925 and Columbia University in 1928. From 1960 to 1972 he was president and chairman of the board of Midwest Life Nebraska. Mr. Hyde served as a charter member of the College's professional advisory council.

This annual program brings architecture and planning students into direct contact with nationally and internationally known professionals who are acknowledged to be at the leading edge of their fields. Visitors and guest critics coming to campus are involved in public presentations and work with the students and faculty of the College in the classroom and studio. The program also provides advanced students with the opportunity to engage in intensive off-campus design charrettes within the offices of leading professional firms.

Hyde Chair of Excellence.

Established in 1986, the Hyde Chair of Excellence allows the College of Architecture to attract visiting faculty of national and international distinction. Through this endowment, renowned scholars and practitioners will be invited to spend a semester or more in residence at the College, working with and teaching architecture and planning students in studios, in seminars, and in an informal mentor role as well.

The Hyde Chair of Excellence was made possible by the generosity of Mrs. Flora Hyde in honor of the memory of her late husband, A. Leicester Hyde. Recipients have included Joseph Esherick, Peter Cook, Christine Hawley, Wolf Prix, Ralph Rapson, Tobias Faber, David Lewis, Tsukasa Yamashita, Ken DeMay, Larry Young, Tom Wang, Charles Redmon, Terry Rankine, David Gosling, Michael Sorkin, Philip Thiel, Anthony Ames, Jeffrey Day, Diene Lewis, Jullien Border, Martin Hougue, Johan Granberg, Paul Preissner, and Doug Jackson.

College of Arts and Sciences

The College of Arts and Sciences offers graduate degrees in natural and physical sciences, social sciences, and the humanities. Every department has a Chair of the Graduate Committee (Graduate Adviser) who will assist students interested in pursuing graduate study in that department. Students should consult the individual department's listing in the Graduate Studies Bulletin for the name of the Chair and members of the Graduate Committee. Students should check specific departmental guidelines concerning options offered for each degree. Criteria for admission (i.e. Graduate Record Examination) are variable and are described in the specific departmental sections of this Bulletin.

Natural and Physical Sciences

The School of Biological Sciences offers the MS and PhD degrees through two major divisions: I. The Section of Ecology and Organismal Biology; and II. The Section of Genetics, Cellular and Molecular Biology. Affiliated faculty from the departments of Agronomy, Biochemistry, Chemistry, Plant Pathology, and Psychology; the School of Natural Resources Sciences; and the State Museum are actively involved in the graduate program. Students have opportunities to develop course work and diverse research interactions through graduate research emphasis groups.

The Department of Chemistry offers the MS and PhD degrees in all of the traditional areas of chemistry (analytical, bio-, inorganic, organic, and physical) as well as in a number of more specialized and/or interdisciplinary areas, including: catalysis, materials chemistry, nanoscience, structural biology, molecular recognition, surface science, materials, polymers, solid state, organometallics, mechanism-based enzyme inhibition, natural products synthesis, biophysical, bioanalytical, environmental science, clinical chemistry, mass spectrometry, and molecular biology. A high priority is placed on treating each student as an individual while providing an environment for maximum professional development.

The Department of Computer Science and Engineering offers the MS and PhD degrees. Computer engineering is available as a specialization under the MS program and as a doctor of philosophy program under the unified engineering PhD program. The computer science MS and PhD programs provide an optional bioinformatics specialization. A cooperative PhD program is also offered with the Department of Mathematics.

The Department of Geosciences offers the MS and PhD degrees in many sub-disciplines of the earth and atmospheric sciences, but with emphasis in meteorology/climatology, hydrological science, sedimentary geology, Quaternary geology, paleoclimatology, geochemistry, geomorphology, structural geology, micropaleontology and vertebrate paleontology. The department houses the ANDRILL (Antarctic Drilling) management office and actively cooperates with the State Museum and the School of Natural Resources, the latter of which includes the State Geological Survey and the UNL Water Center.

The Department of Mathematics offers the MA, MS, MAT, and PhD, and has nationally recognized faculty in algebra, analysis, coding theory, discrete mathematics, differential equations, applied mathematics, and mathematical biology. The department prides itself in teaching, mentoring, and training its graduate students and placing them in the positions they desire. In this regard, the department has been especially successful with women students, receiving the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring in recognition of its accomplishments.

The Department of Physics and Astronomy offers the MS and PhD degrees in physics, with strong programs in atomic, molecular, optical and plasma physics (experiment and theory), in condensed matter/materials physics (experiment and theory, emphasis on nanoscale materials), and in high energy physics (experiment). Among unique facilities, the department hosts several central facilities of the Nebraska Center for Materials and Nanoscience, the new Diocles Extreme Light Laboratory, and is allied with the Research Computing Facility which jointly operates the most powerful computer in the state for physics simulations and data analysis (the CMS Tier-2 Facility). Students in atomic, molecular, optical and plasma physics work in strong-field physics, quantum optics, laser-plasma physics and relativistic optics, optical vortices, quantum information, photoionization processes, and polarized electron phenomena, with some research being carried out at the Advanced Light Source. Students in condensed matter/materials physics fabricate and study novel nanoscale materials and structures, including surface phase transitions, electronic and magnetic structures, "smart" materials, materials for information storage, and multiferroics, using state-of-the-art in-house apparatus and at national facilities such as the Advanced Photon Source and the Center for Advanced Micro Devices. Students in experimental high-energy physics carry out their research on fundamental particles and interactions at Fermilab (Dzero experiment), at CERN's Large Hadron Collider (CMS experiment), with opportunities in particle astrophysics (Pierre Auger Observatory)) and non-accelerator physics (Deep Underground Science and Engineering Laboratory).

The Department of Statistics offers the MS and PhD degrees in statistics. The department has dedicated itself to "turning data into knowledge to solve real world problems." It has a long history of collaboration with other disciplines throughout the university, developing statistical theory and methods that advance statistics while also enabling progress in allied fields as well. Graduate students are intimately involved in these collaborations, allowing them to receive practical experience in addition to theoretical training. Students can tailor their program to their interests and position themselves to take advantage of statistics' many and varied career opportunities. The department values excellence in teaching, with nationally recognized faculty in design of experiments, survey statistics, generalized mixed linear and nonlinear models, categorical data, decision analysis, spatial statistics, and statistical genomics. Sports statistics and bioinformatics are emerging sub-disciplines.

Social Sciences

The Department of Anthropology and Geography offers the MA in anthropology, and MA and PhD degrees in geography. The MA in anthropology offers a science-based course of study, emphasizing preparation for a career in anthropology or for entrance into a doctoral program. Anthropology programs feature Plains archaeology and ethnology, historic and cultural resource management archaeology, applied and development anthropology, and behavioral, ecological and evolutionary approaches to human behavior. Geography degrees emphasize environmental geography, geographic information analysis (GIS, remote sensing, cartography), historical-cultural geography, regional geography, and person-environment behavior and relations. There are specializations in community and regional planning and in anthropology (emphasizing indigenous peoples). The Department sponsors internships, and

offers teaching and research assistantships.

The Department of Communication Studies offers the MA and the PhD degrees in four areas of concentration: instructional communication, interpersonal and family communication, organizational communication, and rhetoric and culture. The department also offers an interdisciplinary MA specialization in marketing, communication studies and advertising.

The department's graduate degree programs are designed to provide an advanced understanding of the scholarly traditions in communication studies; to train students in both social-scientific and humanistic research approaches in order to create proficiency in historical/critical, quantitative, and interpretive/qualitative methods; to develop competent investigators capable of producing communication scholarship of the highest quality; and to foster the creation of teacher-scholars and practitioner-researchers who respect the discipline's pluralism and follow the highest standards of ethical conduct.

The Department of Political Science offers the MA and PhD in the following areas of concentration: American politics, comparative politics, international relations, public administration, and public policy. The department also offers a graduate certificate program in public policy analysis, and a joint MA/JD program in cooperation with the College of Law.

The Department of Psychology offers PhD work in biopsychology, clinical psychology, cognitive psychology, developmental psychology, law-psychology, and social/personality psychology. Well-qualified students, whose goal is the PhD, are recruited; students desiring only an MA are not accepted.

The Department of Sociology offers the MA and PhD. The Department provides training in pure and applied research. At the MA level, students study methods and theory and pursue a broad course of study before writing a thesis. Doctoral candidates develop two specialities, choosing from approximately twenty substantive areas. The department offers especially strong programs in family, health, mental health, substance use, and social inequality (race, class and gender).

Humanities

The Department of Classics and Religious Studies offers the MA degree with concentration in either Greek or Latin. An undergraduate major in Greek or Latin is normally required. While currently admitted students may complete their programs, the department is not accepting new applications at this time.

The Department of English offers the MA and PhD in the major areas of British and American literatures, especially Medieval and Renaissance; 19th century; Great Plains; multicultural and women's literature; and creative writing, composition, and rhetoric.

The Department of History prepares students for careers in research and teaching through its MA and PhD degrees. Every effort is made to provide the creative environment to sustain a community of scholars. Carefully structured and individualized graduate programs afford maximum personal contact and consultation between graduate students and professors in seminars, directed individual readings, lecture courses, and supervised thesis research and writing.

The Department of Modern Languages and Literatures offers the MA and PhD degrees in French, German, and Spanish. Programs consist of advanced work in the student's primary language, courses in literature, criticism and linguistics, interdisciplinary work in other fields or languages, and independent study and research.

The Department of Philosophy offers the MA and PhD degrees with a primarily analytic orientation, providing the opportunity to pursue advanced research in all the major areas of philosophy, including the history of philosophy.

College of Business Administration

Contents

- 1 About the College
- 2 History of the College
- 3 Degree Programs and Objectives
- 4 Accreditation

About the College

The College of Business Administration is developing the next generation of ethical global business leaders and stands on Four Pillars of Excellence: Ethics, Leadership, Entrepreneurship and International Experience.

The College of Business Administration developed from a single course in political economy required of every student at the University of Nebraska in 1869. The College of Business Administration is now the second largest college on the University of Nebraska-Lincoln campus with approximately 3,300 undergraduate and graduate students attending classes with 64 full-time faculty members. The five departments offer masters and doctoral degree specializations in accounting, economics, finance, management and marketing as well as nine undergraduate majors.

The College of Business Administration building offers state-of-the-art technology in every classroom. Computer labs are fully equipped and designed for interactive, multifunctional uses. A complete wireless system and walk-up e-mail stations are available for students, faculty and staff.

The College retains close ties with professional and business leaders. Executives from all around the world come into the classrooms to speak to students and student organizations. Companies visit the college regularly to meet with faculty, attend job fairs, and forge closer ties with the College. Many student organizations are closely affiliated with professional and business organizations in the community.

All tenured faculty members are terminally degreed. Many are the national and international leading experts in their fields of study, producing widely used textbooks and cited research. Many are editors of leading academic journals. Our faculty is often selected to advise businesses and governments on critical issues.

History of the College

Students have been taking business courses at the University of Nebraska-Lincoln for more than a century. The School of Commerce was created in 1913. In 1916, the School of Commerce, with sixteen other universities including Harvard, Northwestern, and the University of Texas, was a charter member of the Association to Advance Collegiate Schools of Business (AACSB). The College of Business Administration was chartered in 1919.

Enrollment in the College of Business Administration has grown significantly in recent years due to its commitment to excellence, as exemplified by internationally known faculty, and its innovative centers and institutes:

- The Bureau of Business Research
- The Nebraska Council on Economic Education and the National Center for Research in Economic Education
- Global Leadership Institute
- Raikes School of Computer Science and Management
- The Nebraska Center for Entrepreneurship

Degree Programs and Objectives

The mission of the College of Business Administration is to foster intellectual curiosity, business insight and effective leadership by providing high quality instruction, research and service to our students, the citizens of Nebraska, and to the national and international communities we serve.

The overall objective of graduate programs is to prepare students to excel as researchers, teachers and professionals. The MBA program equips future business leaders with the qualitative and quantitative skills required to succeed in the business world of today and tomorrow.

Masters students within the College are preparing for professional careers in accounting, economics, finance, management, marketing, or a combination of these. Local, state, national and international organizations seek out graduates with expertise in these areas from the College.

Doctoral students prepare for academic teaching and research positions as well as specialized careers in profit, regulatory, and nonprofit businesses. In addition to receiving teaching and research training, doctoral students have the opportunity to teach undergraduate classes.

The MBA program is offered on campus in a traditional classroom setting and for students unable to come to campus the program is offered online with the same curriculum and professors. MBA specializations are agribusiness, international business, finance, personnel/human resource management, management information systems, strategic management, marketing and sports marketing. Dual degrees are offered in partnership with the College of Law and the College of Architecture.

Faculty members advance their disciplines as they conduct research and publish in professional journals. During the five-year period reviewed during the College's last accreditation, the College of Business Administration faculty researched, wrote, and published over 500 peer reviewed journal articles and produced over 1,300 other intellectual contributions such as book chapters and conference presentations.

The College fulfills its public service objective through its faculty and its Bureau for Business Research, Center for Entrepreneurship, Center for Economic Education, and the Nebraska Council on Economic Education. Through these entities we serve the citizens of Nebraska, the nation, and international business communities.

Accreditation

Baccalaureate, masters, and doctoral degree programs in business are fully accredited by The Association to Advance Collegiate Schools of Business (AACSB). The School of Accountancy is separately accredited by AACSB.

College of Education and Human Sciences

The College of Education and Human Sciences (CEHS) is dedicated to enhancing individuals, families, schools and communities and strengthening the relationships among them. The seven CEHS departments include Child, Youth and Family Studies; Educational Administration; Educational Psychology; Nutrition and Health Sciences; Special Education and Communication Disorders; Teaching, Learning and Teacher Education; and Textiles, Clothing and Design.

In addition, CEHS is home to a variety of research and outreach centers and institutes, including the Barkley Memorial Center Speech-Language and Hearing Clinic; the Buros Center for Testing; the Counseling and School Psychology Clinic; the Center for At-Risk Children Services; the Center for Instructional Innovation; the Family Resource Center; the Great Plains Institute for Reading and Writing; the International Quilt Studies Center; the National Center for Information Technology in Education; the Nebraska Career Information System; the Nebraska Evaluation and Research Center; the Nebraska Human Resources Institute; the Nebraska Research Alliance on Children, Youth, Families and Schools; the Robert Hillestad Textile Gallery; and the Ruth Staples Child Development Laboratory.

CEHS offers four masters degrees in nine majors, the education specialist degree in three majors, two doctoral degrees in 16 specializations under three majors, and one professional degree. CEHS also offers graduate, non-degree programs leading to

certification in areas such as teaching, curriculum leadership and school administration.

Masters and Specialist Programs

CEHS offers four masters degrees in nine majors and the education specialist degree in three majors. For information on masters and specialist degree programs, consult the relevant department's listing in this bulletin.

Doctoral Programs

CEHS offers the AuD, a professional degree, and two doctoral degrees, both the EdD and the PhD, under three majors: Educational Studies, Human Sciences, and Psychological Studies in Education. In addition, CEHS participates in two additional doctoral majors, the inter-institutional educational administration doctoral major and the inter-departmental nutrition doctoral major.

The Educational Studies major includes six specializations. Instructional Technology; Internet-based Education; and Teaching, Curriculum and Learning are hosted by the Department of Teaching, Learning and Teacher Education. Special Education and Audiology and Hearing Science (AuD) are sponsored by the Department of Special Education and Communication Disorders. The Department of Educational Administration hosts Educational Leadership and Higher Education and co-hosts, with Architecture, Architecture Education.

The Human Sciences major includes six specializations. Communication disorders is housed in the Department of Special Education and Communication Disorders; Child, Youth and Family Studies and Gerontology are sponsored by the Department of Child, Youth and Family Studies; Nutrition and Health Sciences is hosted by the Department of Nutrition and Health Sciences; Textiles, Clothing and Design is based in the Department of Textiles, Clothing and Design; and Leadership Studies is housed in the Department of Agricultural Leadership, Education and Communication.

The Psychological Studies In Education major includes four specializations, all hosted by the Department of Educational Psychology: Cognition, Learning and Development; Counseling Psychology; Qualitative and Quantitative Psychometric Methods in Education; and School Psychology.

In addition, the Department of Educational Administration--in cooperation with UNO's Department of Educational Administration--offers a major in Educational Administration, and the Department of Nutrition and Health Sciences participates in the Interdepartmental Nutrition major.

Specific program and application information is available under each department's listing in this bulletin. Up-to-date information is also available on the Web at cehs.unl.edu.

College of Engineering

Teaching, research, and service are vital parts of graduate studies in the College of Engineering. Applied and basic research projects fulfill educational roles in teaching students and showing them how to perform independent studies. They also encourage faculty and students to pursue scholarly achievements in searching for new knowledge and in solving engineering problems.

College of Engineering faculty have degrees from a wide variety of locations, including nearly every major research university in the US and Canada. Nearly 100 percent of engineering faculty have PhD's and are engaged in active research and graduate instruction.

Programs of Study

The College of Engineering administers programs on both the Lincoln and Omaha campuses. The College offers undergraduate and graduate programs in engineering, construction management and engineering technology. Approximately 1,600 undergraduates study engineering or construction management on the Lincoln campus and another 900 students study engineering and technology on the Omaha campus. The College's programs provide students with solid foundations necessary for challenging and rewarding careers in a society experiencing dramatic technological change.

Approximately 600 graduate students are pursuing MS or PhD degrees in engineering. The majority of these students study on the Lincoln campus. The teaching and research assistantship stipends for these students range from about $9,000 to $16,000 per year depending on the field and duties. Tuition remission is available in many of these cases. Graduate students in engineering have also been notably successful in obtaining fellowships available at the University, corporate, and national levels. Among these are NSF, DOE, and USDA fellowships.

MEng, MAE, MS and PhD degrees in engineering are granted by the Graduate College. The Master of Engineering degree program offers a choice of three areas of concentration: engineering management, software engineering, or telecommunications engineering. The Master of Architectural Engineering (MAE) is offered in Architectural Engineering. Master of science programs are available in agricultural and biological systems, architectural engineering, chemical, civil, computer, electrical, engineering mechanics, industrial and management systems, manufacturing, and mechanical engineering. Twelve doctoral fields are available: agricultural and biological systems engineering; architectural engineering; biomedical engineering; chemical and biomolecular engineering; civil engineering; computer engineering; construction, electrical engineering; engineering mechanics; industrial, management systems, and manufacturing engineering; materials engineering; and mechanical engineering. Masters and doctoral programs are arranged through faculty in the various departments and research centers.

Facilities

The College of Engineering maintains spacious, modern laboratories for research and teaching in all the fields and academic disciplines listed above. Technician-staffed machine shops, including foundry and carpentry facilities, and a technician-staffed electronics shop repair, maintain, and develop the necessary instrumentation for the research and teaching activities of the College. In

addition to the College's shops and laboratories, the Department of Biological Systems Engineering operates extensive laboratory and field research facilities across the State.

Extensive computational facilities include a wide variety of networked microcomputers, minicomputers, and superminicomputers with access to central mainframes and MIDnet, which ties to NSFnet, a supercomputer network. Graduate students have access to many workshops and academic courses in computational methods through the Academic Computing Resource Center and the academic departments.

The Engineering Library is a Government Printing Office and Patent depository. Its holdings include over 380,000 books, 1,000 journals, and 370,000 microfiche items. It contains the major archival journals, references, and texts of the various fields. The Engineering and other University libraries also provide computer literature searching and participate in an interlibrary loan system for rapid access to references not available locally.

The Walter Scott Engineering Complex houses modern research and teaching laboratories for civil, electrical, industrial, and mechanical engineering, along with those of engineering mechanics. The Walter Scott complex is the principal site of the annual Engineering Week Open House in which student and faculty projects are displayed to the public. In addition, the College has laboratory and classroom facilities in L.W. Chase Hall, Nebraska Hall, Othmer Hall and the Peter Kiewit Institute building in Omaha.

Other Center Involvement

College of Engineering faculty and graduate students are also intimately involved in research activities of several university-wide centers. These include the Water Center, the Center for Biotechnology, the Industrial Agricultural Products Center, and the Food Processing Center. These are described in other parts of this Bulletin. These Centers and the Engineering Research Centers, in conjunction with the interdisciplinary approach to graduate studies, offers students at UNL unique opportunities to develop exceptionally strong graduate programs geared toward societies increasingly complex social and technical problems.

Hixson-Lied College of Fine and Performing Arts

The Hixson-Lied College of Fine and Performing Arts was established in 1993 to provide a greater focus on the arts at UNL. The College is comprised of the Department of Art and Art History, the School of Music, the Johnny Carson School of Theatre and Film, and the Mary Riepma Ross Media Arts Center. In addition, the Great Plains Art Collection, the Lentz Center for Asian Culture, the Lied Center for Performing Arts, and the Sheldon Memorial Art Gallery and Sculpture Gardens are affiliated with the College.

The College is committed to facilitating the interaction between the many arts entities on campus, to providing students with a high quality education and many opportunities to participate in cultural activities, and to nurturing scholarly research and creative productivity in the arts.

The Hixson-Lied College of Fine and Performing Arts offers graduate degrees in each of the three departments.

The Department of Art and Art History is an accredited institutional member of the National Association of Schools of Art and Design and offers a 60-credit hour MFA program in ceramics, drawing, painting, photography, printmaking, sculpture, textile arts, graphic design, or a combination of these. Individual studio spaces are provided. The department also offers an MA in Art History which requires a minimum of 36 hours of advanced study. The structure and sequence of the major allows individual flexibility.

The School of Music is an accredited institutional member of the National Association of Schools of Music and offers the MM and DMA degrees. Majors at the masters level include composition, conducting, music education, music history, music theory and performance. The conducting, music education and performance majors are 36-credit hour programs. The doctoral degree is offered in performance, conducting or composition. An audition is required for admission. The School of Music offers a concentration in music education within the PhD and EdD programs of the College of Education and Human Sciences. Students major in administration, curriculum, and instruction with a specialization in teaching, curriculum and learning.

The Johnny Carson School of Theatre and Film is an accredited member of the National Association of Schools of Theatre and offers the MFA degree, a 3-year program in acting, directing, and design/technology.

Additional information about each degree, including criteria for admission and specific departmental guidelines concerning degree options, is provided in the individual departmental sections of this Bulletin. Students should also consult the Chair of the Graduate Committee in the individual department or school who can provide more detailed and specific information regarding particular degree requirements.

College of Journalism and Mass Communications

Since it began in 1975, demand for the program leading to the degree of Master of Arts in journalism and mass communications has increased at a steady pace. Initially the graduate faculty expected to have 12 to 15 students, but that estimate proved to be far too conservative. Now more than 90 students are actively pursuing the degree, many of whom are taking courses while continuing to work professionally. Most have approximately eight years of professional experience and usually are in their late 20s or early 30s.

This steady growth parallels what is usually referred to as an "information revolution." Mass communications has been an area of rapid expansion and change during the past 30 years. Increased affluence, leisure, and education for most of this country's population have resulted in increasingly demanding, increasingly sophisticated audiences who want to be entertained and informed through mass media. Rapidly developing technologies have provided a variety of means. Journalists have been challenged to interpret a fast-changing world--to help audiences understand and shape their environments.

In light of all this, the graduate faculty in journalism is committed to offering a quality program combining professional practice in the media with study of professional responsibilities, mass audiences, and their significance. Enrollment in courses in other

disciplines is encouraged to further prepare the student to translate more effectively to mass audiences complexities of a rapidly changing society. Building on the foundation of a student's professional undergraduate education in journalism, this broad understanding of the profession is to be developed through study in the liberal arts and sciences, in communication theory, in professional courses, and by development of competency in research as consumer, interpreter, and initiator.

The curriculum is consistent with this integration of substantial professional and academic credentials. Flexibility within the three areas of the program (news-editorial, advertising, and broadcasting) is provided to encourage differing student goals. The prediction is that a shortage of qualified journalists will continue and the demand for persons with graduate degrees will continue to escalate in the mass media industry, in business, and in academia.

Over the years, doctoral students from communication studies, marketing, sociology, as well as education and human sciences, have taken journalism courses as a supporting minor.

The Master of Arts in journalism and mass communications program was first nationally accredited in 1979 when it became the second such program in the country to receive that designation. The following year it received commendation from the North Central Accrediting Council visiting team for the UNL campus.

College of Law

The College of Law at the University of Nebraska-Lincoln offers a program of legal education designed to prepare its students to meet the diverse and complex challenges they will confront during their professional careers. In the relatively intimate environment of a small law school, students prepare themselves for the practice of law or other professional careers. The experiences of College of Law alumni illustrate the range of opportunities available and the strength of the educational programs of the College.

The College of Law was formed in 1888 and became a part of the University of Nebraska in 1891. It was among the first schools fully accredited by the American Bar Association and was a charter member of the Association of American Law Schools. One of its early deans, native Nebraskan Roscoe Pound, subsequently served as Dean of the Harvard Law School and earned a reputation as one of the foremost legal scholars and educators in legal education.

From Dean Pound's tenure to the present, the College of Law has been the professional home of an energetic and nationally recognized faculty. The current professors are strongly committed to both good teaching and active scholarship. Not only do students have the opportunity to take classes from experts who are exploring the frontiers of their specialties, but in the informal atmosphere of the College, students have easy access to faculty members outside of the classroom.

The College is committed to an educational program designed to permit students to pursue their individual interests within the context of a sound foundation in law and legal process. Most graduates of the College engage in some aspect of the legal profession. This requires not only a grounding in substantive and procedural law, but also the capacity for intellectual rigor and analysis and a background in human affairs upon which to draw in making professional judgments. The curriculum at the College is designed to provide the student with an opportunity to acquire professional knowledge and skill.

A number of graduates from major law schools, including Nebraska, do not ultimately enter the private practice of law, but engage in careers for which their legal education provides a significant advantage, such as business administration, journalism, and government service. The College offers a flexible curriculum in order to accommodate the widely differing goals of its student body. Few courses are required after the first-year program. Students are permitted to take some graduate-level courses in other disciplines within the University for law school credit. In addition to a number of joint degree programs with other colleges at the University, the College of Law is willing to structure joint degree programs on an individual basis for students interested in pursuing interdisciplinary work.

Located on the University's East Campus, the College of Law offers the best in modern facilities, including an appellate courtroom, offices for student activities, an extensive library and student lounges.

The Sherman S. Welpton Jr. Courtroom contains a fully equipped trial courtroom complete with a jury room, conference room, judge's chambers, and a law office classroom, as well as the College's clinical education program. This facility enables the College of Law to continue its tradition of offering the finest in practical skills training.

The student body, composed of approximately 400 students, includes graduates of over 100 colleges and universities. Our students are ambitious, diligent, and able individuals with diverse interests and talents. Women now constitute approximately 50 percent of the total student body and minority students about 15 percent.

The success of any program of legal education is measured in the accomplishments of its alumni. Throughout the history of the College, its graduates have made their mark in many different fields throughout the United States. More than 60 percent of the lawyers and judges practicing in Nebraska are alumni of the College; outside of the Omaha metropolitan area the figure is 80 percent. Nebraska alumni can be found in sophisticated major law firms and smaller, more specialized firms in almost every large metropolitan area in the country from Wall Street to Los Angeles, and from Minneapolis to Dallas. Illustratively, Nebraska alumni have served as Chief Justice of the Nebraska Supreme Court and Court of Appeals, as Governor of Nebraska and Wyoming, as Attorney General of Nebraska and California, as Solicitor General of the United States, as federal and state judge at the District and Courts of Appeals levels, in the Senate and House of Representatives, as chair of federal administrative agencies, and as Special Assistant to the President of the United States.

The College continues to build on this tradition of excellence and is recognized as one of the major law schools in the midwest.

Schmid Law Library

The Marvin and Virginia Schmid Law Library provides an excellent atmosphere for study and research. The library is the largest law

library in the State. Within the Library is the Great Plains Tax Library, which contains the materials necessary for in-depth tax research. The Library is also a selected depository for United States government publications. Equipment and facilities are available for using microforms, audio and video materials, CD-ROM network, the Internet, and the LEXIS and WESTLAW computerized research systems. Law students have access to personal computers and printers in the computer laboratory.

The Schmid Law Library and the University Libraries share an online catalog named IRIS. IRIS contains bibliographic records for most catalogued materials located in the libraries. Library users can look up this information using computer terminals instead of using the traditional card catalog.

The Library is independent in administration and organization from the other libraries on campus, but its resources are supplemented through interlibrary loans and other cooperative programs with the University of Nebraska Libraries and the major public, academic, and legal collections in the country.

Admission to the College of Law

Because the number of applications far exceeds the number of places in each year's entering class, the College can accept only a fraction of those who apply.

In making its decisions, the Committee seeks to identify those individuals who have the ability to compete successfully in a rigorous academic environment.

The major factors that the Admissions Committee considers are the applicant's score on the Law School Admission Test (LSAT) and the applicant's undergraduate grade point average. But that is not to say that admission decisions are simply a function of the numbers.

The Committee also takes into account any upward (or downward) trend in the applicant's academic performance over time and considers the quality of the applicant's undergraduate institution, course of study, personal statement, work experiences, graduate study, extracurricular activities, letters of recommendation, and any other information supplied by the applicant.

Although a majority of the students at the College of Law are residents of Nebraska, the College welcomes applications from students who are not residents of Nebraska. The College takes special care in evaluating applications from members of minority groups that historically have not been well-represented in the legal profession. The College also hosts a summer Pre-Law Institute for promising undergraduates who, if they choose law, would diversify the profession.

With the exception of those who are applying for admission pursuant to the Combined 3-3 Program, applicants ordinarily must have a bachelor's degree or must have completed all requirements for a bachelor's degree before they begin their first year of study at the College of Law. For further information on the application process, please contact the College of Law Admission Office.

Courses for Actuarial Science (ACTS)

Actuarial Science

805. Actuarial Science Seminar (3 cr) Lec.

Prereq: Permission

Variety of topics.

810. Introduction to Credibility, Smoothing of Data, and Simulation (3 cr) Lec.

Prereq: STAT 463

Full, partial, Buhlmann and Buhlman-Straub credibility models. Introduction to empirical Bayes and statistical distributions used to model loss experience. Application of polynomial splines to actuarial data. Simulation of both discrete and continuous random variables in context of actuarial models. Simulation to estimate "p-value" of hypothesis test. "Bootstrap method" to estimate the mean squared error of an estimator.

825. Survival Models (3 cr) Lec.

Prereq: STAT 883 with grad of C or better

Parametric and tabular survival models. Estimation based on observations that might not be complete. Concomitant variable. Use of population data. Application to groups of people with impaired lives.

830. Actuarial Applications of Applied Statistics (3 cr) Lec.

Prereq: STAT 883 with grade of C or better

Data sets are processed and analyzed using statistical software. Introduction to forecasting in actuarial science. Simple and multiple regression, instrumental variables, and time series methods, and application of these methods in forecasting actuarial variables. Interest rates, inflation rates, and claim frequencies.

840. Financial Mathematics (4 cr) Lec.

Prereq: MATH 208 with a grade of C or better; or parallel

Application of financial mathematics to problems involving valuation of financial transactions. Equivalent measures of interest; rate of return on a fund; discounting or accumulating a sequence of payments with interest. Yield rates, length of investment, amounts of investment contributions or amounts of investment returns for various types of financial transactions, loans and bonds. Introduction to the mathematics of modern financial analysis, Calculations involving yield curves, spot rates, forward rates,

duration, convexity, and immunization.

842. Principles of Pension Valuation (3 cr) Lec.

Prereq: ACTS 871 with a grade of C or better

Actuarial cost methods. Determination of normal costs and accrued liability. Effect on valuation results due to changes in experience, assumptions and plan provisions. Valuation of ancillary benefits. Determination of actuarially equivalent benefits at early or postponed retirement and optional forms of payment.

850. Stochastic Processes for Actuaries (3 cr) Lec.

Prereq: STAT 463 with grade of C or better

Introduction to stochastic processes and their applications in actuarial science. Discrete-time and continuous-time processes; non-homogeneous Poisson processes; arithmetic and geometric Brownian motions. Applications of these processes in computation of resident fees for continuing care retirement communities. Pricing of financial instruments.

*860. Loss Distributions (3 cr)

Prereq: STAT 883 with grade of C or better

Introduction to a variety of credibility models and statistical distributions useful to insurance, and making inference from insurance data.

870. Life Contingencies I (3 cr) Lec.

Prereq: ACTS 840 and STAT 882, each with a grade of C or better

First course of a two course sequence that includes ACTS 871. Theory and applications of contingency mathematics in the areas of life and health insurance, annuities and pensions. Probabilistic models.

871. Life Contingencies II (3 cr) Lec.

Prereq: ACTS 870 and STAT 882, each with a grade of C or better

Second course of a two course sequence that includes ACTS 870. Life insurance reserve for models based on a single life. Introduction to multiple life models for pensions and life insurance and to multiple decrement models.

873. Introduction to Risk Theory (3 cr) Lec.

Prereq: STAT 882 with grade of C or better

Applications of compound distributions in modeling of insurance loss. Continuous-time compound Poisson surplus processes, computation of ruin probabilities, the distributions of the deficit at the time of ruin, and the maximal aggregate loss. The effect of reinsurance on the probability of ruin.

875. Actuarial Applications in Practice (3 cr) Lec.

Prereq: ACTS 871 and FINA 307

Principles and practices of pricing, funding, and valuation for life, health, property, and liability insurance; annuities; and pension plans. Commercially available actuarial modeling software.

898. Special Topics (FINA 898) (3 cr per sem)

Prereq: Permission

Special topics in actuarial science.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

930. Fundamentals of Pension Mathematics (3 cr)

Prereq: ACTS 870 with a grade of C or better

Basic theory of pension mathematics. Funding methods, unit credit, entry age normal, aggregate cost, actuarial assumptions, tax deductible contributions, multi-employer pension plans, deposit administration dividend formulas, variable annuities, and ERISA.

950. Seminar in Actuarial Science (1-3 cr per sem, max 3)

Prereq: or parallel: ACTS 870 with a grade of C or better

960. Reading Course in Casualty Actuarial Science (1-3 cr per sem, max 6)

Prereq: Permission

973. Actuarial Risk Theory (FINA 973) (3 cr)

Prereq: ACTS 870 with a grade of C or better

Advanced topics in actuarial theory including Utility Theory, Risk Theory, and Ruin Theory, and their applications.

975. Stochastic Calculus (FINA 975) (3 cr) Lec.

Prereq: STAT 883 with a grade of C or better

Introduction to sigma-fields and information structures, the Riemann integral, the Riemann Stieltjes integral, the Lebesque integral, conditional expection, martingales, Brownian motion, the Ito integral and Ito calculus, equilibrium price measures, and the Black-Scholes option pricing model.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Program Director: Warren Luckner, Society of Actuaries, M.A.

Graduate Chair: Colin M. Ramsay, Ph.D.

Departments Cooperating: Economics, Finance, Mathematics and Statistics

The University of Nebraska-Lincoln offers a complete program in actuarial science. The graduate program in actuarial science at UNL is open to students with undergraduate degrees in a variety of disciplines. No previous course work in actuarial science is required.

Students seeking admission to the actuarial science program:

1. Submit proof of any Society of Actuaries exams passed.

2. Must submit an official University transcript. Applicants are expected to have a cumulative grade point average (GPA) of at least 3.0 on the 4-point scale (with A=4 points).

3. Must submit three letters of reference from persons who are familiar with their academic ability. The person who writes the letter must use the Actuarial Science Graduate Reference Report form. Each applicant must also complete and return the Actuarial Science Graduate Admissions Checklist.

4. Applicants whose first language is not English must submit a Test of English as a Foreign Language (TOEFL). Applicants should attain a score of at least 550 on the TOEFL (213 on the computer version of the test). A student with an exceptional academic record will be considered if his/her TOEFL score is between 525 and 550.

5. The deadline for applications is March 1 for the fall semester (August), and September 1 for the spring semester (January).

To be admitted with provisional standing, a student's undergraduate preparation must have included at least 6 hours in principles of economics and courses in mathematics which, in the judgment of the Committee, constitute reasonable preparation. Normally, the minimum preparation will include three semesters of calculus; one semester of computer programming in an advanced language; one semester of probability and one semester of mathematical statistics; and one semester intermediate macro economics and one semester intermediate micro economics.

To be admitted with full graduate standing for work in actuarial science, a student must satisfy the requirements for provisional standing.

Masters Degree Program.

The masters degree program must be completed without a thesis (Option II) and all requirements under this option must be met. Option I (with a thesis) usually is not open for this degree. A total of 36 hours is required.

In place of the usual major and minor requirements, the masters program must include ACTS 840, 870, 871, and at least 9 additional hours from actuarial science. The program must include at least 12 hours earned in courses open exclusively to graduate students (900-level courses or 800-level courses without 400 or lower level counterparts).

Minors are available in insurance, economics (non-insurance), statistics, or finance. These minors are subject to the approval of the Actuarial Science Graduate Committee. Minors require at least 9 hours in the minor area in addition to the major requirements cited above.

Grades.

It should be noted that within the actuarial science program the normal graduate school scholarship requirement, "B" or better applies to all 800-level major and minor courses. The normal graduate school scholarship requirement, "C" or better, for 900-level courses remains the same for the actuarial degree program. However, a student who receives a "C" grade or lower in his/her minor area may be required to take a Comprehensive Exam in the minor area.

Memorandum of Courses.

The Memorandum of Courses, which contains the proposed list of courses for the student's graduate program, must be filed with the Graduate Studies Office, 1100 Seaton Hall, before the end of the second semester has been completed. Students should check with the Graduate Studies Office for further clarification.

The following courses cannot be included as a part of your memorandum of courses:

Comprehensive Examinations.

Masters degree students will be expected to pass a written comprehensive examination on actuarial science. The Actuarial Science

Comprehensive Exam for students graduating in May or August is held on the first Tuesday of April and for students graduating in December, on the Tuesday before Thanksgiving (in November). Students may be expected to pass another written comprehensive examination on their minor area. Check with your minor department. In addition, an oral examination may be required.

Actuarial Science as a Minor.

Students enrolled in other departments may choose to use actuarial science as their minor area under Option II. A minor in actuarial science must include ACTS 840, 870, 871, and 873. Students wishing to take this minor should contact the chair or adviser of their major area, and the Graduate Chair of the Actuarial Science Program.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Logan, David -1981; Professor; BS 1966, MS 1968, PhD 1970 Ohio State
- Mashayekhi, Mostafa -1991; Associate Professor; BSc 1975, MSc 1976 London; PhD 1990 Michigan State
- Ramsay, Colin M. -1986; E.J. Faulkner Professor and Graduate Chair; BSc 1979, MMat 1980, PhD 1984 Waterloo
- Rejda, George E. -1963; Professor Emeritus; BS 1957, MA 1958 Creighton; PhD 1961 Pennsylvania

Courses for Agricultural Economics (AECN)

Courses for Agricultural Economics (ABUS)

Agricultural Economics

Subject Areas

- Agricultural Economics (ABUS)
- Agricultural Economics (AECN)

855. Marketing and Globalization (MRKT 855) (3-6 cr, max 6)

Prereq: GRBA *813 or equivalent

Globalization and resulting changes in the business environment. Access to new consumers, new supplies. The effect on consumer choices. Readings from scholarly and popular press, videos, and a "real world" application. Marketing strategies developed for Nebraska firms and organizations such as value-added food marketers.

801. Advanced Farm Management and Linear Programming (3 cr I) Lec 2, lab 2.

Prereq: AECN 201

Role of budgeting and linear programming in analyzing farm organization problems, theory of linear programming, linear program design, and analysis of linear programmed solutions to farm organization problems. Goal programming, multiple objective programming, risk programming, and financial modeling.

*804. Agricultural Law (LAW 704G) (1-4 cr)

Legal problems and issues of unique importance to lawyers serving the agricultural sector. The Farm Credit System, the Farmers' Home Administration, and farm financing problems under the Uniform Commercial Code; commodity futures markets; agricultural cooperatives; farmland preservation and rural land use controls; foreign investment in American agriculture; farm labor legislation; farm programs and the economic regulation of agriculture; pesticides; and food additives.

*812. Organization and Performance of Agricultural Markets (3 cr II) Lec 3.

Prereq: AECN 815 or ECON *873

Economic theory of industrial organization and performance applied to agricultural input, raw product, and processed product markets. Buyer market power at first-handler level, spatial markets, vertical integration and contract coordination, and organizational forms unique to agriculture.

*814. Agricultural Price Analysis (3 cr II) Lec 3.

Prereq: AECN/ECON *873 and ECON 817

Economic relationships among the forces that determine the demand, supply and prices for agricultural commodities, products, and factors of production within and across markers. Theoretical foundations reviewed covering individual consumer demand, commodity and factor markets and price determination. Empirical methods applied in analyzing demand, supply and prices, and the factors affecting them. Multiple projects, including interpreting the results, to reinforce understanding of economic behavior.

815. Analytical Methods in Economics and Business (ECON *815) (3 cr)

Prereq: MATH 104 or 106

Equilibrium Analysis: Applications in business, finance, and economics. Market equilibria, accumulations, and economics. Optimization: profit, cost, and utility functions. Constrained optimization problems with utility functions. Constrained optimization problems in production and consumer allocations; Kuhn and Tucker conditions; static and dynamic input-output Models.

*818. Taxation-Farm and Ranch (ACCT *818; LAW 618G; POLS *818) (1-4 cr)

Prereq: ACCT 812 or LAW 637/G

Selection of substantial income tax problems affecting farms and ranches.

*821. Orientation to Research (1 cr I) Lec 1.

Prereq: Permission

Introduction to approaches to agricultural economics research. Critical evaluation of agricultural economics literature. Identify an area of research interest and present a review of current literature in the area.

*827. Static and Dynamic Optimization Methods (2 cr ea, max 4, II) Lec 2.

Prereq: AECN 815 or permission

Optimization methods in economics, organized into modules, each of which introduces the fundamental methods used in the analysis of a particular class of economic problems. Each module is taught within the framework of consumer, firm, or social welfare optimization problems.
A. Static Optimization with Mathematical Programming
B. Dynamic Optimization

827A. Static Optimization with Mathematical Programming

827B. Dynamic Optimization

*832. Economics of Agricultural Production (3 cr I) Lec 3.

Prereq: AECN 201, ECON 373, MATH 104

Static economic analysis of multi-variant agriculture response functions. Resource and enterprise choice, cost functions, resource evaluation, and size and scale economies.

*840. Applied Welfare Economics and Public Policy (3 cr II) Lec 3.

Prereq: AECN/ECON *873

Principles of welfare economics applied to policy issues in agriculture and natural resources. Review of measures of household welfare, willingness to pay, and notions of Pareto optimality, aggregate welfare and market failure. Practical methods of comparative statics analysis of the effect of public policies on consumer and firm behavior, and on market equilibrium. Theory of externalities and welfare implications of market versus non-market allocation of public goods examined. Applications include evaluation of such policies as taxes, price supports, quotas, pollution controls, environmental damage liability, and intellectual property rights.

*841. Environmental Law (LAW 641G) (1-4 cr)

Legal problems encountered as a result of the impairment of the quality of the environment. Control of air, water, land, noise, and radiation pollution, and the roles of federal, interstate, state, and local agencies in affording protection. Includes private actions, class actions, and regulatory actions to protect both private and public interests.

852. Agricultural Finance (3 cr II) Lec 3.

Prereq: AECN 201, or 4 hrs accounting

Principles and concepts of financial management of farm and agribusiness firms developed. Various strategies for acquiring and using capital resources by the individual firm explored. Institutions providing the sources of agricultural credit are individually studied.

856. Environmental Law (NREE 456/856) (3 cr II) PSI.

Prereq: AECN/NREE 357 recommended

Offered odd numbered years. Available through Extended Education and Outreach. Administrative law; risk assessment; environmental impact review; Clean Air Act; Clean Water Act; nonpoint source pollution control; wetlands regulations; pesticide and toxic substance regulation; solid and hazardous waste regulation; drinking water protection; land use regulation; energy policy; international environmental law.

857. Water Law (NREE 457/857; WATS 457) (3 cr II) PSI.

Prereq: AECN/NREE 357

Offered even numbered years. Available through Extended Education and Outreach. Environmental impact review; public trust doctrine; endangered species; land use controls; wetlands regulation; surface and ground water rights; Indian and federal water rights; impact of water quality regulations on water allocation.

865. Resource and Environmental Economics II (NREE 465; WATS 465) (3 cr I) Lec 3.

Prereq: MATH 104 and one course in statistics

Credit in AECN 856 will not count toward any advanced degree in ECON or AECN. Application of resource economics concepts and empirical tools to resource management problems. Public policy issues involving environmental quality, land, and water management.

*868. Advanced Resource and Environmental Economics (3 cr I) Lec 3.

Prereq: AECN/ECON *873, AECN 865, ECON 817

Application of conceptual and empirical tools for analyzing resource problems. Both public and private dimensions of resource management are considered with emphasis on public policy. Economics of environmental quality, management of exhaustible and renewable resources, valuation of non-market goods and key elements of environmental policy analysis.

*873. Microeconomic Models and Applications (ECON *873) (3 cr)

Prereq: ECON 211, 212, and 215

This course is intended for MA Option II students and others who do not plan to proceed to PhD studies. Analysis of microeconomic decision-making by individuals and firms with emphasis on consumer demand, production, cost and profit, market structure and the economics of games, uncertainty, and information.

*876. Water Law, Planning and Policy (LAW 776G) (1-4 cr)

Judicial, legislative, and administrative problems in water resource development, allocation, and control.

*883. Ecological Economics (NRES *883) (3 cr I) Lec 3, rec.

Prereq: AECN 141 or ECON 212 or equivalent

A synthesis across the notion of "utility" as represented in traditional environmental and natural resource economics, "ecology" in ecological economics, and "community" in behavioral economics. Ideas from thermodynamics with a focus on renewable resources. Development, organization, and enhancement of eco-business, eco-industry, eco-government and eco-communities.

*893. Law and Economics (LAW 693G) (1-4 cr)

Economic principles to problems of legal interpretation and policy. Gives economic background for substantive courses in such areas as antitrust, regulated industries, and environmental law and also demonstrates the power of economic analysis when applied to problems in such diverse areas as contracts, property, torts, criminal law, family law, corporations, taxation, securities, procedure, and constitutional law.

*896. Special Topics in Agricultural Economics (1-6 cr per sem, max 6 cr)

Prereq: 12 hrs agricultural economics or closely related areas and permission

Focused agricultural economics topics through research, narrowly targeted literature review, or extension of course work.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Directed Study of Advanced Topics in Agricultural Economics (3 cr ea, max 15) Lec 3.

Significant literature in selected fields of agricultural and resource economics to provide a broad background for conducting research in these fields.
A. Production Economics (3 cr) Prereq: ECON 973 and 974, or permission.
B. Agricultural Industrial Organization (3 cr) Prereq: AECN *812.
D. International Agricultural Trade (3 cr) Prereq: ECON 821 or permission.
E. Agricultural Development (3 cr) Prereq: ECON 973 and 974, or permission.
J. Natural Resource Economics (3 cr) Prereq: AECN *868.

901A. Production Economics (3 cr)

Prereq: ECON 973 and 974, or permission

901B. Agricultural Industrial Organization (3 cr)

Prereq: AECN *812

901D. International Agricultural Trade (3 cr)

Prereq: ECON 821 or permission

901E. Agricultural Development (3 cr)

Prereq: ECON 973 and 974, or permission

901J. Natural Resource Economics (3 cr)

Prereq: AECN *868

902. Research in Agricultural Economics (3 cr ea, max 15)

Prereq: Appropriate section of AECN 901

Investigation of a research issue in a field of agricultural economics. Identification of an issue, discovery and interpretation of relevant research, rigorous development of an additional contribution to the resolution of the issue.
A. Production Economics Prereq: AECN 901A.
B. Agricultural Industrial Organization Prereq: AECN 901B.
D. International Agricultural Trade Prereq: AECN 901C.

E. Agricultural Development Prereq: AECN 901D.
J. Natural Resource Economics Prereq: AECN 901E.

902A. Production Economics Prereq: AECN 901A.

902B. Agricultural Industrial Organization Prereq: AECN 901B.

902D. International Agricultural Trade Prereq: AECN 901C.

902E. Agricultural Development Prereq: AECN 901D.

902J. Natural Resource Economics Prereq: AECN 901E.

921. Seminar in International Trade and Finance (ECON 921) (3 cr) Lec 3.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: Alan E. Baquet, Ph.D.

The Department offers programs leading to the master of science and PhD degrees in agricultural economics. An MBA with a specialization of agribusiness is offered jointly with the College of Business Administration.

Admission decisions for the MS and PhD programs are based on the applicant's likelihood of success in graduate work as evidenced by previous academic performance, letters of recommendation and GRE scores (optional). No one consideration is determining, although applicants generally must have earned an overall GPA of 3.25 with a 3.5 the last two years of academic work. Performance in agricultural economics, economics, mathematics, statistics and related courses is given special consideration.

The GRE (General) is strongly suggested for financial assistance consideration and for admission in most circumstances. There is no predetermined minimum score. International students are required to submit TOEFL scores unless they have received a degree in which English was the medium of instruction. The minimum acceptable score is 550 (paper-based exam) or 213 (computer-based exam), or a minimum score of 6 on the International English Language Testing System (IELTS).

Applicants for the master of science in agricultural economics must have completed intermediate macro- and microeconomics, introductory statistics, and one semester of analytical geometry/calculus or calculus for managerial and social sciences.

The master of science degree requirements include orientation to research, micro-economics and econometrics.

The MBA with specialization in agribusiness is a 48 credit hour degree program. The 18 credit hour core includes managerial accounting, managerial finance, managerial economics, marketing management, organizational behavior, and operations and information systems. In addition, all students must complete 12 credit hours of cross functional courses, 9 credit hours of breadth courses, and 9 credit hours of agricultural economics electives.

Applicants for the doctor of philosophy normally will have a master of science degree in agricultural economics or a related field. They must have completed math equivalent to the three-semester analytical geometry/calculus sequence taught at the University of Nebraska-Lincoln.

Doctor of philosophy candidates must include in their program of study one year of each of the following: advanced econometrics, advanced microeconomics, and advanced macroeconomics. In addition, they must complete two AECN 901 courses and two AECN 902 courses.

Master of Science Degree Minor.

Successful completion of at least 9 credit hours of courses selected in consultation with a representative of the department of agricultural economics and the student's adviser. No more than a total of 3 credit hours may be in AECN 896. No comprehensive exam will be required if all courses are completed with a grade of B or better.

Doctor of Philosophy Degree Minor.

Successful completion of at least 16 credit hours of courses selected in consultation with a representative of the department of agricultural economics and the student's supervisory committee. No more than a total of 4 credit hours in AECN 896.

Specializations available at the masters level:

Agribusiness; Environmental Studies; Great Plains Studies; Water Resources Planning and Management

Specializations available at the doctoral level:

Environmental Studies; Great Plains Studies

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Aiken, J. David -1975; Professor; BA 1972 Hastings; JD 1975 George Washington
- Azzam, M. Azzeddine -1982; Professor; BS 1977, MS 1980 Wisconsin (Platteville); PhD 1984 Nebraska (Lincoln)
- Conley, Dennis -1988; Professor; BS 1969, MS 1971, PhD 1973 Iowa State
- Fulginiti, Lilyan E. -1996; Professor; Lic Econ 1978 Nordeste (Argentina); MA 1980 Pennsylvania; PhD 1987 North Carolina State
- Giannakas, Konstantinos. -1999; Professor; BSc 1992 Aristotle University of Thessaloniki (Greece); MA 1993, MSc 1994 Mediterranean Agronomic Institute at Chania (Greece); PhD 1998 Saskatchewan (Canada)
- Hanson, Ronald -1974; Professor; BS 1968 Western Illinois; MS 1970, PhD 1972 Illinois
- Johnson, Bruce -1975; Professor; BS 1966, MS 1968 Nebraska (Lincoln); PhD 1975 Michigan State
- Jose, H. Douglas -1980; Professor; BS 1966 McGill; MS 1970 Massachusetts; PhD 1974 Oklahoma State
- Lubben, Bradley D. -2005; Assistant Professor; BS 1989 Nebraska; MS 1992 Nebraska; PhD 2005 Kansas State
- Lynne, Gary -1995; Professor; BS 1966, MS 1969 North Dakota State; PhD 1974 Oregon State
- Mark, Darrell R. -2002; Assistant Professor; BS 1997 South Dakota State; MS 1998, PhD 2001 Kansas State
- Perrin, Richard -1993; Professor; BS 1960, PhD 1968 Iowa State
- Peters, David J. -2006; Assistant Professor; BS 1994 Minnesota; MS 1998 Missouri; PhD 2006 Missouri
- Peterson, E. Wesley F. -1990; Professor; BA 1967 California-Berkeley; MPA 1973 Princeton; MA 1980, PhD 1981 Michigan State
- Royer, Jeffrey S. -1990; Professor; BS 1973, MS 1977, PhD 1978 Iowa State
- Schoengold, Karina -2005; Assistant Professor; BS 1998 Wisconsin; MS 2001, PhD 2005 California-Berkeley
- Supalla, Raymond J. -1976; Professor; BS 1968 Minnesota; PhD 1972 Michigan State
- Yiannaka, Amalia -2002; Assistant Professor; BSc 1994 Aristotle University of Thessaloniki (Greece); MA 1995, MSc 1996 Mediterranean Agronomic Institute at Chania (Greece); PhD 2002 Saskatchewan (Canada)

Courses for Agriculture (AGRI)

Agriculture

*810. Research Strategies in Agriculture (1 cr I)

Practical topics related to the planning, organization, administration, financing and reporting of research in agriculture.

815. Comparative Public Administration: Development Administration and Politics in the Third World (3 cr)

For course description, see POLS 815.

*888. Teaching Undergraduate Science (1 cr I)

The dynamics of undergraduate student learning. Begin to develop the reflective practice of progressive instructional improvement. Interpreting improved educational outcomes in terms of the ability of the instructor to manipulate undergraduate student interactions with instructional materials in an active learning environment.

*897. Master of Agriculture Project (AGRO *897; HORT *897) (1-6 cr, max 6)

Prereq: Admission to Master of Agriculture degree program

Project activity for the Master of Agriculture degree. Design, develop and complete a project that requires synthesis of the course topics covered in the primary area of emphasis.

988. Becoming a Professional Scientist (ENTO 988) (2 cr I) Lec 2.

Designed to make a difference between thriving or merely surviving scientific careers. Students gain insights in developing their own scientific careers and in forming philosophical groundings in the process of science. Includes nuts-and-bolts issues, such as applying for jobs, developing research and teaching programs, writing and other communication skills, and the scientific publication process. Philosophical issues include frameworks and innovation in science, student-professor relationships, building interdisciplinary teams, human diversity, and ethics. Format features short lectures and active discussion. Assignments aimed to improve writing skills and personal presentation of ideas and opinions. Beyond the specific issues presented, course is intended to create a forum for personal exploration of the meaning of a scientific career.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Program Coordinator: John Markwell, Ph.D.

Graduate Committee: Baenziger, Barrett, Foster, Jones, Supalla, Wehling, Yuen

The master of agriculture is an interdisciplinary program aimed at persons working in the agricultural, environmental and food sciences. The emphasis is on developing expertise in practice, rather than research. The program is available to both residential and distance students.

Since this is a college-wide degree program, there is wide latitude in the selection of areas of study. An individual curriculum is designed for each student with the goal of best fitting the student's educational objective(s). A unique feature of this masters program is the degree project, which replaces the traditional masters thesis.

Courses for Agronomy (AGRO)

Agronomy

806. Plant Ecophysiology: Theory and Practice (HORT 806; NRES 806) (4 cr I) Lec 3, lab 1.

Prereq: 4 hours of ecology; 4 hours of botany or plant physiology

Offered fall semester of even-numbered calendar years. A field/greenhouse experiment is assigned to students registered for 806. Principles of plant physiology which underlie the relationship between plants and their physical, chemical and biotic environments. Introduction to the ecological niche, limiting factors and adaptation. Seed germination and ecology, plant and soil water relations, nutrients, plant energy budgets, photosynthesis, carbon balance and plant-animal interactions. Introduction to various field equipment used in ecophysiological studies.

*807. Plant-Water Relations (BIOS *817; NRES *807) (3 cr I) Lec 3.

Prereq: AGRO 325 or equivalent; MATH 106 recommended

Quantitative study of water relations in the soil-plant-atmosphere system. Basic physical processes, which describe the movement of water in the soil and the atmosphere, and the physiological processes, which describe water movement inside of the plant. Stomata physiology and the effects of internal water deficits on photosynthesis, respiration, nitrogen metabolism, cell division and cell enlargement. Results from integrative models used to study the relative importance of environmental versus physiological factors for several plant-environment systems.

808. Microclimate: The Biological Environment (GEOG 808; HORT 808; METR 808; NRES 808; WATS 408) (3 cr I)

Prereq: MATH 106 or equivalent; 5 hrs physics; or permission

Physical factors that create the biological environment. Radiation and energy balances of earth's surfaces, terrestrial and marine. Temperature, humidity and wind regimes near the surface. Control of the physical environment through irrigation, windbreaks, frost protection, manipulation of light and radiation. Applications to air pollution research. Instruments for measuring environmental conditions and remote sensing of the environment.

*810. Plant Molecular Biology (BIOC *810; BIOS *810; HORT *810) (3 cr II) Lec 3.

Prereq: AGRO 315 or BIOS 206; BIOC 831 or permission

Molecular genetic basis of biological function in higher plants. Genome organization, gene structure and function, regulation of gene expression, recombinant DNA, and genetic engineering principles. Material taken primarily from current literature.

811. Crop Genetic Engineering (1 cr)

Basic steps required to produce genetically engineered crops. Genetic engineering procedures used to develop current crops and innovations that will lead to future products. Genetic engineering process and predicting how changes in different steps of the process influence the final crop. Application of genetic engineering technology to plan the development of new genetically engineered crops.

812. Crop and Weed Genetics (1 cr)

Application of classical and molecular genetic principles to the explanation of variation observed in plant families and populations. Interpretation of information gathered from whole-plant trait observation and from molecular analysis. Relationships between crops and weeds. Examples from genetic studies on both crop and weed species are the basis of the course.

813. Turfgrass and Landscape Weed Management (HORT 813; TLMT 813) (1 cr II) Lec 1, lab 2.

Fundamental terminology associated with turfgrass and landscape weed management. Weed identification and the cultural practices and herbicide strategies to limit weed invasion and persistence.

*815A. Self-pollinated Crop Breeding (ENTO *815A) (1 cr)

Prereq: AGRO 315

Self-pollinated plant breeding theory and methods. Pedigree, bulk, single seed descent, back-crossing methods and inbreeding theory.

*815B. Germplasm and Genes (ENTO *815B) (1 cr)

Prereq: AGRO 315

Obtaining germplasm and genes from cultivated plants, wild relatives of cultivated plants, and the biosphere. Origination of crops, mutation genetics, biotechnology as a source of genes, chromosomal engineering and plant reproduction.

*815D. Cross-pollinated Crop Breeding (ENTO *815D) (1 cr)

Prereq: AGRO 315

Cross-pollinated breeding theory and methods. Genes in populations, recurrent selection methods, creating populations, hybrid production practices, and population improvement theory.

*818. Agricultural Biochemistry (BIOC *818) (2 cr)

Prereq: Undergraduate major in life sciences or related area, and a course in biochemistry

A Web-based course. Biochemical underpinnings of agricultural production and processing systems. Agricultural biotechnology; bioenergetics; kinetics and enzyme regulation; interaction of biomolecules with light, photosynthesis and the balance between anabolism and catabolism in microbes, plants and animals.

819. Applications of Remote Sensing in Agriculture and Natural Resources (GEOG 819; GEOL 819; NRES 820) (4 cr) Lec 3, lab 2.

Prereq: GEOG/NRES 818; or permission

Introduction to the practical uses of remote electromagnetic sensing in dealing with agricultural and water-resources issues.

*822. Integrated Weed Management (HORT *822) (1 cr) Lec 1.

Prereq: 12 hrs AGRO and/or closely related HORT and/or BIOS

Principles and application of (IWM). Noxious and invasive weed species. Crops and weed control. Plant population shifts. Use of herbicides and the biologically effective dose. Critical period of weed control and weed threshold. Herbicide tolerant crops.

*823. Herbicide Action in Plants (1 cr) Lab.

Prereq: 12 hours agronomy or closely related biological sciences courses

The mode of action and plant response to all the major herbicide families. Why herbicides with different modes of action can result in similar plant symptoms. Issues of crop safety and weed control. Role of integrating herbicide resistant crops and weed control in cropping systems.

824. Plant Nutrition and Nutrient Management (HORT 824) (3 cr II) Lec 3.

Prereq: AGRO 325 or a basic course in plant physiology

A course in organic chemistry or biochemistry recommended. Offered spring semesters. Macro- and micronutrient elements and their function in the growth and development of plants; the role of single elements; interaction/balances between elements and nutrient deficiency/toxicity symptoms as they affect the physiology of the whole plant; and the relationship between crop nutrition and production/environmental considerations (e.g. yield, drought, temperature, pests).

825. Turfgrass Science and Culture (HORT 825) (3 cr I) Lec 2, lab 2.

Prereq: 9 hrs agricultural plant science and 3 hrs soil science

Offered fall semester of odd-numbered calendar years. Methods and principles of establishment and maintenance of turfgrasses. Climate adaptation; methods of identification and propagation; equipment; fertility and watering practices; insects; diseases; and weed control.

*830. Phytopathology Principles (1 cr, max 8)

Prereq: Preparatory courses in botany, microbiology, genetics, and biochemistry

A series of eight different mini-courses. Access to the World Wide Web and E-mail are required. Principles and concepts of plant pathology, including relation of plant disease to crop production, environment, man, current, historical and emerging diseases of corn, soybeans, small grain, turf and sorghum, dry bean and alfalfa. Specific disease cycles, edipemiology and plant health management strategies.

A. Corn Diseases (1 cr) Prereq: AGRO 830 or an introductory plant pathology course.
B. Soybean Diseases (1 cr) Prereq: AGRO 830 or an introductory plant pathology course.
D. Small Grain Diseases (1 cr) Prereq: AGRO 830 or an introductory plant pathology course.
E. Turf Diseases (1 cr) Prereq: AGRO 830 or an introductory plant pathology course.
J. Sorghum Diseases (1 cr) Prereq: AGRO 830 or an introductory plant pathology course.
K. Dry Beans Diseases (1 cr) Prereq: AGRO 830 or an introductory plant pathology course.
M. Alfalfa Diseases (1 cr) Prereq: AGRO 830 or an introductory plant pathology course.

834. Plant Biochemistry (BIOC 834; BIOS *834; CHEM 834) (3 cr II) Lec 3.

Prereq: BIOC/BIOS/CHEM 831

Offered every other year beginning spring 2007. Biochemical metabolism unique to plants. Relationships of topics previously acquired in general biochemistry to biochemical processes unique to plants. Biochemical mechanisms behind many physiological processes discussed in plant or crop physiology.

835. Agroecology (NRES 835) (3 cr II) Lec 3.

Prereq: 12 hours biological or agricultural sciences or permission

Integration of principles of ecology, plant and animal sciences, crop protection, and rural landscape planning and management for sustainable agriculture. Includes natural and cultivated ecosystems, population and community ecology, nutrient cycling, pest management, hydrologic cycles, cropping and grazing systems, landscape ecology, biodiversity, and socioeconomic evaluation of systems. Also includes discussions and team projects for developing communication skills and leadership experience.

836. Agroecosystems Analysis (HORT 836) (3 cr III) Fld.

Cost of travel required. Summer travel course with multi-state faculty. Farm visits in Iowa, Minnesota, and Nebraska. Analyze different farming systems for productivity, economic performance and stability, environmental impact, and social viability. Qualitative and quantitative analyses of whole-farm systems and their relationship to local landscape the communities, to family resource base, and to food security.

837. Animal, Food and Industrial Uses of Grain (2 cr) Lec.

Prereq: CHEM 105 or 109 and one of the following: AGRO 204 or ASCI 250 or FDST 203

Identification and comparison of grain quality characteristics desired by livestock feeders, human food processors, and industrial users, and the methods used to measure these characteristics.

838. Producing Grain for Animal, Food and Industrial Uses (1 cr II) Lec.

Prereq: CHEM 109 and one of the following: AGRO 204, ASCI 250, FDST 203

AGRO 315 and 837 recommended. Genetic development, production practices, and grain handling and storage procedures to deliver quality grain to livestock feeders, human food processors and industrial uses.

840. Great Plains Ecosystems (RNGE 440) (3 cr II) Lec 3.

Prereq: BIOS 101 and 101L, or equivalent recommended

Characteristics of Great Plains ecosystems, interrelationships of ecological factors and processes, and their application in the management of grasslands. Interactions of fire, vegetation, grazing animals and wildlife.

841. Perennial Plant Function, Growth and Development (HORT 841; RNGE 441) (3 cr) Lec 3.

Prereq: AGRO 325 or equivalent

Principles of crop physiology and developmental morphology in relation to function, growth, development and survival of perennial forage, range and turf plants. Relationship of physiology and morphological development on plant use and management.

842. Wildland Plants (RNGE 442) (3 cr I) Lec 2, lab 3.

Prereq: BIOS 101 and 101L, or equivalent recommended

Wildland plants important to grassland and shrubland ecosystem management and production. Distribution, utilization, classification, identification (including identification by vegetative parts), uses by Native Americans, and recognition of grasses, forbs and shrubs, as well as exotic and wetland plants. Emphasis on grasses.

844. Vegetation Analysis (RNGE 444) (3 cr I) Lec 2, lab 3.

Prereq: BIOS 101 and 101L, or equivalent recommended

Criteria by which grasslands are analyzed. Vegetation sampling techniques, measurement and evaluation of grasslands by animal performance, and measurement of important environmental factors. Evaluations of habitat improvement practices, wildlife value, recreational value and watershed value.

845. Livestock Management on Range and Pasture (ASCI 851; RNGE 445) (3 cr I) Lec 2.

Prereq: AGRO/RNGE 240 or 340; ASCI 250

AECN 201 recommended. Students required to participate in a one-week field trip in the Halsey area prior to beginning of fall semester. (Dates are given in class schedule.) Analyzing the plant and animal resources and economic aspects of livestock on range and pasture. Management of pasture and range for continued high production is emphasized.

850. Climate and Society (GEOG 850; METR 850; NRES 852) (3 cr)

Prereq: METR 200 or 351 or equivalent, or permission

Offered spring semester of even-numbered calendar years. Identify the impact of climate and extreme climatic events on society and societal responses to those events. Global in scope and interdisciplinary.

855. Soil Chemistry and Mineralogy (NRES 855; SOIL 455) (3 cr I) Lec 3.

Prereq: AGRO/SOIL 153 or GEOL 101; CHEM 109 and 110; CHEM 221 or 251; or equivalent

Chemical and mineralogical properties of soil components with emphasis on the inorganic colloidal fraction. Structures of soil minerals discussed as a means of understanding properties such as ion exchange and equilibria, release and supply of nutrient and toxic materials, and soil acidity and alkalinity.

857. Soil Chemical Measurements (NRES 857; SOIL 457) (2-3 cr, max 3 I) Lec 2, lab 4-6.

Prereq: AGRO/SOIL 153; CHEM 116 or 221 or equivalent or permission

Permission required to register for 2 cr. Students registering for 3 cr will design, carry out, and report on an independent study project conducted during the term.Offered even-numbered calendar years. Theory and practice of soil chemical analyses commonly encountered in research and industrial settings. Wet analyses of inorganic fraction of soil and operation of instrumentation necessary to quantify results of the analyses.

858. Soil Physical Determinations (NRES 858; SOIL 458) (2 cr I) Lab 3 plus 3 hours to be arranged.

Prereq: SOIL/AGRO/GEOL/WATS 361; PHYS 141 or equivalent; MATH 102 or 103

Graduate students in NRES/AGRO 858 are expected to carry out an independent project and give an oral report. Measurement techniques and principles used in characterizing the physical properties of soils. Analysis of experimental design and sources of experimental error. Techniques included: particle size analysis, soil water content, pore size analysis, field sampling techniques, soil strength, and saturated hydraulic conductivity.

860. Soil Microbiology (BIOS 847; NRES 860; SOIL 460) (3 cr II) Lec 3.

Prereq: One semester microbiology; one semester biochemistry or organic chemistry

Soil from a microbe's perspective-growth, activity and survival strategies; principles governing methods to study microorganisms and biochemical processes in soil; mechanisms controlling organic matter cycling and stabilization with reference to C, N, S, and P; microbial interactions with plants and animals; and agronomic and environmental applications of soil microorganisms.

861. Soil Physics (GEOL 861; NRES 861; SOIL 461; WATS 461) (3 cr I) Lec 3.

Prereq: AGRO/SOIL 153, PHYS 141 or equivalent, one semester of calculus

Recommended: Parallel enrollment in AGRO/NRES 858. Principles of soil physics. Movement of water, air, heat and solutes in soils. Water retention and movement, including infiltration and field water regime. Movement of chemicals in soils.

869. Bio-Atmospheric Instrumentation (GEOG 869; HORT 807; METR 869; MSYM 869; NRES 869) (3 cr I)

Prereq: MATH 106 and 4 hrs physics

Offered fall semester of odd-numbered calendar years. Discussion and practical application of principles and practices of measuring meteorological and related variables near the earth's surface including temperature, humidity, precipitation, pressure, radiation and wind. Performance characteristics of sensors and modern data collection methods discussed and evaluated.

875. Water Quality Strategy (CIVE 875; CRPL 875; GEOL 875; MSYM 875; NRES 875; POLS 875; SOCI 875; SOIL 475; WATS 475) (3 cr II) Lec 3.

Prereq: Permission

Holistic approach to the selection and analysis of planning strategies for protecting water quality from nonpoint sources of contamination. Introduction to the use of methods of analyzing the impact of strategies on whole systems and subsystem for selecting strategies; and for evaluating present strategies.

877. Great Plains Field Pedology (GEOG 867/877; NRES 877; SOIL 477) (4 cr II)

Prereq: AGRO/SOIL 153 or permission

Spacial relationship of soil properties on various parts of landscape typical of the Plains, causal factors, and predictions of such relationships on other landscapes. Also grouping these properties into classes, naming the classes, and the taxonomy that results from this grouping. Finally, requires the application of a taxonomy to a real situation through making a field soil survey in region representative of the Plains border, predicting land use response of various mapped units as it affects the ecosystem, and evaluating the effectiveness of the taxonomic system used in the region surveyed.

880. Modified Rootzones (HORT 880; TLMT 880) (1 cr) Lec 1, rct 2.

Prereq: AGRO/HORT/SOIL 153 and permission

TLMT/AGRO/HORT 480/880 is offered as a five-week course.

Modified rootzones and their applications in the turfgrass and landscape management industry. Current applications and construction techniques, advantages and disadvantages of modified growing media, recommended materials and amendments, management requirements and related costs.

881. Water Resources Seminar (GEOG 881; GEOL 815; NRES 815) (1 cr II)

Seminar on current water resources research and issues in Nebraska and the region.

889. Urbanization of Rural Landscapes (CRPL 889; HORT 889) (3 cr)

Prereq: Permission

Multidisciplinary course dealing with the urbanization process; the impacts on landscapes, people and the community; and the choices that are available to informed citizens.

896. Independent Study (RNGE 496; SOIL 496) (1-6, max 12 cr I, II, III)

Prereq: 12 hrs agronomy or closely related fields and permission

Individual or group projects in research, literature review, extension of course work under supervision and evaluation of a departmental faculty member.

*897. Master of Agriculture Project (AGRI *897; HORT *897) (1-6 cr, max 6)

Prereq: Admission to Master of Agriculture degree program

Project activity for the Master of Agriculture degree. Design, develop and complete a project that requires synthesis of the course topics covered in the primary area of emphasis.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser
P/N only.

906. Crop Growth and Yield Modeling (NRES 906) (3 cr II)

Prereq: NRES 808 or equivalent or permission
Experience in programming in a high-level computer language. Offered spring semester of even-numbered calendar years. Descriptive and explanatory crop growth and yield models studied in detail. Descriptive models focus on yield predictions using easily available inputs while the processes that lead to yield will be examined in explanatory models.

907. Agricultural Climatology (HORT 907; METR 907; NRES 907) (3 cr II) Lec 2, lab 2.

Prereq: NRES 808; STAT 801 or equivalent
Offered spring semester of odd-numbered calendar years. Analysis and use of climatological data as applied to agricultural activities and the use of climatological information to assist in decision making.

908. Solar Radiation Interactions at the Earth's Surface (HORT 908; METR 908; NRES 908) (3 cr II)

Prereq: MATH 208; NRES 808 or equivalent or permission
Offered spring semester of even-numbered calendar years. Quantitative study of radiative transfer to the earth's surface and subsequent interactions of radiation with vegetative components and underlying surfaces. Applications of canopy radiative modeling and remote sensing techniques, particularly in understanding land-surface processes, are discussed.

909. Crop Responses to Environment (HORT 909; NRES 909) (3 cr II)

Prereq: MATH 208, NRES 808, or equivalent or permission
Offered odd-numbered calendar years. Physiological and developmental aspects of hardiness and growth of crop plants as affected by light, temperature, wind, and water. Design, function, and limitations of controlled environment facilities in plant research.

915. Horticultural Crop Improvement and Breeding (HORT 915; NRES 915) (3 cr II)

Prereq: 18 hrs plant sciences including AGRO 315 and *815
Offered even-numbered calendar years. Application of the principles of genetics and plant breeding to the improvement of vegetables, fruits, and ornamental plants.

918. Plant Cytogenetics (HORT 918) (3 cr II) Lec 3, lab.

Prereq: AGRO 315 or equivalent
BIOS 876 and AGRO 815 or 919 recommended. Offered odd-numbered calendar years. Relationships between chromosomes and genes in plants. Discussions of structural and numerical chromosome abnormalities, and their uses in locating genes on specific chromosomes or studying various types of genetic behavior.

918L. Plant Cytogenetics (HORT 918L) (1 cr) Lab.

Prereq: AGRO/HORT 918 or parallel

919. Plant Genetics (HORT 919) (2 cr II) Lec 2.

Prereq: AGRO 315
Discussions of genetic mechanisms and behavior, with emphasis on plants. Topics include allelism, nonallelic gene interactions, linkage and recombination, inheritance involving the cytoplasm, incompatibility, and mutation.

920. Xenobiotics in the Environment (ENTO 920; HORT 920; NRES 920; TOXI 920) (3 cr II) Lec 3.

Prereq: Recommend one course each in organic chemistry, soil science, biochemistry, plant physiology, microbiology and ecology
Offered odd-numbered calendar years. Fate and ecotoxicological impacts of biologically foreign compounds in soil-water-plant environments; uptake, mechanisms of toxicity and metabolism in plants and other biota. Herbicides and other pesticides.

931. Population Genetics (ASCI 931; HORT 931) (3 cr II) Lec 3.

Prereq: AGRO 315 and STAT 801
Structure of populations, forces affecting gene frequency and frequency of genotypes, continuous variation, population values and means, genotypic and environmental variances and covariances.

932. Biometrical Genetics and Plant Breeding (STAT 932) (3 cr) Lec 3.

Prereq: AGRO 931
STAT *802 recommended. Offered odd-numbered calendar years. Theoretical concepts involved in planning breeding programs for the improvement of measurable morphological, physiological, and biochemical traits that are under polygenic control in crop plants of various types.

940. Forage Evaluation (ASCI 924) (3 cr II)

Prereq: Permission

Offered even-numbered calendar years. Analytic procedures and research methods used in evaluating biochemical components and nutritive value of forages. An evaluation of the impact of forage quality on forage breeding and animal performance.

955. Solute Movement in Soils (AGEN 955; CIVE 955; GEOL 985) (3 cr II) Lec 3.

Prereq: MATH 208; AGRO 861 or GEOL 888 or MSYM 852 or CIVE 858

Knowledge of a programming language. MATH 821 recommended. Offered even-numbered calendar years. Examination of the theory and experimental evidence available to characterize the movement of chemicals in soil. Both saturated and unsaturated flow conditions examined. Initial presentation of basic theoretical concepts. Remainder of class a discussion of the literature.

958. Theoretical Aspects of Physical Chemistry of Soils (NRES 958) (3 cr II) Lec 3.

Prereq: MATH 208, AGRO 855, CHEM 871 or 882 or permission

Offered even-numbered calendar years. Topics in physical chemistry which have a special significance in the field of soil chemistry. Includes problems and outside readings in this area of soil chemistry.

961. Advanced Soil Physics (NRES 961) (3 cr II) Lec 3.

Prereq: MATH 208 and PHYS 212, or equivalent; or permission

Offered odd-numbered calendar years. Physics of soils and porous media, with emphasis on the physics and mathematics of the movement of water, air, and heat through soils.

963. Genetics of Host-Parasite Interaction (BIOS 963; HORT 963) (3 cr I) Lec 2 (90 min each per wk).

Prereq: BIOS 206 or 820

Recommended BIOS 312; BIOS *864A or *864B; and BIOC 837. Offered even-numbered calendar years.

966. Soil Fertility (NRES 966) (3 cr I) Lec 3.

Prereq: MATH 106; AGRO 855 and 857; STAT 801

Conditions and transformations involved in the transfer of a mineral nutrient ion from the soil into the plant. Evaluation of nutrient supply to plants.

977. Soil Genesis and Classification (GEOG 967; NRES 977) (3 cr II) Lec 2, rct 1.

Prereq: AGRO 153, AGRO 877/GEOG 867, and permission

Procedures used to classify soils, concepts behind the systems in use, and the genesis of the soils in the major categories of each system.

991. Seminar Presentation and Evaluation (HORT 991) (1 cr, max 2 cr)

AGRO 991 is required for all MS students. Various topics in horticulture, agronomy or related subjects. Emphasis on techniques.

992. General Seminar (HORT 950; NRES 950) (1 cr, max 5 cr)

Prereq: Permission

Expected of all horticulture graduate students and all agronomy PhD students; optional for agronomy MS students. Presentation of thesis or non-thesis topics in agronomy, horticulture or related subjects. For course description, see AGRO 992.

993. Seminar, Research Program Proposal (1 cr)

Required of PhD students; optional for MS students. Presentation of proposed research and methods. Presented within the student's research discipline and completed before the student has completed 18 graduate course hours.

996. Research in Crops (2-5 cr I, II, III)

Prereq: 12 hrs agronomy or closely related sciences and permission

996A. Research in Soils (NRES 996A) (2-5 cr, max 5 I, II, III) Ind.

Prereq: 12 hrs AGRO or closely related sciences, and permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

P/N only.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: Mark Lagrimini, Ph.D.

Graduate Committee: Professors Specht (chair), Cassman, Gaussoin, Lindgren, Lyon, Walters, Associate Professor Todd

Graduate programs in agronomy may be developed in plant breeding and genetics, soil science, crop physiology and production, range and forage management, and weed science. Applicants must meet the admission requirements for graduate study and must

submit to the Department a completed application form including the transcripts of course work, and three letters of recommendation supporting the application from persons qualified to evaluate the applicant's potential for graduate college. Foreign applicants must, in addition, provide evidence of adequate financial resources for self-support during the term of graduate study and must submit English proficiency with minimum scores as outlined by the Graduate College. Applicants are required to send a letter to the chair of the Agronomy Graduate Committee describing their background (vita preferred), experience, and personal and academic goals in pursuing graduate study. A Graduate Record Examination (GRE) is required. Previous academic training must indicate that the student has the scholastic potential to pursue graduate study. Although a background in the area of emphasis is desirable, promising students with degrees in other fields can usually complete basic prerequisites within one semester. A student admitted with deficiencies, as determined by the Graduate Committee, will be enrolled in a provisional status until the deficiencies are removed.

Each student pursuing the PhD degree in agronomy must complete a doctoral program approved by a supervisory committee.

Specializations:

Agricultural Meteorology; Applied Ecology; Crop Physiology and Production; Environmental Studies; Great Plains Studies; Plant Breeding and Genetics; Plant Pathology; Range and Forage Science; Soil and Water Sciences; and Weed Science.

In addition to the courses listed below, STAT 801 and 802 may be used as part of the course work constituting a major in agronomy.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Adams, Don C. -1990; Professor; BS 1976, MS 1978 Utah State; PhD 1980 New Mexico State
- Anderson, Bruce E. -1979; Professor; BS 1974 Minnesota; MS 1977, PhD 1980 Missouri
- Arkebauer, Timothy J. -1994; Professor; BS 1979 Michigan State; MS 1981 Florida; PhD 1986 Nebraska (Lincoln)
- Baenziger, P. Stephen -1986; Professor; BA 1972 Harvard; MS 1974, PhD 1975 Purdue
- Basset, Gilles -2006; Assistant Professor; BS 1994, MS 1995, PhD 2000 National Institute of Agronomic Research (Bordeaux, France)
- Bernards, Mark L. -2005; Assistant Professor; BS 1998, MS 2000 Brigham Young; PhD 2004 Michigan State
- Brandle, James R. -1975; Professor; BS 1966 Tennessee; MS 1970, PhD 1974 Missouri
- Cassman, Kenneth G. -1996; Professor; BS 1975 California (San Diego); PhD 1979 Hawaii
- Clemente, Thomas E. -1997; Associate Professor; BS 1985 Pennsylvania (Indiana); MS 1989 Oklahoma State; PhD 1993 North Carolina State
- Comfort, Steven D. -1993; Professor; BS 1981 Wisconsin (Madison); MS 1984 Minnesota (St Paul); PhD 1988 Wisconsin (Madison)
- D'Croz-Mason, Nora E. -1995; Adjunct Assistant Professor; BS 1970 National University Columbia (South America); MS 1974, PhD 1987 Purdue
- Diestler, Dennis J. -1994; Professor; BS 1964 Harvey Mudd; PhD 1967 California Technical
- Dobermann, Achim -2000; Professor; MS 1987, PhD 1990 Leipzig (Germany)
- Drijber, Rhae A. -1995; Associate Professor; BS 1982, MS 1986 British Columbia; PhD 1993 Alberta
- Dweikat, Ismail -2000; Associate Professor; BS 1981, MS 1983, PhD 1988 Florida
- Eskridge, Kent M. -1992; Professor; BSBA 1976, MA 1981 Missouri; PhD 1987 Nebraska (Lincoln)
- Ferguson, Richard B. -1985; Professor; BS 1976 Friends; MS 1981, PhD 1985 Kansas State
- Foster, John E. -1991; Professor; BA 1964 Central Methodist; MS 1966 Missouri; PhD 1971 Purdue
- Francis, Charles A. -1977; Professor; BS 1961 California (Berkeley); MS 1967, PhD 1970 Cornell
- Gaussoin, Roch E. -1991; Professor; BS 1980, MS 1983 New Mexico State; PhD 1988 Michigan State
- Graef, George L. -1988; Professor; BS 1982 Connecticut; MS 1984, PhD 1988 Iowa State
- Graybosch, Robert A. -1987; Adjunct Professor; BS 1979 Weber State; MS 1981 Northern Arizona; PhD 1984 Iowa State
- Hergert, Gary W. -1979; Professor; BS 1967, MS 1970 Colorado State; PhD 1975 Cornell
- Hiebert, Ronald D. -1994; Adjunct Professor; BS 1968 Southwest State (Oklahoma); MS 1975, PhD 1977 Kansas
- Hoegemeyer, Thomas C. -2007; Adjunct Professor; BS 1970 Nebraska (Lincoln); PhD 1974 Iowa State
- Hubbard, Kenneth G. -1981; Professor; BS 1971 Chadron State; MS 1973 South Dakota School of Mines; PhD 1981 Utah State
- Jackson, David S. -1989; Professor; BS 1984 Cornell; MS 1986, PhD 1988 Texas A&M
- Knezevic, Stevan Z. -1998; Associate Professor; BS 1986 Belgrade; MS 1993 Guelph; PhD 1997 Kansas State
- Lee, Donald J. -1989; Professor; BA 1981 Augustana; MS 1985 South Dakota State; PhD 1988 Montana State
- Lindgren, Dale T. - 1976; Professor; BS 1969 Nebraska (Lincoln); MS 1974, PhD 1975 Wisconsin
- Lindquist, John L. -1997; Associate Professor; BS 1988 Montana State; MS 1994 Minnesota; PhD 1997 Nebraska (Lincoln)
- Louda, Srata -1984; Professor; BA 1965 Pomona; MS 1972 California (Santa Barbara); PhD 1978 California (Riverside)
- Lyon, Drew J. -1993; Professor; BS 1980 Illinois; MS 1985, PhD 1988 Nebraska (Lincoln)
- MacKenzie, Sally -2000; Professor; BS 1981 California (Davis); MS 1984, PhD 1986 Florida
- Mamo, Martha -2000; Associate Professor; BS 1989, MS 1992 Alabama A&M; PhD 1997 Minnesota (St Paul)
- Markwell, John P. -1982; Professor; BA 1970 North Park (Chicago); PhD 1976 Michigan State
- Mason, Stephen C. -1984; Professor; BS 1971 Missouri; MS 1976, PhD 1983 Purdue
- Massengale, Martin A. -1976; Professor; BS 1952 Western Kentucky; MS 1954, PhD 1956 Wisconsin
- McCallister, Dennis L. -1980; Professor; BS 1972 Notre Dame; MS 1977 Ohio State; PhD 1981 Texas A&M
- Merchant, James W. -1989; Professor; BS 1969 Towson State; MA 1973, PhD 1984 Kansas

- Mitchell, Robert B. -2002; Adjunct Associate Professor; BS 1989, MS 1992, PhD 1995 Nebraska (Lincoln)
- Namuth, Deana -2000; Extension Assistant Professor; BS 1990 Nebraska (Lincoln); MS 1993, PhD 1998 Colorado State
- Nelson, Darrell W. -1984; Professor and Dean, Agricultural Research Division; BS 1961, MS 1963 Illinois; PhD 1967 Iowa State
- Nelson, Lenis A. -1970; Professor; BS 1962 South Dakota State; MS 1968, PhD 1970 North Dakota State
- Nielsen, David C. -2004; Adjunct Professor; BS 1977, MS 1979 Iowa State; PhD 1983 Nebraska (Lincoln)
- Pedersen, Jeffrey E. -1989; Adjunct Professor; BS 1976 Wesleyan (Nebraska); MS 1978, PhD 1981 Nebraska (Lincoln)
- Reece, Patrick E. -1978; Professor; BS 1972 Washington State; MS 1975 Oregon State; PhD 1978 Colorado State
- Riordan, Terrance P. -1978; Professor; BS 1965, MS 1968, PhD 1970 Purdue
- Rundquist, Donald C. -1992; Professor; BS 1967 Wisconsin (Whitewater); MA 1971 Nebraska (Omaha); PhD 1977 Nebraska (Lincoln)
- Russell, W. Ken -1999; Associate Professor; BA 1976, MS 1977 Iowa State; PhD 1981 North Carolina State
- Schacht, Walter H. -1994; Professor; BS 1975 Dana; MS 1981 Nebraska (Lincoln); PhD 1986 Utah State
- Schepers, James S. -1975; Adjunct Professor; BS 1968, MS 1970 Nebraska (Lincoln); PhD 1973 Illinois
- Shanahan, John F. -1998; Adjunct Assistant Professor; BS 1977 Nebraska (Lincoln); MS 1979, PhD 1982 Colorado State
- Shapiro, Charles A. -1976; Professor; BS 1974 Cornell; MS 1978, PhD 1982 Nebraska (Lincoln)
- Shea, Patrick -1981; Professor; BS 1975 Fordham; MS 1979 Connecticut; PhD 1981 North Carolina State
- Skopp, Joseph M. -1980; Associate Professor; BS 1971 California (Davis); MS 1975 Arizona; PhD 1980 Wisconsin
- Spalding, Roy F. -1989; Professor; BA 1966 Kenyon; MS 1968 North Carolina; PhD 1972 Texas A&M
- Specht, James E. -1974; Professor; BS 1967 Nebraska (Lincoln); MS 1971 Illinois; PhD 1974 Nebraska (Lincoln)
- Staswick, Paul -1985; Professor; BS 1978 Washington State; PhD 1982 Purdue
- Stubbendieck, James L. -1974; Professor; BS 1966, MS 1968 Nebraska (Lincoln); PhD 1974 Texas A&M
- Swartzendruber, Dale -1977; Emeritus Professor; BS 1950, MS 1952, PhD 1954 Iowa State
- Thurston-Enriquez, Jeanette A. -2001; Assistant Professor; BS 1995, MS 1997, PhD 2001 Arizona
- Todd, Kim A. - 2002; Associate Professor; BSLA 1975 Iowa State; MA 1985 Nebraska (Lincoln)
- Urrea, Carlos A. -2005; Assistant Professor; BS 1984 Universidad Nacional de Columbia; MS 1996 Puerto Rico; PhD 2000 North Dakota State
- Varvel, Gary E. -1984; Adjunct Associate Professor; BA 1971 Chadron State; PhD 1977 Nebraska (Lincoln)
- Verma, Shashi -1974; Professor; BS 1965 Ranchi (India); MS 1967 Colorado; PhD 1971 Colorado State
- Vogel, Kenneth P. -1974; Adjunct Professor; BS 1965, MS 1967 Colorado State; PhD 1974 Nebraska (Lincoln)
- Volesky, Jerry D. -1995; Associate Professor; BS 1980 Dickinson State; MS 1982 North Dakota State; PhD 1986 South Dakota State
- Waller, Steven S. -1978; Professor; AS 1967 Vincennes; BS 1970 Purdue; PhD 1975 Texas A&M
- Walter-Shea, Elizabeth A. -1989; Professor; BS 1978 Central Arkansas; MS 1981 Texas A&M; PhD 1987 Nebraska (Lincoln)
- Walters, Daniel T. -1984; Professor; BS 1973 Illinois; MS 1975 Illinois; PhD 1984 Minnesota
- Watkins, John E. -1982; Professor; BS 1968, MS 1970 Wyoming; PhD 1975 North Dakota State
- Wienhold Brian J. -1998; Adjunct Assistant Professor; BA 1982 Minnesota (Moorhead); MS 1985 North Dakota State; PhD 1989 Arizona
- Wilhelm, Wallace W. -1976; Adjunct Professor; BS 1971 Wisconsin; MS 1973 Arizona; PhD 1976 Missouri
- Wilhite, Donald A. -1977; Professor; BS 1967 Central Missouri State; MA 1969 Arizona State; PhD 1975 Nebraska (Lincoln)
- Wilson, Robert G., Jr. -1975; Professor; BS 1970, MS 1971 Nebraska (Lincoln); PhD 1975 Washington State
- Wortmann, Charles S. -2001; Associate Professor; BS 1972, MS 1978, PhD 1987 Nebraska (Lincoln)

Courses for Animal Science (ASCI)

Animal Science

*806. Animal Science Graduate Seminar (1 cr per sem, max 2 cr I) Lec/disc.

Prereq: Permission

Orientation in the animal science graduate program involving introduction to departmental research program, philosophy, and policies. Discussion of elements of an effective seminar; experience and critique in oral presentation of research data.

816. Veterinary Entomology/Ectoparasitology (ENTO 816; NRES 816; VBMS 816) (2 cr II) Lec 2.

Prereq: 10 hrs entomology or biological science or related fields or permission

Arthropods that cause or vector diseases in animals. Arthropod recognition and biology, and disease epidemiology.

816L. Veterinary Entomology/Ectoparasitology Lab (ENTO 816L; NRES 816L; VBMS 816L) (1 cr II)

Prereq: ASCI, NRES, VBMS 816; or parallel

*817. Meat Technology (4 cr I) Lec 2, lab 6.

Prereq: ASCI 410 or permission

Meat processing and fabrication technology. Practical application of tenderization, restructuring, freezing, dehydration, flavor modification, composition control and quality control technology to manufactured and processed meat products.

818. Eggs and Egg Products (FDST 818) (3 cr I) Lec 2, lab 3.

Prereq: FDST 205

Offered fall semester of odd-numbered calendar years. Chemistry of egg proteins as they relate to physical and functional

properties. Freezing, dehydration, thermal processing, and new processing technologies.

819. Meat Investigations (FDST 819) (1-3 cr, max 3 I, II, III)

Prereq: ASCI 210 or permission

Conduct independent research and study meat industry problems in processing, production, storage, and preparation of meat and meat products.

*820. Feedlot Nutrition and Management (3 cr) Lec 3.

Prereq: CHEM 831

Offered odd-numbered calendar years. Nutritional requirements of and complete ration formulation for feedlot cattle. Management practices needed for successful feedlot operation.

821. Advanced Animal Nutrition (3 cr I) Lec 3.

Prereq: ASCI 320

An advanced course dealing with the nutrition of domestic animals. In-depth coverage of nutrients, nutrient metabolism and nutrient requirements. Biochemical and physiological functions of nutrients in life processes.

*822. Advanced Feeding and Feed Formulation (3 cr II, III) Lec 3.

Prereq: ASCI 320 or equivalent

ASCI *822 requires completion of an independent analysis of published research in a selected area of nutrition and submission of a written report. Feeding practices for domestic animals. Applied animal nutrition and feed formulation.

831. Advanced Animal Breeding (3 cr II) Lec 2, rct 1.

Prereq: ASCI 330

Application of genetic principles to animal breeding. Critical examination of current and potential selection programs and crossbreeding systems. Determination of performance objectives. Expected responses to selection methods and dissemination of improvement in an industry.

841. New Techniques in Reproductive Biology (3 cr II) Lec 2, lab 2.

Prereq: ASCI 341 or equivalent

Mammalian early embryonic development. Basic aspects of embryology and developmental biology. Modern technologies in animal reproductive biology including in vitro maturation and fertilization, embryo transfer, cloning, assisted reproductive technologies, transgenic animals and embryonic stem cells.

842. Endocrinology (BIOS 842; VBMS 842) (3 cr I) Lec 3.

Prereq: A course in vertebrate physiology and/or biochemistry

Mammalian endocrine glands from the standpoint of their structure, their physiological function in relation to the organism, the chemical nature and mechanisms of action of their secretory products, and the nature of anomalies manifested with their dysfunction.

*845. Animal Physiology I (BIOS *813; VBMS *845; VMED 645) (6 cr I) Lec 5, lab 3.

Prereq: For ASCI/VBMS *845/BIOS *813: CHEM 251; BIOS 112 or ASCI 240

Prereq for VMED 645: First year standing in VMED. Primarily for students in animal or biological sciences or veterinary medicine. Mammalian physiology and cellular mechanisms. Microscopic anatomy and physiology of cells, tissues, cardiovascular system, respiratory system, and urinary system.

*846. Animal Physiology II (BIOS *814; VBMS *846; VMED 646) (6 cr II) Lec 5, lab 3.

Prereq: ASCI/VBMS *845/BIOS *813/VMED 645

Primarily for students in animal or biological sciences or veterinary medicine. Mammalian physiology and cellular mechanisms. Microscopic anatomy and physiology of the digestive system, endocrine system, and reproductive system.

*847. Interdisciplinary Concepts in Beef Production (VBMS *847) (3 cr, max 6)

Prereq: Degree in veterinary medicine or animal science, or allied agricultural degree, or permission

Classroom attendance is required during each of the modules. Between modules distance education technologies (laptop computer, Internet access, a computer operating system with a word processor, spreadsheet, and presentation software, email, etc.) are used and required for discussion and assignments. The contributions and interactions of the major academic disciplines upon the production, performance, health, profitability, and sustainability of beef cow and cattle feeding operations.
A. I (3 cr)
B. II (3 cr) Prereq: VBMS *847A.

847A. Interdisciplinary Concepts in Beef Production I (3 cr)

847B. Interdisciplinary Concepts in Beef Production II (3 cr)

Prereq: VBMS *847A

851. Livestock Management on Range and Pasture (AGRO 845; RNGE 445) (3 cr I) Lec 2.

Prereq: AGRO/RNGE 240 or 340; ASCI 250

AECN 201 recommended. Students required to participate in a one-week field trip in the Halsey area prior to beginning of fall semester. (Dates are given in class schedule.) Analyzing the plant and animal resources and economic aspects of livestock on range and pasture. Management of pasture and range for continued high production is emphasized.

896. Independent Study in Animal Science (1-5 cr, max 12 I, II, III)

Prereq: 12 hrs animal science or closely related areas and permission

Individual or group projects in research, literature review, or extension of course work under supervision and evaluation of a departmental faculty member.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

905. Animal Industry Seminar (1 cr per sem, max 4 cr I, II)

Prereq: Permission

Current problems in the field of animal industry.

917. Advanced Meat Science (3 cr II) Lec 3, lab 1.

Prereq: CHEM 831 and FDST 848 or permission

Molecular events occurring during the conversion of muscle to meat. Molecular and cellular properties of meat responsible for the functional and palatability properties of meat products.

918. Growth and Development of Meat Animals (3 cr II) Lec 3.

Prereq: Strong background in biological sciences

ASCI/VBMS *845 and *846 recommended. BIOC, BIOS, and CHEM 831 and 832 advised. Growth and development of livestock animals with emphasis on the prenatal and postnatal differentiation and development of skeletal muscle, bone, and adipose tissue; organ growth discussed. Recent literature as well as classical concepts of animal growth discussed along with the genetic, hormonal, and nutritional factors that affect growth.

921. Interdepartmental Nutrition Seminar (NUTR 921) (1 cr per sem, max 4, I, II)

Prereq: Permission

Presentation and discussion of current literature and research in the field of nutrition.

922. Advanced Animal Nutrition (Ruminant) (3 cr I)

Prereq: ASCI 821 and BIOC 831 or permission

Offered even-numbered calendar years. Nutrient metabolism and utilization by ruminant animals for maintenance, growth, finishing, reproduction and lactation. Major emphasis on protein and energy.

924. Forage Evaluation (AGRO 940) (3 cr II)

Prereq: Permission

Offered even-numbered calendar years. Analytic procedures and research methods used in evaluating biochemical components and nutritive value of forages. An evaluation of the impact of forage quality on forage breeding and animal performance.

925. Energy Metabolism (NUTR 925) (3 cr I) Lec 3.

Prereq: ASCI 821, BIOC 831, or NUTR 455 or 950; or permission

Offered odd-numbered calendar years. Critically evaluate how research in bioenergetics has contributed to scientific discoveries in the fields of nutrition, biochemistry, and physiology. Methodologies for determination of human and animal energy expenditure and body composition. Specifically, direct calorimetry, indirect calorimetry and comparative slaughter techniques. Emphasis on components of organ and tissue energy expenditures. Background information important in other nutrition courses.

926. Carbohydrate and Lipid Nutrition (NUTR 926) (3 cr II) Lec 3.

Prereq: BIOC 831, ASCI 821 or NUTR 455 or 950

Offered even-numbered calendar years. Nutrition and metabolism of carbohydrates and lipids by animals and humans. Emphasis on fundamental principles and current concepts.

927. Protein and Amino Acid Nutrition (NUTR 927) (3 cr II) Lec 3.

Prereq: ASCI 421/821 or NUTR 455 or 950; BIOC/BIOS/CHEM 431/831

Offered even-numbered calendar years. Nutrition and metabolism of proteins and amino acids by animals and humans. Fundamental principles and current concepts.

928. Mineral Nutrition (NUTR 928) (2 cr I) Lec 2.

Prereq: ASCI 821 or NUTR 455 or 950 and BIOC 831; or permission

Offered even-numbered calendar years. Nutrition and metabolism of mineral elements by animals and humans. Information and

current concepts on the metabolism of minerals and requirements for growth, finishing, maintenance, lactation, and reproduction. Interrelationships among minerals and other nutrients discussed and observed in the laboratory.

928L. Mineral Nutrition Laboratory (NUTR 928L) (1 cr I) Lab.

Prereq: Parallel ASCI/NUTR 928

Laboratory experiments that complement material covered in ASCI 928.

929. Vitamin Nutrition (NUTR 929) (3 cr II) Lec 3.

Prereq: BIOC 831, ASCI 821 or NUTR 455 or 950

Offered odd-numbered calendar years. History, chemistry, assay procedures, food content, metabolism, biochemical functions, deficiencies, pharmacological doses, toxicities, and factors influencing vitamin status in animals, including humans.

931. Population Genetics (AGRO 931; HORT 931) (3 cr II) Lec 3.

Prereq: AGRO 315 and STAT 801

Structure of populations, forces affecting gene frequency and frequency of genotypes, continuous variation, population values and means, genotypic and environmental variances and covariances.

932. Quantitative Animal Genetics I (3 cr I) Lec 2, lab 2.

Prereq: ASCI 931 or equivalent

Offered even-numbered calendar years. Use of biometrical and population genetics and related physiology, nutrition, pathology, meats, and economics, to develop intrapopulation breeding methods capable of increasing the net bio-economic efficiency of animal production.

933. Quantitative Animal Genetics II (3 cr I) Lec 2, lab 2.

Prereq: ASCI 931

Offered odd-numbered calendar years. Evaluation of methods for developing and exploiting genetic diversity among animal populations to improve bio-economic efficiency of animal production.

934. Applications of Biotechnology in Animal Science (4 cr) Lec 1, lab 9.

Prereq: Permission

Offered only during 8-week summer session. Strategies and applications of DNA/RNA based methodologies in animal production systems and animal research programs. Practical and experimental approaches. Background, theory, and statistical methods underlying applications emphasized.

943. Advanced Avian Physiology (NRES 943) (3 cr I) Lec 3.

Prereq: One semester of physiology or ornithology, or permission

Anatomical and physiological aspects of the major body systems of birds; discussions cover both domesticated and other species and their adaptations. Comparison with mammalian systems is included, especially to illustrate divergent evolution of structure and function. Behavior is related to adaptations of both anatomy and physiology, and environmental influences are emphasized. Selected techniques (anesthesia, some surgical procedures, artificial insemination, embryo manipulations) are incorporated as laboratory sessions as needed.

949. Biochemistry of Nutrition (BIOC 949; BIOS 949; NUTR 949) (3 cr I) Lec 3.

Prereq: BIOC 832 or *839, or permission

Offered odd-numbered calendar years. Interrelationships of nutrients, nutritional state and metabolic processes. Energy metabolism, integration of nutrition and metabolism and nutritional regulation of gene function.

993. Current Topics in Nutrition (NUTR 993) (1 cr per sem, max 4)

Prereq: NUTR 455 or 950 or ASCI 821

Reading and evaluation of current nutrition research.

996. Problems in Animal Production (1-24 cr I, II, III)

Prereq: Permission

Methods employed in livestock production research. Planning and conducting experiments, keeping records, and analysis of data.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: Donald H. Beermann, Ph.D.

Graduate Committee: Associate Professor Miner (chair); Professors Johnson, Jones; Associate Professors Erickson, Jenkins;

Assistant Professors Funston, White

The Department of Animal Science offers programs leading to the doctor of philosophy degree in the areas of animal breeding and genetics, meats and poultry products, nonruminant nutrition, physiology, and ruminant nutrition. Students may pursue the master of science degree in any of the above areas. Option II and III are available to students in animal science only by special permission of the Graduate Committee obtained at the time of entry into the program.

In addition to complying with the general requirements of the Graduate College, applicants must submit a letter of intent regarding educational and career goals. Scores from the general test of the Graduate Record Examination are required. Admission with full standing requires a 3.0 grade average (4 pt. scale). For international students, the TOEFL is the only test of English proficiency accepted by the department.

All Students must enroll in ASCI 806 during their first year of graduate study at UNL.

Specializations available at the masters level:

Meat Science and Muscle Biology; Physiology; Water Resources Planning and Management

Specializations available at the doctoral level:

Meat Science and Muscle Biology; Physiology

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Adams, Don C. -1990; Professor; BS 1976, MS 1978 Utah State; PhD 1980 New Mexico State
- Anderson, Kathleen P. -1995; Professor; BS 1981 Nebraska (Lincoln); MS 1987 Texas A&M; PhD 1991 Kansas State
- Beermann, Donald H. -1999; Head and Professor; BS 1971 Iowa State; MS 1974, PhD 1976 Wisconsin (Madison)
- Bennett, Gary Lee -1986; Adjunct Professor; BS 1973 Iowa State; MS 1975, PhD 1977 Ohio State
- Brink, Dennis R. -1978; Professor; BS 1971, MS 1975, PhD 1978 Kansas State
- Burkey, Thomas E. -2006; Assistant Professor; BS 1996 Rockford; MS 2003, PhD 2006 Kansas State
- Burson, Dennis E. -1984; Professor; BS 1977 Nebraska (Lincoln); MS 1979, PhD 1985 Kansas State
- Calkins, Chris R. -1981; Professor; BS 1976 Texas A&M; MS 1978 Tennessee; PhD 1981 Texas A&M
- Cundiff, Larry V. -1967; Adjunct Professor; BS 1961 Kansas State; MS 1964, PhD 1966 Oklahoma State
- Cupp, Andrea S. -2000; Associate Professor; BS 1988 Virginia Tech; MS 1991, PhD 1994 Nebraska (Lincoln)
- Erickson, Galen E. -2001; Associate Professor; BS 1995 Iowa State; MS 1997, PhD 2001 Nebraska (Lincoln)
- Ferrell, Calvin F. -1981; Adjunct Professor; BS 1971 Oklahoma State; PhD 1975 California (Davis)
- Ford, J. Joe -1974; Adjunct Professor; BS 1966, PhD 1972 Iowa State
- Funston, Rick N. -2002; Assistant Professor; BS 1985 North Dakota State; MS 1987 Montana State; PhD 1993 Wyoming
- Jenkins, Thomas G. -1982; Adjunct Professor; BS 1972, MS 1973 Arkansas; PhD 1977 Texas A&M
- Johnson, Rodger K. -1978; Professor; BS 1965 North Dakota State; MS 1971, PhD 1973 Oklahoma State
- Jones, Steven J. -1984; Professor; BS 1978 Utah; MS 1980 Arizona; PhD 1984 Purdue
- Keown, Jeffrey F. -1985; Professor; BS 1967 Delaware; PhD 1972 Cornell
- Klopfenstein, Terry J. -1965; Professor; BS 1961, MS 1963, PhD 1965 Ohio State
- Koelsch, Richard K. -1995; Associate Professor; BS 1975, MS 1977 Kansas State; PhD 1992 Cornell
- Kononoff, Paul J. -2004; Assistant Professor; BSA 1995, MSc 1998 Saskatchewan; PhD 2002 Penn State
- Koohmaraie, Mohammad -1988; Adjunct Professor; BS 1978 Pahlavi (India); MS 1980 Texas A&M; PhD 1984 Oregon State
- Larson, Larry L. -1972; Associate Professor; BS 1962, MS 1965, PhD 1968 Kansas State
- Leymaster, Kreg A. -1979; Adjunct Professor; BS 1973 Iowa State; MS 1974 Kentucky; PhD 1977 Ohio State
- Mader, Terry L. -1981; Professor; BS 1973 Kansas State; MS 1979, PhD 1981 Oklahoma State
- Mandigo, Roger W. -1966; Professor; BS 1961 California State Poly (Pomona); MS 1963 New Mexico State; PhD 1967 Oklahoma State
- Miller, Phillip S. -1990; Professor; BS 1984, MS 1988, PhD 1990 California (Davis)
- Miner, Jess L. -1996; Associate Professor; BS 1984 Nebraska (Lincoln); MS 1986 Montana State; PhD 1989 Missouri
- Nielsen, Merlyn K. -1974; Professor; BS 1970 Nebraska (Lincoln); MS 1972, PhD 1974 Iowa State
- Nold, Rosemarie A. -1998; Associate Professor; BS 1988 South Dakota State; MS 1990 Kansas State; PhD 1997 South Dakota State
- Rasby, Rick J. -1986; Professor; BS 1980 Nebraska (Lincoln); MS 1983, PhD 1986 Oklahoma State
- Rathje, Thomas A. -2002; Adjunct Professor; BS 1989 Iowa State; MS 1991, PhD 1995 Nebraska (Lincoln)
- Reese, Duane E. -1984; Associate Professor; BS 1977, MS 1979 Ohio State; PhD 1983 Nebraska (Lincoln)
- Reiling, Bryan A. -2000; Assistant Professor; BS 1987, MS 1991 Iowa State; PhD 1996 Illinois
- Rohrer, Gary -1994; Adjunct Professor; AA 1982 Joliet; BS 1984 Illinois; MS 1986, PhD 1991 Texas A&M
- Rush, Ivan G. -1973; Professor; BS 1964, MS 1965 Missouri; PhD 1974 Oklahoma State
- Scheideler, Sheila E. -1992; Professor; BS 1981, MS 1982 Nebraska (Lincoln); PhD 1986 Iowa State
- Stock, Rick A. -1982; Adjunct Professor; BS 1977 Oklahoma State; MS 1979, PhD 1982 Nebraska (Lincoln)
- Stowell, Richard R. -2001; Assistant Professor; BS 1985, MS 1988 Wisconsin (Madison); PhD 1997 Michigan State
- Stroup, Walter, W. -1979; Professor; BA 1973 Antioch; MS 1975, PhD 1979 Kentucky
- Van Vleck, L. Dale -1988; Professor; BS 1954, MS 1955 Nebraska (Lincoln); PhD 1960 Cornell
- Varel, Vincent H. -1994; Adjunct Professor; BS 1968 Quincy; MS 1973, PhD 1977 Illinois
- White, Brett R. -2000; Associate Professor; BS 1989 Nebraska (Lincoln); MS 1992, PhD 1997 Illinois
- Wood, Jennifer -2006; Assistant Professor; BA 1992 Indiana; MS 1996, PhD 2000 Illinois

Courses for Anthropology (ANTH)

Anthropology

808. Cross-Cultural Mentoring I (WMNS 808) (3 cr) Fld.

Requires weekly meetings with mentee. Pairs UNL student with a refugee and/or immigrant and/or minority K-12 student or adult.

Work with a refugee and/or immigrant and/or minority K-12 student or adult to assist them with the cultural transition process and the educational process Problem-solving techniques and community resources.

809. Cross-Cultural Mentoring II (WMNS 809) (3 cr) Fld.

Prereq: ANTH/WMNS 408/808

Requires weekly meetings with mentee. Continuation of ANTH/WMNS 808.

Continuation of work with refugee and/or immigrant and/or minority K-12 student or adult to assist them in educational process and/or culture transition.

810. Women and Men: An Anthropological Perspective (WMNS 810) (3 cr) Lec 3.

Prereq: 9 hrs ANTH

Cross-cultural meaning and impact of gender definition, with emphasis on women. Gender as a correlate of biology, language, economic systems, social and political structures, and belief systems.

812. Social Structure (3 cr)

Prereq: ANTH 212 or equivalent

Analysis of social structure emphasizing kin and local groups.

816. Topics in Cultural Anthropology (3 cr)

Prereq: ANTH 212

Advanced study of selected topics in cultural anthropology.

817. History of Anthropological Theory (3 cr)

Prereq: 9 hrs ANTH

In-depth study of the origins and development of anthropological theory, method, and thought; the historical growth of the discipline focusing on schools of thought from the Enlightenment through the contemporary period.

818. Ethnology and Museums (3 cr)

Prereq: ANTH 110 or permission

An approach to the museum as it relates to the growth of anthropology in general and ethnological studies in particular. Special emphasis on non-Western technology and its role in the modern museum.

819. Art and Anthropology of Native North America (3 cr)

For course description, see MUSS 870.

820. Ethnic Identity and Ethnic Conflict (3 cr)

Concept of ethnicity and ethnic groups. Reviews way in which ethnic groups emerge and ethnic relations affect the modern nation state. Several ethnic conflicts reviewed and examined, accompanied by discussion of the dynamics of each of these situations. How ethnic identity is formed, adjusted and recreated.

822. Medical Anthropology (3 cr)

Exploration of culture as it affects health care, disease transmission and prevention and health education.

830. Nutritional Anthropology (NUTR 830) (3 cr) Lec 3.

Prereq: 12 hrs ANTH and permission

Anthropological approaches to the study of nutrition. Background to nutrition science; bio-cultural aspects of obesity, fertility, lactose intolerance, and infant feeding practices; biological differences in nutritional requirements, fertility, and mortality; interpretation of nutritional deficiencies in skeletal remains; reconstructing prehistoric diets from archaeological evidence; and evidence of relationships between dietary patterns and dental remains in fossil record.

832. History and Theory of Archaeology (3 cr) Lec 3.

Prereq: 12 hrs ANTH

Current concepts and theories used in archaeology to interpret the archaeological record.

833. North American Archaeology (3 cr)

Prereq: 9 hrs ANTH, including ANTH 232

An areal survey of North American archaeology including methodology, history, and current trends of research. North American prehistory from earliest occupations to the contact period.

834. Introduction to Great Plains Archaeology (3 cr)

Prereq: 9 hours of ANTH, including ANTH 232

History of archaeological research, taxonomic issues, cultural sequences, and current research topics dealing with the Great Plains area of North America.

835. Introduction to Heritage Management Archaeology (3 cr)

Prereq: ANTH 232

Introduction to the nature and purpose of historic preservation as it pertains to resource management and archaeological research. Legislation which forms the basis for cultural resource management principles; integration of state programs and archaeological contractors within the overall framework of land modification planning.

836. The Ancient Maya (LAMS 436) (3 cr) Lec.

Introduction to the prehistory of the Maya region and its periphery, and the features of the Ancient Maya political, economic, religious, gender and material structures. Theoretical and political debates in Mesoamerican scholarship. Interdisciplinary research and the types of methods used to create knowledge about Maya civilization.

838. Topics in Old World Prehistory (CLAS 838) (3 cr) Lec 3.

Prereq: ANTH 242 or equivalent

Topics from Old World prehistory. Archaeological data relevant to selected theoretical or topical problems.

839. Archaeology of Preindustrial Civilizations (3 cr)

Prereq: 12 hours of anthropology

Development and organizational variability of past preindustrial civilizations. Ideas and theories about state formation and their evaluation through use of the archaeological record. Students exposed to general archaeological and anthropological problems posed by complex societies. Databases will include preindustrial civilizations from Mesopotamia, Africa, Egypt, India, China, Japan, Polynesia, Mexico, and Peru.

842. Human Variation (3 cr) Lec 3.

Biological variation of modern humans worldwide through time and space. Standard measurements of phenotypic, e.g., elementary anthropometry. Biological adaptation to environment using recent theoretical perspectives.

844. Biology of Human Variation (3 cr)

Prereq: ANTH 110 or permission

Introduction to the scope and meaning of human biological variation with emphasis on present day populations.

848. Human Growth and Development (BIOS 848) (3 cr) Lec 3.

Prereq: ANTH 242 and 242L, or BIOS 101 and 101L

Biological diversity from an evolutionary perspective. History of study of human physical and biological principles of growth. Genetic, epigenetic, and hormonal effects on human and other mammal growth patterns and the environmental factors that influence growth including nutrition, disease, socioeconomic status, and pollution. Highlights of unique features and various stages of human growth, the anthropologist's interpretation of growth patterns among human populations, and possible adaptive significance of human variation.

851. Contemporary Issues of Indigenous Peoples in North America (ETHN 451) (3 cr) Lec 3.

Prereq: ANTH 351 or 352

Political, economic, and social issues concerning indigenous peoples in North America.

854. Traveling Ethnographic Field School (3-6 cr)

Prereq: ANTH 212 or upper division anthropology course; and permission

An advanced comparative study of contemporary populations in a selected area of North America (occasionally outside of the US) that will combine the traditional survey of ethnographic literature with personal observation and participation in rural, urban, or traditional settings. The ethnographic focus (e.g., Native Americans or recent immigrants to the US) will change depending on research opportunities.

872. Belief Systems in Anthropological Perspective (3 cr)

Prereq: ANTH 110 or permission

Cross-cultural examination of the structure, form, and functions of belief systems. Interrelationship between the ideological subsystem of a culture and its social, political, and economic organization. Primitive and contemporary societies surveyed.

873. Ecological Anthropology (NRES 873) (3 cr)

Integrative study of human adaptive systems and their ecological contexts. Examination of the dynamic interrelationships between subsistence, technology, social behavior, human demography, and ecological variability.

874. Applied and Development Anthropology (3 cr)

Prereq: ANTH 212

Analysis of the many recent attempts by anthropologists and other trained specialists to influence the process of development and socioeconomic change in the modern world. Special emphasis on programs directed specifically at ethnic minorities in urban as well as in rural settings throughout the world.

875. Primitive Technology (3 cr)

Prereq: 9 hours ANTH

Survey of the major technologies and industrial complexes of the prehistoric and primitive worlds. Through lectures, experiments, and examination of artifacts, students gain familiarity with the ways in which preindustrial man has manipulated his environment. Skills necessary to analyze technology within its cultural setting.

876. Human Rights, Environment, and Development (3 cr)

Prereq: ANTH 212

Human rights from an anthropological perspective. Assesses issues of significance in the area of international human rights, development, and the environment, paying specific attention to concerns such as Western and non-Western perspectives on human rights; individual rights and collective (group) rights; social, economic, and cultural rights; women's rights; indigenous peoples and minority groups' rights; and planetary (environmental) rights. Particular emphasis on rights to food, culture, development, and a healthy ecosystem.

877. Hunters-Gatherers (3 cr)

Prereq: 9 hours ANTH, including ANTH 212

Survey of hunter-gatherer society with emphasis on ecological and social adaptations. Acquaints student with the literature on hunters-gatherers and their important role in human history and evolution.

878. Pro-seminar in Latin American Studies (EDPS 878; GEOG 878; HIST 878; LAMS 478; MODL 878; POLS 878; SOCI 878; SPAN *878) (3 cr, max 6) Lec 3.

Prereq: Permission

Interdisciplinary analysis of the mechanics and consequences of cultural continuity and social change in Latin America.

879. Pro-seminar in International Relations I (AECN 467; ECON 866; GEOG 848; HIST 879; POLS 866; SOCI 866) (3 cr)

Prereq: Permission

Open to students with an interest in international relations. Topic varies.

882. Research Methods in Anthropology (3 cr)

Prereq: Permission

Strongly recommended to graduate students in all sub-fields before starting thesis work. Introduces advanced students to practical and theoretical issues involved in designing and undertaking anthropological research. Logic and organization of research emphasized.

883. Advanced Field Methods (3 cr, max 12)

Prereq: Permission

When appropriate, small-scale fieldwork exercises will be planned, executed and analyzed. Preparation for fieldwork through study of the philosophical and practical problems of anthropological field research.

884. Quantitative Methods in Anthropology (3 cr)

Prereq: 9 hrs ANTH; STAT 218 or equivalent

Introduces collection, management and analysis of quantitative anthropological data. Through exercises and a final paper, both methods of exploratory and confirmatory data analysis are reviewed. Computer-assisted analysis.

885. Pro-seminar in Anthropology (1-3 cr)

Investigation of selected problems in anthropology to be arranged in keeping with the needs of the instructor and the students.

886. Community-based Research and Evaluation (ETHN 487) (3 cr)

Prereq: ANTH 212

Qualitative ethnographic field and participant observation research projects involving documentation, data analysis and theory. Focus on community-based organizations, agencies and development advocacy projects.

887. Analysis of Archaeological Materials (4 cr, max 16) Lec/lab.

Topics vary by semester. Survey of vocabulary, techniques, and ideas needed to research major materials found in archaeological sites.
A. Ceramics (4 cr)
B. Lithics (4 cr)

D. Archaeofauna (4 cr)
E. Historic Material Culture (4 cr)

887A. Ceramics (4 cr)

887B. Lithics (4 cr)

887D. Archaeofauna (4 cr)

887E. Historic Material Culture (4 cr)

888. Contentious Issues in Anthropology (3 cr)

Prereq: 9 hours of anthropology beyond ANTH 110
Explores recent controversial issues through the integration of biological, cultural and archaeological branches of anthropology.

890. Advanced Fieldwork (1-6 cr per sem, max 24) Fld.

Prereq: ANTH 290 or equivalent; no credit toward major if ANTH 280 is counted
Open only to students who have completed ANTH 280 or a comparable class and who wish to gain further practical experience in field research. Further practical experience in field research.

891. Advanced Laboratory Work (1-6 cr, max 24) Lab, fld.

Prereq: Permission
Open only to advanced students wishing to complete a research project they have developed with ANTH faculty guidance.

*894. Internship in Professional Archaeology (1-6 cr, max 6) Fld.

Prereq: 9 hrs ANTH
Structured professional experience in archaeological research, administration, or curation outside the traditional academic setting.

895. Internship in Anthropology (1-6 cr, max 6) Fld.

Structured professional experience outside the traditional academic setting. Learn and use anthropological skills. Develop professional networks.

896. Special Readings in Anthropology (1-6 cr)

Advanced readings in special areas of topics of anthropology to be selected by the student in consultation with the instructor.

898. Advanced Current Topics in Anthropology (3 cr)

Prereq: Permission
Seminar on current issues and problems in anthropology. Topics chosen in keeping with the needs of the instructor and students.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

915. Seminar in Ethnology (3 cr)

Intensive study of theory and method in ethnology, with special attention to current research literature.

935. Seminar in Archaeology (3 cr)

Theory and method in prehistory and historic archaeology. Current research literature in the field.

945. Seminar in Physical Anthropology (3 cr)

Intensive study of theory and method in physical anthropology, with special attention to current research literature.

994. Seminar in Anthropology and Geography (GEOG 994) (1-3 cr, max 6)

996. Research Other Than Thesis (1-6 cr)

Research or reading in selected problems in anthropology, including the preparation of research for publication.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department of Anthropology and Geography Chair: Raymond Hames, Ph.D.

Graduate Committee Chair: TBA

The department offers graduate courses leading to the degree of master of arts. The requirements for admission, for Candidacy, and for courses and thesis are those established and maintained by the Graduate College. Applicants should accompany their application for admission with a statement of educational goals and their scores from the general Graduate Record Examination.

With the exception of students in the Professional Archaeology Specialization, all graduate students will be required to take three core courses in the Department of Anthropology: ANTH 812, 832, and 842. If a student has taken any of these courses at the 400 level (412, 432, and 442), and they were taken within five years prior to the student's admission to the Graduate College, they need not be repeated at the graduate level.

Upon admission to this program, all graduate students are required to have a course in statistics. If a statistics course has not been taken prior to admission, this will be regarded as a deficiency, which will have to be remediated.

Any class taken to remediate a deficiency will not count as part of the credits required for the master of arts in anthropology.

Program Assessment

In order to assist the department in evaluating the effectiveness of its program, majors will be required at the end of their graduate program:

1. to complete an oral examination which focuses on the breadth of the field as well as on the student's field of specialization.

2. to complete a written exit survey, submitted anonymously.

The graduate adviser will inform students of the scheduling and format of assessment activities.

These assessment activities will in no way affect a student's GPA or graduation.

Specializations available:

Environmental Studies; Great Plains Studies; International Human Rights and Diversity; Professional Archaeology; Women's and Gender Studies

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Athanassaopoulos, Effie F. -1997; Associate Professor; BA, Athens (Greece), 1979; PhD, Pennsylvania, 1993
- Awakuni-Swetland, Mark -2003; Assistant Professor; PhD 2003 Oklahoma
- Bleed, Peter A. -1972 Professor; BA 1965, MA 1968, Minnesota; PhD, Wisconsin, 1973
- Demers, Paul -2004; Assistant Professor; PhD 2001 Michigan State
- Draper, Patricia. -1998; Professor and Vice Chair; BA, Vassar, 1964; MA 1965, PhD 1972, Harvard
- Glazier, Stephen -1988; Adjunct Professor; MA 1976, PhD 1981 Connecticut
- Hames, Raymond -1980; Professor and Chair; BA 1971, PhD 1978 California (Santa Barbara)
- Hitchcock, Robert -1990; Adjunct Professor; BA 1972 California (Santa Barbara); MS 1977, PhD 1982 New Mexico
- Lynott, Mark -1977; Adjunct Professor, National Park Service; PhD 1977 Southern Methodist
- McCollough, Martha -1996; Associate Professor; MA 1990 Alaska; PhD 1996 Oklahoma
- Noble, Vergil -2004; Adjunct Assistant Professor; PhD 1983 Michigan State
- Osborn, Alan J. -1976; Adjunct Assistant Professor and Supervisory Archaeologist; BA 1970 Missouri; MA 1973, PhD 1977 New Mexico
- Osborne, Daniel -2007; Assistant Professor; BA 1998 Florida; PhD 2007 Indiana
- Sanchez, Carleen -2004; Assistant Professor; PhD 2003 UCSB
- Scott, Douglas D. -1983; Adjunct Assistant Professor, National Park Service; PhD 1977 Colorado
- Wandsnider, LuAnn -1991; Associate Professor; BS 1979 Wisconsin (Madison); MS 1981, PhD 1989 New Mexico
- Willis, Mary -2000; Associate Professor; MS 1990, PhD 1995 Washington

Courses for Interior Design (IDES)

Courses for Architecture (ARCH)

Architecture

Subject Areas

- Architecture (ARCH)
- Interior Design (IDES)

510/*810. Advanced Architectural Design I (5 cr) Studio 12.

Prereq: 5th year standing, professional program
Vertically integrated 5th and 6th year studio.

511/811. Advanced Architectural Design II (5 cr) Studio 12.

Prereq: 5th year standing, professional program
Vertically integrated 5th and 6th year studio.

518/818. Fabrication and Construction Team (1-6 cr, max 6) Lec, lab.

Prereq: Permission

The shifting relationship between conceiving and making through practical collaborative experience with actual design-construct projects, play a role in all aspects of research, design and construction of the commission.

524/824. Advanced Architectural Drawing (2 cr) Studio.

Prereq: Permission

Advanced work in architectural drawing. Discourse about various drawing problems encountered in design process and practice.

525/825. Computer-Aided Drawing/Design (CADD) in Architecture (3 cr) Lec 1, studio 2.

Prereq: Permission

Application of advanced CADD systems, technology and techniques to the solution of problems in architecture. The use of sophisticated software and hardware in drawing management with emphasis on its application to design, graphics, and professional drawings. Upon completion of this course, the student should understand the potentials and limitations of CADD systems in the professional practice of architecture.

530/830. Advanced Elements of Building Construction (3 cr) Lec 3.

Prereq: Admission to the fifth year or permission

Common building systems and their components. The vocabulary of construction, in both verbal and graphic terms, that can be immediately applied in the design studio.

531/*831. Architectural Structures III (3 cr)

Prereq: ARCH 411

Analysis and design of structural systems, including mass, vector systems, rectangular and curvilinear frames, surface systems, seismic and wind forces, and current structural developments. Individual investigations and model testing.

532/832. Production Drawings (3 cr)

Development of production drawings for a small building. Plans, elevations, sections, and details developed through a process of exploration and research.

532A/*832A. Seismic Design for Architects (1 cr)

Prereq: Permission

Introduction to basic seismic design principles. Making critical decisions concerning the overall performance of a building during an earthquake.

533/*833. Architectural Systems Design II (3 cr)

Prereq: ARCH 530/*830

Investigation of contemporary theoretical and operational ideas in environmental systems and technology. Experiments in the development of architectural systems. Detailed drawings and models.

535/835. Advanced Lighting Design (3 cr) Lec 1, lab 4.

Prereq: ARCH 333 or IDES 335 or by permission

Translation of physical measurements of sensory stimuli into architectural-spatial relationships with respect to artificial and natural illumination; advanced lighting theories and techniques through lecture, discussion, simulation, and direct application to spatial design/development.

536/836. Daylighting and Energy (3 cr) Lec 1, lab 4.

Prereq: ARCH 333 or *430

Integration of daylighting strategies with building energy performance. Use of physical modeling to depict lighting excellence (quality or lack thereof) and computer modeling to perform energy analyses. Drawing a direct connection between the use of natural light in buildings and buildings' energy consumption.

537/837. Architectural Acoustics (2 cr) Lec 2.

Prereq: ARCH 310, 333 and 411

Advanced acoustic design. Translation of physical measurements of sensory stimuli into architectural-spatial relationships with respect to internally and externally generated sound.

540. Architecture History and Theory I (3 cr) Lec 3.

Prereq: Formal acceptance into the architecture program by faculty or permission

Selected aspects of the history and theory of fifteenth- through eighteenth-century architecture emphasizing the architect as a creative personality.

541/841. Architectural History and Theory II (3 cr) Lec 3.

Prereq: For students in the professional program: formal acceptance into the architecture program by faculty or permission

Selected aspects of the history and theory of nineteenth- and early twentieth-century architecture emphasizing the intellectual impact and material expression of cultural change.

542/842. Contemporary Architecture (3 cr) Lec 3.

Prereq: For students in the professional program: formal acceptance into the architectural program by faculty or permission

Selected aspects of contemporary architectural theory and design from the mid-twentieth century to the present emphasizing the diversity of current thought and practice.

545/*845. Architecture, Society, and Culture I (3 cr)

Prereq: Admission to the fifth year, ARCH 541/841 and 542/842, or permission

Comprehensive review of the relationship between modern architectural theory, society, and culture. Readings in the literature of architecture and modern society with emphasis on evolution of architectural thought.

546/*846. Theory and Criticism in Architecture Since 1945 (3 cr)

Prereq: ARCH 542/842 or permission

Theory and criticism in architecture since 1945 as they relate to contemporary American society and culture, with reference to those parallel in other humanities disciplines, including arts, linguistics, literary criticism, and philosophy.

548/848. Architecture of the Great Plains (3 cr) Lec 3.

Prereq: Acceptance into third year or permission

Selected aspects of the history of architecture on the Great Plains with emphasis on the architecture of Nebraska built during the nineteenth and twentieth centuries.

550/850. Survey of Asian Architecture (3 cr) Lec 3.

Comparative study of the architecture of Asian cultures with emphasis on pre-eighteenth-century India, China, and Japan.

556/856. Behavioral and Social Factors in Environmental Design (IDES 856) (3 cr) (UNL) Lec 3.

Prereq: Permission

Survey of theory, methods, research and findings from the social and behavioral sciences as they relate to architectural design, interior design, and regional and community planning. Application of principles to architectural and interiors programs, designs, and the planning process.

557/857. Housing Issues in Contemporary Society (2 cr)

Prereq: Permission

Survey of social, psychological, political and economic research regarding housing in today's global economy. Focus on how the research can impact the practice of design at the interior and architectural as well as the community and regional planning scale.

558/858. The Changing Workplace (IDES 858) (3 cr) (UNL) Lec 3.

Survey and integration of theory, methods, research and findings from the social, behavioral, and managerial sciences as they relate to the design of work environments. Factors effecting change in the contemporary workplace.

560/*860. Environmental Survey and Analysis (CRPL *872) (3 cr) Lec 3.

Prereq: Permission

Comprehensive review of contemporary methods and theories of environmental survey and analysis in the fields of landscape architecture, regional planning, conservation, and related areas, with emphasis on interrelationships between human and natural systems.

561/*861. Studies in Environmental Design (3 cr)

Prereq: ARCH 560/*860

Comparative case studies in environmental development in the fields of landscape architecture, regional planning, conservation, and related areas with emphasis on program techniques. Development of individual or group project programs of contemporary environmental development of large-scale sites, including movement systems, siting of structures, growth phasing, and aesthetic controls.

562/*862. Urban Form Typology (3 cr)

Prereq: Entrance into 5th year professional program or permission

Addresses core aspects of the architecture of cities. Reviews current typological theories and undertakes descriptive, normative and critical studies of urban examples according to ecological and anthropological criteria. Includes lectures by faculty, guest speakers and seminar presentations by students.

563/863. Architectural Preservation (3 cr) Lec 3.

Introduction to the principles, processes, and practice of architectural preservation and the conservation of historic districts.

564/*864. Urban Design I (3 cr) Lec 3.

Prereq: Permission

Detailed study of the context, theory, process, and practice of urban design.

565/*865. Urban Design II (3 cr)

Prereq: ARCH 564/*864

Comparative case studies in urban design and social planning directed at an understanding of urban form.

566/866. Community Design Center (1-6 cr)

Prereq: Permission

Community oriented design studio. The design process and its relationship to the environmental development process emphasized.

567/867. Planting Design (HORT 339) (4 cr I) Lec 2, studio 4.

Prereq: HORT 212; HORT 266 or ARCH 210

Design processes, principles and elements as applied to the use of native and ornamental plant materials. Aesthetic, functional and microclimatic arrangements.

568/868. Planting Design (HORT 341) (3 cr II) Lec 2, lab 2.

Prereq: HORT 266; MATH 102; MSYM 109 or PHYS 141

SOIL 153 and CNST 131 recommended. Lab exercises and field trips are required. Landscape construction, techniques and practices including site measurement and layout, topography, grading, cut-fill drainage and runoff calculations, topsoil protection; bioengineering and urban site erosion control; retaining walls; non-living landscape construction and design techniques as a part of the design process using problem-solving.

581/881. Women in Design (IDES 481) (3 cr)

Prereq: Admission to the BSAS program or permission

Intensive study of particular historical and contemporary contributions by women to the design professions related to the built environment. Evaluation of design work by and about women seen in their aesthetic and intellectual context. Examinations of the roles and values of women in design and their impact on the assumptions and issues currently held by the profession.

582/882. Advanced Color Theory (IDES 882) (3 cr) (UNL) Lec 3.

Prereq: Admission to the third year in architecture or interior design program; or permission

Advanced color theories and their application to the Built environment.

597/697. Selected Topics in Architecture (1-6 cr, max 24)

Prereq: Permission

Group investigation of a topic in architecture originated by the instructor.

598/898. Problems in Architecture (1-6 cr, max 9)

Prereq: Permission

Individual investigation of a topic in architecture.

610/910. Advanced Architectural Design III (5 cr) Studio 12.

Prereq: 6th year standing, professional program

Vertically integrated 5th and 6th year studio.

611/911. Advanced Architectural Design IV (5 cr) Studio 12.

Prereq: 6th year standing, professional program

Vertically integrated 5th and 6th year studio.

612/*812. Architectural Design: Urban Issues (4 cr) Studio 12.

Prereq: ARCH 550/850

Advanced architectural design. Design of groups or complexes of buildings in highly specialized or urbanized environments. Comprehensive studies and formal presentations.

613/913. Architectural Design: Terminal Project Studio I (6 cr)

Prereq: ARCH 510/*810, submission of a statement of intent and a contract with a faculty mentor

Advanced architectural design. The first part of a year-long design project initiated by the student and developed in conjunction with a faculty mentor. The first course in the sequence consists of initial studies that are further developed and completed in the following semester. These initial studies lead to a written and visual proposal that sets the parameters and the agenda for detailed formal design explorations in the following semester.

614/914. Architectural Design: Terminal Project Studio II (6 cr) Studio.

Prereq: ARCH 613/913

Advanced architectural design. The second part of a year-long design project initiated by the student under the supervision and

guidance of a faculty mentor. The second course in the sequence develops the formal expression and representation of a specific architectural project as described in the previous semester's work.

617/817. Product Design (IDES 417) (3 cr)

Prereq: Permission

A practical investigation in the use of materials and their fabrication process with emphasis on wood, plastic and steel. Generation of a design from conception to a finished product.

632/932. Architectural Structures IV (2-6 cr)

Prereq: ARCH 411

Research projects concerning architectural structures.

680/*880. Professional Practice (3 cr)

Orientation to professional practice through a study of the architects' and the contractors' relationships to society, specific clients, their professions, and other collaborators in the environmental design and construction fields. Ethics; professional communication and responsibility; professional organizations; office management; construction management; legal and contractual relationships; professional registration; and owner-architect-contractor relationships.

683/*883. Architectural Programming (3 cr) Lec 3.

Prereq: ARCH 550/850

Lecture/seminar/research studying architectural programming/evaluation methods and leading toward the development of an architectural program and statement of design intent for the final studio problem to be done in either ARCH 913 or ARCH 914.

691/991. Seminar in Architecture (2-3 cr)

Prereq: ARCH 550/850 and permission

Contemporary problems in design and practice.

692/992. Seminar in Architecture (2-3 cr)

Prereq: ARCH 550/850 and permission

Contemporary problems in design and practice.

695/*895. Internship

Prereq: ARCH 550/850 and permission

Exposure to the architectural profession through office application including job promotion, client relations, data collection, design, production drawings, estimating, specifications, bid documents, and quality control.

696/*896. Problems in Programming (3 cr)

Prereq: ARCH *810, *812 and 911, and approval of the faculty

Research and programming in preparation of master's thesis.

699/*899. Masters Thesis (6-10 cr)

Prereq: ARCH *896; any two of ARCH 511/911, 612/*812, or 613/913; admission to masters degree program and permission of major adviser

Projects to place special emphasis upon a major field of interest. Design problem or written thesis.

*815. Architectural Design: Terminal Project Studio I (3 cr) Studio.

Prereq: MArch/MCRP dual degree candidate

Coreq: CRPL 990. Advanced architectural design. Initial investigation into the parameters and agenda leading to a proposal for the terminal studio project.

*816. Architectural Design: Terminal Project Studio II (3 cr) Studio.

Prereq: ARCH *815

Coreq: CRPL 990. Advanced architectural design. Detailed formal design development of the terminal studio project established in ARCH *815 and CRPL 990.

851. Latin American Architecture Seminar (3 cr) Lec 3.

Prereq: ARCH 441/541/841 and permission

ARCH 441/841 does not require prior study of Latin America.

Introduction to 20th Century Latin American architecture in a cultural and ecological context.

884. Case Study in the Study and Practice of Architecture (3 cr) Lec 3.

Prereq: Permission

A group investigation in recently completed professional building projects. Methodology as prescribed by the American Institute of Architects "Case Study Work Group," and the "Large Firm Roundtable-The Educator/Practitioner Net."

*885. Research Methods in Architecture and Interior Design (IDES *885) (3 cr)

Research methods employed by the diverse specializations within the disciplines of architecture and interior design. Methods which contribute to a theoretical and informational body of knowledge as well as those contributing directly to design application.

*812. Socio-psychological Aspects of Interiors (3 cr) Lec 3.

Prereq: 9 hrs social sciences and 9 hrs interior design or permission

Interior space in relation to social, religious, psychological, economic, and cultural aspects of past and current civilizations.

826. Design in an Age of Digital Environments (3 cr) Lec 3.

Prereq: Admission to the BSD program

Digital environments and their implications for design. Three types of digital environments: intelligent reality, real virtual reality, and neural reality. These environments have qualities which provide unique challenges for their design: intelligence, temporal sequencing, and interactivity. Alternative design processes for handling these special qualities.

845. Historic Interiors II (3 cr) (UNL) Lec 3.

Prereq: IDES 340

History and development of international interiors and furnishings including American styles, from the nineteenth century to the present with emphasis on the changes produced by nineteenth- and twentieth-century technologies.

850. Interior Design Studio III (5 cr) (UNL) Studio 12.

Prereq: IDES 318 and 351

Advanced application of the design process with emphasis on complex residential and commercial problems, including systems design, and individual professional objectives.

851. Interior Design Studio IV (3 cr) Lec 1, lab 4.

Prereq: IDES 850

Prior or concurrent work experience in interior design or related field. Design of multipurpose interior (contract and residential) spaces with complete drawings and specifications. Individual and team problems.

856. Behavioral and Social Factors in Environmental Design (ARCH 556/856) (3 cr) (UNL) Lec 3.

Prereq: Permission

Survey of theory, methods, research and findings from the social and behavioral sciences as they relate to architectural design, interior design, and regional and community planning. Application of principles to architectural and interiors programs, designs, and the planning process.

858. The Changing Workplace (ARCH 558/858) (3 cr) (UNL) Lec 3.

Survey and integration of theory, methods, research and findings from the social, behavioral, and managerial sciences as they relate to the design of work environments. Factors effecting change in the contemporary workplace.

860. Preservation and Conservation of Historic Interiors (2 cr) (UNL) Lec 2.

Prereq: IDES 340

Restoration, conservation, renovation or adaptive reuse of historic interiors. Energy feasibility for the older structure.

882. Advanced Color Theory (ARCH 582/882) (3 cr) (UNL) Lec 3.

Prereq: Admission to the third year in architecture or interior design program; or permission

Advanced color theories and their application to the Built environment.

883. Domesticity and Power in the Colonial World (3 cr) Lec 3.

Prereq: Permission

Colonial architecture as a world-wide phenomenon. Re-examines the relationship between architecture, politics, and ethical values. The colonial domestic sphere are viewed as a counterpoint to the public arena.

884. Material Culture: The Social Life of Things (3 cr) (UNL) Lec 3.

Prereq: Permission

Theories and practices of material culture. History and interior design--and indeed the broad category of humanity itself--through the lens of material objects.

*885. Research Methods in Architecture and Interior Design (ARCH *885) (3 cr)

Research methods employed by the diverse specializations within the disciplines of architecture and interior design. Methods which contribute to a theoretical and informational body of knowledge as well as those contributing directly to design application.

886. Evolving Issues in Interior Design (3 cr) Lec 3.

Prereq: Admission to the BSD Program

Evolving issues in interior design. Contemporary and controversial issues designed to articulate and frame parameters in a manner that encourages depth of thought. The nuances of the field and practice of interior design and its relationship to the allied design disciplines.

Contents

-
  -
  -
  -
-

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Program Director, Architecture: Mark A. Hoistad, A.I.A.
Program Director, Interior Design: Betsy Gabb, FIDFC, IIDA

Graduate Committee: Associate Professor Handa (Chair), Assistant Professors Ankerson, Jung

Website: archweb.unl.edu

The Architecture Program in the College of Architecture offers three degrees: a professional degree, the Master of Architecture (M.Arch); a graduate degree, the Master of Science (MS); and a doctoral degree (PhD/EdD) specialization in architecture education. In addition, the Program offers joint graduate degrees with the Colleges of Business Administration (MBA) and Engineering (MEng) and internal to the College with Community and Regional Planning (MCRP).

Master of Architecture Degree

The professional program in architecture is administered by the College of Architecture and is designed to educate highly skilled professional architects. The program features design studios and a range of professional electives in theory, technology, representation, cultural issues, and urban design. Each applicant, depending on previous academic training, professional practice experience and specific interests, works with a faculty adviser to establish a specific program of study suited to his or her interests and career objectives.

Two curricula of study are provided in the master of architecture program. The choice is dependent upon the applicant's prior educational and professional experience.

- Applicants holding a four-year bachelor of science in architectural studies or environmental design, or an equivalent baccalaureate degree granted by an accredited institution, normally complete a 54-credit hour professional program in two years (four academic semesters).
- Applicants with degrees from other fields are eligible to enter the professional program with deficiencies. These deficiencies are established by a departmental faculty committee on an individual basis after a review of the applicant's transcripts and other pertinent materials. Students in this program will be required to complete 27 to 50 hours of selected undergraduate courses (a minimum of one additional year) prior to pursuing the course work of the professional program. Applicants with deficiencies exceeding 50 credit hours will not be admitted.

Curriculum.

The Master of Architecture (M.Arch) program is designed to empower the student to develop a course of study to begin the process of defining their existence as a design professional. Through selections from option studies proposed by the faculty and the professional elective array offered by the faculty each student can customize their curriculum to support their emerging image of the architect they want to be. Further, students in the last year can propose, develop and design a project of their own choosing working one on one with a faculty mentor as a culminating experience of their graduate studies.

With the adviser's approval, elective courses may be selected from other University departments at either the 800- or 900-course level. Half of the required hours must be earned at the University of Nebraska-Lincoln.

Internships.

The Architecture Program offers students in the professional program the opportunity to participate in a Summer Internship Program for academic credit. Students have secured internships with prominent national and international firms. The internship program is available to students who have completed the BSD program and will have at least one semester of study remaining after interning.

International Studies Program.

Professional program students are eligible to participate in international programs offered in London, England and Tianjin, China.

Admission Requirements for Master of Architecture.

Applicants for the master of architecture degree should submit to the Department of Architecture Student Affairs Committee the

following items:

- A program application.
- A portfolio of recent work.
- A statement of educational goals.
- Official transcripts.
- Three letters of professional or academic recommendation.
- TOEFL for international students whose primary language is not English.

The Graduate Record Examination is not required for the professional program application.

Candidates considered for admission should have completed their undergraduate training with an overall grade average of "B" (3.0) and an architectural design studio average of "B". Students who wish to be considered for fellowships and assistantships should apply by the February 1 deadline.

Applications for admission received after the deadline for submission may not be considered until the following academic year.

The Student Affairs Committee makes its first recommendations for admission in March for the following fall semester.

Master of Architecture Joint Degree Options

The program offers two joint degree options for students pursuing a master of architecture.

One option is to pursue a curriculum of study that leads to a master of business administration and a master of architecture. This curriculum is a 68-credit hour program of study.

The second option is to pursue a curriculum of study that leads to a master of community and regional planning and a master of architecture. This curriculum is a 68-credit hour program of study.

Admission requirements for Joint Degree Options

Students applying for a joint degree must make an application to both the Graduate School and the Architecture Program's master of architecture professional program. The Graduate School application requires GRE scores to be submitted as a part of the application. Students interested in pursuing one of these options must include a letter of interest with their application materials.

The master of science in architecture degree is a graduate program with a scholarly, research-based curriculum. The program is available to students who hold an undergraduate degree in architecture or a related discipline.

Curriculum.

Each student, with the guidance of their adviser, prepares a detailed course of study. This course of study must include courses in theory, research methods or analytical techniques, field research, and campus-wide electives. The 36-credit-hour program of study terminates with a written thesis on a topic developed by the student in consultation with their faculty adviser and committee. Candidates for the master of science in architecture degree must maintain a 3.0 GPA, pass a comprehensive exam, pass an oral examination covering the area of preparation, and complete the requirements for the thesis.

Master of Science in Architecture

Specializations Available for the Master of Science Degree:

Environmental Studies; Great Plains Studies; Interior Design

Admission Requirements for the Master of Science.

Minimum entrance requirements are:

- acceptance to the UNL Graduate Program,
- an undergraduate degree in architecture or a related discipline,
- a B average or better in past academic programs, and
- a TOEFL score of 550 (paper) or 213 (computer), 79-80 (internet) or higher for international students whose first language is not English.

Applicants for the master of science degree should submit the following items.

- Architecture Program application form.
- A portfolio of recent work.
- A statement of research intentions or interests.
- Official transcripts.
- Three letters of professional or academic recommendation.
- Graduate School application form.
- Scores from the Graduate Record Examination.
- TOEFL score.

Master of Science in Architecture Specialization in Interior Design

The Specialization in Interior Design within the master of science degree in architecture is a scholarly research-based curriculum.

This 36-credit-hour program of study is designed for those students who have successfully completed a CIDA accredited undergraduate degree in interior design or closely related field and are interested in approaching the design of the built environment as user-centered providing a basis for informed design decisions. It is understood that of prime importance in the design of the built environment is the satisfaction of the user's physical, psycho-social, and spiritual needs and the protection of their health, safety and well-being.

To fulfill the requirements of the Specialization in Interior Design, candidates must: a) maintain a 3.0 GPA, b) receive a grade of B or better in all courses counted toward the degree, c) pass the required cumulative examinations, d) pass an oral examination covering their area of preparation and thesis research, and e) complete the requirements for the thesis.

Distance Education Options

In addition, the Interior Design Program has launched a Distance Education portion to the Masters degree. For more information on the Distance Ed/MS-ID program, please click on the following link:
http://archweb.unl.edu/idesdistance .

The Masters, therefore, can be completed partially, or in its entirety through distance education. Courses offered through distance education are only available when the same course is offered for 'in residence' students. Completing the Masters through distance education will take more than the two years for a typical resident student.

Doctorate in Educational Studies with a Specialization in Architecture Education

The program provides academic preparation and professional development for those individuals who will serve as: a) faculty members in programs of architecture in public and private post-secondary educational institutions; and as b) administrative leaders of architecture programs in higher education. The program offers students a choice of either the PhD or the EdD. The specialization in architecture education is jointly sponsored by the College of Architecture and the College of Education and Human Sciences.

Curriculum

The program of study offers broad objectives and specific experiences for each student. The common core of studies provides students with a multicultural perspective, a direct teaching experience, and an active research program as well as opportunities for working with community and professional leaders to explore contemporary architecture education problems. The program culminates with either a dissertation (PhD) or field study (EdD).* Higher Education/Education Administration

- Advanced Architectural Concepts
- Practicum/Internship
- Social Science Research Methods
- Doctoral Seminars
- Dissertation

Admission Requirements

To be accepted into this specialized program of study, a student must have completed a graduate research-related degree. The credit hours (up to 36) accumulated during the master of science program may be accepted for advanced standing in the doctoral program.

A joint admissions committee composed of representative members of the respective departments (Architecture and Educational Administration) will collectively administer the admissions process. The application shall include the following:

a) Architecture Program application form,

b) Graduate School application form,

c) Graduate Record Examination (GRE) scores,

d) All undergraduate and graduate transcripts,

e) Three letters of recommendation,

f) A statement of goals regarding educational objectives,

g) Evidence of scholarly writing and research ability,

h) Evidence of experience with diverse cultures,

i) Portfolio evidence of a satisfactory background in architecture,

j) Evidence of an undergraduate degree in architecture or a related discipline,

k) Evidence of research-related graduate experience, and

l) An English proficiency exam (e.g., TOEFL score) is required of all international student applicants. A degree from an accredited university in the US, Canada or England replaces the English proficiency requirement.

Each applicant will need to gain the agreement of a member of the Graduate Faculty to act as chair of his or her supervisory

committee and as a mentor. The Admissions Committee and its chair will facilitate the matching of student and mentor.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Allisma, Tom -2006; Assistant Professor; BS 1998, MArch 2000 Nebraska (Lincoln)
- Ankerson, Katherine -1996; Assistant Professor; BS 1978, MS 1994 Washington State
- Bahe, Lindsey Ellsworth -2005; Assistant Professor; BSD 2001, MArch 2003 Nebraska (Lincoln)
- Borner, William L. -1972; Professor and Registered Architect; BArch 1967 Western Reserve; MArch 1968 Michigan
- Case, F. Duncan -1991; Associate Professor; AB 1968, PhD 1975 Princeton
- Day, Jeff L. -2001; Assistant Professor and Registered Architect; AB 1988 Harvard; MArch 1995 California (Berkeley)
- Despang, Martin -2005; Associate Professor, Architecture; Dipl Ing Architeckt 1994 Hanover (Germany)
- Drummond, Wayne -2000; Dean, Professor; BArch 1968 Louisanna State; MArch 1969 Rice
- Duncan, Robert I. -1976; Professor; BS Arch 1960 Kansas; MArch 1968 Iowa State
- Ertl, Ted A. -1974; Associate Professor and Registered Architect (AIA); BArch 1969, MArch 1975 Colorado
- Gabb, Betsy S. -1986; Director Interior Design Program and Professor; BS 1970 Nebraska (Lincoln); MA 1972 Minnesota; EdD 1982 Nebraska (Lincoln)
- Handa, Rumiko -1996; Associate Professor and Registered Architect; BArch 1979 Tokyo; MArch 1983, PhD 1992 Pennsylvania
- Hardy, Steven -2008; Associate Professor; 1995 BArch Kansas; 1996 University College London
- Hemsath, Timothy -2007; Assistant Professor; BS 1999, MArch 2001 Nebraska (Lincoln)
- Hinchman, Mark -1998; Associate Professor and Registered Architect (AIA); BArch 1983 Notre Dame; MArch 1987 Cornell; MA (Art History) 1995 Chicago
- Hind, Peter -2007; Assistant Professor; BS 1998, MArch 2000 Nebraska (Lincoln)
- Hoistad, Mark A. -1989; Associate Dean, Architecture Program Director, Professor and Registered Architect (AIA); BS (Arch) 1977 Georgia Institute of Technology; MArch 1983 Houston
- Jung, Hyun Tae -2006; Assistant Professor; BS, MS, MPhil in Architecture Seoul (South Korea)
- Krug, Nate S. -1994; Associate Professor and Registered Architect (AIA); BEd 1973 Kansas; MArch 1976 California (Los Angeles)
- Kuska, Sharon S. B. -1993; Associate Dean, Professor and Registered Engineer; BSAS 1982, MS 1984, PhD 1993 Nebraska (Lincoln)
- Laging, Thomas S. -1967; Professor and Registered Architect (AIA); BArch 1963 Nebraska (Lincoln); MArch 1966 Harvard
- Potter, James J. -1981; Professor and Registered Architect; BS 1964 California State Polytechnic; MArch 1973 SUNY (Buffalo); PhD 1982 Pennsylvania State
- Puderbaugh, Homer L. -1960; Professor Emeritus and Registered Architect (AIA); BArch 1952, MS 1959 Kansas State
- Rice, Camila -2006; Assistant Professor; BArch 1980 Oregon; MLA 1995 Harvard
- Sawyers, H. Keith -1958; Professor Emeritus; BArch 1958 Iowa State; MArch 1966 California (Berkeley)
- Steward, W. Cecil -1973; Professor Emeritus and Registered Architect (FAIA); BArch 1957 Texas A&M; MS 1961 Columbia

Courses for Watercolor (WATC)

Courses for Sculpture (SCLP)

Courses for Printmaking (PRNT)

Courses for Photography (PHOT)

Courses for Painting (PANT)

Courses for Graphic Design and Illustration (GRPH)

Courses for Drawing (DRAW)

Courses for Ceramics (CERM)

Courses for Art History and Criticism (AHIS)

Courses for Art Theory and Practice (ARTP)

Art and Art History

Subject Areas

- Art Theory and Practice (ARTP)
- Art History and Criticism (AHIS)
- Ceramics (CERM)
- Drawing (DRAW)
- Graphic Design and Illustration (GRPH)
- Painting (PANT)
- Photography (PHOT)
- Printmaking (PRNT)

- Sculpture (SCLP)
- Watercolor (WATC)

*896. Advanced Problems in Studio (1-24 cr)

Prereq: Permission

Problems in technique and expression on a tutorial basis.

*899. Studio Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

Original work in studio, under direction.

996. Problems in Studio Art (1-24 cr)

Prereq: Permission

Problems in technique and expression. Advanced laboratory experience.

997. Colloquium (1-24 cr)

Prereq: Permission

Problems and approaches relating to the practice of art, with special attention to media.

811. Classical Architecture (3 cr)

Prereq: 12 hrs in art history, or related disciplines with permission

History and development of architectural orders and styles from ancient Greece and Italy.

812. Greek Sculpture (3 cr)

Prereq: 12 hrs in art history, or related disciplines with permission

Greek sculpture from the Bronze Age through Hellenistic periods. Introduction to classical themes as presented in individual freestanding and architectural sculpture, as well as stylistic evolution. Concepts involve techniques, materials and use of sculpture.

813. Roman Painting (3 cr)

Prereq: 12 hrs in art history, or related disciplines with permission

Development of Roman painting from the Etruscans through the Age of Constantine.

818. Gothic Painting and Prints (3 cr)

Prereq: 12 hrs in art history, including AHIS 318; or 12 hrs in related disciplines with permission

Style, iconography, history, and function of painting and prints from ca. 1150 to 1475 in France, Germany, and the Netherlands. Includes manuscript illumination, stained glass, panel painting, woodcuts, and engravings, stressing the development of naturalism before the “Renaissance” in Northern Europe.

821. The Italian Renaissance City (3 cr)

Prereq: 12 hrs art history, or related disciplines with permission

Exploration of the art and architecture of a single Italian city in the late middle ages and Renaissance, attention to civic projects and the role of art in defining the identity, and creating the “myths” of that city. Focus city will rotate among Florence, Venice and Rome.

826. Northern Renaissance and Reformation Art (3 cr)

Prereq: 12 hrs art history, including AHIS 318 or 818; or 12 hrs in related disciplines with permission

Art of the Renaissance and Reformation in Germany and the Netherlands. Stresses the influences of Italian Renaissance Art and the impact of the protestant Reformation from ca. 1475 to 1575.

831. Italian Baroque Art (3 cr)

Prereq: 12 hrs in art history, or in related disciplines with permission

Introduction to the painting, sculpture and architecture in Italy from the late sixteenth to the late seventeenth century.

841. Impressionism and Post-Impressionism (3 cr)

Prereq: 12 hrs in art history or in related disciplines with permission

French Impressionism and post-Impressionism with consideration of the historical context out of which they emerged. Development of avant-gardism and the changing relationship of the artist to society.

846. Art Since 1945 (3 cr)

Prereq: 12 hrs in art history, including AHIS 102 and 246

Art from 1945 to the present focusing on the development of avant-gardism, the transition from modernism to postmodernism and the various art world institutions.

848. Postmodernism (3 cr)

Prereq: 12 hrs in art history, including AHIS 102 or 246, and 846; or 12 hrs in related disciplines with permission
Developments in art since 1970, exploring the various art styles and also the relationship of the artists to their audience and to the institutions of the art world.

851. 19th-Century American Art (3 cr)

Prereq: 12 hours in art history, including AHIS 251 or 341;, or permission
Topics in 19th century American art and material culture.

852. American Art, 1893-1939 (3 cr)

Prereq: 12 hrs in art history, including AHIS 252 or 346, or permission
Early 20th century American art.

856. Pre-Columbian Art (3 cr)

Prereq: Permission
Emphasizing the Mesoamerican and Andean traditions.

857. Colonial Art of Latin America (3 cr)

Prereq: Permission
Emphasizing New Spain, the Viceroyalty of Peru, and Brazil.

871. History of Photography (3 cr)

Prereq: Permission
Introduction to the history of still photography with major emphasis on its development as an art form.

872. Photography Since 1960 (2-3 cr)

Prereq: AHIS 871 or permission
Movements in photography since 1960 with emphasis on the interaction with art theory and criticism.

876. History of Prints (3 cr)

Prereq: 12 hrs art history, including AHIS 221, 226, or 231; or in related disciplines with permission
Introduction to the history of prints stressing printmaking techniques, i.e., woodcut, engraving, drypoint, etching, and the makers of prints during the first 300 years of printmaking in Europe: Baldung, Goltzius, Bruegel, and Rembrandt. Major technical developments, such as the introduction of printing colored woodcuts, are included.

890. Directed Individual Reading (1-6 cr, max 6)

Prereq: Permission of department chair

892. Independent Research in Art History (1-6 cr, max 6)

Prereq: Permission of department chair

895. Internship in Art History (1-6 cr, max 6)

Prereq: Permission of department chair
Grade only for 895.

898. Special Topics in Art History (1-3 cr, max 24)

Prereq: Permission

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Methodology and Historiography (3 cr)

Prereq: Permission
History of the discipline, with an examination of the various art historical approaches. Development and refinement of specialized research skills appropriate to the field.

911. Seminar in Classical Art and Archaeology (3 cr)

Prereq: Permission

916. Seminar in Medieval Art (3 cr)

Prereq: Permission

921. Seminar in Italian Renaissance Art (3 cr)

Prereq: Permission

926. Seminar in Northern Renaissance Art (3 cr)

Prereq: Permission

931. Seminar in Baroque Art (3 cr)

Prereq: Permission

946. Seminar in Modern Art (3 cr)

Prereq: Permission

951. Seminar in American Art (3 cr)

Prereq: Permission

956. Seminar in Latin American Art (3 cr)

Prereq: Permission

977. Seminar in Latin American Art (1-3 cr)

Prereq: Permission

980. Seminar in Art Historical Problems (3 cr)

Prereq: Permission

988. Introduction to the Interdisciplinary Study of the Middle Ages (ENGL 988; HIST 988; MODL 988; MUSC 988) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Middle Ages. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

989. Introduction to the Interdisciplinary Study of the Renaissance (ENGL 989; HIST 989; MODL 989; MUSC 989) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Renaissance. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

*831. Ceramics I (1-6 cr)

Graduate-level various ceramic media and concepts.

*832. Ceramics II (1-6 cr)

Graduate-level various ceramic media and concepts.

834. Glaze Formulation (3 cr) Stu 6.

Prereq: Permission

Practical and theoretical information to develop, mix, fire, and troubleshoot ceramic surfaces for pottery and sculpture.

835. Kiln Design and Construction (3 cr) Stu 6.

Prereq: Permission

Knowledge and skills required to design and build a kiln for firing pottery and sculpture.

*896. Advanced Problems in Ceramics (1-6 cr, max 24) Stu.

Prereq: Permission

Problems in technique and expression.

898. Special Topics in Ceramics (3 cr, max 24) Stu.

Prereq: Permission

899. Studio Thesis in Ceramics (6-10 cr, max 10) Stu.

Prereq: Admission to masters degree program and permission of major adviser

Original work in studio.

931. Ceramics III (1-6 cr)

Prereq: CERM *831-832

Graduate-level individual work in ceramics.

932. Ceramics IV (1-6 cr)

Prereq: CERM *831-832
Graduate-level individual work in ceramics.

996. Problems in Ceramics (1-6 cr, max 24) Stu.
Prereq: Permission
Problems in technique and expression. Advanced laboratory experience.

*801. Drawing I (1-6 cr, max 6)
Graduate-level work in various drawing media and concepts.

*802. Drawing II (1-6 cr, max 6)
Graduate-level work in various drawing media and concepts.

901. Drawing III (1-6 cr, max 6)
Graduate-level work in drawing, that can include the exploration of a variety of media and visual ideas.

902. Drawing IV (1-6 cr, max 6)
Graduate-level work in drawing, that can include the exploration of a variety of media and visual ideas.

*821. Graphic Design I (1-6 cr, max 6)
Graduate-level work in various graphic design media and concepts.

*822. Graphic Design II (1-6 cr, max 6)
Graduate-level work in various graphic design media and concepts.

921. Advanced Graphic Design I (1-6 cr, max 6)
Prereq: GRPH *821-822 or permission
Advanced graduate-level work in various graphic design media and concepts.

922. Advanced Graphic Design II (1-6 cr, max 6)
Prereq: GRPH *821-822 or permission
Advanced graduate-level work in various graphic design media and concepts.

925. Book Arts (1-6 cr, max 6)
Prereq: GRPH 825 or permission
Continued graduate work in limited edition and/or unique book arts.

*851. Painting I (1-6 cr, max 6)
Graduate-level work in various painting media and concepts.

*852. Painting II (1-6 cr, max 6)
Graduate-level work in various painting media and concepts.

951. Painting III (1-6 cr, max 6)
Prereq: PANT *851-852 or permission
Graduate-level work in various painting media and concepts.

952. Painting IV (1-6 cr, max 6)
Prereq: PANT *851-852 or permission
Graduate-level work in various painting media and concepts.

*861. Photography I (1-6 cr, max 6)
Graduate-level work in various photographic media and concepts.

*863. Color Photography I (1-6 cr, max 6)
Prereq: Permission

*864. Color Photography II (1-6 cr, max 6)
Prereq: Permission

*886. Photography II (1-6 cr, max 6)
Graduate-level work in various photographic media and concepts.

*898A. Advanced Problems: Color Photography I (1-6 cr, max 6)
Prereq: Permission

*898B. Advanced Problems: Black and White Photography I (1-6 cr, max 6)
Prereq: Permission

961. Photography III (1-6 cr, max 6)
Prereq: ARTP *861-862 or permission
Research in photography culminating in a portfolio selected from the semester's work.

962. Photography IV (1-6 cr, max 6)
Prereq: ARTP *861-862 or permission
Research in photography culminating in a portfolio selected from the semester's work.

963. Color Photography III (1-6 cr, max 6)
Prereq: Permission

964. Color Photography IV (1-6 cr, max 6)
Prereq: Permission

998A. Advanced Problems: Color Photography II (1-6 cr, max 6)
Prereq: Permission

998B. Advanced Problems: Black and White Photography II (1-6 cr, max 6)
Prereq: Permission

*841. Printmaking I (1-6 cr, max 6)
Graduate-level work in various printmaking media and concepts.

*842. Printmaking II (1-6 cr, max 6)
Graduate-level work in various printmaking media and concepts.

941. Printmaking III (1-6 cr, max 6)
Prereq: PRNT *841-842

942. Printmaking IV (1-6 cr, max 6)
Prereq: PRNT *841-842

*811. Sculpture I (1-6 cr, max 6)
Graduate-level work in various sculpture media and concepts.

*812. Sculpture II (1-6 cr, max 6)
Graduate-level work in various sculpture media and concepts.

911. Sculpture III (1-6 cr, max 6)
Prereq: SCLP *811-812 or permission
Graduate-level work in various sculpture media and concepts.

912. Sculpture IV (1-6 cr, max 6)
Prereq: SCLP *811-812 or permission
Graduate-level work in various sculpture media and concepts.

*857. Watercolor I (1-6 cr, max 6)
Graduate-level work in various watercolor media and concepts.

*858. Watercolor II (1-6 cr, max 6)
Graduate-level work in various watercolor media and concepts.

957. Watercolor III (1-6 cr, max 6)
Prereq: WATC *857-858

958. Watercolor IV (1-6 cr, max 6)
Prereq: WATC *857-858

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary .

Department Chair: Edward Forde

Graduate Committee: Professors Cal (chair), Mamiya; Associate Professors Fritz, Neal

The department offers graduate instruction leading to the degree of master of fine arts in studio art. Candidates may pursue the MFA in the following areas of emphasis: ceramics, drawing, painting, photography, printmaking, sculpture, textile arts, graphic design, or a combination of several of these disciplines. The department reserves the right to retain for its collection one creative work by each graduated MFA student.

Undergraduate Requirements.

Candidates for the degree of master of fine arts must have obtained the bachelors degree from an institution of recognized standing and preferably have completed undergraduate preparation substantially the equivalent of that required for the bachelor of fine arts degree at the University of Nebraska-Lincoln.

Application Procedure.

An applicant must submit two separate packets of documents, one to the Office of Graduate Studies (deadline January 1) and another to the Graduate Chair of the Department of Art and Art History (deadline February 1). Send the application form, application fee and two official copies of all transcripts of previous college work to Graduate Studies. Send one official copy of all transcripts of previous college work, three letters of recommendation (sent directly from the references), a statement of professional intent and evidence of creative work to the Department of Art and Art History. Students may apply in one or two studio disciplines, but in order to emphasize two areas, they must be accepted in both. Creative work must be presented in the form of a portfolio consisting of 20 images submitted as 35mm slides, or on a CD, DVD, or as a videotape. Applicants in graphic design may provide a Website address for us to view their work. Applicants in photography may send a portfolio of 20 original photographs. Materials should be mailed in a plain manila envelope. They will be transferred to a file upon receipt. (No binders, boxes, or plastic page sleeves, please.) The departmental application deadline is February 1 for entry the following August. Applicants should consult the Department of Art and Art History Website, www.unl.edu/art/, for more detailed information about portfolio requirements.

Master of Fine Arts Requirements.

The master of fine arts candidate must: a) complete 60 credit hours of approved course work; b) present an original body of creative work, known as a "thesis exhibition," in a gallery space on campus; c) write a brief essay on the thesis work; d) pass an oral examination. The program requires a minimum of 26 hours of work in the area(s) of emphasis and a minimum of 9 hours in regularly scheduled art history courses. An additional 9 hours may be taken in approved academic courses. Additional studio course work brings the total to the 60 credit hour minimum.

Minor available:

Art History

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Bartels, Ron H. -1989; Associate Professor; BFA 1970 Kansas City Art Institute; MFA 1972 California Institute of Arts
- Bolland, Andrea -1994; Associate Professor; BA 1982 Washington; MA 1986, PhD 1992 North Carolina
- Cal, Santiago -2000; Associate Professor; BFA 1995 Kutztown State (PA); MFA 1998 Virginia Commonwealth
- Dominguez, Eddie -1998; Associate Professor; BFA 1981 Cleveland Institute of Art; MFA 1983 Alfred
- Forde, Edward -2004; Professor; BA 1968, MFA 1971 California (Santa Barbara
- Fritz, Dana -1998; Associate Professor; BFA 1992 Kansas City Art Institute; MFA 1995 Arizona State
- Fuller, Shelley T. -1990; Associate Professor; BA 1981 Augustana; MFA 1989 Nebraska (Lincoln)
- Hoff, Michael C. -1989; Associate Professor; AB 1977 Missouri; MA 1982 Florida State; PhD 1988 Boston
- Holz, Aaron -2004; Assistant Professor; BFA 1995 Moorhead State; MFA 1002 SUNY (Albany)
- Ingraham, Elizabeth -1998; Associate Professor; BA 1969 Colorado; JD 1973 Denver; MFA 1992 California (Santa Barbara)
- Jacobshagen, N. Keith -1968; Professor; BFA 1965 Art Institute (Kansas City); MFA 1968 Kansas
- Katz, Wendy J. -2000; Assistant Professor; BA 1988 Occidental; MA 1989 Michigan (Ann Arbor); PhD 1997 California (Los Angeles)
- Kendall, Gail M. -1987; Professor; BFA 1966 Michigan; MFA 1974 Eastern Michigan
- Kunc, Karen -1983; Professor; BFA 1975 Nebraska (Lincoln); MFA 1977 Ohio State
- Mamiya, Christin J. -1987; Professor; BA 1977 Yale; MA 1982, PhD 1987 California (Los Angeles)
- Neal, Maureen (Mo) -1995; Associate Professor; BA 1988 Washington State; MFA 1991 Virginia Commonwealth
- Pinnell, Peter -1996; Associate Professor; BFA 1980 Alfred (New York); MFA 1982 Colorado
- Souto, Francisco -2004; Assistant Professor; BFA 2000 Herron School of Art; MFA 2002 Ohio State
- Stewart, Alison G. -1989; Associate Professor; BA 1973 Syracuse; MA 1976 Queens; PhD 1986 Columbia
- Williams, Sandra -2000; Associate Professor; BFA 1994 Cleveland Institute of Art; MFA 1999 Ohio State

Aviation Institute

Description

Director: Brent Bowen, Ed.D.

The Aviation Institute is a division of the Department of Public Administration administered through the University of Nebraska at Omaha. The Aviation Institute, in cooperation with the Departments of Educational Administration, UNL, and Public Administration, UNO, offer graduate aviation courses to fulfill requirements for a minor field or as a cognate or selected courses on a plan of study. Program outlines for study have been developed for the graduate degrees in public administration and educational leadership. Through the use of distance education, a student has the opportunity to take classes applicable to a masters or doctoral degree in public administration. A masters and doctorate in educational administration with an aviation focus is also available.

Questions regarding graduate program opportunities in aviation should be directed to:

Aviation Graduate Program Coordinator
University of Nebraska at Omaha
422 Allwine Hall
Omaha, Nebraska 68182-0508
(402) 554-3424
(800) 858-8648
www.unomaha.edu/~unoai

Courses for Biochemistry (BIOC)

Biochemistry

*810. Plant Molecular Biology (AGRO *810; BIOS *810; HORT *810) (3 cr II) Lec 3.

Prereq: AGRO 315 or BIOS 206; BIOC 831 or permission

Molecular genetic basis of biological function in higher plants. Genome organization, gene structure and function, regulation of gene expression, recombinant DNA, and genetic engineering principles. Material taken primarily from current literature.

*818. Agricultural Biochemistry (AGRO *818) (2 cr)

Prereq: Undergraduate major in life sciences or related area, and a course in biochemistry

A Web-based course. Biochemical underpinnings of agricultural production and processing systems. Agricultural biotechnology; bioenergetics; kinetics and enzyme regulation; interaction of biomolecules with light, photosynthesis and the balance between anabolism and catabolism in microbes, plants and animals.

831. Biomolecules and Metabolism (BIOS 831; CHEM 831) (4 cr I, II) Lec 4.

Prereq: CHEM 252 or 262

BIOS 102 recommended. First course of a two-semester comprehensive biochemistry course sequence. Structure and function of proteins, nucleic acids, carbohydrates and lipids; nature of enzymes; major metabolic pathways; and biochemical energy production.

832. Gene Expression and Replication (BIOS 832; CHEM 832) (2 cr I, II) Lec 2.

Prereq: BIOC 831

Continuation of BIOC 831. Structural and biochemical aspects of DNA replication and gene expression, and biotechnology.

833. Biochemistry Laboratory (BIOS 833; CHEM 833) (2 cr I, II) Lab 4.

Prereq: BIOC 831 or concurrent enrollment

Introduction to techniques used in biochemical and biotechnology research including measurement of pH, spectroscopy, analysis of enzymes, chromatography, fractionation of macromolecules, electrophoresis and centrifugation.

834. Plant Biochemistry (AGRO 834; BIOS *834; CHEM 834) (3 cr II) Lec 3.

Prereq: BIOC/BIOS/CHEM 831

Offered every other year beginning spring 2007. Biochemical metabolism unique to plants. Relationships of topics previously acquired in general biochemistry to biochemical processes unique to plants. Biochemical mechanisms behind many physiological processes discussed in plant or crop physiology.

*836. Biophysical Chemistry (CHEM *836) (3 cr II) Lec 3.

Prereq: One semester of physical chemistry

Introductory course covering x-ray diffraction and protein structure, absorption, spectroscopy of biomolecules, linear and circular dichroic spectroscopy of proteins and nucleic acids, fluorescence probes, membrane dynamics, NMR, EPR, and Resonance Raman spectroscopy applied to biological systems. Energetics, enzyme kinetics, relaxation kinetics, allosteric systems, and hydrodynamics.

837. Research Techniques in Biochemistry (BIOS 837) (4 cr II) Lec 1, lab 9.

Prereq: CHEM 116 or 221 and BIOC 833, or permission

For advanced undergraduate and beginning graduate students who plan a career in laboratory work within the life sciences. Practical applications of biochemical methodology to studies in the life sciences. Practical experience with quantitation by spectrophotometry, chromatographic and electrophoretic fractionation of proteins and nucleic acids, detection of biomolecules by immunological and DNA hybridization techniques, and analysis of data with a microcomputer.

*838. Molecular Biology Laboratory (VBMS *838) (5 cr III) Lec 6, lab 27.

Prereq: BIOC 832, BIOS 312 and 313, an advanced course in genetics and permission

Students may use a gene of their own interest if they have a suitable probe. Basic techniques for bacteriophage and plasmid molecular cloning; dideoxy DNA sequencing.

*839. Survey of Biochemistry (BIOS *839; CHEM *839) (3 cr I) Lec 3.

Prereq: Permission

Comprehensive survey of biochemistry for incoming graduate students. Topics include those in BIOC 831 and 832, but not all topics discussed in lecture periods. Depth enhanced by assigned readings.

*848. Redox Biochemistry (CHEM *848) (3 cr) Lec 3.

Prereq: 3 hrs BIOC and 3 hrs inorganic chemistry

Redox (oxidation and reduction)-based biochemical processes (energy generation, oxygen transfer, enzyme catalysis, signaling, gene regulation, and diseases). Recent progress in these areas. Roles of metals in biochemical reactions, metal homeostasis, and biosynthesis of metal cofactors and metal sites. Biochemistry and pathophysiology of redoxactive species and radicals. Antioxidant molecules and enzymes.

*869. Chemistry for Secondary School Classrooms (BIOS *883; CHEM *869; TEAC *869) (1 cr, max 12)

Credit in this course will not count towards a graduate degree in chemistry or biochemistry or biological sciences. Course taught via World Wide Web. Chemistry content for high school teachers organized according to the National Science Education Standards. Individual course coverage includes: content, integration with other sciences and mathematics, graphing calculators, probe-experiments, simulations, at-home experiments, teaching materials, and industrial applications related to the title description.
A. Structure and Properties of Matter: Water and Solutions (1 cr)
B. Structure and Properties of Matter: Periodicity (1 cr)
D. Structure and Properties of Matter: Bonding and Structure (1 cr)
E. Structure and Properties of Matter: Carbon Chemistry and Polymers (1 cr)
J. Structure and Properties of Matter: Gases and the Atmosphere (1 cr)
K. Chemistry of Life Processes: Biomolecules (1 cr)
L. Structure and Properties of Matter: Condensed States and Materials Science (1 cr)
M. Interactions of Matter and Energy (1 cr)
N. Chemistry of Life Processes: DNA (1 cr)
P. Chemistry of Life Processes: Energy and Metabolism (1 cr)
Q. Chemical Reactions: Equations and their Consequences (1 cr)
R. Chemical Reactions: Acids and Bases (1 cr)
T. Chemical Reactions: Kinetics (1 cr)
U. Chemical Reactions: Oxidation, Reduction and Electrochemistry (1 cr)
V. Equilibrium: Unifying Theme (1 cr)
W. Conservation of Energy and the Increase in Disorder: Thermodynamics (1 cr)
Y. Inquiry and the Nature of Science: Analysis and Instrumentation (1 cr)
Z. Structure of Atoms: Nuclear Chemistry (1 cr)

886. Advanced Topics in Biophysical Chemistry (BIOS 886; CHEM 886) (3 cr)

Prereq: CHEM 871 or 881

Applications of thermodynamics to biochemical phenomena, optical properties of proteins and polynucleotides, and kinetics of rapid reactions.

*898. Research in Biochemistry (1-6 cr I, II, III)

Prereq: BIOC 833 and permission

Laboratory research on a specific problem under the supervision of a biochemistry faculty member.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

932. Proteins (BIOS 932; CHEM 932) (3 cr) Lec 3.

Prereq: BIOC 832 or *839, or permission

Classification, composition, purification and function of proteins.

933. Enzymes (BIOS 933; CHEM 933) (3 cr) Lec 3.

Prereq: BIOC 832 or *839, or permission

Kinetics regulation and reaction mechanisms of enzymes.

934. Nucleic Acids (BIOS 934; CHEM 934) (3 cr II) Lec 3.

Prereq: BIOC 832 or *839 or permission

Structure and function of nucleic acids and nucleoproteins. Assessment of current research in nucleic acid biochemistry.

935. Metabolic Function and Dysfunction (BIOS 935; CHEM 935) (3 cr) Lec 3.

Prereq: BIOC/CHEM/BIOS 432/832 and permission

BIOC/CHEM/BIOS 935 is offered even-numbered calendar years.

Current metabolic research at the bioenergetic, metabolomic, and molecular level. The normal metabolic processes that go awry in cancer, obesity, and oxidative stress.

949. Biochemistry of Nutrition (ASCI 949; BIOS 949; NUTR 949) (3 cr I) Lec 3.

Prereq: BIOC 832 or *839, or permission

Offered odd-numbered calendar years. Interrelationships of nutrients, nutritional state and metabolic processes. Energy metabolism, integration of nutrition and metabolism and nutritional regulation of gene function.

992K. Seminar in Biological Chemistry (CHEM 992K) (1-2 cr, max 2 I, II)

Prereq: BIOC 832 or *839; and permission

998. Advanced Topics in Biochemistry (1-3 cr, max 3)

Prereq: BIOC 832 and *839

BIOC 998 is a special biochemistry topics when faculty and student needs cannot be met by other courses.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Director for the Center for Biological Chemistry: Paul N. Black, Ph.D.

Graduate Chair: Melanie Simpson , Ph.D.

Graduate study in biochemistry is pursued through the Center for Biological Chemistry, which has responsibility for instructional programs, undergraduate degrees, and graduate degrees in biochemistry. The purpose of the program is to provide training in biochemistry that will prepare students for professional careers in agricultural, biomedical or natural sciences, with particular emphasis on carrying out and interpreting contemporary research. The program is designed to provide sufficient depth that the student will be at the state of the art in his/her area of specialization. At the same time, the program is designed to provide sufficient breadth that the student can understand current studies in related areas of biochemistry. This balance is important because nationally, many students change areas of specialization at some point after receiving their PhD degrees.

The faculty of the Center for Biological Chemistry is made up of faculty from the Department of Biochemistry and participating faculty in animal science, agronomy and horticulture, biological sciences, chemistry, and veterinary and biomedical sciences.

Applicants for graduate work in the Center for Biological Chemistry must have a BS or BA degree in biochemistry, biology, chemistry, or a related field. Undergraduate work should include at least one course in biochemistry, one course in genetics, one course in physical chemistry (calculus based), one year of organic chemistry, and one year of physics. Deficiencies in these requirements will be made up during the first year of graduate study. The verbal, quantitative and analytical parts of the Graduate Record Examination are required for a student to be considered for admission. The advanced Graduate Record Examination in biochemistry, biology, or chemistry is recommended. Foreign students whose native language is not English must have a minimum TOEFL score of 550.

Further information about admission and graduate programs can be obtained from the Center for Biological Chemistry, N200 Beadle Center, City Campus. Also visit the biochemistry Web site at biochem.unl.edu.

Master of Science Degree.

All students must take BIOC 831/832/998 and at least 2 credits of biochemistry seminar (BIOC 992K). Other course requirements are arranged in consultation with the Examining Committee. Students under Option I (advance permission is required to use Option II) must earn a minimum of 30 hours of credit, consisting of 20 to 24 hours of courses (including seminar) and 6 to 10 hours of thesis credit. At least one half of the required hours (including thesis) must be taken in the Center. At least 8 hours must be taken in courses only open to graduate students (900 level or 800 level without a 400 counterpart). Students will be required to assist with teaching biochemistry courses for a minimum of one semester.

Each student must pass a written comprehensive examination formulated and administered by the Examining Committee. The purpose of the exam is to test the student's breadth of knowledge in biochemistry.

Students in the Option I program must complete an original research project, write a thesis, and present a publicized seminar

open to faculty and students at which the work comprising the MS thesis is presented. Each student must pass a final oral examination administered by the Examining Committee.

Doctor of Philosophy Degree.

The PhD in the Center for Biological Chemistry is a research degree providing in-depth education in an area of biochemistry. Course requirements are arranged in consultation with the student's Supervisory Committee but should include credit hours in BIOC 831/832/998 and 4 credits in a biochemistry seminar (BIOC 992K). There is a requirement to assist with teaching biochemistry courses for a minimum of 2 semesters.

Students must pass a comprehensive examination consisting of written and oral components. This examination will include preparation and defense of an original research proposal and the student's Supervisory Committee is responsible for administering the exam.

Students must complete an original research project, write a dissertation, formally present and defend the research work in a seminar, and pass a final oral examination covering the research work and thesis administered by the Supervisory Committee. The PhD degree is principally a research degree; thus, this is the most important requirement in the program.

Minor in Biochemistry.

To fulfill the requirements for a minor in biochemistry, graduate students outside the Center for Biological Chemistry are required to complete at least 9 credits in BIOC-listed or cross-listed courses at the 800 or 900 level, with at least 3 credits at the 900 level (masters degree) and at least 15 credits in BIOC-listed or with at least 6 credits at the 900 level (doctoral degree).

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Bailey, Cheryl -2006; Assistant Professor; BA 1990, PhD 1999 Iowa
- Barycki, Joseph J. -2002; Associate Professor; BS 1991 Rochester; PhD 1996 Delaware
- Basset, Gilles -2006; Assistant Professor; PhD 2000 Bordeaux (France)
- Becker, Donald F. -2003; Associate Professor; BA 1989 Bethel College (St. Paul); PhD 1994 Minnesota
- Black, Paul N. - 2008; Professor and Chair; BS 1978 Colorado State; Ph.D. 1983 Vermont
- DiRusso, Concetta - 2008; Professor; BA 1975 Hampshire College; Ph.D. 1982 Vermont
- Fomenko, Dmitri - 2008; Assistant Professor; Ph.D. 1999 Russian Academy of Sciences
- Gladyshev, Vadim N. -1998; Charles Bessey Professor; PhD 1992 Moscow State
- Griep, Mark A. -1990; Associate Professor; BS 1981, PhD 1986 Minnesota
- Lee, Jaekwon -2003; Assistant Professor; BS 1988 Chungnam National (Korea); MS 1992 Seoul National (Korea); PhD 1998 Rutgers
- Lou, Marjorie -1994; Willa Cather Professor; BS 1960 National Taiwan; MS 1962 Virginia Tech; PhD 1966 Boston
- Markwell, John P. -1982; Professor; BA 1970 North Park (Chicago); PhD 1976 Michigan State
- Miner, Jess L. -1996; Associate Professor; BS 1984 Nebraska (Lincoln); MS 1986 Montana State; PhD 1989 Missouri
- Nickerson, Kenneth -1975; Professor; BS 1963 Rutgers; PhD 1969 Cincinnati
- Parkhurst, L. J. -1969; Hewett University Professor; BA 1959, MS 1960, PhD 1965 Yale
- Sarath, Gautam -1994; Adjunct Professor; BSc 1974, MSc 1976 Delhi (India); PhD 1984 California (Davis)
- Simpson, Melanie -2002; Associate Professor; BS 1992, PhD 1997 Minnesota
- Sommerville, Greg -2004; Assistant Professor; BS 1988, MS 1993, PhD 1999 Texas (Dallas)
- Soundarajan, Madhavan -2001; Senior Lecturer; BS 1967, MS 1969, MPhil 1977 Madras; PhD 1981 Brigham Young
- Spreitzer, Robert J. -1984; Charles Bessey Professor; BS 1974 Cleveland State; PhD 1980 Case Western Reserve
- Staswick, Paul E. -1985; Professor; BS 1978 Washington State; PhD 1982 Purdue
- Stone, Julie. -2001; Associate Professor; BS 1986, MS 1992 Wisconsin (Madison); PhD 1996 Missouri (Columbia)
- Weeks, Donald P. -1989; Professor; BS 1963 Purdue; PhD 1967 Illinois
- Wilson, Mark -2005; Assistant Professor; BS 1995 Rochester; MS 1998, PhD 2001 Yale
- Wood, Charles -1995; Lewis Lehr/3M University Professor; MA 1976, MPhil 1976, PhD 1981 Columbia
- Zempleni, Janos -2001; Associate Professor; BS 1988, PhD 1992 Giessen (Germany)

Courses for Biological Sciences (BIOS)

Biological Sciences

*803. Principles of Evolution (2 cr) Lec 2.

Micro- and macroevolutionary patterns and processes. Population genetics, evolutionary ecology, speciation, phylogenetic systematics, and biogeographic patterns of extant and extinct taxa.

*804. Principles of Behavioral Ecology (2 cr) Lec 2.

Introduction to the ecology and evolution of animal behavior.

*805. Principles of Ecology (2 cr) Lec 2.

Ecological principles at the populations, community, and ecosystem levels. Population growth, meta-population dynamics, competitive and predatory interactions, temporal and spatial variation in community food webs, tropic cascades, patterns and mechanisms underlying species diversity, ecosystem processes, nutrient cycling, and global change.

806. Insect Ecology (ENTO 806) (3 cr II) Lec.

Prereq: BIOS 220 and 222

Interrelationships of the biotic and abiotic factors as they influence insect development, behavior, distribution, and abundance.

807. Biology of Cells and Organelles (4 cr)

Prereq: BIOS 201 and 301, or permission

Regulation and timing of macromolecular synthesis during the cell cycle; the genetic autonomy of mitochondria and chloroplasts.

808. Functional Histology (VBMS 808) (4 cr II) Lec 3, lab 2.

Prereq: BIOS 101 and 101L, or 102 or 112; BIOS 213 or ASCI 240

Recommended BIOS 315. Microscopic anatomy of the tissues and organs of major vertebrate species, including humans. Normal cellular arrangements of tissues and organs as related to their macroscopic anatomy and function, with reference to sub-cellular characteristics and biochemical processes. Functional relationships among cells, tissues, organs and organ systems, contributory to organismal well being. General introduction to pathological processes and principles underlying some diseases.

*809. Professionalism (1 cr) Lec 3.

P/N only. Discussion of skills needed to be a professional scientist including: writing, submitting, editing, and revision of journal articles and grant proposals; preparation or oral and poster presentations; and ethical issues in research and teaching.

*810. Plant Molecular Biology (AGRO *810; BIOC *810; HORT *810) (3 cr II) Lec 3.

Prereq: AGRO 315 or BIOS 206; BIOC 831 or permission

Molecular genetic basis of biological function in higher plants. Genome organization, gene structure and function, regulation of gene expression, recombinant DNA, and genetic engineering principles. Material taken primarily from current literature.

*811. Plant Tissue Culture (HORT *811; NRES *811) (4 cr II) Lec 2, lab 4.

Prereq: BIOS 109; AGRO 325 which includes CHEM 109, 110; or equivalent

Survey of techniques used in plant cell, tissue and organ culture, including current research. Laboratory emphasizes practical manipulation of plant cells, tissues, and organs, including examples from woody and herbaceous plant species.

812. Human Genetics (3 cr) Lec 2, rct 1.

Prereq: BIOS 101 and 101L, or 102/102H; BIOS 206

Three semesters high school algebra or equivalent recommended. Genetic basis of human variation, with emphasis on methods of applying genetic principles to human kind. Genetic ratios in pooled data; population and quantitative genetics; consanguinity; polygenic inheritance; blood types; sex linkage; linkage and crossing over, sex determination; visible chromosome variation; mutation; heredity and environment; eugencis; anthropological genetics; molecular genetics and molecular basis of disease; human genome project.

*813. Animal Physiology I (ASCI *845; VBMS *845; VMED 645) (6 cr I) Lec 5, lab 3.

Prereq: For ASCI/VBMS *845/BIOS *813: CHEM 251; BIOS 112 or ASCI 240

Prereq for VMED 645: First year standing in VMED. Primarily for students in animal or biological sciences or veterinary medicine. Mammalian physiology and cellular mechanisms. Microscopic anatomy and physiology of cells, tissues, cardiovascular system, respiratory system, and urinary system.

*814. Animal Physiology II (ASCI *846; VBMS *846; VMED 646) (6 cr II) Lec 5, lab 3.

Prereq: ASCI/VBMS *845/BIOS *813/VMED 645

Primarily for students in animal or biological sciences or veterinary medicine. Mammalian physiology and cellular mechanisms. Microscopic anatomy and physiology of the digestive system, endocrine system, and reproductive system.

815. Developmental Biology (3 cr) Lec 3.

Prereq: 12 hrs BIOS

Survey of topics in developmental biology, both animal and plant development.

*816. Computer-Aided Sequence Analysis Primer (VBMS *818) (2 cr I)

Prereq: BIOC 831 or BIOS 801 or 820

Introductory course in biological sequence display, analysis and manipulation with computers. Applied rather than theoretical aspects of different programs are emphasized providing skills to satisfy the analysis demands of molecular biology research. Students completing this course will be able to search, display and analyze the biological information content of macromolecules.

*817. Plant-Water Relations (AGRO *807; NRES *807) (3 cr I) Lec 3.

Prereq: AGRO 325 or equivalent; MATH 106 recommended

Quantitative study of water relations in the soil-plant-atmosphere system. Basic physical processes, which describe the movement of water in the soil and the atmosphere, and the physiological processes, which describe water movement inside of the plant. Stomata physiology and the effects of internal water deficits on photosynthesis, respiration, nitrogen metabolism, cell division and cell enlargement. Results from integrative models used to study the relative importance of environmental versus physiological factors for several plant-environment systems.

818. Advanced Genetics (3 cr)

Prereq: 12 hrs biological sciences including BIOS 206 or equivalent

Principles and methodology of genetics, with emphasis on Drosophila: multiple alleles and complex loci, linkage and recombination, chromosome rearrangements, fine structure analysis, sex determination, recombinant DNA, and gene function in development.

819. Behavioral Neuroscience (PSYC 865) (2-3 cr)

Prereq: 12 hrs psychology or 12 hrs biological sciences, including PSYC or BIOS 373

Relationship of physiological variables to behavior: an introduction to laboratory techniques in neuropsychology.

820. Molecular Genetics (VBMS 820) (3 cr)

Prereq: 12 hrs biological sciences including BIOS 206 or equivalent

Molecular basis of genetics. Gene structure and regulation; transposable elements; chromosome structure; DNA replication, repair mechanisms and recombination.

822. Comparative Physiology (3 cr)

Prereq: BIOS 213, BIOS 823 recommended

Comparative physiology with emphasis on the diversity of adaptations in basic physiological systems and the effects of environmental parameters upon such systems. Comparative physiology of osmoregulation, temperature regulation, metabolism, muscle, central nervous function, and sensory function.

823. Advanced Animal Physiology (3 cr) Lec 3.

Prereq: BIOS 213 or equivalent and one semester organic chemistry

More detailed mechanisms operating in selected physiology systems of man and other animals. Neural, cardiovascular, renal, and endocrine systems. Additional areas examined if time permits.

*824. Fundamentals of Ecological and Evolutionary Physiology (1 cr) Lec 1.

Prereq: Permission

Fundamental concepts associated with evolutionary and ecological approaches to the study of whole organism physiology.

825. Plant Biotechnology (3 cr) Lec 3.

Prereq: BIOS 109 and 301, or permission

Introduction to the use of plants for basic and applied purposes by deliberate manipulation of their genomes; techniques in plant genetic engineering; manipulation of plant development and metabolism; engineering pest, disease, and stress resistance; plants as bioreactors; and environmental and social impacts of plant biotechnology.

827. Practical Bioinformatics Laboratory (3 cr)

Prereq: BIOS 206 or equivalent

No programming skill is required. Basic knowledge and skills needed for general bioinformatics, genomics and proteomics analyses; various computational analyses including database search, sequence alignment, phylogenetic reconstruction, gene prediction/mining, microarray data analyses and protein structure analyses.

828. Perl Programming for Biological Applications (3 cr) Lec 3.

Prereq: 12 hrs BIOS

Computer programming, using Perl, as applied to biological sciences, bioinformatics, computational biology, and genomics.

829. Phylogenetic Biology (4 cr) Lec 3, rct 1.

Prereq: BIOS 102 or 206; BIOS 103; BIOS 207 or parallel; or equivalent

Basic principles of phylogenetic inference and emphasis on the application of phylogenetic hypotheses in biology and biomedical sciences. How inferences from phylogenetic trees can be applied to areas of biological investigation, including: systematics, biogeography, conservation biology, molecular evolution, behavior, and macroevolution.

831. Biomolecules and Metabolism (BIOC 831; CHEM 831) (4 cr I, II) Lec 4.

Prereq: CHEM 252 or 262

BIOS 102 recommended. First course of a two-semester comprehensive biochemistry course sequence. Structure and function of proteins, nucleic acids, carbohydrates and lipids; nature of enzymes; major metabolic pathways; and biochemical energy production.

832. Gene Expression and Replication (BIOC 832; CHEM 832) (2 cr I, II) Lec 2.

Prereq: BIOC 831

Continuation of BIOC 831. Structural and biochemical aspects of DNA replication and gene expression, and biotechnology.

833. Biochemistry Laboratory (BIOC 833; CHEM 833) (2 cr I, II) Lab 4.

Prereq: BIOC 831 or concurrent enrollment

Introduction to techniques used in biochemical and biotechnology research including measurement of pH, spectroscopy, analysis of enzymes, chromatography, fractionation of macromolecules, electrophoresis and centrifugation.

*834. Plant Biochemistry (AGRO 834; BIOC 834; CHEM 834) (3 cr II) Lec 3.

Prereq: BIOC/BIOS/CHEM 831

Offered every other year beginning spring 2007. Biochemical metabolism unique to plants. Relationships of topics previously acquired in general biochemistry to biochemical processes unique to plants. Biochemical mechanisms behind many physiological processes discussed in plant or crop physiology.

*835. Animal Biochemistry (VBMS *835) (3 cr II, even-numbered years) Lec/disc.

Prereq: BIOC 831 or permission

Biochemistry of animal cells and tissues, with integration of major metabolic pathways and aspects of their control mechanism.

836. Quaternary Paleoclimatology and Paleoecology (GEOL 823) (3 cr) Lec 3.

Prereq: 12 hours in GEOL or BIOS

Analysis and interpretation of the Quaternary period's paleoecological data. Patterns of long-term climate variation. Distribution patterns and responses of organisms and ecosystems to Quaternary environmental change.

837. Research Techniques in Biochemistry (BIOC 837) (4 cr II) Lec 1, lab 9.

Prereq: CHEM 116 or 221 and BIOC 833, or permission

For advanced undergraduate and beginning graduate students who plan a career in laboratory work within the life sciences. Practical applications of biochemical methodology to studies in the life sciences. Practical experience with quantitation by spectrophotometry, chromatographic and electrophoretic fractionation of proteins and nucleic acids, detection of biomolecules by immunological and DNA hybridization techniques, and analysis of data with a microcomputer.

838. Biogeochemical Cycles (GEOL 824) (3 cr) Lec 3.

Prereq: CHEM 109 or 113; 12 hrs geology or biological sciences

Chemical cycling at or near the earth's surface. Interactions among the atmosphere, biosphere, geosphere, and hydrosphere. Modern processes, the geological record, and human impacts on elemental cycles.

*839. Survey of Biochemistry (BIOC *839; CHEM *839) (3 cr I) Lec 3.

Prereq: Permission

Comprehensive survey of biochemistry for incoming graduate students. Topics include those in BIOC 831 and 832, but not all topics discussed in lecture periods. Depth enhanced by assigned readings.

840. Microbial Physiology (VBMS 840) (3 cr) Lec 3.

Prereq: BIOS 312 and either 313 or 314; or permission

Molecular approaches to the study of prokaryotic cell structure and physiology, including growth, cell division, metabolism, and alternative microbial life styles.

841. Pathogenic Microbiology (VBMS 841) (3 cr II) Lec 3.

Prereq: BIOS 312 and either 313 or 314, or permission

Fundamental principles involved in host-microorganism interrelationships. Identification of pathogens, isolation, propagation, mode of transmission, pathogenicity, symptoms, treatment, prevention of disease, epidemiology, and methods of control.

842. Endocrinology (ASCI 842; VBMS 842) (3 cr I) Lec 3.

Prereq: A course in vertebrate physiology and/or biochemistry

Mammalian endocrine glands from the standpoint of their structure, their physiological function in relation to the organism, the chemical nature and mechanisms of action of their secretory products, and the nature of anomalies manifested with their dysfunction.

843. Immunology (VBMS 843) (3 cr) Lec.

Prereq: BIOS 206 and one semester organic chemistry

BIOS 201 recommended. A fundamental consideration of cellular and humoral mechanisms of immunity, the structure and function of immunoglobulins, antigen-antibody interactions; hypersensitivity; transplantation and tumor immunity; immune and autoimmune disorders.

845. Food Microbiology (FDST 805) (3 cr I) Lec 3.

Prereq: BIOS 312, CHEM 251 and BIOC 321; or permission

Nature, physiology, and interactions of microorganisms in foods. Introduction to food-borne diseases, the effect of food processing systems on the microflora of foods, principles of food preservation, food spoilage, and foods produced by microorganisms. Food plant sanitation and criteria for establishing microbial standards for food products.

846. Food Microbiology Laboratory (FDST 806) (2 cr I) Lab 6.

Prereq: Parallel registration in FDST 805 or permission

Laboratory study of the microorganisms in foods and the methods used to study them as discussed in FDST 805.

847. Soil Microbiology (AGRO 860; NRES 860; SOIL 460) (3 cr II) Lec 3.

Prereq: One semester microbiology; one semester biochemistry or organic chemistry

Soil from a microbe's perspective-growth, activity and survival strategies; principles governing methods to study microorganisms and biochemical processes in soil; mechanisms controlling organic matter cycling and stabilization with reference to C, N, S, and P; microbial interactions with plants and animals; and agronomic and environmental applications of soil microorganisms.

848. Human Growth and Development (ANTH 848) (3 cr) Lec 3.

Prereq: ANTH 242 and 242L, or BIOS 101 and 101L

Biological diversity from an evolutionary perspective. History of study of human physical and biological principles of growth. Genetic, epigenetic, and hormonal effects on human and other mammal growth patterns and the environmental factors that influence growth including nutrition, disease, socioeconomic status, and pollution. Highlights of unique features and various stages of human growth, the anthropologist's interpretation of growth patterns among human populations, and possible adaptive significance of human variation.

*849. Woody Plant Growth and Development (HORT *849; NRES *849) (3 cr I) Lec 2.

Prereq: CHEM 251 and AGRO 325

Offered fall semester of odd-numbered calendar years. Plant growth and development specifically of woody plants as viewed from an applied whole-plant physiological level. Plant growth regulators, structure and secondary growth characteristics of woody plants, juvenility, senescence, abscission and dormancy.

850. Biology of Wildlife Populations (NRES 850) (4 cr II) Lec 3, lab 3.

Principles of population dynamics. Management strategies (for consumptive and nonconsumptive wildlife species) utilizing principles developed.

851. Advanced Molecular Biology Laboratory (2 cr) Lab.

Prereq: BIOS 205 and 206

A research project designed to give practical experience with a variety of molecular biology techniques.

853. Advanced Cell Biology Laboratory (2 cr)

Prereq: BIOS 205; BIOS 405/805 or parallel BIOS 805

A series of labs designed to acquaint students with modern techniques used in cell biology labs including plant and animal tissue culture, two-dimensional protein gels, immunoblotting, protein purification techniques, and the use of computers to analyze data.

854. Ecological Interactions (NRES 854) (4 cr) Lec 3, lab 4.

Prereq: BIOS 220 or equivalent

May also be offered at Cedar Point Biological Station. Nature and characteristics of populations and communities; interactions within and between populations and community structure and dynamics. Examples from plants and animals. Direct and indirect interactions and ecological processes, competition, predation, parasitism, herbivory and pollination. Structure, functioning and persistence of natural communities, foodweb dynamics, succession and biodiversity.

855. Great Plains Flora (4 cr) Lab and field 9.

Prereq: 12 hrs biological sciences or permission

May also be offered at Cedar Point Biological Station. Plant identification. Field study of the flora in various habitats. Field trips on grassland and woodland vegetation of this region.

856. Mathematical Models in Biology (NRES 456) (3 cr) Lec 3.

Prereq: MATH 106 and 107 or permission

Biological systems, from molecules to ecosystems, are analyzed using mathematical techniques. Strengths and weakness of mathematical approaches to biological questions. Includes: 1) brief review of college level math, 2) introduction to modeling, 3) oscillating systems in biology, 4) randomness in biology, 5) review of historically important and currently popular models in biology.

857. Ecosystem Ecology (GEOL 857) (4 cr) Lec 3, rct 1.

Prereq: BIOS 207 or 220

Processes controlling the cycling of energy and elements in ecosystems and how both plant and animal species influence this. Human influenced global and local change that alter these cycles and ecosystem functioning.

859. Limnology (NRES 859; WATS 459) (4 cr II)

Prereq: 12 hrs biological sciences, including introductory ecology, 2 sems chemistry

Lab by permission. Field trips, assigned readings. Physical, chemical, and biological processes that occur in freshwater; organisms occurring in freshwater and their ecology; the biological productivity of water and its causative factors; eutrophication and its effects.

*860. Advanced Limnology (NRES *866) (3 cr I)

Prereq: NRES 859 or equivalent

In-depth consideration of selected areas of limnology including stream limnology, primary production, secondary production, nutrient cycling, and eutrophication.

861. Marine Ecology and Paleoecology (GEOL 839) (2 cr) Lec 2.

Prereq: BIOS/NRES 220

Includes several field trips. Introduction to the fundamentals of marine ecology and application to paleoecology.

861L. Marine Ecology and Paleoecology Laboratory (GEOL 839L) (1 cr) Lab 3.

Prereq: Parallel GEOL 439/839

Lab includes several field trips.

862. Animal Behavior (3 cr)

Prereq: 12 hrs biological sciences or permission

Assigned reading. Introduction to animal behavior stressing the ethological approach. Anatomical and physiological bases of behavior, ontogenetic and phylogenetic observations, and the relations of animal behavior studies to genetics, ecology, taxonomy, and evolution.

863. Experimental Methods in Animal Behavior (3 cr)

Prereq: 12 hrs biological sciences including BIOS 862, or permission

Advanced course in animal behavior stressing an experimental approach. Proximate and ultimate bases of behavior and the relations of behavior to genetics, ecology and evolution investigated using classical methods and state-of-the-art techniques.

864. Fisheries Biology (NRES 864) (3 cr) Lec 3.

Prereq: BIOS/NRES 889 or equivalent

Biology of fishes. Factors that affect fishes in the natural environment. Techniques used in the analysis and management of fish populations.

*864A. Principles of Plant Pathology I (3 cr) Lec 2.

Prereq: PLPT 369 or equivalent; an introduction to biochemistry course

Epidemiology and disease control through cultural, biological, chemical and host plant resistance strategies.

*864B. Principles of Plant Pathology II (3 cr II) Lec 2.

Prereq: PLPT 369 or equivalent; an introduction to biochemistry course

Molecular and cellular approach to the study of plant pathological principles.

*865. Insect Transmission of Plant Diseases (ENTO *865) (2 cr II) Lec 2.

Prereq: 8 hrs biological sciences including BIOS 864 preceding or parallel and 6 hrs entomology or biological sciences (zoology)

Offered even-numbered calendar years. Relationships between plant diseases and their vectors with emphasis on virus diseases and transmission by aphids.

*866. Phytopathogenic Nemotodes (3 cr I) Lec 2, lab 3.

Prereq: BIOS 864A or *864B, or permission

Offered odd-numbered calendar years. Lecture and laboratory course concerning principles of nematode-induced disease of plants.

*867. Plant Pathogenic Bacteria (2 cr I) Lec 2.

Prereq: BIOS 312, 864A or *864B, and CHEM 832 or 836 or permission

Offered even-numbered calendar years. Principles and methods of identification, chemistry and function of cell constituents, role and characterization of antibacterial agents, spread and survival mechanisms of pathogenicity, host-parasite relations and control measures.

*867L. Plant Pathogenic Bacteria Lab (1 cr I) Lab 3.

Prereq: Parallel registration in BIOS *867

868. Field Animal Behavior (4 cr)

Prereq: 12 hours biological sciences or permission

Offered in the summer at Cedar Point Biological Station. Requires extensive field work and an independent research project. Behavior of animals. Methods for testing evolutionary hypotheses under field conditions with emphasis on foraging behavior, animal communication, and animal social systems.

*869. Phytopathogenic Fungi (3 cr II) Lec 1, lab 2.

Prereq: BIOS 312, 805, 864A or *864B; or equivalent and permission

Offered even-numbered calendar years. Ecology and taxonomy of plant pathogenic and plant associated fungi with emphasis on environment influences and on microbial interactions leading to biological control.

870. Prairie Ecology (4 cr)

Prereq: BIOS 302 or equivalent

Extensive field work is required. Structure, function, distribution of communities. Interaction of different species with their biotic and abiotic environment.

871. Plant Taxonomy (4 cr)

Prereq: 12 hrs biological sciences

Principles of plant classification, with emphasis on taxonomic procedures, nomenclatural rules, and plant identification. Laboratory work on taxonomic and analysis and plant identification.

873. Freshwater Algae (4 cr) Lec 3, lab 4.

Prereq: 12 hrs biological sciences

May also be offered at Cedar Point Biological Station. Classification, identification, and life histories of algae from freshwater, soil, and air.

874. Herpetology (NRES 874) (4 cr) Lec 4.

Prereq: BIOS/NRES 386

BIOS 388 recommended. May also be offered at Cedar Point Biological Station. Fossil and living amphibians and reptiles. Anatomy, classification, ecology, and evolution.

875. Ornithology (3 cr)

Prereq: 12 hrs biological sciences

Lab by permission. May also be offered at Cedar Point Biological Station. Review of avian biology, with emphasis on functional morphology, evolutionary relationships, and breeding biology.

875L. Ornithology Lab (1 cr)

Prereq: Parallel BIOS 894 and permission

876. Mammalogy (NRES 876) (4 cr) Lec 3, lab 3.

Prereq: 8 hrs BIOS; BIOS 386 or NRES 311

Field trips may include time outside regularly scheduled class. May also be offered at Cedar Point Biological Station. Evolution, natural history, ecology, and functional morphology of planetary mammals and mammals of the Northern Great Plains. Lab and field time emphasize diversity of mammalian families and species identification of Nebraska mammals.

877. Bioinformatics and Molecular Evolution (3 cr)

Prereq: BIOS 101 and 101L, or 102; BIOS 206 or parallel or CHEM 251, or equivalent

Basic statistics recommended. Pairwise and multiple alignments, sequence similarity and domain search, distance estimation, phylogenetic methods, gene mining, protein classification and structure. Algorithms used in bioinformatics. Fundamental concepts of molecular evolution that underlie various bioinformatics methods.

878. Plant Anatomy (4 cr)

Prereq: 8 hrs biological sciences, BIOS 109 recommended

Development, structure, and function of tissues and organs of the higher plants. Relationships of structure to physiology and ecology of plants.

*879. Plant Growth and Development (3 cr) Lec 3.

Prereq: AGRO 325; BIOS 478/878; CHEM 252 or BIOC/BIOS/CHEM 431/831

Processes involved in plant growth and development, seed formation, dormancy, germination, differential growth, flowering, and senescence. The role of extrinsic factors (e.g. light, water, and gravity) and intrinsic factors (e.g. formones, pigments, and energy sources) on these processes.

881. Helminthology (4 cr) Lec 2, lab 6.

Prereq: 12 hrs biological sciences including BIOS 385 and permission

Classification, morphology, biology of helminth parasites, chiefly of animals other than humans. Includes collection, preparation of specimens, and technique.

882. Field Entomology (ENTO 811) (4 cr)

Prereq: 12 hrs entomology or biological sciences and permission

Offered summers only at Cedar Point Biological Station. Field course in insect taxonomy and biology emphasizing field collection, specimen preparation, classification, and insect natural history.

*883. Chemistry for Secondary School Classrooms (BIOC *869; CHEM *869; TEAC *869) (1 cr, max 12)

Credit in this course will not count towards a graduate degree in chemistry or biochemistry or biological sciences. Course taught via World Wide Web. Chemistry content for high school teachers organized according to the National Science Education Standards. Individual course coverage includes: content, integration with other sciences and mathematics, graphing calculators, probe-experiments, simulations, at-home experiments, teaching materials, and industrial applications related to the title description.
A. Structure and Properties of Matter: Water and Solutions (1 cr)
B. Structure and Properties of Matter: Periodicity (1 cr)
D. Structure and Properties of Matter: Bonding and Structure (1 cr)
E. Structure and Properties of Matter: Carbon Chemistry and Polymers (1 cr)
J. Structure and Properties of Matter: Gases and the Atmosphere (1 cr)
K. Chemistry of Life Processes: Biomolecules (1 cr)
L. Structure and Properties of Matter: Condensed States and Materials Science (1 cr)
M. Interactions of Matter and Energy (1 cr)
N. Chemistry of Life Processes: DNA (1 cr)
P. Chemistry of Life Processes: Energy and Metabolism (1 cr)
Q. Chemical Reactions: Equations and their Consequences (1 cr)
R. Chemical Reactions: Acids and Bases (1 cr)
T. Chemical Reactions: Kinetics (1 cr)
U. Chemical Reactions: Oxidation, Reduction and Electrochemistry (1 cr)
V. Equilibrium: Unifying Theme (1 cr)
W. Conservation of Energy and the Increase in Disorder: Thermodynamics (1 cr)
Y. Inquiry and the Nature of Science: Analysis and Instrumentation (1 cr)
Z. Structure of Atoms: Nuclear Chemistry (1 cr)

884. Physiology of Exercise (NUTR 884) (3 cr) Lec, disc 2, lab 3.

Prereq: 12 hrs BIOS including BIOS 213 or equivalent, and BIOS 214
Effects of physical activity on the circulatory, respiratory, and other physiological processes.

885. Aquatic Insects (ENTO 802; NRES 802) (2 cr II) Lec 2.

Prereq: 12 hrs biological sciences or permission
Biology and ecology of aquatic insects.

885L. Identification of Aquatic Insects (ENTO 802L; NRES 802L) (1 cr II) Lab 1.

Prereq: Must be taken parallel with ENTO/NRES 802/BIOS 885
Identification of aquatic insects to the family level.

886. Advanced Topics in Biophysical Chemistry (BIOC 886; CHEM 886) (3 cr)

Prereq: CHEM 871 or 881
Applications of thermodynamics to biochemical phenomena, optical properties of proteins and polynucleotides, and kinetics of rapid reactions.

887. Field Parasitology (4 cr)

Prereq: 12 hrs biological sciences or equivalent biological sciences course work
Offered summers only at Cedar Point Biological Station. Animal host-parasite relationships, epizootiology, ecology, host distribution, classification, and life cycle stages of animal parasites.

888. Natural History of the Invertebrates (4 cr)

Prereq: 12 hrs biological sciences
Offered summers only at Cedar Point Biological Station. Field course in invertebrate community relations stressing on-site observation of community components, natural history, and interactions.

889. Ichthyology (NRES 889) (4 cr I) Lec 3, lab 4.

Prereq: 12 hrs biological sciences
May also be offered at Cedar Point Biological Station. Fishes, their taxonomy, physiology, behavior, and ecology; the dynamics of fish stocks and factors regulating their production.

897. Special Topics in Biological Sciences (1-4 cr, max 24)

Prereq: 12 hrs BIOS and permission
Topic varies by semester.

898. Independent Research (1-8 cr, max 8) Ind.

Prereq: 12 hrs BIOS and permission
Independent study and laboratory or field investigation of a specific problem under the supervision of a staff member.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

902. Introduction to Biotechnology Core Research Facilities (1 cr)

Prereq: Permission

Survey of each of the Biotechnology Core Facilities primarily for incoming graduate students. Lectures cover theory and practical aspects of how to use the resources of each facility. Visits made to each of the core facilities. At course end student should have the necessary knowledge to use each facility.

910. Developmental Genetics (3 cr)

Prereq: General genetics or equivalent

Effects of various mutations on developing biological systems. Mechanisms by which the abnormal genome expresses its phenotype. Special consideration to vertebrate organisms.

911. Scanning Electron Microscopy (5 cr)

Prereq: Permission

Research project chosen by the student. Specimen preparation and techniques for the application of scanning electron microscopy to biological materials.

913. Transmission Electron Microscopy (3-5 cr)

Prereq: Permission

Students desiring to know about should register for 3 cr. Those desiring additional training and experience should register for 5 cr. They will complete individual projects including cytochemistry and high resolution autoradiography. Lectures, demonstrations, and laboratory work on the routine procedures of transmission electron microscopy including specimen preparation, viewing, micrograph processing, interpretation, analysis and application to biological problems.

915. Graduate Seminar (1-3 cr per sem)

Prereq: Permission

Topics include the following:
A. Graduate Seminar
D. Botany
E. Ecology
G. Cell Biology and Genetics
J. Ethnobotany
M. Microbiology
P. Parasitology
W. Evolutionary Biology
Z. Other Topics

916. Research Seminar (1 cr, max 10)

Aimed at improving research design in evolutionary biology. Experience with presenting scientific ideas, as well as help with specific project.

924. Molecular Phylogenetics (4 cr) Lec3, lab 1.

Prereq: Permission

Theory and methodology of phylogenetic inference based on molecular characters (mainly DNA sequences). Population genetic principles and analysis of microsatellite loci. Emphasis on project design, data analysis, and hypothesis testing. Training on current computer programs for phylogenetic analysis acquired.

932. Proteins (BIOC 932; CHEM 932) (3 cr) Lec 3.

Prereq: BIOC 832 or *839, or permission

Classification, composition, purification and function of proteins.

933. Enzymes (BIOC 933; CHEM 933) (3 cr) Lec 3.

Prereq: BIOC 832 or *839, or permission

Kinetics regulation and reaction mechanisms of enzymes.

934. Nucleic Acids (BIOC 934; CHEM 934) (3 cr II) Lec 3.

Prereq: BIOC 832 or *839 or permission

Structure and function of nucleic acids and nucleoproteins. Assessment of current research in nucleic acid biochemistry.

935. Metabolic Function and Dysfunction (BIOC 935; CHEM 935) (3 cr) Lec 3.

Prereq: BIOC/CHEM/BIOS 432/832 and permission

BIOC/CHEM/BIOS 935 is offered even-numbered calendar years.

Current metabolic research at the bioenergetic, metabolomic, and molecular level. The normal metabolic processes that go awry in

cancer, obesity, and oxidative stress.

940. Microbial Diversity (3 cr)

Prereq: 6 hrs microbiology and BIOC 831 or permission

Diversity of microbial structures, shape, movement, metabolism, symbioses, and adaptations to extreme environments using both bacterial and fungal examples. A physiological approach used throughout.

941. Physiology of Anaerobic Microorganisms (3 cr)

Prereq: BIOS 312 and 831 or permission

BIOS 840 recommended. Methods of energy transduction, growth, and metabolism of anaerobic microorganisms from a variety of habitats. Microbes considered range from methane producers to photosynthetic bacteria. Molecular and phylogenetic analyses as well as interactions among microorganisms in anaerobic environments.

942. Genetics, Genomics, and Bioinformatics of Prokaryotes (VBMS 942) (3 cr)

Prereq: BIOS 241 and 312, or permission

Prokaryotic gene regulation, DNA exchange, DNA recombination and repair, comparative prokaryotic genomics and computer-based methods of analysis.

947. Industrial Microbiology and Biotechnology (3 cr)

Prereq: BIOS 312 or equivalent, BIOS 831 or 840 recommended, or permission

Biosynthetic activity of bacteria, yeasts, and fungi, including genetically engineered organisms: antibiotic, amino acid, enzyme, and vitamin production; polysaccharides, steroid transformation, microbes as food sources, microbial insecticides, petroleum microbiology, fermentation engineering, and mass production of microbial cells.

949. Biochemistry of Nutrition (ASCI 949; BIOC 949; NUTR 949) (3 cr I) Lec 3.

Prereq: BIOC 832 or *839, or permission

Offered odd-numbered calendar years. Interrelationships of nutrients, nutritional state and metabolic processes. Energy metabolism, integration of nutrition and metabolism and nutritional regulation of gene function.

950. Medical Molecular Virology (VBMS 950) (3 cr I) Lec.

Prereq: BIOS/CHEM/BIOC 431/831 and 432/832; VBMS *852

Offered odd-numbered calendar years. Current topics in molecular virology relevant to the natural history and pathogenesis of viral diseases of humans and animals.

951. Quantitative Analysis in Biology (4 cr)

Prereq: Permission

Surveys the kinds of quantitative problems that arise in biological research, particularly in field-oriented disciplines such as ecology, evolution and behavior, and the quantitative methods used to solve them. Practical learning of the strengths and weaknesses of different methods through the analysis of biological data on microcomputers.

952. Phylogenetic Co-evolution (3 cr) Lec 2, lab 1.

Prereq: BIOS 385 or 830 or permission, and a firm foundation in systematics and ecology

Use of computer required. Introduction and application of the concepts of phylogenetic co-evolution and historical ecology. Examination of the history of organisms and biotic associations as the foundation for studies in ecology and systematics. Computers used to examine methods of tree comparison and construction and to investigate experimental algorithms.

953. Advanced Population Ecology (3 cr)

Prereq: Permission

Ecological phenomena in populations. Quantitative description of population processes, life history strategies, foraging theory, resource interactions, population dynamics of competition and predation, and selected current topics in population ecology. Research methodology and historical development of the field as well as analysis, criticism, and synthesis of current research in the area.

955. Advanced Behavioral Ecology (3 cr) Lec 3.

Prereq: Previous course work in ecology or behavioral comparative psychology

Evolution of behavioral attributes of animals with respect to ecological conditions. Overview of the field and area of active research.

956. Biochemical Adaptation (3 cr)

Prereq: Permission; a course in biochemistry is strongly recommended

Major aspects of molecular/physiological adaptation in plants and animals including the evolution of metabolic pathways, enzyme function, and gene regulation.

957. Zoogeography (3 cr)

Prereq: Permission

Principles of dispersal of animals with ecologic and historic emphases.

958. Genetic Ecology (3 cr)

Prereq: Background in genetics and ecology

Interplay of genetics and ecology. Genetic basis of adaptation to environmental conditions and particularly the variety of ways in which this may occur.

959. Advanced Community Ecology (3 cr)

Prereq: Permission

Ecological and evolutionary forces responsible for patterns of numbers and types of species which coexist and form ecological communities. Mathematical models, coevolution, random processes, historical background, and examination of biotic interactions responsible for the observed patterns. Emphasis on critique and synthesis of current theory in light of empirical evidence.

960. Biosystematics and Nomenclature (ENTO 960) (2-3 cr) Lec 3, assigned readings.

Methods and principles of systematics and nomenclature.

962. Animal Communication (3 cr)

Prereq: Course work in ecology and/or evolution and/or animal behavior, or permission

Course work in physics recommended. Advanced introduction to the evolution of animal communication. Addresses evolution of signal structure (including acoustic, visual, electrical, and chemical signals), environmental effects on signal transmission, and the evolution of receiver responses to signals.

963. Genetics of Host-Parasite Interaction (AGRO 963; HORT 963) (3 cr I) Lec 2 (90 min each per wk).

Prereq: BIOS 206 or 820

Recommended BIOS 312; BIOS *864A or *864B; and BIOC 837. Offered even-numbered calendar years.

964. Signal Transduction (VBMS 964) (3 cr)

Prereq: BIOS 832, BIOS 820 or equivalent, or permission

Molecular basis of genetics in eukaryotes. Gene structure and regulation, transposable elements, chromosome structure, DNA replication and repair mechanisms and recombination.

965. Plant Pathology-Plant Virology (3 cr I) Lec 2.

Prereq: BIOS 864A or *864B or permission

Offered odd-numbered calendar years.

966. Advanced Viral Pathogenesis (VBMS 966) (3 cr)

Prereq: BIOS 843; VBMS 852 or equivalent introductory course in virology or experience

Advanced analysis on the mechanisms of cell and tissue damage by viruses, the spread of viruses through the body, and the host response.

968. Seminar in Plant Pathology (1 cr per sem)

Prereq: Permission

989. Research Design (3 cr) Lec 3.

Prereq: STAT 801 or equivalent

Basic logic of research design and methodology in ecology, evolutionary biology and behavior. Logic of scientific investigation, how to evaluate a dependent variable, the manipulation and control of independent, secondary and confounding variables, independence and pseudoreplication, the use of repeated measures designs and quasi-experimental designs.

996. Research (3-10 cr)

Prereq: Permission of instructor and departmental Graduate Committee

other than thesis.

998. Special Topics in the Life Sciences (1-24 cr)

Prereq: Permission

Reviews of specialized subject areas. Subject dependent on student demand and availability of staff.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Director of School of Biological Sciences: Alan Kamil, Ph.D.

Graduate Committee: Associate Professor Orti (chair); Professor Gardner; Assistant Professors Angeletti; Associate Professors Harris, Harshman, Mitra, Wagner

The major goal of the School of Biological Studies (SBS) is to develop an integrated perspective of biological sciences and to provide a well-rounded education based on a functional understanding that extends from fundamental cell and molecular biology to global ecology. The SBS graduate program is important to UNL and the state in that we are the only major biology department that awards the PhD in Nebraska. The breadth and diversity of the graduate program extends through several specific research interest clusters termed Graduate Research Emphasis Groups (GREGs). The GREGs represent formally approved groups of SBS faculty, adjunct faculty, and graduate students who share common research interests. The GREGs set forth requirements for graduate studies and also are intended to provide an interactive forum for more focused research interests that reflect SBS and interdepartmental strengths of the faculty. GREG research areas constitute specializations for degrees offered by the School of Biological Sciences. Our dedication to excellence in research, teaching, and training is evidenced by our funding support and our ability to attract outstanding postdoctoral fellows and graduate students. We train approximately 25 postdoctoral and 80 graduate students at any given time and take pride in launching our trainees into successful and productive careers ranging from biomedical researchers in industry, to postdoctoral faculty members at other institutions. For current GREG information, visit www.biosci.unl.edu.

Each application must be accompanied by scores from the General Test and any appropriate Subject Test of the Graduate Record Examinations (GRE). A statement (no more than 300 words) stating long-range goals and specific research interests and experiences is required. Applicants should indicate the kind of graduate work planned and identify the appropriate research area of interest. Applicants should have a minimum cumulative grade point average equivalent to 3.0 (B) or score in at least the 50th percentile in each portion of the GRE taken. Admission also depends on the nature of the applicant's interest and whether appropriate faculty, space, and facilities are available for the type of graduate training proposed. Entering graduate students are normally expected to have taken a year of physics, one semester of calculus, and chemistry through organic chemistry, or one semester each of organic chemistry and biochemistry.

Master of Science Degree.

Students admitted to the School of Biological Sciences identify one of the areas to pursue a degree. During the first semester after admission, it is the responsibility of each student, with the help of a faculty adviser, to seek a guidance interview to assess strengths and weaknesses in background and potential to complete the degree program. Degree requirements are those of the Graduate College and additional stipulations of various Graduate Research Emphasis Groups (GREGs). Option II is available to students in biological sciences only by special permission of the Graduate Committee obtained at the time of entry in the program. Option III is not open for masters degree programs in biological sciences.

Minor in Biology:

Masters students in other departments may seek a minor in biological sciences by fulfilling the appropriate course work. The student is required to make arrangements with the Graduate Committee in Biological Sciences before the program of studies is approved.

Specializations Available at the Masters Level:

Ecology, Evolution and Behavior, Genetics and Bioinformatics, Microbiology and Molecular Biology, Parasitology, Plant Pathology, Plant Systems Biology

Doctor of Philosophy Degree.

Entering doctoral students must affiliate with one of the GREGs of the School of Biological Sciences. During the first semester, each student will have a guidance interview as described in the masters program. A qualifying examination administered by the section is taken during the first academic year after admission. For the purpose of PhD advisory committees, the faculty of the School is divided into Graduate Research Emphasis Groups. A supervisory committee of at least five members representing two groups satisfies the graduate college requirement of an external member. The supervisory committee will guide the student's program of course work and determine need for additional training in supporting or deficient areas, and will determine, on an individual basis, training in one or both of the following areas: foreign language or special research techniques. Requirements for the degree differ from the general requirements of the Graduate College in that the oral comprehensive examination is the only examination that may be waived by special permission of the Graduate Committee.

Specializations Available at the Doctoral Level:

Ecology, Evolution and Behavior, Genetics and Bioinformatics, Microbiology and Molecular Biology, Parasitology, Plant Pathology, Plant Systems Biology

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Alfano, James -2000; Professor, Plant Pathology; PhD 1993 Washington State
- Angeletti, Anisa -2003; Research Assistant Professor; PhD 1993 Illinois State
- Angeletti, Peter -2003; Assistant Professor; PhD 1997 Alabama (Birmingham)
- Atkin, Audrey L. -1996; Associate Professor; BS 1985 Guelph; PhD 1992 Alberta
- Avramova, Zoya -2002; Associate Professor; PhD 1975 Moscow State

- Bachman, Gwen -1998; Associate Professor; BA 1983 California (San Diego); PhD 1992 California (Los Angeles)
- Baenziger, P. Stephen -1986; Professor, Agronomy; BA 1972 Harvard; MS 1974, PhD 1975 Purdue
- Barletta, Raul G. -1991; Professor, Veterinary and Biomedical Sciences; BS 1976, MS 1976 Universidad Nacional de LaPlata (Argentina); PhD 1987 Alabama (Birmingham)
- Basolo, Alexandra L. -1994; Professor; BS 1982 California (San Diego); MA 1984 San Francisco State; PhD 1990 Texas (Austin)
- Benson, Andrew K. -1996; Professor, Food Science and Technology; BS 1987 Iowa State; PhD 1992 Texas (San Antonio)
- Blum, Paul -1990; Professor; BA 1976 California (Berkeley); PhD 1984 California (Davis)
- Bond, Alan B. -1996; Research Professor; SB 1968 Chicago; PhD 1976 California (Berkeley)
- Brassil, Chad -2006; Assistant Professor; PhD 2005 Toronto
- Cerutti, Heriberto D. -1997; Associate Professor; Ingeniero Agronomi 1983 Nacional del Litoral (Argentina); PhD 1992 Cornell
- Chapman, Nora -1989; Associate Professor, Pathology/Microbiology UNMC; PhD 1981 Harvard
- Chia, Catherine -1991; Associate Professor; AB 1977 Cornell; PhD 1986 Michigan State
- Chollet, Raymond -1977; Professor, Biochemistry; BA 1968 Colgate; MS 1969, PhD 1972 Illinois
- Christensen, Alan C. -1994; Associate Professor; BS 1976, BS 1977, PhD 1982 Washington
- Elthon, Thomas E. -1989; Associate Professor; BS 1977 Arizona State; MS 1980, PhD 1983 Iowa State
- Feely, Dennis -1982; Associate Professor; BS 1971 Pepperdine; MS 1978 Northern Arizona; PhD 1980 Minnesota
- Freeman, Patricia -1981; Professor and Curator of Zoology, Museum; BA 1969 Randolph (Macon); PhD 1977 New Mexico
- French, Roy C. -1987; Adjunct Associate Professor, Plant Pathology; BS 1977 Colorado State; PhD 1983 Louisiana State
- Fritz, Sherilyn C. -1999; Professor, Geosciences; BA 1974 Macalester; MS 1979 Kent State; PhD 1985 Minnesota
- Funnell, Deanna -2002; Adjunct Assistant Professor, Plant Pathology; PhD 1996 Arizona
- Gardner, Scott L. -1995; Professor and Curator of Parasitology; MA 1983 Northern Colorado; PhD 1988 New Mexico
- Gibson, Robert -1998; Professor; BA 1974 Oxford; PhD 1978 Sussex (England)
- Giesler, Loren -2002; Associate Professor; PhD 1998 Nebraska (Lincoln)
- Hack, Mace -2002; Games & Parks; PhD 1994 California (San Diego)
- Harris, Steve -2001; Assistant Professor; PhD 1992 Michigan
- Harshman, Lawrence G. -1994; Associate Professor; BS 1975, MS 1977 California (Riverside); PhD 1982 SUNY (Stony Brook)
- Hebets, Eileen -2005; Assistant Professor; BA 1994 Albion; MS 1996 Cincinnati; MS 1998, PhD 2002 Arizona
- Herman, Patricia -1985; Research Assistant Professor; BA 1971 Mercyhurst; PhD 1984 Pittsburgh
- Hoagland, Kyle D. -1990; Professor, Natural Resource Sciences; BS 1973 Michigan State; MS 1975 Eastern Michigan; PhD 1981 Nebraska (Lincoln)
- Hutkins, R.W. -1987; Professor, Food Science and Technology; BS 1979, MS 1980 Missouri; PhD 1984 Minnesota
- Jackson, Tamara -2005; Assistant Professor, Plant Pathology; PhD 2005 Illinois
- Jameson, Mary Liz -1999; Research Associate Professor, Entomology, Museum; BS 1986, MS 1988 Nebraska (Lincoln); PhD 1997 Kansas
- Janovy, John Jr. -1966; Varner Professor; BS 1959, MS 1962, PhD 1965 Oklahoma
- Jones, Clinton -1989; Professor, Veterinary and Biomedical Sciences; PhD 1985 Kansas
- Kamil, Alan C. -1992; Holmes Professor and Director of Biological Sciences; BA 1963 Hofstra; MS 1966, PhD 1967 Wisconsin (Madison)
- Knops, Johannes (Jean) -1999; Associate Professor, Biological Sciences and Director of Cedar Point Biological Station; Ing 1982 Higher Agriculture College (Netherlands); Drs 1989 Utrecht (Netherlands); PhD 1994 Arizona State
- Leger, Daniel W. -1980; Professor, Psychology; AB 1973 Humboldt State; MA 1975 California (Riverside); PhD 1980 California (Davis)
- Louda, Svata -1983; George Holmes Professor; BA 1965 Pomona; BS 1968 Washington (Seattle); MA 1972 California (Santa Barbara); PhD 1978 California (Riverside)
- Mackenzie, Sally -1999; Distinguished Professor, Agronomy and Horticulture and School of Biological Sciences; BS 1981 California (Davis); PhD 1986 Florida
- Martin, Eugene L. -1971; Associate Professor; BA 1962 Princeton; MS 1966, PhD 1970 Rutgers
- Meagher, Michael -1995; Professor, Chemical Engineering; PhD 1987 Iowa State
- Mitra, Amitava -1989; Associate Professor, Plant Pathology; BS 1977, MS 1980, PhD 1985 Montana
- Moriyama, Etsuko -2001; Associate Professor; PhD 1988 Ochanomizu
- Morris, T. Jack -1990; Director and Distinguished Professor; BS 1968, MS 1970 McGill; PhD 1973 Nebraska (Lincoln)
- Nickerson, Kenneth -1975; Professor; BS 1963 Rutgers; PhD 1969 Cincinnati
- Orti, Guillermo -1997; Associate Professor; Licenciado en Biologia 1987 Buenos Aires; PhD 1995 SUNY (Stony Brook)
- Osorio, Fernando A. -1984; Professor, Veterinary and Biomedical Sciences; MV 1972 Buenos Aires (Argentina); MS 1982, PhD 1984 Iowa State
- Osterman, John C. -1983; Associate Professor and Vice Director; BA 1974 Hiram (Ohio); PhD 1979 Indiana
- Pardy, R. L. -1977; Professor; BS 1964 Northern Arizona; MS 1966, PhD 1969 Arizona
- Partridge, James -1978; Professor, Plant Pathology; BS 1966, PhD 1973 California (Riverside)
- Pattnaik, Asit -2002; Professor, Veterinary and Biomedical Sciences; PhD 1984 Griffith
- Pilson, Diana -1994; Associate Professor; BS 1980 Tufts; PhD 1990 Duke
- Powers, Thomas O. -1985; Associate Professor; BS 1976 Purdue; MS 1979 Florida; PhD 1983 California (Riverside)
- Qu, Feng -1994; Research Associate Professor; PhD 1992 Chinese Academy of Science
- Reinhard, Karl J. -1993; Professor; BA 1977 Arizona; MS 1984 Northern Arizona; PhD 1988 Texas A&M
- Russo, Sabrina -2007; Assistant Professor; PhD 2003 Illinois
- Schmidt, Michael A. -1987; Adjunct Assistant Professor; BS 1974, MS 1979, MD 1983 Nebraska (Medical Center)
- Siegfried, Blair -1990; Professor, Entomology; PhD 1989 Penn State
- Staswick, Paul -1985; Professor, Agronomy; BS 1978 Washington State; PhD 1982 Purdue
- Steadman, James R. -1969; Professor, Plant Pathology; BA 1964 Hiram; MS 1968, PhD 1969 Wisconsin

- Storz, Jay -2005; Assistant Professor; PhD 2000 Boston
- Tenhumberg, Brigitte -2006; Assistant Professor; PhD 1992 Göttingen (Germany)
- Thurston-Enriquez, Jeanette -2001; Adjunct Assistant Professor, Agronomy; PhD 2001 Arizona
- Tracy, Steven -1990; Associate Professor, Pathology/Microbiology UNMC; PhD 1979 California (San Diego)
- VanEtten, James L. -1966; Allington Professor, Plant Pathology; BA 1960 Carleton; MS 1963, PhD 1965 Illinois
- Veomett, George -1977; Associate Professor; AB 1966 Rochester; PhD 1972 Colorado
- Vidaver, Anne M. K. -1966; Professor, Plant Pathology; BA 1960 Russell Sage; MA 1962, PhD 1965 Indiana
- Wagner, William E. -1997; Associate Professor; AB 1984 California (Berkeley); PhD 1991 Texas (Austin)
- Wedin, David -1998; Associate Professor, Ecology, Natural Resource Sciences; PhD 1990 Minnesota
- Weeks, Donald P. -1989; Professor, Biochemistry; BS 1963 Purdue; PhD 1967 Illinois
- Wegulo, Stephen -2005; Assistant Professor, Plant Pathology; PhD 1997 Iowa State
- Wood, Charles -1996; Lehr 3M Endowed and University Professor; BA 1975 Kansas; MA 1976, MPhil 1976, PhD 1981 Columbia
- Yuen, Gary Y. -1989; Professor, Plant Pathology; BS 1977, MS 1980, PhD 1984 California (Berkeley)
- Zera, Anthony J. -1988; Professor; BS 1970 SUNY (Buffalo); MS 1977 Connecticut; PhD 1984 SUNY (Stony Brook)
- Zhang, Luwen -2001; Associate Professor; PhD 1993 Kansas Medical Center
- Zhou, You -1999; Research Assistant Professor; PhD 1991 Western Ontario

Courses for Marketing (MRKT)

Courses for Man agement (MNGT)

Courses for Finance (FINA)

Courses for School of Accountancy (ACCT)

Courses for Graduate Business Administration (GRBA)

Business

Subject Areas

- Graduate Business Administration (GRBA)
- School of Accountancy (ACCT)
- Finance (FINA)
- Man agement (MNGT)
- Marketing (MRKT)

*800. Ethical and Legal Considerations in Management (3 cr)

Prereq: Permission of the MBA director

Introduction to the Legal System; Introduction to Legislation and Impact on Business-State; Evolution of Concepts in Law; Introduction to Legislation and Impact on Business-Federal; Other Developing Legal Concepts; White Collar Crimes; Relationship of Business and Government-Concept of "Public Interest"; The Corporation-A Legal Perspective; Business and Ethics; Business and Religion; International Business Ethics; The "Professional Manager" in Business.

*801. Survey of Accounting (3 cr)

Prereq: Permission of the MBA director

A one-semester course for graduate students without prior study in financial and managerial accounting. Common Body of Knowledge materials as described by the American Assembly of Collegiate Schools of Business. Concepts essential to thorough understanding of managerial and business concepts and practices.

*802. JDEP Design Studio I (JDEP 802) (3 cr) Lec 3, lab 10.

Prereq: Admission to the MBA program; BSAD/CSCE/JDEP 402H

The first semester of a two semester sequence of the J. D. Edwards Design Studio. Application of software design principles in a team oriented project management setting. Complete projects in consultation with private and public sector clients.

*803. JDEP Design Studio II (JDEP 803) (3 cr) Lec 3, lab 10.

Prereq: Admission to the MBA program; GRBA/JDEP *802

The second semester of a two semester sequence of the J. D. Edwards Design Studio. Application of software design principles in a team oriented project management setting. Complete projects in consultation with private and public sector clients.

*804. Finance (3 cr)

Prereq: Permission of the MBA director

Foundation for studying advanced financial principles at the graduate level. Efficient resource utilization and associated costs. Portfolio theory, capital asset pricing model (CAPM), advanced budgeting techniques, cost of capital theory, financial forecasting, and financial planning.

*805. Marketing Management (3 cr)

Prereq: Permission of the MBA director

Examination of marketing system, its relations with the socioeconomic system, and the influences of each upon the other as these elements affect the management of marketing activities. Trends in the structure of marketing institutions, processes and practices. Consideration of customer attributes and behavioral characteristics, and how a marketing manager responds to these in the design of marketing strategies, using research, product development, pricing, distribution structure, and promotion.

*806. Management Theory and Organizational Behavior (3 cr)

Prereq: Permission of the MBA director

Behavioral science foundations of management theory. Techniques of human resource administration and utilization explored with particular emphasis on the behavioral science rationale for the application of these techniques.

*810. Contemporary Managerial Accounting (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Internal accounting as a tool to generate information for managerial planning and control. Problems and case material used to review basic financial accounting, to develop operational understanding of elementary cost systems, capital and operating budgeting concepts, incremental analysis, transfer pricing, performance evaluation, and other selected quantitative techniques available to assist management in the performance of the planning and control functions.

*811. Managerial Finance (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

A case course designed to meet the financial core requirement in the MBA program. Application of financial theory to business problems. Financial statement analysis, working capital management, capital structure planning, cost of capital, and capital expenditure analysis.

*812. Managerial Economics (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Applies economics to problems faced by managers in both the private and public sector. Consideration is given to the impact of the economic environment on decisions made by the firm including the effects of legal, regulatory and social constraints. Internal allocation of resources in organizations from an economic perspective. Economic tools that aid managers, including statistical analysis, are applied to practical decisions.

*813. Managerial Marketing (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Mixture of case discussions, readings, lectures, plus written and oral assignments. Development of analytical and decision making skills, and an understanding of the market forces which influence those decisions. Major emphasis on the decision areas of product, distribution, personal selling, advertising and pricing, as well as on the development of integrated marketing programs. Social, ethical, and global issues.

*814. Applied Organizational Behavior (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Critical behavioral science theories that contribute to the effective management of human behavior in organizations. Conceptual frameworks that help diagnose and explain the potential for common interpersonal problems. These models serve as the foundation for student efforts to develop behavioral skills and intervention techniques that promote effective individual and team activity leading to positive managerial experiences. Communication, power and influence, conflict management, and perception.

*815. Operations and Information Systems Strategy (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Understanding of how operations and information systems can be used to capture competitive advantage in the marketplace. Relationships between operations and information systems and other functional areas of organizations, e.g., marketing, finance, and engineering/research and development.

*851. Managerial Decision Making (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Advanced quantitative tools for aiding and enhancing managerial decision-making so that students develop skills for formulating, analyzing, and solving a wide range of interdisciplinary business problems. Decision-making under certainty, uncertainty and risk, and in competitive situations. Use of various quantitative models and computer-based tools, including problem formulation, interpretation of solution, sensitivity and shadow price, heuristic approaches, simulation and game models.

*852. International Business (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Reconsideration of marketing, management, accounting, and financial concepts within and between foreign environments. Understanding of alternative cultural, economic, and political systems which affect the operations of business firms. Attention to functional business decision making.

*853. Strategic Management and Business Policy (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Development and implementation of corporate strategies and policies. Interrelationships between the external and internal environments of the organization (including functional areas) are stressed through identification, analysis, and implementation of solutions to strategic situations facing varying types of organizations. Policy cases, live cases/industry analyses, and an executive-level simulation game. Bridging the gap between management theory and practice.

*860. Management: Theory, Issues and Practice (3 cr)

Prereq: Admission to the MBA program and/or permission of the MBA director

Historical background, various approaches to management, and the functions, roles, and activities of the modern manager within the organizational and environmental context. Contemporary issues such as total quality management, employee productivity, and international management. The theme and perspective is how to make the practice of management of today's organizations more effective.

*890. Administrative Internship (1-3 cr per sem)

Prereq: Admission to the MBA program and/or permission of the MBA director; and the permission of a graduate faculty member

Maximum of 6 semester hours of GRBA *890 can be counted towards a graduate degree. Students present oral and written reports to faculty seminar once a semester. Independent study of theories, principles, practices, techniques, and strategies utilized in the business field. Practical experience in managerial, administrative situations.

*896. Directed Readings or Research in Business (1-3 cr per sem)

Prereq: Admission to the MBA program and/or permission of the MBA director; and the permission of a graduate faculty member

*898. Managerial Skills Seminar (A, B, D, E, G, J) (1-3 cr per sem)

Prereq: Admission to the MBA program and/or permission of the MBA director

Seminar in current topics in business. Topical issues such as diversity, ethics, leadership, business communication, etc. New topics announced prior to each term in which the course is being offered.

*801. Financial Reporting and Analysis (3 cr)

Prereq: Permission of MBA or MPA director

Effective utilization of accounting information presented in financial statements. Primary financial statements, revenue recognition practices, the financial reporting system, the effects of accounting method choice on reported financial data, and firm valuation.

*802. Accounting Standards (3 cr)

Prereq: ACCT 810 with a grade of C or better, or permission

Analysis of changes in authoritative audit and accounting pronouncements. Besides topical coverage, recent discussion memoranda, technical bulletins, interpretations and statements of policy will be emphasized as to their integration into the accounting framework.

*803. Seminar in Financial Accounting (1-3 cr, max 3)

Prereq: Admission to the Masters of Professional Accountancy (MPA) program; or permission of MPA faculty adviser and instructor

The economic characteristics of accounting information as they relate to the role played by financial accounting reports in allocating capital.

804. Advanced Accounting (3 cr)

Prereq: ACCT 314 with grade of C or better, or permission

Special accounting problems relating to the preparation of combined and consolidated financial statements for accounting entities with branch offices and with subsidiaries, both domestic and foreign; partnership accounting; accounting for foreign currency transactions and translations; governmental and not-for-profit accounting.

*807. Professional Responsibility and Ethics in Accounting (3 cr)

Prereq: Permission of MBA or MPA director

Standards of ethical financial reporting and corporate governance in the context of the legal, regulatory, and social environments of corporate business. Acts of law and sanctions imposed for violations of standards of financial reporting.

808. Advanced Managerial Accounting (3 cr)

Prereq: ACCT 308 with grade of C or better and FINA 361, or permission

Advanced treatment of managerial accounting topics with emphasis on generation, communication, and use of information to assist management in performance of the planning and control function. Problem, case, and library materials and computer system analysis are used to develop understanding of overhead variance analysis, cost systems, capital budgeting, and other quantitative techniques relevant to internal accounting.

810. Auditing (3 cr)

Prereq: ACCT 309 and 314, both with a grade of C or better

Duties and responsibilities of auditors; method of conducting various kinds of audits; audit working papers; the preparation of the audit report; the auditor's certificate; special problems in the audit of different kinds of enterprises.

812. Federal Tax Accounting (3 cr)

Prereq: ACCT 313 with grade of C or better, or permission

Federal and state income tax concepts. The theory and the historical growth of the fundamentals of the federal tax laws and regulations. Practical application of the tax laws in the preparation of the tax returns (for wage earners and sole proprietors) and the need for tax planning.

*813. Advanced Federal Tax Accounting (3 cr)

Prereq: ACCT 812 and admission to the Master of Professional Accountancy Program

Application of federal and state tax laws as they pertain to corporations, partnerships, limited liability companies, estates, and trusts. Tax compliance, research, and planning.

*814. Governmental and Not-For-Profit Accounting (3 cr)

Prereq: ACCT 314

Accounting and reporting for governmental units and organizations established as not-for-profit corporations. Expanded treatment of fund accounting and reporting for agencies operated in and for the general public interest.

*815. Tax Research and Planning (3 cr)

Prereq: ACCT 812

Development of skills in identifying problems, interpreting facts, conducting research, and communicating results in the field of Federal taxation.

*816. Special Topics in Federal Taxation (3 cr)

Prereq: ACCT 812

Areas of Federal law that are especially relevant in the prevailing economic and political climate.

*817. The Income Tax and Management Decisions (3 cr)

Prereq: Courses constituting the equivalent of the undergraduate Common Body of Knowledge requirement for CBA

The impact of Federal income tax law on management decisions, more from the viewpoint of recognizing problems than prescribing solutions.

*818. Taxation-Farm and Ranch (AECN *818; LAW 618G; POLS *818) (1-4 cr)

Prereq: ACCT 812 or LAW 637/G

Selection of substantial income tax problems affecting farms and ranches.

*820. Accounting Policy (3 cr)

Prereq: Permission of MBA or MPA director

ACCT *820 is a capstone course for accountants. Extended application of accounting theory as it relates to both the public sector and the private sector. Environmental considerations and the international implications of accounting treatments. Use of cases and exposure drafts of proposed accounting pronouncements in accounting theory.

830. Advanced Auditing (3 cr)

Prereq: ACCT 810 with a grade of C or better, or permission

Internal and compliance auditing; auditor's ethics and liability; EDP auditing; audit sampling; special report writing; audit standards for state and local governmental entities and government agencies; review and discussion of selected audit cases; international auditing.

*831. Seminar in Auditing (3 cr)

Prereq: Admission to the Masters of Professional Accountancy (MPA) program; or permission of MPA faculty adviser and instructor

*837. Taxation-Individual Income (LAW 637G) (3-4 cr, max 4)

The structure and content of the federal income tax system, focusing on taxation of individuals. Income, deductions, income splitting, capital gains, and tax accounting. Technical proficiency in solving tax problems and an understanding of the tax policy decisions implicit in the technical rules.

*838. Taxation-Corporate (LAW 638G) (1-4 cr)

Prereq: LAW 637/G

Pre- or coreq: LAW 632/G. Advanced federal income tax focusing on income taxation of corporations and shareholders.

*840. Fraud Examination (3 cr)

Prereq: Permission

Explains fraud and provides a forum for discussing how fraud differs from other crimes. Includes fraud techniques, schemes, readings and study of actual fraud cases.

*848. Business Planning (LAW 648G) (1-4 cr)

Prereq: LAW 632/G, 638/G

Series of separate, rather detailed planning problems. Each problem calls for the selection and planning of a transaction to meet the needs of the parties involved, in light of applicable corporate, partnership, tax, and securities considerations.

*857. Controllership (3 cr)

Prereq: Admission to either the Masters of Professional Accountancy (MPA) or MBA program; or permission of MPA faculty adviser and instructor; ACCT 808 or GRBA 810

Rudiments of conceptual framework for designing and evaluating management accounting and control systems for business firms and situations. Case studies on the management aspects of budgeting, standard setting, variance analysis, cost allocation, operating control, transfer pricing, capital budgeting, performance evaluation, and other pertinent topics relating to managerial uses of accounting data.

*858. Seminar in Managerial Accounting (3 cr)

Prereq: Admission to either the Masters of Professional Accountancy (MPA) or MBA program; or permission of MPA faculty adviser and instructor

863. Taxation-Individual Income II (LAW 663G) (3 cr)

Most important tax principles affecting business and investments, as well as an introduction to basic tax procedure (both administrative and judicial), civil and criminal fraud, tax research, and certain ethical issues common in tax practice.

873. Business Law II (3 cr)

Prereq: ACCT 372 with grade of C or better, or permission

Basic legal principles to allow recognition or relevant issues and the legal implications of business situations. Applications of the principles of law to accounting and auditing. Political, social, and ethical implications. Specific study of bailments, uniform commercial, code labor relations, agency, business entities, ethics, and fiduciary relationships.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

904. Seminar in Accounting Theory (1-3 cr, max 3)

906. Seminar in Comparative Accounting Systems (3 cr, max 24)

Prereq: Permission (ordinarily at least two senior-level courses in accounting or ACCT *801 and suitable supporting courses)

A research seminar on the conceptual framework underlying selected accounting systems or subsystems. The specific systems studied vary depending upon interest and background of enrolled students, but ordinarily include insurance or other regulatory systems, governmental or other not-for-profit systems, Securities and Exchange Commission regulations, federal income tax rules, and foreign systems. Contrasts with traditional financial and managerial reporting systems and the reasons for the differences that exist.

916. Seminar in Contemporary Accounting Theory: Empirical Tests and Methodologies (3 cr) Lec 3.

Prereq: ACCT *803

Empirical validations and implications of accounting information. The convergence of accounting with other disciplines such as: behavioral sciences; portfolio theory; and information theory. Recent empirical studies such as: implications of the efficient capital market hypothesis on external financial reporting, information content of financial reports, and market perceptions of external accounting information.

920. History and Philosophy of Accounting Thought (3 cr)

Prereq: Permission

The historical development of accounting thought and the individuals, institutions, organizations, and philosophies that shaped its past and present and will influence its future.

945. Partnership Taxation (LAW 745G) (1-4 cr)

Prereq: ACCT 812 or LAW 637G

Survey of important principles of partnership taxation.

967. Estate Planning (LAW 767G) (1-4 cr)

Prereq: LAW 637/G

Pre- or coreq: LAW 639/G. Federal estate and gift taxation, related income tax rules, estate planning concepts, and state inheritance taxation.

968. Estate Planning Problems (LAW 768G) (1-4 cr)

Prereq: LAW 767/G

Problems of planning and implementing estate plans for clients of substantial wealth with emphasis on skills of drafting the various legal instruments usually required for comprehensive estate planning.

969. Tax Policy Seminar (LAW 769G) (1-4 cr)

Policies of federal income taxation with emphasis on current legislative proposals and alternatives.

990. Accountancy Internship (1-3 cr per sem, max 6)

Prereq: Admission to MPA program, permission of MPA adviser, and acceptance into approved internship program

Maximum of 6 sem hrs can be counted towards the MPA degree. Students present oral and written reports to faculty seminar once a semester. Independent study of theories, principles, practices, techniques, and strategies utilized in the accounting field. Practical experience in professional accounting situations through a preapproved internship program.

991. Seminar in Capital Market Research in Accounting (3 cr)

Prereq: Admission to PhD program, completion of research tools requirement, and permission

Capital market effects of accounting measurements and presentation, foundation of capital market research in accounting, methodology in conducting capital market research, and implication of capital market effects on accounting policy.

992. Seminar in Behavioral Accounting Research (3 cr)

Prereq: Admission to PhD program, completion of research tools requirements, and permission

MNGT 960 recommended. Behavioral factors in accounting system, design, audit judgment, decision making using accounting data, performance evaluation, accounting policy formation, and other accounting-related tasks.

993. Seminar in Analytical Accounting Models (3 cr)

Prereq: Admission to PhD program and permission

Measurement alternatives through modeling of choices and economic analysis of information choices.

995. Seminar in Contemporary Managerial Accounting: Selected Topics (3 cr, max 24)

Prereq: ACCT 858 or equivalent

May be repeated for credit if different subject matter. Special subjects in contemporary managerial accounting.

996. Directed Reading or Research (1-3 cr each registration)

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

807. Property and Liability Insurance (3 cr)

Prereq: FINA 307

Open to masters level and PhD students only. Analysis of risk theory, property and liability risks, and the economic functions of property insurance. Traditional and modern theories of risk, property and liability coverages, and functional insurance areas. The role of property and liability insurance in meeting current economic and social problems in urban core areas of major central cities.

812. Life Insurance (3 cr)

Prereq: FINA 307

Open to masters level and PhD students only. Analysis of the economic functions of life insurance. Human-life value concept and the basic forms of life insurance and annuities used in insuring life values. Life insurance pricing, functional company operations, legal aspects, and contractual provisions. Health and other specialized forms of human-life value insurance.

820. Employee Benefit Plans (3 cr)

Prereq: ECON 210, or 211 and 212; FINA 307

Analysis of group life insurance, group medical expense and disability income insurance, private pension plans, profit sharing and thrift plans, Section 401(k) plans, individual retirement accounts (IRAs), Keogh plans for the self-employed, group property and liability insurance, and other employee benefits. An analysis of major public policy issues.

838. Risk Management (3 cr)

Prereq: ECON 307, 407, and FINA 361, or permission

Identifies and analyzes major and minor pure loss exposures facing business firms, examines the alternative risk management techniques for dealing with these exposure, selects the most appropriate technique(s) for controlling each exposure, and monitors the financial results so that the risk management program remains effective. Actual risk management audits of business firms and case studies are used to integrate the concepts, techniques, and tools studies in the course.

*850. Multinational Financial Analysis (3 cr) Lec 3.

Prereq: GRBA 811 and permission

FINA 850 is open to masters level and PhD students only.

International aspects of financial management. Exchange risk analysis and management. Accessing international capital markets. International capital budgeting. Numerical optimization technique.

*855. Capital Markets and Financial Institutions (3 cr)

Prereq: FINA 365 or permission

Open to masters level and PhD students only. Analysis of the development and functions of the various financial institutions, with emphasis on the nonbank financial intermediary. Sources and uses of funds for each of the major types of intermediary, the nature and structure of financial markets, the behavior of financial institutions, and the theories of interest rate determination.

861. Advanced Finance (3 cr)

Prereq: FINA 361 or 360 and MATH 104

Open to masters level and PhD students only. Advanced development of the finance specialization with major emphasis on theoretical issues. Application of quantitative techniques and the role of capital markets into the external financing policy of the firm.

*863. Portfolio Management (3 cr) Lec 3.

Prereq: GRBA *811

The workings of securities markets. The fundamental intuition of the risk-return trade-off. The role of information in financial markets. All major asset pricing models and application to risk management in a portfolio context.

865. Bank Management (3 cr)

Prereq: FINA 361 and 365

Open to masters level and PhD students only. Bank asset management; policy and practices for reserves, loans, and investments. Internal organization of commercial banks. New problems and recent innovations in commercial banking.

*867. Options, Futures and Derivative Securities (3 cr)

Prereq: FINA *863 or equivalent

Open to masters and PhD students only. Analysis of the properties of derivative securities that are commonly encountered in practice. Examines the theoretical framework within which derivative securities can be valued. Discussion of alternative hedging strategies for financial institutions and portfolio managers.

882. Real Estate Finance (3 cr)

Prereq: FINA 382

Open to masters level and PhD students only. (This course may be used toward fulfillment of the Nebraska Real Estate Commission's educational requirements.) Consideration of procedure, instruments, techniques, and trends in financing urban real property; an examination of realty credit markets and sources of funds (private and public); valuation of real property for lending and investment purposes; and measurement of investment performance.

898. Special Topics (ACTS 898) (3 cr per sem)

Prereq: Permission

Special topics in actuarial science.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

907. Insurance Seminar (3 cr)

960. Financial Management (3 cr)

Prereq: Completion of the MBA core requirements

Open to masters level and PhD students only. Assuming a background of knowledge which includes the finance function in business and the technique of financial analysis, this course confronts the student with the unique role of financial management which relates both to the company as an operating entity and to the interest of the owners in the results of the operation.

961. Advanced Theory of Finance (3 cr)

Prereq: FINA 361

Open to masters level and PhD students only. Critical examination of the relation of the capital markets to the external financing problems of the firm. Advanced developments of the finance specialization with major emphasis on the theoretical issues.

965. Seminar in Banking (3 cr)

Open to PhD students only.

966. Seminar in Investments (3 cr)

Open to PhD students only.

968. Seminar in Finance (3 cr each)

Open to PhD students only.

973. Actuarial Risk Theory (ACTS 973) (3 cr)

Prereq: ACTS 870 with a grade of C or better

Advanced topics in actuarial theory including Utility Theory, Risk Theory, and Ruin Theory, and their applications.

975. Stochastic Calculus (ACTS 975) (3 cr) Lec.

Prereq: STAT 883 with a grade of C or better

Introduction to sigma-fields and information structures, the Riemann integral, the Riemann Stieltjes integral, the Lebesque integral, conditional expection, martingales, Brownian motion, the Ito integral and Ito calculus, equilibrium price measures, and the Black-Scholes option pricing model.

994. Seminar in Selected Subjects: Special Topics (3 cr)

Prereq: FINA 961

Open to PhD students only.

996. Directed Reading or Research (1-3 cr each registration)

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

821. Entrepreneurship and Venture Management (ENTR 821) (3 cr)

Prereq: ACCT 201 and 202, or 306; FINA 361; MNGT 331 and 360; MRKT 341

Aspects of starting and managing a new enterprise. Characteristics of entrepreneurs; the identification and evaluation of new venture opportunities-resource utilization; development of appropriate strategies and the successful planning, implementation and launching of a new business venture.

822. Small Business Management (ENTR 822) (3 cr)

Prereq: ACCT 201 and 202, or 306; FINA 361; MNGT 331 and 360; MRKT 341

Small businesses and owner management. Process of creating and managing one's own business, whether new or acquired. Actual involvement in small business organizations (e.g., internships, on-site visits and discussions, and consulting assignments). Cases relevant to small business are used.

823. Small Business Growth and Development (ENTR 823) (3 cr)

Prereq: ACCT 201 and 202, or 306; FINA 361; MNGT 331 and 360; MRKT 341

Financial human resource, operations and marketing issues that face entrepreneurs whose businesses are confronted with significant growth potential or that have matured. Franchising, initial public offerings, succession and estate planning. For course description, see MNGT 823.

828. International Management (3 cr)

Prereq: MNGT 360

US enterprises operating in the global economy. The manner in which cultural, economic, political, and social differences affect the management of business, governmental, military, and other enterprises is considered. Problems of managing in Latin America, Europe, and Asia.

831. Enterprise Management Systems (3 cr)

Prereq: MNGT 331 or equivalent

An analytical approach to the design, planning, and control of operations management systems, including both domestic and international, manufacturing and service operations.

837. Computer-aided Analysis in Decision Making (3 cr)

Prereq: BSAD 150 and MNGT/MIST 350

Analytical and simulation models for decision making in functional areas such as finance, accounting, marketing, personnel, operations, and inventory. Students learn how to construct decision models for practical applications. Analyzing alternatives and implementing solutions that result in increased productivity.

841. Topics in Management Science for Deterministic Systems (3 cr)

Prereq: BSAD 150 and permission

Selected topics in operations research/management science. Approaches for analysis of deterministically well-defined systems, the techniques' analytical underpinnings, and the foundation and structure of the management sciences approach. Application of the techniques. Linear programming, nonlinear programming, dynamic programming, network analysis, and/or other deterministic topics.

842. Topics in Management Science for Stochastic Systems (3 cr)

Prereq: BSAD 150 and permission

Topics in operations research/management science. Analysis of systems that change probabilistically or incorporate risk and

uncertainty, the techniques' analytical underpinning, providing insight into the foundation and structure of the management science approach. Application of the techniques. Decision analysis, game theory, Markovian decision processes, queuing theory, and/or other probabilistic or stochastic topics.

852. Database Organization and Management (MIST 852) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

Database technology and related human and managerial considerations. Databases from two perspectives: the logical view, as the manager and applications programmer see and use the organization's data; and the physical view, as the systems software programmers and database manager view the data. Theory on database organization and the practical applications of databases.

*853. Data Mining and Warehousing (MIST *853) (3 cr) Lec 3.

Prereq: MNGT 950 or equivalent course in statistics

Large scale data storage systems used in business. Statistical and data mining tools used for analyzing large sets of data. Sources of data that are internal and external to the organization. Primary data mining applications in business and demonstrated on representative data sets. Data warehouses, data marts, online analytic mining techniques used to support business operations. Application of actual software where possible.

854. Information Systems Analysis and Design (MIST 854) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

Methods and methodologies used in systems analysis, design, and implementation. Decision-making process, systems development life cycles, requirement analysis, logical and/or conceptual design, and basic database concepts.

855. Mobile and Ubiquitous Commerce (MIST 855) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

The impact of wireless and mobile technology on the ways in which business is conducted and the strategic implications of wireless applications in organizations.

856. Object-Oriented Systems Development (MIST 856) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

Object-orientation as an approach to developing information systems. Analysis, design and implementation of systems development from the object-oriented perspective. Object-orientation and object-oriented methods and methodologies.

857. Business Data Communications (MIST 857) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

Fundamentals of business data communications, and networking hardware and software. Communication protocols such as TCP/IP, Internet and electronic commerce.

858. Electronic Business (MIST 858) (3 cr) Lec 3.

Prereq: MNGT/MIST 350

Management related topics in electronic business: conceptualizing and maintaining e-business strategy. Economic impact of 3-business strategies and management practices, models of e-business, electronic payment systems, Internet security, ethics and privacy, and advanced e-business trends and issues.

859. Global Information Systems (MIST 859) (3 cr) Lec 3.

The worldwide political and economic changes in the last decade that have propelled city, state, country governments, and corporations to expand business globally and enter into new markets. Information technology (IT) has a key role in the globalization of business. The necessary concepts and ideas to understand the issues i the global or international use of information technology. IT environments around the world, national infrastructures and regulatory regimes, global IT application, global information systems (IS) development strategies, global management support systems, and global IT management strategies.

861. Advanced Personnel/Human Resource Management (3 cr)

Prereq: MNGT 361

Review and analysis of current policies, problems, and issues in personnel/human resource management. Students apply knowledge of P/HR principles, practices, policies, and procedures to the identification and solution of case problems.

862. Labor Relations (3 cr)

Prereq: MNGT 360 or ECON 381

Interdisciplinary approach to labor-management relations with emphasis upon collective bargaining and grievance administration. Appreciation of collective bargaining process is gained through the actual negotiating of a labor-management contract. On-going union-management relationships.

863. Compensation Administration (3 cr)

Prereq: MNGT 361

Design and administration of compensation systems. Determinants of general level of pay, pay structures, wage and salary

surveys, job analysis, job evaluation, performance evaluation, benefit plans and financial incentive systems.

864. Human Resource Planning (3 cr)

Prereq: MNGT 360 or 361 or ECON 381

Analytic exposure to human resource planning at the level of the organization and builds an understanding of human resource concepts, models, and problem-solving tools. Strategic planning, human resource planning, analysis of people-related business issues, and forecasting. Policy-setting and long-range planning for such human resource functions as job analysis, recruitment, selection, human resource information systems (HRIS), training and development management of diversity and compensation administrations.

865. Organizational Theory and Behavior (3 cr)

Prereq: MNGT 360 or equivalent

Behavior and design of the organization as a unit, as well as the individual processes (e.g., influence, coordination, decision making) that are affected by organization design. Organization structure, technology, size, culture, goals and environment are key variables in this analysis. Applications to real-life organizational design problems emphasized.

866. Government and Labor (ECON 885) (3 cr)

Prereq: MNGT 361 or ECON 381

Government regulation of employment and labor relations. Includes laws and agencies relating to employment practices, pay, hours, equal employment opportunity, labor relations, safety, health pensions, and benefits. Social and economic implications of governmental regulation.

867. Leadership in Organizations (3 cr)

Prereq: MNGT 360 and COMM 311

Classic and contemporary theories of leadership. Enhances the student's understanding of the nuances of leadership as it is practiced and experienced in organizations. Students have opportunities to assess their personal leadership capacity, as well as to identify the skills, attitudes and competencies they possess and/or need to develop in order to assume and distinguish themselves in leadership positions.

875. Business Policies and Strategies (3 cr) Lec 3.

Prereq: ACCT 201 and 202, or 306; ECON 211 or 212; FINA 361/361H; MIST/MNGT 350; MNGT 331 and 360/360H; MRKT 341/341H; or equivalent

Formulation and application of business policies and strategies; involves analysis of cases using knowledge acquired in such basic courses as marketing, accounting, finance, operations, human resources, information systems, and economics. Complexity of business problems and the interrelationships of business functions.

*876. Strategic Management (3 cr)

Prereq: Management Department permission

Theories, concepts, techniques, and practices of strategic management. Includes strategic decision making, assessing the strategic situation, strategic planning systems and techniques, and implementation and control.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

905. Research Design and Methodology (3 cr)

Prereq: Permission

Research designs appropriate for basic and field research, including methodology for implementing such designs. An analysis of various statistical methods for evaluating research data. Includes prospectus and manuscript writing and submission; critical review of various research currently published.

931. Operations Planning and Control Systems (3 cr)

Taught predominately by the case method with a few classes for review and summary lectures. Concentrates on higher management decisions involving the manufacturing, service, and public sectors. Facilities planning, labor, aggregate planning, strategic planning, capacity management, and trade-off analysis.

932. Business History (2-3 cr)

History of business of the leading nations with emphasis on the United States, including the effect of environment upon business, the development of entrepreneurship and management, and the impact of business upon the community and nation. Case histories and entrepreneurial-managerial appraisals.

933. Advanced Topics in Supply Chain Management (3 cr) Lec 3.

Advanced conceptual and methodological practices in designing and planning supply chain systems. Advances and strategies in supply chain procurement, transportation, distribution and warehousing, globalization, outsourcing, and technology.

941. Management Science (3 cr)

Prereq: Graduate students who have completed all quantitative core requirements equivalent to MATH 104 or 105; ECON 215; and MNGT 331

Main concepts and techniques of modern management science for management decision analysis. Application of the tools to real-world decision-making situations.

950. Management Information Systems (3 cr)

Education or experience with computers and/or experience in administration. Consideration of kinds of information needed to support the full spectrum of decision making in private and public organizations. Techniques of measuring and reporting on outcomes of managerial decisions. The design of management information systems (MIS) with regard to the proper role of the computer, systems analysts, programmers, managers and users, data management technology, and kinds of computer hardware and software.

954. Advanced Topics in Information Systems (3 cr)

Prereq: Permission

Identifies and addresses the current issues in Information Systems. Includes technical and managerial aspects, e.g., Internet, software project management, etc.

960. Organizational Behavior (3 cr)

Prereq: Permission

Human behavior within organizations. Research findings and the contributions of behavioral science.

969. Organization and Management Theory (3 cr)

Prereq: Permission

Major historical perspectives and some of the current competing paradigms in the field of organization theory. Classical management theory, human relations theory, the technology-structure and structure-environment contingency perspectives for organizational design, strategic human resource management, organizational culture, institutional theory, and such current topics as organizational demography and groups in organizations. Critiquing the theoretical perspectives on both conceptual and methodological dimensions as well as developing comparisons and contrasts between the perspectives. Critical elements of theory building in the organizational sciences and the frameworks for examining organizational theory.

971. Strategic Leadership (3 cr)

Prereq: Permission

The effect of leadership throughout organizations on successful development and execution of organizational strategies. Strategic leadership in organizations and its relationship to domains such as top management teams, board leadership development, organizational visions and cultures, and organizational effectiveness. Relevance of strategic leadership theory and practice to organizational change and/or transformation, strategic alignment, organizational, adaptability, global organizational systems, and authentic organizational decision-making and cultures.

980. Seminar in Interpersonal Processes in Organizations (3 cr)

Prereq: Permission

Field of organizational behavior at the individual level. Two specific features of human behavior: understanding how individuals interact with their environment to explain behavior and performance; and how individuals interact with other actors in their work environment to both facilitate and evaluate attitudes and behavior. Students read existing research literature-to learn the “classic” studies that serve as the foundations for significant organizational behavior theories, and to understand the current conceptual trends, hypotheses, and methodologies involved in advancing these theories.

981. Seminar in Labor Relations (3 cr)

982. Seminar in Human Resource Management (3 cr)

983. Seminar in Organizational Behavior (3 cr)

Prereq: Permission

Capstone seminar in the organizational behavior track. Reflection, perspective and the future of topics in the field of organizational behavior including research methodology, social learning theory/organizational behavior models, managerial activities/behaviors, cross-cultural/international research, and leadership.

984. Seminar in Operations Management (3 cr)

985. Seminar in Strategic Management and Business Policy (3 cr)

Prereq: MNGT *876 and GRBA *853, or equivalent

988. Seminar in Management Information Systems (3 cr)

Prereq: MNGT 950 or equivalent

989. Seminar in Organization and Management Theory (3 cr)

Prereq: Permission

Current paradigms in the field of organizational theory. Transaction cost economics, agency theory, strategic choice and decision-making, resource dependency, power, population and community ecologies, and interorganizational networks. Current topics in organizational theory. Critiquing the theoretical perspectives on both conceptual and methodological dimensions as well as developing comparisons and contrasts between the perspectives. Ethical code of conduct and other issues involved in publishing in the organizational sciences.

990. Seminar in History of Management Thought (3 cr)

Development of management thought from the ancient civilizations of Sumer and Egypt, through the Middle Ages, to more recent developments. Scientific Management School, the contributions of Henri Fayol, and the Hawthorne research. The evolution of management as a body of knowledge.

994. Seminar in Selected Topics I (3-6 cr, max 6)

Prereq: Management department permission

995. Seminar in Selected Topics II (1-6 cr, max 6)

Prereq: Management department permission

996. Directed Reading or Research (1-6 cr each registration)

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

*821. Applied Marketing Research (3 cr)

Prereq: GRBA *813 or equivalent; EDPS 859 or ECON 215 or equivalent

Research methods to supply marketing information pertaining to the: assessment of the nature of demand, assessment of the extent of demand, marketing program development, and the monitoring of marketing performance.

*822. Survey of Buyer Behavior (3 cr)

Prereq: GRBA *813 or equivalent, or permission

Survey of the literature of buyer behavior. Economic, sociocultural and psychological aspects of buying behavior as the basis of marketing strategy and public policy.

*824. Advanced Quantitative Analysis in Marketing (SRAM *824) (3 cr)

Prereq: GRBA *813 or equivalent, or permission

Review, evaluation, and design of advanced marketing research investigations. State-of-the-art methodological issues relevant to marketing to provide an understanding of multivariate data analysis pertinent to the marketing literature. Analysis of linkage, structure, and causality/change for marketing phenomena.

*826. Services Marketing (3 cr)

Prereq: GRBA *813 or equivalent

Working understanding of services marketing and the services marketing process. Key concepts, issues and terminology. Specific tools and frameworks enabling communication with other professional marketers and analysis of services marketing situations to make realistic recommendations for managerial action.

828. Sports Marketing (3 cr)

Prereq: GRBA 813 or equivalent; or permission

Basic concepts and theories unique to sports marketing. Review of the basic principles of marketing in the context of sports. Framework for incorporation of unpredictable nature of the sports industry and exploration of the complex relationships between the elements of sports and marketing. Current research in: sports marketing; coverage of the growing popularity of women's sports; and the globalization of sports.

*830. Strategic Issues in Marketing Communication (3 cr)

Prereq: GRBA *813 or equivalent, or permission

Analysis and application of current concepts regarding the formulation and evaluation of marketing communication strategy in organizations which operate on a profit and not-for-profit basis.

*835. Marketing Channels and Distribution (3 cr)

Prereq: GRBA *813 or equivalent, or permission

Marketing management issues related to selection of intermediaries, channel control, marketing institutions, channel power and pricing. Distribution management issues: location, finished goods inventory, transportation, communication, and customer service.

841. Marketing and Electronic Commerce (3 cr)

Prereq: GRBA *813 or equivalent, or permission

Strategies to deal with opportunities and challenges of evolving technology and marketing in digital networks of customers, suppliers, and employees; different interactive marketing platforms for e-commerce; the future and strategic, societal, and ethical implications of technology and interactive marketing in e-commerce.

850. Strategic Database Marketing (3 cr)

Prereq: GRBA *813 or equivalent, or permission

Theory and strategic use of large marketing databases. Advances in theory and practice. Concepts of customer relationship management, integration with electronic commerce systems, analytical techniques, ethics and practices of customer data privacy.

855. Marketing and Globalization (ABUS 855) (3-6 cr, max 6)

Prereq: GRBA *813 or equivalent

Globalization and resulting changes in the business environment. Access to new consumers, new supplies. The effect on consumer choices. Readings from scholarly and popular press, videos, and a "real world" application. Marketing strategies developed for Nebraska firms and organizations such as value-added food marketers.

*896. Sports Marketing Practicum (3 cr)

Prereq: MRKT 828 and permission

Supervised sports marketing related internship.

*898. Seminar: Special Topics (3 cr)

Prereq: GRBA 813 or equivalent, or permission

Current topics in marketing; services marketing, ethics, and business-to-business marketing.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

921. Seminar in Marketing Communication Strategy (A, B, D, E, G, J) (3 cr each)

Prereq: Permission

931. Marketing Channels Topical Seminar (A, B, D, E, G, J) (3 cr each)

Prereq: Permission

940. Marketing Management (3 cr)

Prereq: Permission

Decision-making activities in problems concerned with the development and management of marketing programs. Strategy choices in situations involving product development, market analysis and segmentation, channels, merchandising, promotion, pricing, and marketing research.

944. Theory of Logistics (3 cr)

Prereq: Permission

Critical examination of various theories of structure and operation of logistics systems. Application of logistics theory to business problems.

954. Problems in International Marketing (3 cr)

Prereq: Permission

Simulation of marketing decision making in an international environment. Material in the course is balanced between the developed and underdeveloped countries of the world in Europe, Africa, Asia, and the Americas. Case materials are used as a basis for class discussion. Cases and discussions focus on specific interests of students enrolled.

970. Development of Marketing Theory (3 cr)

Prereq: Permission

Continuing development of marketing theory, utilizing a review of "classic" and current marketing literature. Historical roots of marketing as a discipline, the requirements for marketing theory, and current efforts and future directions in the development of a mid-range theory of marketing.

971. Marketing and Society (3 cr)

Prereq: Permission

Role of the marketing activities and the marketing system in society.

972. Seminar: Behavioral Research in Marketing (3 cr)

Prereq: MRKT *822, and permission

980. Marketing Colloquium (3 cr)

Prereq: Permission

Seminar in dissertation research topics and methods.

996. Directed Reading or Research (1-3 cr each registration)

998. Seminar in Special Topics (A, B, D, E, J, K) (3 cr each)

Prereq: Permission

New topics announced prior to each term in which course is offered. Seminar in current topics in marketing.
D. (3 cr)

998D. Seminar in Special Topics (SRAM 998D) (3 cr)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Contents

-
  -
  -
  -
  -
  -
  -
  -
-

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Area Committee: Associate Dean Anderson (chair); Professors Brown, Gentry, Luthans, Zorn

School/Departments Cooperating: Accountancy, Finance, Management, and Marketing

The Business Interdepartmental Area Graduate Committee makes recommendations to the UNL Dean of Graduate Studies regarding the admission of students for study leading to the degree programs. The department offers an MA, MBA, MBA/JD, MBA/MARC (Master of Architecture), MPA, and the PhD program. These programs are accredited by the Association to Advance Collegiate Schools of Business.

Applicants for the various advanced degree programs offered by the Business Interdepartmental Area must hold a baccalaureate degree, or be in the process of completing a degree, from an accredited college or university and are expected to have a satisfactory scholastic average. In addition, they must have a satisfactory score on the Graduate Management Admission Test (GMAT) and present three letters of recommendation regarding their capacity for graduate study. Information regarding the GMAT may be obtained at mba.com, or from Graduate Advising, 125 College of Business Administration, University of Nebraska-Lincoln. Students who wish to be considered for fellowships or assistantships during the academic year should begin the application process by December 1.

Applicants for admission to the masters programs (MA, MPA), other than MBA programs, are normally graduates of an accredited institution. Students who are not graduates of an Association to Advance Collegiate Schools of Business (AACSB) accredited college or school of business are usually required to complete a number of courses to satisfy the Common Body of Knowledge (CBK), which consists of a combination of undergraduate and graduate courses. Students who hold a bachelors degree in business administration or who have previously completed undergraduate course work in these areas may be able to have some of these hours waived. In addition, students are expected to have completed a course in calculus and to have satisfied the written and oral communication requirements of the department. Transcripts will be reviewed at the time of admission to determine any entrance deficiencies.

The MBA program is designed to provide students with broad exposure to business administration and its functional areas. This program is best suited for those who have little or no previous course work in business. Typically, students from areas such as the humanities, sciences, engineering, education, agriculture, and architecture choose the MBA program. Students interested in the MBA program may register as a full-time or part-time student. Courses are offered during the fall, spring and summer sessions.

The College of Business offers several joint and cooperative MBA programs:

- An MBA program with a specialization in agribusiness is offered in cooperation with the College of Agricultural Sciences and Natural Resources.
- The MBA/JD program is a joint program offered by the Business Interdepartmental Area and the Law College. Students interested in pursuing a career in corporate law, general law practice, government regulations, business management, or other business-related fields may pursue this program.

- The MBA/MARC architecture program is offered by the business interdepartmental areas and the College of Architecture. The program is based on the increased need for architects to be well versed in business practices. Students can complete this program in a suggested three-year sequence.

The MBA program is available at Offutt Air Force Base in Bellevue, Nebraska, in a mixed delivery format. The MBA is delivered in a modular schedule with a combination of classroom and on-line requirements and is designed to meet the educational needs of civilians as well as the military personnel in the greater Omaha area. Students enroll in the program to improve their abilities, to improve their chances of promotion, and/or to prepare for a post-retirement career.

The MBA program is also available on-line. This on-line delivery, along with the modular scheduling, allows today's working professional the opportunity to participate in an internationally recognized program without putting his or her career on hold. If travel, job or family obligations prevent you from attending traditional on-campus classes, the flexibility of on-line classes brings the UNL MBA to you--on your schedule.

For additional information on the Distance MBA program, contact:

C. J. Bachman, Director
UNL Distance MBA Program
106 Peacekeeper Drive, Ste 806
Offutt Air Force Base, Nebraska 68113
(402) 595-2346
cbachman1@unl.edu

The MA program provides the opportunity for students to focus on one or two areas of business (or one area of business and one area outside of business with the approval of the adviser). The possible areas of concentration are listed under specific MA requirements in this section. The MA program is normally chosen by students who already have a general background in business administration and wish to build an area of specialization.

Students interested in a career in accounting should consider the master of professional accountancy (MPA) degree. This degree may be earned by students pursuing a bachelor of business administration degree at UNL or by students who have already completed an undergraduate degree. Because admission and enrollment in the MPA program involves specific requirements that differ from those of other business programs, students interested in this degree should contact the MPA adviser, College of Business Administration, prior to enrolling in course work.

The MPA/JD program is a joint program offered by the School of Accountancy and the College of Law. Students interested in a career in taxation or other law/accounting-related fields may pursue this program.

The PhD program is designed primarily for those who expect to pursue a career in research or university-level teaching.

Students in the business area must also earn a grade of B or better in 800-level course work in a minor, or allied, or supporting course work to be recommended for a graduate degree. Students should refer to the Business Interdepartmental brochure for additional information regarding scholastic requirements.

Students interested in the programs offered by the Business Interdepartmental Area may receive a detailed brochure of the admission and program requirements by contacting:

Graduate Advising
University of Nebraska-Lincoln
125 CBA
PO Box 880405
Lincoln, NE 68588-0405

Students in the MA, MPA, MBA, and MBA/JD program should also be aware of the requirement of submission of the Memorandum of Courses form prior to completion of half the program. For additional information, see .

NOTE:

No student on nondegree status may take graduate courses in the business area without prior specific written approval of the chair of the Graduate Committee.

Master of Business Administration

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Students seeking the MBA degree will normally complete 48 hours of graduate credit. A student who has no previous course work in business administration may want to complete some of the Common Body of Knowledge (CBK) requirements, but the only undergraduate requirements are calculus, statistics, and computer proficiency. Students who hold a bachelors degree may be allowed to waive some of the MBA core classes.

The graduate core consists of the following 18 hours of course work: GRBA *810, *811, *812, *813, *814, and *815.

The cross-functional requirements include GRBA *851, *852, *853, and *898. Graduate business administration *853 is to be

taken in the student's final semester in the program.

The breadth requirements include an additional 9 hours of electives from three of the four interdepartmental business areas--accounting, finance, marketing, and management. At least 6 of the 9 hours must be graduate-only courses (*800 or 900).

An additional 9 hours of elective courses are required. These courses may be selected in the areas of the interdepartmental programs. Alternatively, these courses may be taken outside of the College of Business Administration. At least one course must be graduate-only (*800 or 900).

Master of business administration students admitted without relevant work experience must complete an internship. All students are encouraged to participate in international studies programs.

Master of business administration students may structure the electives and breadth requirements into a specialization. A specialization is made up of 9 hours, 6 of which must be graduate-only (*800 or 900) in an area of business. A specialization may be obtained in: accounting, agribusiness, executive leadership, finance, information and software systems, international business, management information systems, marketing, personnel/human resource management, sports marketing, and strategic management and business policy.

According to the policies of the Graduate College and the business interdepartmental area faculty, candidates for the MBA are required to take a final written, comprehensive examination. This exam will be administered in GRBA *853, which should be taken during a student's final semester in the program.

In addition to the MBA application and admission requirements listed above, students interested in the MBA/JD program must also submit Law College application materials and be admitted to the law program. Because the Law College only admits first-year students in the fall semester, application materials must be received by March 1 in order to be considered for the following academic year. For further information on the program, please contact the Assistant Dean, College of Law, University of Nebraska-Lincoln.

Master of Professional Accountancy

For a brief description of the program, application requirements and contact information, view the graduate program summary.

The mission of the School of Accountancy is to provide quality teaching, research, and service and to maintain a leadership role in accounting education. The objective of the master of professional accountancy program is to provide candidates with greater breadth and depth in accounting education, and related subjects and skills, than is possible in a baccalaureate program in preparation for careers as professional accountants.

Admission and enrollment in this program has some very specific deadlines which differ from those described above. It is very important for students interested in this program to consult with the Director of the MPA program, prior to applying for admission.

Applicants for admission to the MPA program are normally either enrolled in the bachelors degree program in business administration at UNL (provisional status) or are graduates of an accredited institution (full graduate standing).

Applicants must have a satisfactory score on the Graduate Management Admission Test (GMAT), submit three letters of recommendation for graduate study, and (if a graduate of another institution) provide two copies of official transcripts covering all collegiate work completed. At the time of admission, transcripts are reviewed to determine if any deficiencies must be completed to satisfy accreditation standards (as established by the American Assembly of Collegiate Schools of Business).

The MPA program is generally pursued by those students who are in the process of completing their bachelors degree in business administration at the University of Nebraska-Lincoln. It is recommended that students apply to this program during the first semester of their senior year. Students from other departments and institutions interested in this program may apply for admission during their senior year or after completion of the bachelors degree.

In addition to satisfying the Common Body of Knowledge (CBK) requirements and other general requirements as set forth by the Business Interdepartmental Area and the Graduate College, students may also be required to complete undergraduate accounting prerequisite courses. These courses include ACCT 201, 202, 308, 309, 313, and 314. Students admitted to the program while enrolled in the bachelors degree in business administration at UNL will complete a minimum of 156 hours of semester credit--with 36 of these hours taken in graduate-level courses. A minimum of 20 hours of credit must be earned in graduate-only course work (courses with no 400-level counterpart). Fifteen hours of graduate-only course work must be completed in accounting. Students who have not previously completed an administrative policy course will be required to take GRBA 853, Strategic Management and Business Policy. During the final semester of the program, students will be required to pass an oral comprehensive examination.

A complete listing of the requirements for the MPA Program are available from the Director of the MPA Program.

In addition to the MPA application and admission requirements listed above, students interested in the MPA/JD program must also submit College of Law application materials and be admitted to the law program. Since the College of Law only admits first-year students in the fall semester, application materials must be received by March 1 in order to be considered for the following academic year. For further information on the program, contact the Assistant Dean, College of Law, University of Nebraska-Lincoln.

Master of Arts and Doctor of Philosophy

To qualify for admission to either program, students must normally have graduated from an accredited institution with a degree in business administration. Students applying to the MA program who are not graduates of an American Assembly of Collegiate Schools of Business accredited college or school of business administration will be required to complete the Common Body of Knowledge courses.

The Common Body of Knowledge (CBK) consists of the following classes: BLAW 371 (Legal Environment); ACCT 201 and 202 (Principles) or 306; ECON 211 and 212 (Principles) or 210, 215 (Statistics); FINA 361 (Finance); MRKT 341 (Marketing); MNGT 360 (Managing Behavior in Organizations); and MNGT 331 (Operations and Resources Management). In addition, students are expected to have completed a course in calculus and show computer proficiency and oral and written communication skills. Furthermore, students who have not previously completed an administrative policy course will be required to take GRBA 853, Strategic Management and Business Policy.

The MA degree is offered under all three options according to requirements of the Graduate College. A faculty adviser is responsible for and designs a student's MA program. The student is expected to complete a program in one or two principal fields to be selected from banking, finance, insurance, investments, management information systems, management science, organization and management theory, marketing, marketing channels, organizational behavior, personnel and labor relations, production, strategic management, and promotion. The supporting field may be selected from the above or, in the case of Option II, an outside minor with the approval of the adviser. Under Options I and II, a minimum of 16 hours of course work must be earned in courses open exclusively to graduate students. Under Option III, a minimum of 18 hours must be earned in graduate-only courses. Graduate business administration 853 and departmental 996, directed reading courses, may not be used to fulfill the minimum hours required in courses open exclusively to graduate students (900 level or 800 level without 400 or lower counterparts) for all three options.

The MA student is required to take written and/or oral comprehensive examinations according to the requirements of the Graduate College. At the discretion of the adviser, this examination may include a separate section specifically covering the supporting field.

The Marketing Department also offers a specialization in marketing, communications studies, and advertising. (See list of approved specializations below.) This is an Option III program. The program consists of a major-a minimum of 18 hours in marketing and two minors of 9 hours-one in communication studies and one in advertising. Eighteen hours of the program are specified courses which includes 6 hours from each of the following three departments: marketing, communication studies, and advertising. There is also an eight hour comprehensive exam of which five hours can be waived if the student has a 3.25 GPA or higher in all courses taken in the specialization.

Applicants for admission to the PhD program should be graduates of an accredited institution with a degree in business administration. Students who are not graduates of an AACSB accredited college or school of business may be required to complete courses to satisfy the Common Body of Knowledge. Some programs may permit the student to substitute appropriate courses in analytical techniques or behavioral sciences to fulfill this requirement. A student's supervisory committee will make this determination at the time of admission to the program.

In addition to the general requirements of the Graduate College for the doctor of philosophy degree, students are normally required to choose four fields of emphasis. At least half of the fields must be in the business area, including banking, finance, financial accounting, insurance, international marketing, investments, managerial accounting, management information systems, management science, organization and management theory, marketing, marketing channels, organizational behavior/human resources management, production and operations management, promotion, strategic management, and taxation. Fields in the Department of Economics may be included in the program. Each of the fields will normally be covered by a comprehensive examination. Approved minors, if used, may include the areas of mathematics, political science, psychology, economics, and sociology or others specifically approved by the supervisory committee.

As part of their regular course work, doctoral students are required to take ECON 852 Teaching College Economics and Business prior to, or parallel, with the first course taught. In addition to the regular course work and research prescribed in a PhD program, a student must complete a minimum of 9 hours of acceptable course work for the research tool requirement. These hours must be completed after receipt of the bachelors degree and may be taken as either graduate-level or undergraduate-level courses designated by the supervisory committee. The tool may include courses in one or more of the following fields designated by the supervisory committee: research methods, statistics, mathematics, computer science, or foreign language. These hours will not be part of the required minimum 90 hours for the PhD degree.

Specializations available for the MA degree:

Executive Leadership; Finance; Management Information Systems; Management Science; Marketing; Marketing, Communication and Advertising; Marketing-Survey Research and Analysis; Organizational Behavior; Organization and Management Theory; Personnel/Human Resource Management; Productions and Operations Management; Strategic Management and Business Policy

Specializations available at the doctoral level:

Accountancy; Finance; Management; Marketing

School of Accountancy

For a brief description of the program, application requirements and contact information, view the graduate program summary, Click here.

Director: Paul Shoemaker, Ph.D.

Graduate Committee Chair: David Smith, Ph.D.

Students not seeking a law degree may be admitted to one or more of the cross-listed College of Law courses in the School of Accountancy with the specific approval of the faculty member teaching the course and the Dean of the College of Law.

For admission to all graduate courses, the prerequisite course must have been completed with a C or better or the student must have permission of the instructor.

Finance

Department Chair: Gordon V. Karels, Ph.D.

Management

Department Chair: Sang M. Lee, Ph.D.

Marketing

Department Chair: Ronald D. Hampton, Ph.D.
Graduate Committee Chair: James Gentry, DBA

Faculty

School of Accountancy

For faculty research interests and contact information, view the graduate program summary.

- Allen, Arthur C. -1989; Associate Professor; BSBA 1985 Mississippi; PhD 1989 Alabama
- Brown, James F., Jr. -1980; Professor; BS 1968, MBA 1970, DBA 1980 Tennessee
- Chen, Kung H. -1973; Professor; BA 1964 Taiwan; MBA 1969 West Virginia; PhD 1974 Texas
- Crabtree, Aaron D. -2004; Assistant Professor; BS 1999 Emory and Henry; MPA 2000, PhD 2004 Virginia Polytechnic
- Gao, Lei -2005; Assistant Professor; BA 1998 Renmin (China); PhD 2005 Kansas
- Lawrence, Janice E. -1992; Associate Professor; BA 1969 Knox; MS 1977 Wisconsin (Whitewater); PhD 1992 Texas A&M
- Price, Renée -2000; Assistant Professor; BA 1978 Whitman; MS 1987 Texas A&M; MA 1988 Chicago; PhD 1993 Texas A&M
- Ruchala, Linda V. -1994; Associate Professor; BS 1976 Michigan State; MGRP 1978 Harvard; PhD 1991 Indiana
- Shoemaker, Paul A. -1989; Director and Associate Professor; BS 1974 Bloomsburg; MBA 1983 Marywood; PhD 1989 Pennsylvania State
- Smith, David B. -2005; Professor; BA 1970 Carleton; MBA 1973 Pennsylvania (Whorton); PhD 1979 Illinois
- Wang, Dechun -2004; Assistant Professor; BS 1993 Renmin (China); MS 2000, PhD 2004 Missouri (Columbia)

Finance

For faculty research interests and contact information, view the graduate program summary.

- DeFusco, A. Richard -1985; Associate Professor; BS 1977, MBA 1979 Rhode Island; PhD 1985 Tennessee
- Dudney, Donna M. -1999; Assistant Professor; BS 1982, MS 1991, PhD 1997 Nebraska (Lincoln)
- Farrell, Kathleen A. -1993; Assistant Professor; BBA 1986 Kent State; PhD 1994 Georgia
- Friesen, Geoffrey -2005; Assistant Professor; BS 1995 Nebraska (Lincoln); PhD 2003 Iowa
- Geppert, John M. -1994; Associate Professor; BS 1985 Nebraska (Omaha); MS 1987, PhD 1989 Purdue
- Karels, Gordon V. -1986; Chair and Nebraska Bankers Association College Professor of Banking and Associate Dean; BA 1973 Southwest State (Minnesota); MA 1977, PhD 1979 Purdue
- Lin, Yijia -2007; Assistant Professor; BA 1999 Beijing; MA 2002, PhD 2006 Georgia State
- Peterson, Manferd O. -1976; W. W. Marshall College Professor and V. J. Skutt Distinguished Professorship; BA 1966 Wisconsin State (River Falls); MA 1968, PhD 1971 Michigan State
- Unlu, Emre -2007; Assistant Professor; BA 1999 Turkey; MBA 2002, MS 2005 Missouri (Columbia)
- Zorn, Thomas S. -1981; George B. Cook/Ameritas Professor of Finance; AB 1964, MA 1970, PhD 1978 California (Los Angeles)

Management

For faculty research interests and contact information, view the graduate program summary.

- Avolio, Bruce J. -2001; Donald and Shirley Clifton Professor of Leadership Management; BA 1975 New York State (Oneonta); MA 1978, PhD 1981 Akron
- Combs, Gwendolyn -2000; Assistant Professor; BA 1974 Wellesley; MBA 1976 Washington; PhD 2000 Nebraska (Lincoln)
- Digman, Lester A. -1977; Harold J. Laipply College Professor of Management; BSME 1961, MSIE 1962, PhD 1970 Iowa
- Jones, M. Colleen -1996; Clinical/Assistant Professor; BBA 1972 Iowa; MBA 1973 Southern California; DBA 1992 George Washington
- Lee, Sang M. -1976; Chair and University Eminent Scholar and Regents Distinguished Professor; BA 1961 Seoul (Korea); MBA 1963 Miami (Ohio); PhD 1969 Georgia
- Luthans, Fred -1967; George Holmes Distinguished Professor; BA 1961, MBA 1962, PhD 1965 Iowa
- Mitchell, Marie S. -2006; Assistant Professor; BA 1993, MA 1998, PhD 2006 Florida
- Nadkarni, Sucheta -2000; Associate Professor; BA 1987, MA 1989 Bombay (India); PhD 1995 Kansas (Lawrence)
- Nah, Fiona -1998; Associate Professor; BS 1988, MSc 1992 National (Singapore); PhD 1997 British Columbia

- Olson, David L. -2001; James and HK Stuart Professor of MIS; BS 1966 South Dakota School of Mines; MBA 1978 Kearney State; PhD 1981 Nebraska (Lincoln)
- Schniederjans, Marc J. -1981; C. Wheaton Battey Distinguished Professor of Business; BS 1972 Missouri (St Louis); MBA 1974, PhD 1978 St Louis
- Sebora, Terrence -1994; Associate Professor; MA 1970 St. John's; MBA 1984 Wisconsin (Oshkosh); PhD 1993 North Carolina
- Siau, Keng -1996; E. J. Faulkner College Professor; BS 1989, MA 1991 National (Singapore); PhD 1996 British Columbia
- Swenseth, Scott R. -1987; Associate Professor; AS 1978 North Dakota State; BS 1980 Moorhead State; MBA 1981 Gonzaga; PhD 1988 Texas A&M
- Trimi, Silvana -2001; Associate Professor; BS 1990 Tirana (Albania); MA 1996, PhD 2001 Nebraska (Lincoln)
- Uhl-Bien, Mary -2006; Professor; Howard Hawks Chair in Ethics and Leadership; BBA 1986, MBA 1988, PhD 1991 Cincinnati
- West, Bradley J. -2005; Assistant Professor; BA 1998; MA 2001, PhD 2007 Michigan

Marketing

For faculty research interests and contact information, view the graduate program summary.

- Ball, A. Dwayne -1987; Associate Professor; BA 1973 Rice; PhD 1982 Ohio State
- Carlson, Leslie -2008; Professor and Nathan J. Gold Distinguished Professorship in Marketing; BA 1973 Midland Lutheran; MA 1980, PhD Nebraska (Lincoln)
- Gentry, James W. -1987; Professor and Maurice J. and Alice Hollman College Professorship in Marketing; BS 1969 Kansas State; MBA 1971, DBA 1973 Indiana
- Grossbart, Sanford L. -1972; W. W. Marshall Professor of Marketing; BSBA 1966, MBA 1967, PhD 1972 Florida
- Hampton, Ronald D. -1984; Chair and Associate Professor; BSBA 1972, MBA 1978 Central Missouri State; PhD 1984 Arkansas
- Kennedy, Patricia -1989; Associate Professor; BBA 1979, MBA 1980, PhD 1990 Oregon
- Saini, Amit -2003; Assistant Professor; BE 1993, PGDPC 1997, PhD 2003 Washington State
- Sohi, Ravipreet S. -1991; Professor; MBA 1982, MS 1988, PhD 1991 Wisconsin

Courses for Chemistry (CHEM)

Chemistry

812. Chemistry Applications of Laboratory Computers (4 cr)

Prereq: CHEM 261 or parallel, and permission

Introduction to the principles and applications of the digital computer in the chemistry laboratory for online data acquisition and experiment control. Programming, digital logic, and computer-experiment interfacing.

821. Analytical Chemistry (3 cr)

Prereq: CHEM 882 and 884, or parallel; parallel CHEM 823

Credit toward the degree cannot be earned in both CHEM 821 and 827. Chemical and physical properties applied to quantitative chemical analysis. Solution equilibria, stoichiometry, and instrumental theory and techniques.

823. Analytical Chemistry Laboratory (2 cr) Lab 6.

Prereq: CHEM 882 and 884, or parallel; parallel CHEM 823

Laboratory to accompany CHEM 821. Application of analytical chemical principles to laboratory problems.

*824. Applied Problems in Analytical Chemistry (3 cr)

Prereq: CHEM 821

Selection and execution of analytical methods in the solution of typical academic and industrial chemical problems.

*825A. Ionic Equilibria (1 cr) Lec 1.

Prereq: or parallel: CHEM 821 or *824

Survey of theory of ionic equilibrium systems of importance in chemical analysis.

*825B. Electrochemical Methods (2 cr) Lec 2.

Prereq: CHEM 821 or *824

Survey of principles and applications of electroanalytical chemistry.

*825D. Mass Spectrometry (1-2 cr, max 2) Lec 1-2.

Prereq: CHEM 821 or *824

Survey of the fundamentals (1 cr) and applications (1 cr) of mass spectrometry.

*825E. Data Handling (1 cr) Lec 1.

Prereq: or parallel: CHEM 821 or *824

Application of statistical, graphical and numerical methods for the treatment of analytical chemical data.

*825G. Chromatographic Separations (2 cr) Lec 2.

Prereq: CHEM 821 or *824

Survey of principles and applications of modern chromatographic analysis.

*825J. Optical Methods of Analysis (2 cr) Lec 2.

Prereq: CHEM 821 or *824

Survey of principles and analytical application of modern optical spectrometric methods.

827. Applied Analytical Instrumentation (4 cr) Lec 2, lab 8.

Prereq: CHEM 116 or 221; CHEM 251 or equivalent

Credit may not be earned in both CHEM 821 and 827. Chemistry graduate students may not take 827 for credit. Primarily for non-majors who will use analytical chemistry in their professional careers. Introduction to modern instrumentation techniques of chemical analysis in fields related to chemistry. Analysis of organic systems.

831. Biomolecules and Metabolism (BIOC 831; BIOS 831) (4 cr I, II) Lec 4.

Prereq: CHEM 252 or 262

BIOS 102 recommended. First course of a two-semester comprehensive biochemistry course sequence. Structure and function of proteins, nucleic acids, carbohydrates and lipids; nature of enzymes; major metabolic pathways; and biochemical energy production.

832. Gene Expression and Replication (BIOC 832; BIOS 832) (2 cr I, II) Lec 2.

Prereq: BIOC 831

Continuation of BIOC 831. Structural and biochemical aspects of DNA replication and gene expression, and biotechnology.

833. Biochemistry Laboratory (BIOC 833; BIOS 833) (2 cr I, II) Lab 4.

Prereq: BIOC 831 or concurrent enrollment

Introduction to techniques used in biochemical and biotechnology research including measurement of pH, spectroscopy, analysis of enzymes, chromatography, fractionation of macromolecules, electrophoresis and centrifugation.

834. Plant Biochemistry (AGRO 834; BIOC 834; BIOS *834) (3 cr II) Lec 3.

Prereq: BIOC/BIOS/CHEM 831

Offered every other year beginning spring 2007. Biochemical metabolism unique to plants. Relationships of topics previously acquired in general biochemistry to biochemical processes unique to plants. Biochemical mechanisms behind many physiological processes discussed in plant or crop physiology.

*835. Chemical Biology (3 cr)

Prereq: CHEM 252 or 262, and 871 or 881

Credit toward the degree cannot be earned in both CHEM 835, and 831 and/or 832 or their equivalents. Use of recent advances in genomics to organize the field of biochemistry as well as an understanding of how biologists, biochemists and chemists use this information to cure diseases.

*836. Biophysical Chemistry (BIOC *836) (3 cr II) Lec 3.

Prereq: One semester of physical chemistry

Introductory course covering x-ray diffraction and protein structure, absorption, spectroscopy of biomolecules, linear and circular dichroic spectroscopy of proteins and nucleic acids, fluorescence probes, membrane dynamics, NMR, EPR, and Resonance Raman spectroscopy applied to biological systems. Energetics, enzyme kinetics, relaxation kinetics, allosteric systems, and hydrodynamics.

*839. Survey of Biochemistry (BIOC *839; BIOS *839) (3 cr I) Lec 3.

Prereq: Permission

Comprehensive survey of biochemistry for incoming graduate students. Topics include those in BIOC 831 and 832, but not all topics discussed in lecture periods. Depth enhanced by assigned readings.

841. Inorganic Chemistry (3 cr)

Prereq: CHEM 252 or 262, and 264; parallel CHEM 843

CHEM 841 and the accompanying laboratory course, CHEM 843, constitute a basic course in inorganic chemistry. The structure, bonding, properties, and reactions of inorganic compounds with emphasis on the relationships and trends that are embodied in the periodic table of the elements.

843. Inorganic Chemistry Laboratory (2 cr)

Prereq: CHEM 252 or 262, and 264; parallel: CHEM 841

Introduction to typical inorganic chemistry laboratory techniques through the preparation and characterization of inorganic compounds.

*845. Modern Inorganic Chemistry (3 cr)

Prereq: CHEM 841, 843, and 882 or permission

Topics in inorganic chemistry such as bioinorganics, catalysis, organometallic, materials and solid state chemistry. Theoretical principles and practical applications, and on correlating the physical and chemical properties of the chemical elements and inorganic chemical compounds.

*848. Redox Biochemistry (BIOC *848) (3 cr) Lec 3.

Prereq: 3 hrs BIOC and 3 hrs inorganic chemistry

Redox (oxidation and reduction)-based biochemical processes (energy generation, oxygen transfer, enzyme catalysis, signaling, gene regulation, and diseases). Recent progress in these areas. Roles of metals in biochemical reactions, metal homeostasis, and biosynthesis of metal cofactors and metal sites. Biochemistry and pathophysiology of redoxactive species and radicals. Antioxidant molecules and enzymes.

*855. Advanced Organic Chemistry (3 cr)

Prereq: CHEM 252 or 262 or equivalent

Survey of modern concepts of structure/bonding, acidity/basicity, stereochemistry, and reaction mechanisms. Introduction to the fundamental tools used to investigate reaction mechanism (transition state theory, elementary Huckel theory, linear free energy relationships, rate laws and kinetic isotope effects). Mechanistic examples emphasize the major classes of organic reactions, particularly concerted, carbanionic and carbocationic. Development of reasoning skills.

861. Advanced Organic Spectroscopy (4 cr)

Prereq: CHEM 252 and/or 254, or 262 and/or 264, or equivalent

CHEM 861 may be taken only once towards the degree. Use of advanced spectroscopic techniques (e.g., NMR, ESR, IR and mass spectrometry) and molecular modeling in the elucidation of organic structures.

863. Advanced Organic Preparations (1-5 cr, max 5) Lab 3-15.

Prereq: CHEM 252 and/or 254, or 262 and/or 264, or equivalent

Laboratory work in organic chemistry preparatory to research. Preparation of a number of typical organic compounds.

*865. Organic Reactions (3 cr) Lec 3.

Prereq: CHEM *855 or permission

Modern reactions and methodology for organic synthesis. Carbon-carbon bond-forming reactions; alkene synthesis; oxidation; reductions; functional group interconversion; use of protecting groups; organometallic reagents; and free radical based transformations.

*869. Chemistry for Secondary School Classrooms (BIOC *869; BIOS *883; TEAC *869) (1 cr, max 12)

Credit in this course will not count towards a graduate degree in chemistry or biochemistry or biological sciences. Course taught via World Wide Web. Chemistry content for high school teachers organized according to the National Science Education Standards. Individual course coverage includes: content, integration with other sciences and mathematics, graphing calculators, probe-experiments, simulations, at-home experiments, teaching materials, and industrial applications related to the title description.

A. Structure and Properties of Matter: Water and Solutions (1 cr)
B. Structure and Properties of Matter: Periodicity (1 cr)
D. Structure and Properties of Matter: Bonding and Structure (1 cr)
E. Structure and Properties of Matter: Carbon Chemistry and Polymers (1 cr)
J. Structure and Properties of Matter: Gases and the Atmosphere (1 cr)
K. Chemistry of Life Processes: Biomolecules (1 cr)
L. Structure and Properties of Matter: Condensed States and Materials Science (1 cr)
M. Interactions of Matter and Energy (1 cr)
N. Chemistry of Life Processes: DNA (1 cr)
P. Chemistry of Life Processes: Energy and Metabolism (1 cr)
Q. Chemical Reactions: Equations and their Consequences (1 cr)
R. Chemical Reactions: Acids and Bases (1 cr)
T. Chemical Reactions: Kinetics (1 cr)
U. Chemical Reactions: Oxidation, Reduction and Electrochemistry (1 cr)
V. Equilibrium: Unifying Theme (1 cr)
W. Conservation of Energy and the Increase in Disorder: Thermodynamics (1 cr)
Y. Inquiry and the Nature of Science: Analysis and Instrumentation (1 cr)
Z. Structure of Atoms: Nuclear Chemistry (1 cr)

871. Physical Chemistry (4 cr) Lec 3, rct 1.

Prereq: CHEM 114 and 116, or 221, with a grade of Pass or C or better; MATH 106/108H and 238, or 107/107H; one year college PHYS

Credit toward the degree may be earned in only one of: CHEM 471/871 and 481/881. Conceptual and mathematical foundations of classical and statistical thermodynamics. Applications of thermodynamics to phase and chemical equilibria. Thermodynamics of solutions of small molecules and of polymers. Biological applications of thermodynamics. Introduction to chemical and biochemical spectroscopy.

*874. Topics in Chemical Pedagogy (TEAC *874) (1-3 cr, max 12)

A maximum combined total of 12 hours from TEAC *869 and/or *874 may be counted toward a masters degree. Credit in this course will not count towards a graduate degree in chemistry. Courses are Web-based. Topical chemistry content for high school teachers organized according to the National Science Education Standards.
A. Green Chemistry (2-3 cr)
D. Demonstrations for High School Chemistry (1-3 cr)
E. Experiments for High School Chemistry (1-3 cr)
J. Developing a Safety Culture (1 cr)
K. Chemistry of Life Processes: Biomolecules (1-3 cr)
L. Addressing Misconceptions (1-3 cr)
M. Mathematics Integration (MATH 874M) (2-3 cr) May be counted towards the MAT and MScT degrees in mathematics and statistics, not the MA, MS, or PhD.
N. Inquiry Strategies (1-3 cr)
P. Chemistry in the Workplace (1-3 cr)
Y. Graphing Calculator Activities (2-3 cr)

874A. Green Chemistry (2-3 cr)

874D. Demonstrations for High School Chemistry (1-3 cr)

874E. Experiments for High School Chemistry (1-3 cr)

874J. Developing a Safety Culture (1 cr)

874K. Chemistry of Life Processes: Biomolecules (1 cr)

874L. Addressing Misconceptions (1-3 cr)

874M. Mathematics Integration (MATH *874M) (2-3 cr)

May be counted towards the MAT and MScT degrees in mathematics and statistics, not the MA, MS, or PhD.

874N. Inquiry Strategies (1-3 cr)

874P. Chemistry in the Workplace (1-3 cr)

874Y. Graphing Calculator Activities (2-3 cr)

*875. Chemical Pedagogy in the High School Laboratory (TEAC *875) (1-3 cr, max 6)

Credit in this course will not count towards a graduate degree in chemistry. Laboratory-based courses addressing specific issues connected with teaching laboratory work in high school chemistry programs.
A. Small-scale Experiments (1-3 cr)
B. Technology Integration (3-6 cr)
E. Inquiry Experiments (1-3 cr)
K. At-home Experiments (1-3 cr)
P. Probe Experiments (1-3 cr)
T. Traditional Experiments (1-3 cr)

875A. Small-scale Experiments (1-3 cr)

875B. Technology Integration (3-6 cr)

875E. Inquiry Experiments (1-3 cr)

875K. At-home Experiments (1-3 cr)

875P. Probe Experiments (1-3 cr)

875T. Traditional Experiments (1-3 cr)

881. Physical Chemistry (4 cr) Lec 3, rct 1.

Prereq: CHEM 114 and 116 (CHEM 116 for 2 cr), or CHEM 221 with a grade of C or better, MATH 208, PHYS/ASTR 212 and (recommended) 222

Students having credit in CHEM 871 may not receive credit in CHEM 881. CHEM 881 and 882 with accompanying lab 884 form a continuous basic course in physical chemistry for students interested in chemistry as a profession. Thermodynamics and statistical mechanics and their application to the study of solids, liquids, gases, solutions, phase equilibria, and chemical

equilibria.

882. Physical Chemistry (4 cr) Lec 3, rct 1.

Prereq: CHEM 881

Students having credit in CHEM 871 may not receive credit in CHEM 882.This course should be accompanied by CHEM 884. Continuation of CHEM 881. Statistical mechanics and thermodynamics and their applications to the study of solids, liquids, gases, solutions, and chemical equilibrium. Chemical kinetics.

884. Physical Chemical Measurements (2 cr) Lab 9.

Prereq: CHEM 881; parallel with CHEM 882

884A. Physical Chemical Measurements (3 cr) Lab 6.

Prereq: CHEM 881; parallel with CHEM 882

*885. Survey of Modern Physical Chemistry (3 cr)

. A one-semester survey course in modern physical chemistry, covering chemical thermodynamics, chemical kinetics, quantum chemistry, molecular structure and spectroscopy.

886. Advanced Topics in Biophysical Chemistry (BIOC 886; BIOS 886) (3 cr)

Prereq: CHEM 871 or 881

Applications of thermodynamics to biochemical phenomena, optical properties of proteins and polynucleotides, and kinetics of rapid reactions.

887. Spectroscopy and Scattering (3 cr)

Prereq: CHEM 882 or 885 or 972

A quantitative treatment of the principal methods of electronic, optical and magnetic resonance spectroscopy as well as light and electron scattering.

887L. Introduction to Molecular Spectroscopy Lab (1 cr) Lab 1.

Prereq: CHEM 881 or *885; parallel: CHEM 887

Optional lab work to accompany CHEM 887.

*898. Special Problems (1-24 cr)

Prereq: Permission

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

932. Proteins (BIOC 932; BIOS 932) (3 cr) Lec 3.

Prereq: BIOC 832 or *839, or permission

Classification, composition, purification and function of proteins.

933. Enzymes (BIOC 933; BIOS 933) (3 cr) Lec 3.

Prereq: BIOC 832 or *839, or permission

Kinetics regulation and reaction mechanisms of enzymes.

934. Nucleic Acids (BIOC 934; BIOS 934) (3 cr II) Lec 3.

Prereq: BIOC 832 or *839 or permission

Structure and function of nucleic acids and nucleoproteins. Assessment of current research in nucleic acid biochemistry.

935. Metabolic Function and Dysfunction (BIOC 935; BIOS 935) (3 cr) Lec 3.

Prereq: BIOC/CHEM/BIOS 432/832 and permission

BIOC/CHEM/BIOS 935 is offered even-numbered calendar years.

Current metabolic research at the bioenergetic, metabolomic, and molecular level. The normal metabolic processes that go awry in cancer, obesity, and oxidative stress.

937A. Advanced Topics in Plant Biochemistry: Photosynthesis and Related Processes (3 cr) Lec 3.

Prereq: Permission

Offered every fourth semester. For course description, see BIOC 937A.

939. Photobiochemistry (2 cr I) Lec 2.

Prereq: One year BIOC and PHYS

For course description, see BIOC 939.

940. Seminar in Inorganic Chemistry (1 cr)

942. Physical Inorganic Chemistry (2 or 3 cr)

Prereq: CHEM *845

Advanced study of the physical aspects of inorganic chemistry with emphasis on spectroscopic and kinetic properties of inorganic compounds.

943. Solid-State Chemistry (2 cr)

Prereq: CHEM *845 and *885

Advanced course dealing with the structure, bonding, properties, and reactions of inorganic solid materials.

945. Advanced Inorganic Chemistry (2 cr)

Prereq: CHEM *845

Chemistry of the metallic compounds.

946. Organometallic Chemistry (1-6 cr, max 6)

The chemistry of compounds that occupy the boundary between inorganic and organic chemistry.

952. Stereochemistry of Organic Compounds (2-4 cr, max 4)

Prereq: CHEM *855

Types of stereoisomerism in organic compounds. Steric strain and certain other steric effects in reactions of organic substances.

953. Organic Reaction Mechanisms (2-4 cr, max 4)

Prereq: CHEM *855

Classes of reaction mechanisms and the methods whereby mechanisms may be studied. Kinetic and equilibrium studies; isotopic labeling; activation parameters; linear free energy relationships; stereochemistry; NMR and other spectroscopic methods as applied to reaction mechanisms, including direct observation of reactive intermediates; interpreting the results of semi-empirical calculations of reaction pathways; and studies of acid- and base-catalysis mechanisms.

954. Physical Organic Chemistry (2-4 cr, max 4)

Prereq: CHEM *855

Elementary aspects of molecular orbital (MO) theory. Selected concepts in molecular symmetry and topology. Applications of MO calculations to reaction mechanisms and elucidation of electronic structure for organic molecules: calculations vs. experiment. Introduction to selected interdisciplinary topics.

963. Metals in Organic Synthesis (2-4 cr, max 4)

Prereq: CHEM 865

Use of organometallic reagents and catalysts in organic synthesis.

964. Bioorganic Chemistry (2-4 cr, max 4)

Prereq: CHEM *855

Organic chemistry of biological systems with particular emphasis on the molecular mechanisms of action of enzymes and their associated cofactors.

965. Advanced Synthetic Strategy (2-4 cr, max 4)

Prereq: CHEM 865

Strategy and execution of organic synthesis. Retrosynthetic analysis; total synthesis of natural and unnatural products; methods for asymmetric synthesis; and applications of pericyclic reactions.

972. Quantum Chemistry I (3 cr)

Prereq: CHEM *885

Basic principles of quantum mechanics applied to problems in molecular structure and chemical bonding.

982. Chemical Thermodynamics (3 cr)

Prereq: CHEM *885

Principles of thermodynamics, with applications to chemical systems and processes, and illustrations from current literature.

983. Statistical Thermodynamics (2 cr)

Prereq: CHEM *885 or 982

Application of equilibrium statistical mechanics to problems of chemical interest. Calculation of thermodynamic functions from molecular structure data. Molecular theories of gases, liquids, and solutions.

984. Chemical Kinetics (2 cr)

Prereq: CHEM *885 or 982

Concepts and equations; successive, competing, and reversible reactions; equilibrium, collision, and activated-complex theories; reaction mechanism; heterogeneous reactions; current literature.

988. Radiochemical Techniques (2 cr) Lec 1, lab 4.

Prereq: CHEM 987

Radiochemical experiments illustrating the applications of radioisotopes to various chemical problems, with emphasis on radiation safety and safe handling of radioisotopes.

990. Seminar in Chemistry (1-5 cr, max 5) Lec.

CHEM 990 consists of monthly lectures presented by guest speakers from other colleges and universities, the government, and industry. Registration in CHEM 990 is required of all full-time CHEM graduate students. Current topics of chemical interest.

991A. Selected Topics in Analytical Chemistry (1-6 cr, max 6)

Prereq: CHEM 821 or *824, or parallel

991B. Special Topics in Inorganic Chemistry (1-6 cr, max 6)

Prereq: CHEM *845 and permission

991E. Special Topics in Organic Chemistry (2-4 cr, max 4)

Prereq: CHEM *855

Topics of special interest in modern organic chemistry.

991J. Special Topics in Physical Chemistry (1-6 cr, max 6)

Prereq: CHEM 881 and 882, or *885

992A. Seminar in Analytical Chemistry (1-5 cr, max 5)

992E. Seminar on Current Literature of Organic Chemistry (1-5 cr, max 5)

Weekly seminar summarizing recently published developments in organic chemistry.

992J. Seminar in Physical Chemistry (1-5 cr, max 5)

Prereq: CHEM *885

992K. Seminar in Biological Chemistry (BIOC 992K) (1-2 cr, max 2 I, II)

Prereq: BIOC 832 or *839; and permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary .

Department Chair: James Takacs, Ph.D.

Graduate Committee: Professors Patrick Dussault (graduate chair), Parkhurst, Takacs, Associate Professor, Redepenning

Graduate students may work towards the PhD or MS degree. Graduate courses and research are offered in five divisions of the department: analytical, biochemistry, inorganic, organic, and physical chemistry.

To be in good standing within the department and to engage in research leading to advanced degrees, satisfactory progress must be made in the areas of grade point average, cumulative examinations, research performance and teaching performance. Students in good standing may continue to pursue PhD or MS degrees.

To be admitted to candidacy for advanced degrees students must pass a requisite number of cumulative examinations which are given monthly during the academic year. The student has the option of taking each examination in any of the five divisions. Students must commence taking the examinations no later than the third semester of residence.

Masters Degree.

To fulfill the requirements for Option I, candidates must: a) maintain a sufficiently high GPA, b) pass the required cumulative examinations, and c) pass an oral examination covering their area of preparation and thesis research. Students must specifically apply to the Graduate College for admission to the Option II masters degree before being admitted to the Graduate College. In

addition, the student must obtain special permission from the Graduate Committee to work towards this degree option.

Doctor of Philosophy Degree.

To fulfill the requirements for the PhD degree the candidate must: a) maintain a sufficiently high GPA; b) pass the required cumulative examinations; c) pass oral examinations on his/her dissertation research and on an original research proposal; d) present a dissertation which contains significant results of an original investigation under the direction of a member of the department. Qualified students may progress directly toward the PhD degree without obtaining a masters degree.

Specific details of the advanced degree program may be obtained from the departmental Graduate Committee.

Specialization available:

Environmental Studies (MS and PhD)

Chemistry faculty are also active in the toxicology major (MS and PhD) which is offered jointly with UNMC.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Berkowitz, David B. -1991; Professor; BS 1982 Chicago; PhD 1990 Harvard
- Cerny, Ron -1984; Research Associate Professor; BS 1977 Nebraska (Lincoln); PhD 1983 North Carolina
- Cheung, Chin Li (Barry) -2005; Assistant Professor; BS 1995 Wisconsin; MA 1997, PhD 2002 Harvard
- Choe, Wonyoung -2004; Assistant Professor; BS 1987, MS 1989 Seoul National; PhD 1998 Michigan
- DiMagno, Stephen -1994; Associate Professor; BA 1985 Swarthmore; PhD 1991 California (Berkeley)
- Du, Liangcheng -2001; Associate Professor; BS 1986 Yunnan (Kunming, China); MS 1989 Chinese Academy of Science (Shanghai); PhD 1996 Royal Veterinary and Agricultural University (Denmark)
- Dussault, Patrick -1988; Professor; BS 1982 California; PhD 1986 California Institute of Technology
- Eckhardt, Craig J. -1967; Professor; BA 1962 Colorado; MS 1965, PhD 1967 Yale
- George, T. A. -1968; Vice Chair and Professor; BS 1963 Manchester Institute; PhD 1966 Sussex
- Griep, Mark -1990; Associate Professor; BS 1981, PhD 1986 Minnesota
- Hage, David -1989; Charles Bessey Professor; BS 1983 Wisconsin (LaCrosse); PhD 1987 Iowa State
- Harbison, Gerard -1992; Professor; BA 1977 Trinity (Ireland); PhD 1984 Harvard
- Lai, Rebecca Y. -2007; Assistant Professor; BSc 1999 California State (Los Angeles); PhD 2003 Texas (Austin)
- Langell, Marjorie A. -1981; Charles Bessey Professor; BS 1974 Connecticut; MA 1976, PhD 1979 Princeton
- Li, Hui -2005; Assistant Professor; BS 1993 Lanzhou (China); MS 1996 China Institute of Atomic Energy; PhD 2004 Iowa
- Moriyama, Hideaki -2003; Research Associate Professor; BEng 1982, MEng 1984 Kumamoto Institute of Technology (Japan); PhD 1987 Osaka
- Parkhurst, L. J. -1969; Hewett University Professor; BA 1959, MS 1960, PhD 1965 Yale
- Powers, Robert -2003; Assistant Professor; BA 1984 Rutgers; PhD 1989 Purdue
- Rajca, Andrzej T. -1992; Professor; MS 1981 Politechnika (Poland); PhD 1985 Kentucky
- Redepenning, Jody G. -1990; Associate Professor; BA 1980 Concordia (Minnesota); PhD 1985 Colorado State
- Takacs, James -1988; Charles Bessey Professor; BS 1976 Rutgers; PhD 1981 California Institute of Technology
- Zeng, Xiao Cheng -1994; Ameritus University Professor; BS 1984 Peking; PhD 1989 Ohio State

Courses for Child, Youth and Family Studies (CYAF)

Child, Youth and Family Studies

801. Family and Consumer Sciences Curriculum (3 cr) (UNL)

Prereq: 15 hrs CYAF and/or NUTR and/or TXCD

Development of curriculum for Family and Consumer Sciences (CYAF) using student-centered, interactive methods of instruction.

801A. Family and Consumer Sciences Education Practicum I (1 cr) (UNL)

Prereq: Parallel CYAF 801

Development and implementation of teaching plans in a supervised 7th to 12th grade setting.

802. Curriculum Theory and Methods (4 cr) Lec 4. (UNL)

Prereq: Parallel CYAF 801 and 801A

The relationship between theory and practice in developing teaching-learning plans for Family and Consumer Science. Analyzing classroom management theory and developing plans for assessment.

802A. Educational Practicum II (1 cr) Fld 1. (UNL)

Prereq: CYAF 401/801 and 401A/801A; parallel CYAF 802

Development and implementation of teaching plans in a supervised setting in school grades 7th to 12th. Observation of the effectiveness of classroom management practices.

*804A. Family and Consumer Sciences Methods (3 cr) Lec 3.

Prereq: Admission to CYAF degree program and permission

Distance education course delivered by Central Washington State University.

The analysis and development of curriculum and methods of teaching Family and Consumer Sciences (FCS) in the context of the National Standards for FCS students, the National Standards for teachers of FCS and the standards for the state in which the candidate will teach. Learners and the learning environment; program leadership; beginning instructional strategies; Family, Career, and Community Leaders of America (FCCLA); curriculum development; integration of technology in the FCS classroom; and assessment.

*804B. Family and Consumer Sciences Methods II (3 cr) Lec 3.

Prereq: Admission to CYAF graduate program and permission.

Distance education course delivered by Texas Tech University.

Development of curriculum and methods of teaching Family and Consumer Sciences (FCS) in the context of the National Standards for FCS students, the National Standards for teachers of FCS and the standards for the state in which the candidate will teach. Learners and the learning environment; program leadership; beginning instructional strategies; Family, Career, and Community Leaders of America (FCCLA); curriculum development; integration of technology in the FCS classroom and assessment.

*807. Supervisory Leadership (ALEC *807) (3 cr) Lec 3.

Prereq: ALEC 302 or 801

Knowledge and theoretical basis for practicing supervisors in a changing workplace where supervisors have increasing responsibilities due to the flattening of organizational structures. Solving supervisory challenges in organizing and planning, problem solving and decision making, performance appraisal, and leading a diverse workforce.

*808. Occupational Programs in Family and Consumer Sciences (3 cr) Lec 3.

Prereq: Admission to CYAF graduate program

Distance education course delivered by Iowa State University.

Planning and implementing occupational Family and Consumer Sciences programs in career and technical education. Cooperative education, career pathways, and work-based education.

*811. Perspectives on Family and Consumer Sciences (1 cr each, max 3)

Prereq: 24 hrs human sciences, preferably distributed among the subject fields

A. Historical Development of Family and Consumer Sciences (1 cr)
B. Current Issues in Society and Implications for Family and Consumer Sciences Education (1 cr)
D. Future Trends and Professions in Consumer Science (1 cr)
E. Future Trends and Professions in Family and Consumer Sciences Education (1 cr)

813. Student Teaching in Family and Consumer Sciences (6-12 cr, max 12) Fld. (UNL)

Prereq: CYAF 401/801, and 402/802

CYAF 413 is 12 credit hours only. CYAF 813 is 6-12 credit hours. CYAF 413/813 requires a minimum of fourteen weeks supervised student teaching experience. One middle-level experience and one high school experience are to be completed. Pass/No Pass only.

Actual experiences in the teaching of family and consumer sciences.

813B. Internship: Selected Experiences (3-6 cr) (UNL)

Prereq: Permission

Pass/No Pass only.

Actual and simulated experiences in working with persons through human resources and family sciences in special focused areas of student's choice, e.g., adult education, career education, post-secondary education, special needs programs, consumer affairs.

*814. Evaluation in Career and Technical Education (TEAC *814) (3 cr)

Two aspects of evaluation in the classroom: 1) selection and use of evaluation in assessing learning, and 2) consideration of conceptual and methodological issues in conducting evaluation to determine and account for the effectiveness of programs.

*815. Advanced Instructional Theory in Family and Consumer Sciences (3 cr)

Different instructional models and their relationship to theoretical frameworks of curriculum. Students design instruction that supports the critical consciousness framework.

816. Educational Programming (3 cr)

Prereq: Permission

Not open to human resources and family science education majors in certification track. Planning and implementing developmentally appropriate educational experiences for a variety of audiences in non-formal settings.

*817. Critical Issues for the Beginning Teacher (1-3 cr, max 3)

Examines issues faced by beginning or returning teachers. Possible issues are classroom management, planning, selecting resources, and other critical issues to the new teacher. The theory and its application to the students' educational setting discussed for each issue. Includes how teachers can mentor and support one another as a collaborative group.

*818. History and Philosophy of Family and Consumer Science and Career and Technical Education (3 cr) Lec 3.

Prereq: Admission to CYAF degree program and permission

Distance education course delivered by University of Nebraska-Lincoln.

History, mission, philosophy and development of Family and Consumer Sciences (CYAF) and career and technical education. Societal context for families and communities. Impact of selected legislation on family and consumer sciences programs.

*820. Family Economics (3 cr)

Prereq: Admission to CYAF graduate program or permission

Distance education course delivered by South Dakota State University.

Major issues relative to the economics of families including household production; human capital development and the economics of crises; and public policy and family life cycle spending, saving and borrowing. New and emerging issues and the role of ethics in the field of family economics. A theoretical and research perspective used to illuminate concepts.

*821. Insurance Planning for Families (3 cr)

Prereq: Admission to CYAF graduate program or permission

Risk management concepts, ethical considerations, tools, and strategies for individuals and families. Life insurance; property and casualty insurance; liability insurance; accident, disability, health, and long-term care insurance; and, government-subsidized programs. Case studies provide experience in selecting appropriate insurance products.

*822. Financial Counseling (3 cr)

Prereq: Admission to CYAF graduate program or permission

Distance education course delivered by North Dakota State University.

Theory and research regarding the interactive process between clients and practitioner, including communication techniques, motivation and esteem building, the counseling environment, ethics, and methods of data intake verification and analysis. Legal issues, compensation, uses of technology to identify resources, information management, and current or emerging issues.

*823. Estate Planning for Families (3 cr)

Prereq: Admission to CYAF graduate program or permission

Distance education course delivered by Montana State University.

Fundamentals of the estate planning process, including estate settlement, estate and gift taxes, property ownership and transfer, and powers of appointment. Tools and techniques used in implementing an effective estate plan, ethical considerations, and new and emerging issues in the field. Case studies provide experience.

*824. Fundamentals of Financial Planning (3 cr)

Prereq: Admission to CYAF graduate program or permission

Distance education course delivered by Kansas State University.

Issues and concepts related to the overall financial planning process and establishing client-planner relationships. Services provided, documentation required, and client-CFP licensee relationships. Competencies related to gathering of client data, determining goals and expectations, and assessing the client's financial status. Emerging issues and the role of ethics.

*825. Reading in the Content Area (3 cr) Lec 3.

Prereq: Admission to CYAF graduate program

Basic reading and writing process relating to content literacy including schema theory, comprehension, and second language acquisition. The contribution of content literacy to content material and positive learning environments. Use of a variety of materials including textbooks, literature, Internet resources and media in the content classroom. Assisting diverse students in the use of reading, writing and vocabulary strategies to learn content material.

*828. Retirement Planning, Employee Benefits and the Family (3 cr)

Prereq: Admission to CYAF graduate program or permission

Micro and macro considerations in retirement planning for individuals and families. Various types of retirement plans, ethical consideration in providing retirement planning services, assessing and forecasting financial needs, integration of retirement plans with government benefits, and current research and theory. Case studies provide experience.

830. Practicum in Infant Development (3 cr) Lec 2, lab 3.

Current literature related to prenatal development, birth, and infancy. Observation and interaction with infants and their parents in the laboratory.

*835. Professional Practices in Financial Planning (3 cr)

Prereq: Admission to CYAF graduate program or permission

Distance education course delivered by Kansas State University.

Challenges of managing financial planning practices: business valuation, personnel, marketing, client services, ethics and technical applications. Case study analysis, relying on a theoretical and applied approach, will provide practical exposure to management issues. Emphasis on current research findings.

*836. Financial Planning Case Studies (3 cr)

Prereq: Completion of all courses toward the Family Financial Planning specialization or permission

Distance education course delivered by Kansas State University.

Capstone course integrating both theoretical and applied concepts, including research findings introduced in all other courses. Students develop written financial plans based on comprehensive cases, presented to a panel of practitioners.

*840. Personal Income Taxation (3 cr)

Prereq: Admission to CYAF graduate program or permission

Distance education course delivered by Montana State University.

Income tax practices and procedures including tax regulations, tax return preparation, tax audits, appeals, preparation for an administrative or judicial forum, and ethical considerations. Family/individual case studies provide practice in applying and analyzing information.

*841. Housing/Real Estate (3 cr)

Prereq: Admission to CYAF graduate program or permission

Distance education course delivered by Iowa State University.

The role of housing and real estate in the financial planning process from a theoretical perspective. Taxation, legal aspects, mortgages, and financial calculations related to home ownership and real estate investments. New and emerging issues, as well as the role of ethics in financial planning.

*845. Research in Leadership Education (ALEC *845) (3 cr) Lec.

Steps in preparing a research proposal, including statement of the research question, review of relevant literature, and determination of an appropriate research design and methodology. Research methodology, including both quantitative and qualitative procedures.

846. Addictions and Violence in Families (3 cr) (UNL, UNO)

Addictions and violence across the life cycle. Theories, behavioral patterns, and physiological and psychological impacts on individuals and the family and implications for intervention.

*850. Teaching Family and Consumer Sciences with Technology (3 cr) Lec 3.

Prereq: Admission to the CYAF graduate program

Distance education course delivered by South Dakota State University.

Integration of technology in the family and consumer sciences classroom focusing on the National Education Technology Standards (NETS).

*855. Psychology of Adolescence (3 cr) Lec 3.

Prereq: Admission to the CYAF graduate program and permission

Distance education course delivered by North Dakota State University.

Student differences and ways of adjusting teaching practice to meet individual needs. Application of learning theories to educate the whole child (cognitive, affective, social). Equitable treatment of students.

*860. Employee Assistance Program Seminar (3 cr)

Prereq: One 800-level CYAF course; MNGT 861; EDPS 882 and 868; or permission

Professional readiness of students in relation to the understanding, development, implementation, evaluation, and continuation of effective employee assistance programs.

*861. Foundations of Youth Development (1 cr) Lec 1.

Prereq: Admission to CYAF graduate program

Pass/No Pass only.

Fundamentals of youth development and the youth development profession. Ethical, professional and historical elements of youth development as it has evolved toward professionalization.

862. Adulthood and Aging (3 cr) (UNL)

Human development from young adulthood to old age with emphasis on interaction of and changes in physical, psychological and social-relational development.

*863. Youth Professionals as Consumers of Research (3 cr)

Prereq: Admission to CYAF graduate program

Research report evaluation skills for youth development professionals. Fundamental quantitative and qualitative research principles guiding disciplined inquiry. Application of research results and theories to practice.

*864. Community Youth Development (3 cr)

Prereq: Admission to CYAF graduate program

May be offered via distance education by Michigan State University.

National emphasis of strength-based or asset approach to community youth development, encompassing individual development and adolescent relationships with environments. Research, theory and practice applied in communities. Existing models, theoretical and applied literature, and current community efforts.

*865. Research Design and Methods (3 cr)

Qualitative and quantitative research designs and methods used in conducting research. Students develop a research proposal.

*867. Implementing Research and Scholarly Practice (3 cr)

Prereq: CYAF 865

Use developed proposal to conduct a pilot study and report results. Technical writing of research reports.

*868. Adolescents and Their Families (3 cr)

Prereq: Admission to CYAF graduate program

Distance education course delivered by Michigan State University.

Adolescent development as related to and intertwined with family development. Reciprocal influences between adolescents and their families. Working with youth vis a vis the family system.

*869. Administration and Program Management (3 cr)

Prereq: Admission to CYAF graduate program

Distance education course delivered by Colorado State University or Kansas State University.

Introduction to the development, administration and management of youth-serving organizations.

870. Program Design, Implementation and Evaluation in Family and Human Services (3 cr)

Prereq: 9 hours in CYAF or social sciences

Principles and methods of program design, implementation, and outcome evaluation of children and family programs. Participation in a community-based project involving practical application of program design and evaluation methods.

871. Human Sexuality and Society (EDPS 871; PSYC 871; SOCI 871) (3 cr) (UNL)

Prereq: Permission

Open to advanced students planning careers in the professions in which knowledge of human behavior and society is important (e.g., helping professions, medicine, law, ministry, education, etc.).

Interdisciplinary approach to human sexuality in terms of the psychological, social, cultural, anthropological, legal, historical, and physical characteristics of individual sexuality and sex in society.

*872. Youth Development (3 cr) (UNL, UNO)

Prereq: 12 hours CYAF or social sciences

Scientific literature concerning the interrelationship of the physiological, psychological and sociological aspects of the adolescent and young adulthood years. Understanding of individuals and their continuous adjustment within the family life cycle as they make the transition from childhood to adulthood.

*873. Program Design, Evaluation and Implementation (3 cr)

Prereq: Admission to CYAF graduate program

Overview of program development process and outcome evaluation of community children and family programs. Theoretical, methodological and programmatic issues in conducting programs and scholarship.

874. Assessment in Early Childhood (3 cr) (UNL)

Prereq: 12 hrs CYAF and/or social sciences including CYAF 270 and 270L

Selection, use and interpretation of assessment instruments for understanding the developmental level of children, birth through age 8. Assessment of reasoning and thinking processes, concept formulation and social cognition.

*875. Youth in Cultural Contexts (3 cr)

Prereq: Admission to CYAF graduate program
Distance education course delivered by Michigan State University.

Cultural context factors that affect youth from a holistic perspective within and outside the family unit. The cultural heritage of differing family types. Social and educational processes.

876. Cognitive Processes in Children (3 cr)

Prereq: 12 hrs CYAF and/or social sciences including CYAF 270 and 270L
Graduate students required to do some additional work.

Nature and development of reasoning and thinking processes and concept formation in children. Contribution of Piaget and others in providing new insights. Implications of these for teachers, parents, and others working with children.

877. Administration of Early Childhood Programs (3 cr) (UNL)

Prereq: 12 hrs CYAF or social sciences including CYAF 270 and 270L or permission
Administration of early childhood programs.

*878. Youth Policy (3 cr)

Prereq: Admission to CYAF graduate program
Distance education course delivered by Michigan State University.

Various federal and state policies designed specifically for youth. Existing state and national policies as to whether they contribute to, or act as barriers to, desired developmental outcomes.

*881. Family Systems (3 cr)

Prereq: Admission to CYAF graduate program or permission
Distance education course delivered by North Dakota State University.

Research and theory relative to family functioning throughout the life cycle, especially financial decision making during crisis and conflict. Factors that shape family values, attitudes, and behaviors from a multi-cultural perspective. New and emerging issues critical to family functioning.

882. Parent Education (3 cr) Lec, lab arr.

Prereq: 12 hrs CYAF and/or social sciences
Methodologies and programs in parent education.

883. Investing for the Family's Future (3 cr) Lec 3.

Prereq: Admission to CYAF graduate program
Distance education course delivered by Iowa State University.

Investment options for families. Common stocks, fixed income securities, convertible securities, and related choices. The relationship between investment options and employee and/or employer benefit plan choices.

888. Child and Family Policy (3 cr) (UNL, UNO)

Analysis of child and family policies including what is family policy, how policy is made and implemented, how values and goals affect policy and future directions for child and family policies in America and in other countries.

*890. Workshop Seminar (1-3 cr each per sem, max 15)

Prereq: 6 hrs education, 12 hrs human sciences including some work in specific areas
Selecting and organizing content and instruction in specific subject areas to facilitate conceptual learning in different educational settings.
A. Related Art (1-3 cr, max 3)
B. Family Economics and/or Consumer Education (1-3 cr, max 3)
D. Food and Nutrition (1-3 cr, max 3)
E. Housing and Furnishings (1-3 cr, max 3)
G. Human Development and the Family (1-3 cr, max 3)
J. Home Management (1-3 cr, max 3
K. Textiles and Clothing (1-3 cr, max 3)

*891. Special Topics in Human Sciences (HUMS *891; NUTR *891; SLPA *891; TEAC *891; TXCD *891) (1-3 cr, max 12)

Aspects of human sciences not covered elsewhere in the curriculum.

*892. Special Topics in Education (EDAD *892; EDPS *892; EDUC *892; SPED *892; TEAC *892) (1-3 cr, max 12)

Prereq: EDPS 859 or parallel; EDPS 859 or equivalent
Aspects of education not covered elsewhere in the curriculum.

893. Special Topics in Contemporary Family Issues (1-3 cr, max 18) (UNL, UNO)

Current family related issues such as: debt management, gender and family, low income families, retirement planning, work and family, mothering, fathering, and housing. Topics vary.

894. Contemporary Youth Issues (1-9 cr, max 9) Lec.

Prereq: Admission to the CYAF graduate program and permission

Issues faced by youth such as life skills, violence, and appearance. Topics vary.

895. Special Topics in Family and Cultural Diversity (3 cr, max 18) (UNL, UNO)

Current topics related to diverse populations, e.g., religion, sexual orientation, ethnicity.

*896. Advanced Independent Study (1-6 cr, max 6)

Prereq: 12 hrs in major department or closely related areas, and permission

Individual projects in research, literature review, or creative production may or may not be an extension of course work. Supervised and evaluated by departmental faculty members.

*897. Supervised Educational Experiences in Family and Consumer Sciences (1-6 cr)

Prereq: Permission

Pass/No Pass only.

Actual and simulated educational experiences in family and consumer sciences.

*897A. Practicum in Early Childhood Education (3 cr) (UNL) Lec 3, lab 24.

Prereq: CYAF 270 and 270L with grades of C or better; or permission

Pass/No Pass only.

Integrating development theory into the planning, implementation, and evaluation of individual and group experiences for young children in the child development laboratory.

*897B. Practicum in Family Financial Planning (3-6 cr, max 6)

Prereq: Admission to CYAF graduate program or permission

Pass/No Pass only.

897D. Community Internships in Child, Youth and Family Studies (1-6 cr, max 6) Fld.

Prereq: 12 hrs CYAF and/or related social sciences

Fieldwork in agencies serving children, youth and families.

*897E. Practicum in Family and Consumer Sciences Education (1-3 cr, max 3) Fld.

Prereq: Admission to CYAF degree program and permission

Pass/No Pass only. Distance education course delivered by Central Washington State University.

Development and implementation of teaching plans in supervised schools grades 7-12. Observation of the effectiveness of classroom management practices.

898. Research Experience in Child, Youth and Family Studies (1-5 cr, max 5) (UNL, UNO) Ind.

Prereq: 18 hrs CYAF and/or social sciences

CYAF 898 requires a contract with a CYAF faculty member.

Participation in an ongoing research project in child development studies and/or early childhood education, family science, marriage and family therapy, family and financial management, or family and consumer sciences education.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900. Philosophy of Child and Family Sciences (3 cr) Lec 3.

Theory and modes of inquiry in child and family science, and how this theory and evidence is used to discover knowledge.

906. Consumer and Family Economics (3 cr I)

Analyses and evaluation of current theories and sources of data in the area of consumer and family economics.

907. Family Financial Management (3 cr I) (UNL)

Prereq: CYAF 906

Analyses and evaluation of current theories and sources of data in the area of family financial management.

912. Advanced Curriculum Theory in Family and Consumer Sciences (1-3 cr, max 3)

Prereq: Experience in teaching, or permission

Various conceptualizations or frameworks of curriculum. The mission of family and consumer sciences and the relationship of the mission to the frameworks, particularly critical consciousness. Family systems of action and practical reasoning as components of critical consciousness.

918. Teaching Family and Consumer Sciences in Colleges (3 cr)

Philosophy, objectives, and procedures as applied to teaching specific human sciences subject areas at the college level.

920. Teaching Practicum (NUTR 920; TXCD 920) (1-3 cr, max 3)

Prereq: CYAF 918 or permission of department chair

Supervised classroom experiences designed to develop competencies in teaching at the college level.

930. Sociological/Anthropological Research Methods in Education (EDPS 930; NUTR 930; TEAC 930) (1-3 cr, max 15)

Empirical and theoretical research into the sociocultural problems and the lived experiences of people across educational, family and community settings.
A. Ethnographic Methods (1-3 cr, max 3)
B. Special Topics in Qualitative and/or Quantitative Research Methods (1-3 cr, max 3)
D. Discourse Analysis Across School, Home and Community Settings (1-3 cr, max 3)
E. Introduction to Linguistic Analysis of Classroom Interaction (1-3 cr, max 3)
J. Hermeneutic Traditions in Education (1-3 cr, max 3)
K. Quantitative Research Traditions in Education (1-3 cr, max 3)

950. Family Law (LAW 630G) (1-4 cr)

The family examined as a socio-legal entity with respect to its creation, dissolution, and the problems incident to its continuation, including interspousal rights and duties and the relationship between parents and children.

951. Theoretical Foundations of Marriage and Family Therapy (3 cr)

Prereq: 12 hrs CYAF and/or social sciences

General systems theory, its derivations and application in family therapy. Family therapy's history, contributions, current theorists, and approaches.

952. Psychopathology and Dysfunctional Interactions (3 cr)

Psychological, behavioral and emotional disorders identified in the Diagnostic and Statistical Manual and various interpersonal dysfunctions. Interpersonal antecedents and consequences of these disorders. Integration of individual and family diagnosis. Research supporting treatment from a family systems approach.

953. Issues and Ethics for Family Professionals (3 cr)

Prereq: 12 hrs CYAF and/or social sciences

Ethical and professional issues that family professionals confront as they assist families to cope with problems and strengthen family systems.

954. Assessment in Family Therapy (3 cr)

Prereq: 12 hrs CYAF and/or social sciences; CYAF 951 and 952, or equivalent or permission

Assessment of family systems using objective and subjective measures for the purpose of clinical intervention and research.

955A. Clinical Family Therapy I (3 cr)

Prereq: 12 hrs CYAF and/or social sciences; masters admission in CYAF; CYAF 951, and permission

Didactic training and supervised laboratory/clinic-based experiences in marriage and family therapy.

955B. Clinical Family Therapy II (3 cr)

Prereq: 12 hrs CYAF and/or social sciences; masters admission in CYAF; CYAF 955A, permission

Didactic training and supervised laboratory/clinic-based experiences in marriage and family therapy.

956. Treatment of Human Sexual Dysfunction (3 cr)

Prereq: Permission

CYAF 956 is only open to those students involved in clinical training.

Investigation of the literature, research, and theories of typical and atypical sexual behavior and expression. Assessment and treatments of sexual dysfunctions and other problematic sexual behavior will be examined from a theoretical and applied perspective.

961. Seminar in Parent/Child Relationships (3 cr) Lec 3.

Relationships between parents and children from the developmental, contextual, and life-span perspectives. Theoretical,

methodological, and applied implications of research.

970. Advanced Early Childhood Education (3 cr)

Prereq: 18 hrs PSYC, EDPS, SOCI, or CYAF

Advanced philosophy, procedures, and policies relating to early childhood education at the nursery school-kindergarten level and care of children outside the home.

971. Seminar in Child Development (3 cr)

Prereq: 18 hrs PSYC, EDPS, SOCI, or CYAF

Analysis of major studies and current literature in Child Development/Early Childhood Education.

972. Theories of Human Development and Family Relations (3 cr) (UNL)

Prereq: 18 hrs PSYC, and/or EDPS, and/or SOCI, and/or CYAF

Theoretical basis of child study and family analysis. Critical evaluation of methods and theories in child development, family relations, and human development from an integrative and holistic perspective.

973. Social Processes in Children (3 cr)

Prereq: CYAF 876, 971, or 972 or equivalent and 18 hours CYAF, PSYC, EDPS, or SOCI

Synthesis of current and historical perspectives in theory and research on children's social development including multiple contexts for socialization/individuation.

974. The Infant in the Family (3 cr)

Prereq: 12 hrs in CYAF, or social sciences

Infant development within the context of the family.

980. Comparative Family Systems (3 cr)

Structure and functioning of families in other cultures. Analysis of the interchanges between the family and larger society at different stages of the life cycle.

981. Readings in Family Life (3 cr)

Prereq: 18 hrs CYAF, PSYC, EDPS, or SOCI

Analysis and critical evaluation of major theories and current related literature in such phases of family life as development of personality, mate selection, and adjustment in marriage.

987. Family Strengths (3 cr)

Prereq: 12 hrs CYAF and/or social sciences

Theoretical literature and research on healthy families, and study of applications of these findings in various family life education and family therapy settings.

989. Innovative Approaches to Family Intervention (1 cr, max 3)

A. Collaborative Health Care. Conceptual models for delivery of mental health treatments.
B. Pharmacology and Family Therapy. Use of pharmacological treatments within the context of Marriage and Family Therapy.
D. Group Therapy. Group dynamics emphasizing skills for conducting groups for couples and families.

992. Seminar in Family and Consumer Sciences Education (1 cr, max 2) (UNL)

Prereq: Permission of departmental chair

995. Doctoral Seminar (3 cr, max 18) (UNL)

Prereq: Permission

CYAF 995 is intended primarily for doctoral students, although other graduate students may be admitted with permission.

Develop, execute and report on one or more projects on an individual or small group basis. Immersion in outcome-based scholarly activities with a faculty mentor. The interaction between research and practice.

996. Scholarly Practice and Discovery (1-6 cr, max 6)

Prereq: Permission

Investigation related to family and consumer sciences.

997. Advanced Practicum in Family Therapy (1-6 cr, max 6)

Prereq: CYAF 955A and B and permission

Supervised marital and family therapy in university and community agencies.

998. Special Topics in Human Sciences (NUTR 998; TXCD 998) (1-3 cr, max 6)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Julie Johnson, Ph.D.

Graduate Committee: Professors Raikes (chair), Abbott, DeFrain, Edwards, Johnson, Zeece; Associate Professors Bischoff, Churchill, Dalla, Prochaska-Cue, Torquati, Xia; Assistant Professors, deGuzman, Hollist, Huddleston-Casas, Reisbig, Springer; Assistant Professor of Practice Rupiper

The **master of science** degree in Child, Youth and Family Studies has a central focus on the family or issues that relate to the family. The degree is made up of three tracks: Child Development/Early Childhood Education, Family and Consumer Sciences Education, and Family Science. Four areas of specialization are also available: Family and Consumer Sciences Education, Family Financial Planning, Marriage and Family Therapy, and Youth Development. Family Financial Planning, Family and Consumer Sciences Education and Youth Development are interinstitutional programs via distance education. The Child, Youth and Family Studies Masters Degree Handbook, available on the Web at **cehs.unl.edu/cyaf/grad**, outlines the program requirements.

Candidates for the MS degree must hold a bachelors degree from an accredited college/university and have completed at least 18 hours in child, youth and family studies or the equivalent from related fields. A minimum 3.0 undergraduate GPA is required. Applicants must take the GRE and have their scores submitted as part of their application. Additional application procedures are required for those persons interested in the Marriage and Family Therapy specialization.

Although applications will be considered on a continuing basis, there are preferred deadlines. Applicants interested in the Child Development, Family and Consumer Sciences Education, and Family Science tracks, as well as Family Financial Planning and Youth Development specializations, have the following deadlines: October 1, January 15, and June 1. Applicants interested in Marriage and Family Therapy are considered only on January 15 or until available slots are filled.

The Interdepartmental **Certificate Program in Medical Family Therapy** is a joint program between the UNMC Department of Family Medicine and the UNL Department of Child, Youth and Family Studies. The program offers intensive training in medical family therapy and collaborative health care. It is designed for both health and mental health professionals who are interested in implementing the biopsychosocial-family systems model in the clinical setting. Certificate programs in **Family Financial Planning and Youth Development** are also offered. For complete information, refer to **cehs.unl.edu/cyaf/grad**. Please contact the department for any additional information.

University of Nebraska-Lincoln Department of Child, Youth and Family Studies 135 Mabel Lee Hall Lincoln, NE 68583-0236 (402) 472-2957

Doctor of Philosophy Degree.

Studies leading to a PhD in human sciences with specializations in Child, Youth and Family Studies as well as Gerontology are available. This degree prepares scholars both in applied and basic aspects of Child, Youth and Family Studies. The focus is to prepare scholars for leadership roles in teaching, research and/or policy development and implementation. The *Child, Youth and Family Studies PhD Handbook* is available on the Web at **cehs.unl.edu/cyaf/grad**, and outlines the program requirements.

Applications are considered January 15 for the upcoming academic year.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Abbott, Douglas A. -1983; Professor; BS 1973 Oregon State; MS 1979 Brigham Young; PhD 1983 Georgia
- Bischoff, Richard J. -1998; Associate Professor; BS 1988 Weber State; MS 1990 Auburn; PhD 1993 Purdue
- Churchill, Susan L. -1998; Associate Professor; BS 1991 Washington and Lee; MS 1993, PhD 1997 Georgia
- Cramer, Sheran L. -1970; Professor Emeritus; BS 1963 South Dakota State; MS 1967 Iowa State; PhD 1980 Nebraska (Lincoln)
- Dalla, Rochelle -1996; Associate Professor; BA 1991 Colorado; MS 1993, PhD 1996 Arizona
- DeFrain, John -1975; Professor; BA 1970, MA 1971 Nebraska (Lincoln); PhD 1975 Wisconsin
- deGuzman, Maria -2005; Assistant Professor; BA 1995 Manila; MA 2001, PhD 2004 Nebraska (Lincoln)
- Edwards, Carolyn Pope -1997; Professor; BA 1969, MA 1974, EdD 1974 Harvard
- Hollist, Cody - 2005; Assistant Professor; BS 1999 Brigham Young; MS 2001 Nebraska (Lincoln); PhD 2004 Brigham Young
- Huddleston-Casas, Catherine -2001; Assistant Professor; BS 1992, MS 1995 Illinois; PhD 2002 Minnesota
- Holcombe, Melinda A. -1957; Professor Emeritus; BS 1954, MS 1962 Nebraska (Lincoln)
- Johnson, Julie M. -1980; Professor; BS 1971, MS 1972 North Dakota State; PhD 1984 Nebraska (Lincoln)
- King, Kay F. -1977; Professor Emeritus; BS 1962, MS 1963 Brigham Young; PhD 1967 Florida State
- Kostelnik, Marjorie -2000; Professor and Dean of Education and Human Sciences; BS 1972 Pittsburgh; MS 1977, PhD 1978 Penn State
- Prochaska-Cue, Kathy -1994; Associate Professor; BS 1969, MS 1972, PhD 1988 Nebraska (Lincoln)
- Raikes, Helen -1990: Professor; BS 1966 Iowa State; MS 1969 California (Davis); PhD 1981 Iowa State
- Reisbig, Allison -2007; Assistant Professor; BS 1999 Emporia State; MS 2002, PhD 2007 Kansas State

- Rottmann, Leon H. -1975; Professor Emeritus; BS 1955, MA 1957, PhD 1960 Nebraska (Lincoln)
- Rupiper, Michelle - 1994; Assistant Professor of Practice; BA 1984 Northern Iowa; MS 1990 Nebraska (Omaha); PhD 2001 Nebraska (Lincoln)
- Springer, Paul R. -2007; Assistant Professor; BS 2001 Brigham Young, MS 2003 Auburn; PhD 2007 Texas Tech
- Stevens, Georgia -1989; Professor Emeritus; BS 1968, MS 1971 Nebraska (Lincoln); PhD 1979 Maryland
- Torquati, Julia -1995; Associate Professor; BA 1987, MS 1993, PhD 1994 Arizona
- VanZandt, Sally L. -1967; Professor Emeritus; BS 1963, MS 1966 Nebraska (Lincoln)
- Woodward, John C. -1966; Professor Emeritus; BA 1950 Doane; MA 1953, PhD 1957 Nebraska (Lincoln)
- Xia, Yan -2001; Assistant Professor; BA 1982 Hebei (China); MA 1988 South China Normal; MS 1999, PhD 2000 Nebraska (Lincoln)
- Zeece, Pauline -1984; Professor; BS 1975, MS 1981, PhD 1986 Iowa State

YOUTH DEVELOPMENT INTER-INSTITUTIONAL FACULTY

Michigan State University

- Villarruel, Francisco -1990; Professor; AB 1982 Michigan; MS 1987, PhD 1990 Wisconsin (Madison)

Kansas State University

- Johannes, Elaine -1993; Extension Specialist; BS 1979, MS 1982, PhD 2003 Kansas State

University of Missouri-Columbia

- Ganong, Larry
- Herzog, Melissa

FAMILY AND CONSUMER SCIENCES EDUCATION INTER-INSTITUTIONAL FACULTY

Central Washington University

- Bergh, Karen -2000; BS 1966 Washington State; MS 1991 Lesley

North Dakota State University

- Borr, Mari

Texas Tech University

- Couch, Sue -1978; MS PhD Kentucky
- Laman, Effie

South Dakota State University

- DeBates, Debra -BS 1973, MS 1993 South Dakota State; Phd 1999 Iowa State

Iowa State University

- Hausafus, Cheryl -1975; BS 1968 Florida State; MS 1971 Penn State; PhD 1978 Iowa State
- Keino, Lea -;Professor; Bs Nairobi; MEd British Columbia; MEd, PhD Iowa State

FAMILY FINANCIAL PLANNING INTER-INSTITUTIONAL FACULTY

Iowa State University

- Swanson, Patricia -1989; Lecturer; BS 1969, MS 1969, PhD 1988 Iowa State

Kansas State University

- Grable, John -1999; Associate Professor; BS 1987 Nevada (Reno); MS 1988 Clarkson; PhD 1997 Virginia Polytechnic Institute
- Maddux, Estoria -2003; Professor; BS 1972 Georgia; MS 1973 Tennessee; PhD 1979 Purdue

Montana State University

- Goetting, Marsha -1992; Professor; BS 1971, MS 1973 Kansas State; PhD 1996 Iowa State
- Haynes, George -1994; Associate Professor; PhD 1996 Cornell

North Dakota State University

- Fitzgerald, Margaret -1997; Professor; BS 1983 North Dakota State; MS 1987 Arizona State; PhD 1997 Iowa State
- Perkins, Ann -2005; Professor; PhD 2003 Iowa State
- Sanders, Gregory -1988; Professor; BS Indiana; MS Nebraska (Lincoln); PhD 1983 Georgia

Oklahoma State University

- Fournier, David -1978; Professor; BS 1975, MA 1975 Missouri; PhD 1979 Minnesota
- Muske, Glenn -1996; Associate Professor; BS 1977, MS 1977 North Dakota State; PhD 1996 Iowa State

South Dakota State University

- Enevoldsen, Bernadine -1964; Professor; BS 1964, MS 1986 South Dakota State; PhD 1993 Minnesota
- Yao, Rui -2003; LLB 1996 Qingdao; MS 2001, PhD 2003 Ohio State

University of Missouri-Columbia

- Sharpe, Deanna

Courses for Religious Studies (RELG)

Courses for Latin (LATN)

Courses for Hebrew (HEBR)

Courses for Greek (GREK)

Courses for Classics (CLAS)

Classics and Religious Studies

Subject Areas

- Classics (CLAS)
- Greek (GREK)
- Hebrew (HEBR)
- Latin (LATN)
- Religious Studies (RELG)

807. Early Christianity (HIST 807; RELG 307) (3 cr)

Life, literature, thought, and institutions of the Christian movement from Jesus to Constantine. A critical, historical approach to the sources in English translation and how they reflect the interaction of Christian, Jew, and pagan in late antiquity. The historical Jesus vis-a-vis the Christ of Faith, the impact of Paul's thought, the formation of Christian dogma, methods of interpreting canonical and extracanonical Christian literature, the problem of heresy and orthodoxy.

808. Dead Sea Scrolls (JUDS 408; RELG 408) (3 cr)

Prereq: CLAS 205 or 306 or permission

, including the history and thought of the Qumran inhabitants, the archaeology of Qumran, and the corpus of the Scrolls. Concentration on the reading of selected primary texts from the .

809. The Religion of Late Western Antiquity (HIST 809; RELG 409) (3 cr)

Religious institutions, philosophies, and lifeways of the Hellenistic Age from Alexander to Constantine. Includes civic religion of Greece and Rome, popular religion, mystery cults, Judaism, Christianity, popular and school philosophies (Platonism, Aristotelianism, Epicureanism, Cynicism, Stoicism), Gnosticism. History, interrelationships, and emerging world view of these movements.

810. Gnosticism (RELG 410) (3 cr)

Nature, history, literature, ritual, and impact of the classical Gnostic religions, 100 BCE to 400 CE. Extensive reading of original Gnostic treatises in English translation, with particular attention to their appropriation and transformation of earlier Jewish, Christian, and pagan religious and philosophical traditions. The principal Gnostic schools to be treated are Simonians, Sethians, Valentinians, Hermetics, and Manichaeans.

838. Topics in Old World Prehistory (ANTH 838) (3 cr) Lec 3.

Prereq: ANTH 242 or equivalent

Topics from Old World prehistory. Archaeological data relevant to selected theoretical or topical problems.

840. Gender and Sexuality in the Ancient World (WMNS 830) (3 cr) Lec 3.

Ancient Greek and Roman evidence pertaining to the fields of women's studies, gender studies, and sexuality.

883. Classical Drama (ENGL 840) (3 cr)

Greek and Roman tragedy and comedy in translation.

891. Topics in Greek Prose (3 cr, max 24)

Repeatable. Readings from Greek prose masterpieces. Topics vary.

892. Topics in Greek Poetry (3 cr, max 24)

Repeatable. Readings from Greek verse masterpieces. Topics vary.

*896. Reading and Research (1-6 cr)

Prereq: Permission

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

961. Seminar in Greek Literature (1-6 cr each)

*896. Readings and Research (1-24 cr)

Prereq: Permission

851. St. Augustine's Confessions (3 cr)

Prereq: LATN 302
Latin text of .

856. Latin of the Middle Ages (3 cr)

Selections from representative authors.

891. Topics in Latin Prose (3 cr, max 24)

Repeatable. Readings from Latin prose masterpieces. Topics vary.

892. Topics in Latin Poetry (3 cr, max 24)

Repeatable. Readings from Latin verse masterpieces. Topics vary.

*896. Reading and Research (1-24 cr)

Prereq: Permission

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

941. Seminar in Latin Literature (1-24 cr)

889. Medieval Literature and Theology (ENGL 889) (3 cr)

Exploration of the relationship between significant medieval theologies and primary medieval poets and prose masters.

Description

Department Chair: Sidnie White Crawford, Ph.D.

Graduate Chair: John D. Turner, Ph.D.

While currently admitted students may complete their programs, the department is not accepting new applications at this time.

Master of Arts.

The prerequisite for admission to the program in classics leading to the degree of master of arts is normally an undergraduate major in Greek or Latin.

For the degree of master of arts, a candidate must specialize in either Greek or Latin. The remaining work, or the minor when required, may be in courses in Greek (where the specialization is Latin), Latin (where the specialization is Greek), anthropology, art, English, history, modern languages and literatures, philosophy, religious studies, theater arts, or any other area approved to offer the masters degree.

Faculty

- Burnett, Stephen -2000; Associate Professor; BA1978 Wisconsin (Madison); MA 1981 Trinity Evangelical Divinity; PhD 1990 Wisconsin (Madison)
- Crawford, Dan D. -1997; Senior Lecturer; BA 1963 Haverford; MA 1966 Princeton; MA 1968, PhD 1972 Pittsburgh
- Crawford, Sidnie White -1997; Professor and Chair; BA 1981 Trinity; MTS 1984 Harvard Divinity; PhD 1988 Harvard
- Duncan, Anne -2007; Assistant Professor; BA 1993 Swarthmore; MA 1997, PhD 2000 Pennsylvania
- Gorman, Robert J. -1996; Assistant Professor; BA 1984 Nebraska (Lincoln); MA 1988, PhD 1995 Pennsylvania
- Lahey, Stephen -2007; Assistant Professor; BA 1986 West Chester, MA 1990, Kansas, PhD 1996 Connecticut
- Rinkevich, Thomas E. -1967; Associate Professor; BA 1964 Xavier (Cincinnati); MA 1966, PhD 1973 Ohio State
- Turner, John D. -1976; Professor; AB 1960 Dartmouth; BD 1965, ThM 1966 Union Theological Seminary (Virginia); PhD 1970 Duke

- Winter, Thomas N. -1970; Associate Professor; BA 1964 Michigan State; MA 1965, PhD 1968 Northwestern
- Wood, Simon -2004; Assistant Professor; BA 1992 Otago (New Zealand); PhD 2004 Temple

Courses for Communication Studies (COMM)

Communication Studies

800. Rhetorical Theory (3 cr)

Prereq: COMM 200 and 201, or permission

Major writers, works, and concepts involved in the rhetorical approach to the study of human communication.

812. Directing Forensics (3 cr)

Prereq: COMM 200, 201, 212 or permission

For students interested in teaching debate and speech activities at the secondary or collegiate level. Relationship between theory in speech communication and practice in the debate and speech contest situation.

827. Instructional Communication (3 cr)

Prereq: COMM 200, 201; Teachers College major or permission

Advanced introductory course in instructional communication. Focus on: understanding variables associated with the communication process in instructional settings, and managing instructional communication more effectively. Experimental and cognitive understanding of the role of communication in the instructional process.

830. Political Communication (POLS 830) (3 cr)

Prereq: COMM 200, 201 or political science major or minor, or permission

Role of communication in the political process, with an emphasis on communication strategies in political campaigns. Communication variables important in the political process, an application of communication theory and principles to political rhetoric, and analysis and criticism of selected political communication events.

*850. Seminar in Gender and Communication (3 cr)

Prereq: COMM 200 and 201

Relationship between gender and communication. Theories and research on gender and communication, serving as the basis for studying the interrelationships among language, social reality, sex role stereotypes, and cultural values.

852. Communication and Culture (3 cr)

Prereq: COMM 200 and 201 or permission

Theories of communication and culture as the basis for investigation of human communication in a variety of cultural contexts and activities.

*859. Human Communication Theory (3 cr)

Evolution of human communication theory as a social science. Major writers, works, and concepts involved in the study of human communicative interaction.

870. Interpersonal Communication Theory (3 cr)

Prereq: COMM 200 and 201 or permission

Central concerns of interpersonal communication theory and research, and to the various approaches to issues in the interpersonal communication context.

880. Critical and Interpretive Research (3 cr)

Prereq: COMM 200, 201 or permission

Introduction to critical and interpretive research in communication studies. Relationship of theory and methodology, text and context, selecting appropriate research questions, writing research proposals, and the ethics of research. Philosophical and theoretical assumptions underlying such research as well as on procedures for conducting research.

*882. Introduction to Quantitative Research Methods (3 cr)

Introduction to quantitative research methodology and analysis. Paradigmatic assumptions, reading and interpreting quantitative research studies, and quantitative research design and analysis. Posing research questions and/or hypotheses, quantitative measurement and study design, data collection, and univariate statistical analyses.

885. Small Group Communication Theory (3 cr)

Prereq: COMM 200, 201 and 210 or permission

Sketches out the conceptual territory of small group communication via a review of the small group communication literature so that students with little or no theoretical background in the small group communication area can develop an integrative picture of small groups.

*886. Organizational Communication (3 cr) Lec 3.

Prereq: COMM 386 and permission

Principles and theories relevant to communication behavior within organizations which can be used to guide the way people communicate in organizations.

*887. Consulting and Training in Communication (3 cr) Lec 3.

Prereq: COMM 200, 201, 386, and permission

Research on communication consulting and training. Design of consulting and training programs for use in organizational environments.

890. Internship in Communication Studies (1-6 cr, max 6)

Prereq: Permission

A structured professional experience in the field of communication studies outside of the traditional academic setting. Communication problems are confronted not as abstractions, but as specific occurrences with which the student must cope.

*898. Special Topics (1-3 cr, max 24)

Prereq: COMM 200, 201; and permission

Topic will be announced prior to registration.

Topic varies.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900. Introduction to Graduate Studies in Communication (3 cr)

Prereq: Permission

Will be required for all graduate students in communication studies. Systematic introduction to the discipline of communication studies, focusing upon the various dimensions of scholarship essential to successful pursuit of an advanced degree in communication studies. Function of communication studies research, surveys major research trends of the discipline, examines epistemology from a human communication perspective, and helps to develop writing and research skills.

911A. The Classical Tradition (3 cr)

Prereq: Permission

In-depth study of the evolution of rhetorical theory from its origin to St. Augustine, with emphasis on rhetorical theory in Classical Greece and Rome.

911B. The Modern and Renaissance Tradition (3 cr)

Prereq: Permission

In-depth study of the evolution of rhetorical theory from the middle ages through the modern period, with emphasis on eighteenth- and nineteenth-century British rhetorical thought.

911D. The Contemporary Period (3 cr)

Prereq: Permission

In-depth study of the development of rhetorical theory in the twentieth century.

912. Seminar in Argumentation (3 cr)

Prereq: Permission

Major theories or argumentation, theory building, applicability of methodologies, and understanding how argument functions in society.

927A. Seminar in Instructional Communication (3 cr)

Prereq: Permission

Literature and research pertaining to the basic psychological concepts, principles, and communication skills employed in effective instruction. Communication as it applies to instruction by studying and applying theories of learning and communication to instructional contexts.

927B. Seminar in Instructional Communication Research (3 cr)

Prereq: Permission

To review and analyze the seminal and current research related to communication in instructional contexts. Foundation for developing theory and generating original research.

927D. Current Issues in Instructional Communication (3 cr)

Prereq: Permission

Investigation of current topics in instructional communication and speech communication education. Specific content depends on the semester the course is offered and the research interests of the instructor assigned.

950A. Perspectives in Communication and Culture (3 cr)

Prereq: Permission

The ways race, gender, ethnicity, and nationality are constructed in cultural discourses. Influence of various media on the standardizations of images.

950B. Seminar in Intercultural Communication (3 cr)

Prereq: One of the following: COMM 827, 852, 853, 870, 885, 886, permission

Introduction to theory and research in intercultural communication. Role of culture in the rhetorical and communication processes and on theory-building, methodology, and research design in intercultural communication.

950D. Current Issues in Communication and Culture (3 cr)

Prereq: Permission

Investigation of current topics in the research on the relationship between cultural processes and human communication. Current research on the relationship between communication and gender, ethnicity, and politics.

953. Seminar in Political Communication (3 cr)

Prereq: COMM 830 and permission

In-depth study of the influences of communication behavior on political events. Communication within political campaigns and governmental processes.

970A. Seminar in Interpersonal Communication (3 cr)

Prereq: Permission

Fundamental concepts, theories, and research in interpersonal communication. Selected problems and contemporary research.

970B. Seminar in Family Communication (3 cr)

Prereq: Permission

Concepts, theories, and research in family communication. Selected problems and contemporary research across a variety of family contexts.

970D. Current Research in Interpersonal Communication (3 cr)

Prereq: Permission

Surveys current research in interpersonal communication. Issues, direction and methodology in interpersonal communication.

981. Critical Research Design (3 cr)

Prereq: COMM 880 or permission

Advanced course in rhetorical criticism and textual analysis. Designing and conducting an in-depth research project from a critical perspective.

983. Advanced Experimental Research (3 cr)

Prereq: Permission

Experimental designs with an emphasis on assessing strengths and limitations of the various approaches. Individual research projects are planned, conducted, and reported.

984. Interpretive Research Design (3 cr)

Prereq: Permission

Theory and practice of interpretive research methodologies and methods. Individual and/or group research projects are planned, conducted, and reported.

985. Cultural Criticism (3 cr)

Prereq: COMM 880 or permission

Advanced course focusing on the critical analysis of cultural artifacts, especially upon the relationship of media, language, and culture. Designing and conducting a research project from a cultural studies perspective.

986A. Perspectives in Organizational Communication (3 cr)

Prereq: Permission

Perspectives in organizational communication range from a system-cultural-applied orientation to that of the paradigmatic. Various orientations, strengths and weaknesses of each, and looks at empirical and theoretical research representative of these views.

986B. Problems and Issues in Organizational Communication (3 cr)

Prereq: Permission

Basic issues in the study of organizational communication range from differences in the structure of the organization itself to differences in the task activities of work units. How such differences influence the communication behavior of those involved.

986D. Current Research in Organizational Communication (3 cr)

Prereq: Permission

Current research in organizational communication over a two-year period. Emphasis on issues studied, the focus organizational communication research takes, and the methodology employed.

996. Research Problems Other Than Thesis (1-6 cr)

998. Special Topics in Communication Studies (1-24 cr)

Prereq: COMM 200 and 201; or permission

Special topics in communication studies.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: William J. Seiler, Ph.D.

The Department of Communication Studies offers the MA and PhD degrees in four areas of concentration: instructional communication, interpersonal and family communication, organizational communication, and rhetoric and culture. The department also offers an interdisciplinary MA specialization in marketing, communication studies, and advertising.

The department's graduate degree programs are designed to provide an advanced understanding of the scholarly traditions in communication studies; to train students in both social-scientific and humanistic research approaches in order to create proficiency in historical/critical, quantitative, and interpretive/qualitative methods; to develop competent investigators capable of producing communication scholarship of the highest quality; and to foster the creation of teacher-scholars and practitioner-researchers who respect the discipline's pluralism and follow the highest standards of ethical conduct.

Master of Arts Degree.

Students pursuing masters degrees with a major in communication studies must have completed an undergraduate major of at least 30 hours in communication studies, or have had equivalent preparation. The Department also offers a specialization in marketing, communication studies, and advertising. This is an Option III program. The program consists of a major--a minimum of 18 hours in communication studies and two minors of 9 hours--one in advertising and one in marketing. Eighteen hours of the program are specified courses which includes 6 hours from each of the following three departments: communication studies, marketing, and advertising. There is also an 8-hour comprehensive exam of which 5 hours can be waived if the student has a 3.25 GPA or higher in all courses taken in the specialization.

Doctor of Philosophy Degree.

Applicants for this degree have met the minimum requirements for the masters degree. The student must take such qualifying examinations as may be prescribed by the department. General requirements of the Graduate College also apply. Two research tools are required for the PhD degree. This requirement may be met by any combination of the methods described in this bulletin, see , and the department's "Graduate Studies Handbook for the Doctor of Philosophy Degree" under Research Methodology Requirements.

Approved Specializations:

Great Plains Studies (MA and PhD); Marketing, Communication and Advertising (MA only); Women's and Gender Studies (MA and PhD)

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Bormann, Dennis -1966; Professor Emeritus; BA 1957 South Dakota; MA 1959, PhD 1968 Iowa
- Braithwaite, Dawn O. -1998; Professor and Willa Cather Professor; BA 1978 California State (Fullerton); MA 1980 California State (Long Beach); PhD 1988 Minnesota
- DiSalvo, Vincent S. -1971; Professor Emeritus; BS 1964 Wisconsin State (River Falls); MA 1966 Kansas State; PhD 1971 Bowling Green
- Japp, Phyllis -1981; Associate Professor; BA 1976, MA 1979 Nebraska (Omaha); PhD 1986 Nebraska (Lincoln)
- Kellas, Jody -2004; Assistant Professor; BS 1995 Northwester, MA 1999, PhD 2002 Washington
- Krone, Kathleen -1991; Professor; BS 1973, MS 1975 Illinois State; PhD 1985 Texas (Austin)
- Lee, Ronald -1991; Professor; BA 1974, MA 1976 Wayne State (Detroit); PhD 1981 Iowa
- Lucas, Kristen -2006; Assistant Professor; BS 1995 Northern Michigan; MA 2002, PhD 2006 Purdue
- Seiler, William J. -1972; Professor and Chair; Professor Business Education; BEd 1965 Wisconsin State (Whitewater); MA 1967 Kansas State; PhD 1971 Purdue
- Soliz, Jordan -2004; Assistant Professor; BA 1997, MA 1999, PhD 2004 Kansas

Courses for Community and Regional Planning (CRPL)

Community and Regional Planning

800. Introduction to Planning (3 cr) Lec.

Field of community and regional planning is introduced in relation to the history of cities, urbanization, and regionalization. Origins and evolution of American urban and regional planning practice. The planning process as a response to social, political, physical, and economic factors is analyzed. Community comprehensive planning process, plan implementation, and functional areas of planning.

*802. Planning Theory (3 cr) Lec 3.

Prereq: or parallel: CRPL 800

Linkages between knowledge and organized action in planning practice are analyzed in terms of philosophical underpinnings, decision theory, programming, policy formulation, politics, goals, values, and social change. Historical traditions of contemporary planning theory. The identities, roles, and relationships of planners with society.

*804. Legal Aspects of Planning (3 cr) Lec/sem.

Prereq: or parallel: CRPL 800 or permission

Applications of constitutional, common, administrative, and statutory law in the planning process are studied. Roles of the branches of American government in the regulation and control of land use and development, as well as in the planning, development, and delivery of public services and facilities. Legal theories, issues, cases, and applications relevant to professional planning practice, as well as the legal responsibilities of participants in the planning process.

*810. Qualitative Techniques for Planners (3 cr)

Applied qualitative research techniques. Interpret verbal data generated by the community. Organize, categorize, and analyze the words (data) into critical empirical comparable units of analysis. Optimize “active” listening skills; techniques to incorporate qualitative community concerns into the planning process; and epistemological insights on how to combine data obtained from divergent research methods into a single research project.

815. Housing, Renewal, and Development (3 cr) Lec.

Prereq: or parallel: CRPL 800

Comprehensive analysis of public policies and programs for housing, urban renewal, and large-scale development and a consideration of their social, political, and environmental implications at the neighborhood, community, and regional scales. Formulation of housing and renewal policy and programs as a part of the community and regional planning process and related regulations and stimulation efforts, and to the design, construction, and marketing processes as they affect or are affected by public housing policies and the private sector. Methodology, processes, results, problems, and changing nature of the federal role in housing and urban development.

820. Grant Writing and Fund-raising (3 cr)

Introduces and familiarizes the student with the theory and practice of fund-raising and grant writing. Overview of the principles and concepts of philanthropy and the basic issues of fund-raising. Skills of writing a case statement, conducting a donor search and analysis, designing a fund raising vehicle, and writing grant applications in “real world” situations.

*830. Planning with GIS (3 cr) Lec/lab.

Prereq: Admission to the MCRP program or permission

Theory and practice of geographic information systems use in planning. Selection and use of computer software and data for problem solving and decision making in community and regional planning. Specific planning-related applications of geographic information systems, spreadsheet modeling, and data base management.

831. Computer Graphics Applications in Physical and Environmental Planning (3 cr)

Acquire skill and working experience in the use of microcomputer- and minicomputer-based CAD systems as applied to physical and environmental planning, urban design and computer cartography. Productive techniques of using CAD equipment and software to perform site planning, mapping, site analysis, and site selection tasks.

*840. Planning Methods and Analysis (3 cr) Lec/lab.

Prereq: Principles of statistics course; CRPL 800; CRPL *830; community and regional planning major

Analytical methods and techniques for research, problem solving, and decision making are studied and applied within the context of the planning process. Statistical analyses; forecasting methods; optimization techniques; models and simulation techniques; and methods of demographic, economic, land use, and policy analyses are studied in relation to community and regional planning.

850. Social Planning and Policy (3 cr) Lec/sem.

Social planning and policy is introduced and studied through a historical presentation of US social welfare policy, an exploration of models and methods utilized by government and human service agencies in the planning of social programs, and an analysis of contemporary social policy issues. Areas to be covered include privatization, universalism vs. selectivity, race and ethnicity, homelessness, and poverty.

860. Planning and Design in the Built Environment (3 cr) Lec/sem.

Introduces principles and practices of planning, design and implementation for multiple-structure built environments. Influences of physical, social, environmental, and economic factors upon planned and designed environments are studied. Various planning and design methods, processes, and products. Means of project implementation are explored, and examples of existing and proposed projects.

870. Environmental Planning and Policy (3 cr) Lec/sem.

Introduces environmental planning, including its history and origins. Major environmental issues throughout the world, and the roles of planning in addressing these problems. Environmental planning process and environmental legislation.

*872. Environmental Survey and Analysis (ARCH 560/*860) (3 cr) Lec 3.

Prereq: Permission

Comprehensive review of contemporary methods and theories of environmental survey and analysis in the fields of landscape architecture, regional planning, conservation, and related areas, with emphasis on interrelationships between human and natural systems.

875. Water Quality Strategy (AGRO 875; CIVE 875; GEOL 875; MSYM 875; NRES 875; POLS 875; SOCI 875; SOIL 475; WATS 475) (3 cr II) Lec 3.

Prereq: Permission

Holistic approach to the selection and analysis of planning strategies for protecting water quality from nonpoint sources of contamination. Introduction to the use of methods of analyzing the impact of strategies on whole systems and subsystem for selecting strategies; and for evaluating present strategies.

877. Recreation and Park Planning (3 cr)

Exploration, analysis, and application of recreation and park planning principles and practices. Understanding of park planning at the local, regional, and national level is developed.

880. Economic Development Planning (3 cr)

Introduces the theory and principles of economic development planning. Concepts, analytical approaches, and theories of economic growth of local communities. Consideration of local economic development plans for small communities. International perspectives of economic development.

881. Planning in Developing Countries (3 cr)

Introduction to the comparative study of urbanization and planning in developing countries. Social, economic, and spatial organization of Third World cities, including international trends, theories of development, life in these cities, and how the people and governments of Third World countries attempt to cope with their problems and plan for a better future.

889. Urbanization of Rural Landscapes (AGRO 889; HORT 889) (3 cr)

Prereq: Permission

Multidisciplinary course dealing with the urbanization process; the impacts on landscapes, people and the community; and the choices that are available to informed citizens.

*890. Professional Seminar (1 cr) Sem.

Prereq: Community and regional planning major

Diverse issues relating to contemporary professional planning practice are studied through abbreviated case studies and presentations by visiting specialists and participants in the planning process. Interrelated social, economic, political, and physical factors affecting specific planning situations. Current and emerging roles for professional planners.

895. Selected Topics in Community and Regional Planning (1-9 cr)

Aspects of community and regional planning not covered elsewhere in the curriculum.

896. Special Problems in Community and Regional Planning (1-6 cr)

Prereq: Permission

Individual or group investigations of problems relating to community and regional planning.

*897. Planning Internship (1-4 cr)

Prereq: Community and regional planning major and permission

Supervised practical experience in a planning-related organization.

*898. Professional Project (1-6 cr)

Prereq: MCRP degree candidate and permission of department graduate committee

Professional project is a non-thesis culmination of the MCRP degree program. The professional project emulates professional planning practice and is pursued individually by the student with supervision by a faculty advisory committee.

*899. Masters Thesis (6 cr)

Prereq: Admission to MCRP degree program and permission of major adviser

900. Professional Planning Practice (3 cr) Lec and sem.

Prereq: or parallel: CRPL 800

Current concepts, ideas, and issues relating to professional planning practice are studied. Contexts of planning practice, the professional planner's relationship to society, ethics in professional planning practice, and political and organizational behavior in plan making and policy implementation. Roles of citizens, client groups, and consultants in the planning process. Forms of collaborative problem solving, including mediation and negotiation. Planning office and project management issues and approaches, including personnel administration and project financing and budgeting.

913. Planning and the Natural Environment (3 cr)

Prereq: CRPL 800 or permission

Occasional field trips and practical exercises. Interdisciplinary examinations of regional ecological problems and consideration of the theories, principles, techniques, and strategies utilized in planning for the conservation and development of the natural environment. Ecological emphasis with case studies of environmental deterioration and suggested or implemented solutions.

990. Planning Studio (3 cr) Lec and lab.

Prereq: CRPL 800, *830, *840; MCRP degree candidate

Application and synthesis of multi-disciplinary philosophies, theories, methods, analyses, and techniques of planning in the context of contemporary complex planning projects. Individual and team approaches pursued in specific project contexts for survey research, definition of research questions and hypotheses, analyses, creative problem solving, formulation and evaluation of alternatives, plan making, and development of implementation strategies.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Program Director: Gordon P. Scholz

Graduate Committee: Professors Scholz (chair), Mutunayagam; Associate Professor Cantarero; Assistant Professor Nam

Application for Admission.

Applications for admission to the MCRP degree program must include the following: 1) Application for Admission to the Graduate College form, submitted to the Office of Graduate Studies; 2) two official copies of all college transcripts, submitted to the Office of Graduate Studies; 3) official score report for the Graduate Record Exam General Test, submitted to the Office of Graduate Studies; 4) three letters of recommendation on standard Graduate Studies forms, submitted to the program office; and 5) an essay responding to program application questions, submitted to the program office.

Applications are accepted for admision in fall and spring semesters, as well as summer sessions.

Degree Program.

The master of community and regional planning (MCRP) degree program provides preparation for professional planning practice in the public, private, and nonprofit sectors.

Planning is an interdisciplinary problem-solving profession that influences a broad range of future-oriented decision making. Planners work with individuals, groups, and organizations to formulate plans, policies, and strategies through which desired change can be achieved. Planners utilize a wide variety of methods and techniques to identify problems and needs and to formulate plans of action that effectively address those needs. Planners often need to accommodate differing viewpoints in the process of formulating desirable and compatible plan and policy recommendations.

The MCRP degree program emphasizes understanding of the importance and interrelationships among human resources, natural resources, sociocultural characteristics, economic activity, political and institutional roles, and characteristics of the natural and built environment. The program provides students with a sound foundation in planning theory, methods, process, and application-a background which enables graduates to formulate, initiate, and coordinate a broad range of planning and development actions.

Students with diverse undergraduate, graduate, and professional backgrounds are encouraged to enter the MCRP degree program. No prior course work in planning is required.

The MCRP degree program requires completion of 48 graduate credit hours, 24 of which are in the following required core courses:

- 800. Introduction to Planning (3 cr)
- 802. Planning Theory (3 cr)
- 804. Legal Aspects of Planning (3 cr)
- 810. Qualitative Techniques for Planners (3 cr)
- 830. Planning with GIS (3 cr)

840. Planning Methods and Analysis (3 cr)
900. Professional Planning Practice (3 cr)
990. Planning Studio (3 cr)

Each student consults with a faculty adviser in the MCRP program to select elective courses within and outside the program that will help the student achieve his or her academic and professional goals. Students are encouraged to select at least 9 credit hours of course work in an area of concentration defined in consultation with their faculty advisors.

Each student must pursue one of three possible completion tracks for the MCRP degree: 1) 6-credit-hour masters thesis and oral examination; 2) 6-credit-hour professional project and oral examination; or 3) comprehensive written examination and oral examination. The program schedules the written comprehensive examination for track 3 typically no more than once each semester.

Dual Degree Programs.

The MCRP degree may be pursued within three dual degree programs at the University of Nebraska-Lincoln:

The MCRP/JD dual degree program is offered in collaboration with the College of Law. This program enables completion of both the MCRP degree and the juris doctor degree in a four-year period.

The MCRP/MArch dual degree program is offered in collaboration with the architecture program in the College of Architecture. This program enables completion of both the MCRP degree and the master of architecture degree in a three-year period. This program is intended for persons who hold the bachelor of science in design (BSD) or equivalent undergraduate degree.

The MCRP/MS in civil engineering, with a transportation engineering emphasis, is intended for persons holding the bachelor of science in civil engineering degree.

Persons interested in the MCRP/JD, MCRP/MArch or MCRP/MS (transportation engineering) dual degree programs should inquire with the Community and Regional Planning program director.

Interdepartmental Programs.

The MCRP program cooperates with other disciplines in offering courses for the Environmental Studies Interdepartmental Area, the Great Plains Studies Interdepartmental Area, and the Water Resources Planning and Management Interdepartmental Area. See "Environmental Studies," "Great Plains Studies," and "Water Resources Planning and Management" sections for separate descriptions of these interdepartmental programs.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Cantarero, Rodrigo -1989; Associate Professor; BS 1975 Iowa State; MA 1979 & 1980 Iowa; PhD 1988 Southern California
- Fischer, Marie -1975; Professor Emeritus; BS 1952 George Williams; MA 1970 Nebraska (Lincoln)
- Luther, Joseph -1983; Professor Emeritus; BA 1972 Eastern Washington; MUD 1973, DED 1975 Texas A&M
- Mutunayagam, N. Brito -1981; Professor of Community & Regional Planning and Architecture; BSEngr 1963 Kerala (India); DTCP 1967 School of Planning and Architecture (India); MEngr 1974 Asian Institute of Technology (Thailand); DEDP, VPI and SU 1981
- Nam, Yunwoo -2005; Assistant Professor; BA 1989, MPA 1992 Yonsei (Korea); MCRP 1999, PhD 2004 Pennsylvania
- Scholz, Gordon P. -1975; Professor of Community & Regional Planning and Architecture; Registered Architect, AICP; BArch 1968 Nebraska (Lincoln); MArch and MUP 1971 Illinois (Urbana); MBA 1974 Nebraska (Omaha)
- Tang, Zhenghong - 2008; Assistant Professor; PhD Texas A&M

Courses for Computer and Electronics Engineering (CEEN)

Courses for Computer Science and Engineering (CSCE)

Computer Science and Engineering

Subject Areas

- Computer Science and Engineering (CSCE)
- Computer and Electronics Engineering (CEEN)

810. Information Retrieval Systems (3 cr) Lec 3.

Prereq: CSCE 235, 310, or permission

Outline of general information retrieval problem, functional overview of information retrieval. Deterministic models of information retrieval systems; conventional Boolean, fuzzy set theory, p-norm, and vector space models. Probabilistic models. Text analysis and automatic indexing. Automatic query formulation. System-user adaptation and learning mechanisms. Intelligent information retrieval. Retrieval evaluation. New theories and future directions. Practical experience with working experimental information retrieval system.

813. Database Systems (3 cr) Lec 3.

Prereq: CSCE 310

CSCE 813 requires practical experience with a working database system. Data and storage models for database systems; entity/relationship, relational, and constraint models; relational databases; relational algebra and calculus; structured query language; logical database design: normalization, integrity; distributed data storage; concurrency; security issues. Spatial databases and geographic information systems.

821. Foundations of Constraint Processing (3 cr) Lec 3.

Prereq: CSCE 310 and 476/876, or permission

Constraint processing as a powerful formalism for articulating and solving industrial problems such as design, scheduling, and resource allocation. Foundations of constraint satisfaction, its basic mechanisms (e.g., search, backtracking, and consistency-checking algorithms), and constraint programming languages. New directions in the field, such as strategies for decomposition and for symmetry identification.

823. Design and Analysis of Algorithms (3 cr)

Prereq: CSCE 310

Mathematical preliminaries. Strategies for algorithm design, including divide-and-conquer, greedy, dynamic programming and backtracking. Mathematical analysis of algorithms. Introduction to NP-Completeness theory, including the classes P and NP, polynomial transformations and NP-complete problems.

824. Computational Complexity Theory (3 cr) Lec.

Prereq: CSCE 235 and 310

Turing machine model of computation: deterministic, nondeterministic, alternating, probabilistic. Complexity classes: Time and space bounded, deterministic, nondeterministic, probabilistic. Reductions and completeness. Complexity of counting problems. Non-uniformity. Lower bounds. Interactive proofs.

825. Compiler Construction (3 cr) Lec 3.

Prereq: CSCE 310

Review of program language structures, translation, loading, execution and storage allocation. Compilation of simple expressions and statements. Organization of a compiler including compile-time and run-time symbol tables, lexical scan, syntax scan, object code generation, error diagnostics, object code optimization techniques, and overall design.

828. Automata, Computation and Formal Languages (3 cr) Lec 3.

Prereq: CSCE 310

Introduction to the classical theory of computer science. Finite state automata and regular languages, minimization of automata, context free languages and pushdown automata, Turing machines and other models of computation, undecidable problems, introduction to computational complexity.

830. Computer Architecture (3 cr) Lec 3.

Prereq: CSCE 230, 231, 310, and parallel: STAT 880 or ELEC 810; or permission

Credit not applicable towards graduate degree in computer science. Addresses the architecture of single-processor (Von Neumann or SISD) computer systems. Covers the evolution, design, implementation and evaluation of state-of-the-art systems. Topics: Memory Systems, including interleaving, hierarchies, virtual memory and cache implementations; Communications and I/O, including bus architectures, arbitration, I/O processors and DMA channels; and Central Processor Architectures, including RISC and Stack machines, high-speed arithmetic, fetch/execute overlap and parallelism in a single-processor system.

832. High-Performance Processor Architectures (3 cr) Lec 3.

Prereq: CSCE 830; MATH 814; STAT 880 or ELEC 810

CSCE 832 assumes knowledge of computer architecture, pipelining, memory hierarchy, instruction level parallelism, and compiler principles. High performance computing at the processor level. The underlying principles and micro-architectures of contemporary high-performance processors and systems. State-of-the-art architectural approaches to exploiting instruction level parallelism for performance enhancements. Case studies of actual systems highlight real-world trade-offs and theories.

834. VLSI Design (3 cr) Lec 3.

Prereq: CSCE 335

Introductory course in VLSI design using metal-oxide semiconductor (MOS) devices primarily aimed at computer science majors with little or no background in the physics or circuitry of such devices. Design of nMOS and CMOS logic, data-path, control unit, and highly concurrent systems as well as topics in design automation.

835. Cluster and Grid Computing (3 cr) Lec 3.

Prereq: CSCE 310 or equivalent programming experience

CSCE 835 is designed for non-CSE students who have an interest in building or programming cluster to enhance their computationally-intense research. Build and program clusters. Cluster construction, cluster administration, cluster programming and grid computing.

837. File and Storage Systems (3 cr) Lec 3.

Prereq: CSCE 351 or 451/851; CSCE 430/830

CSCE 837 requires designing and implementing a real-life file and storage system. System-level and device-level topics in the design, implementation, and use of file and storage systems. Components and organization of storage systems, disk drive hardware and firmware, multi-disk systems, RAIDs, local, distributed and P2P file systems, and low-power design. Design and implement a real-life file and storage system.

840. Numerical Analysis I (MATH 840) (3 cr) Lec 3.

Prereq: Grade of "Pass" or "C" or better in CSCE 150E or 155/155H; MATH 208/208H

Credit toward the degree may be earned in only one of the following: CSCE/MATH 340/840 and ENGM 480/880. Algorithm formulation for the practical solution of problems, interpolation, roots of equations, differentiation, and integration. Effects of finite precision.

841. Approximation of Functions (MATH 841) (3 cr) Lec 3.

Prereq: A programming language, MATH 821 and 814

Uniform approximation, orthogonal polynomials, least-first-power and least squares approximation, polynomial interpolation and spline interpolation, approximation interpolation by rational functions, and Fourier series.

847. Numerical Analysis II (MATH 847) (3 cr) Lec 3.

Prereq: CSCE 340, MATH 814 and 821

Numerical matrix methods and numerical solutions of ordinary differential equations.

851. Operating Systems Principles (3 cr) Lec 3.

Prereq: CSCE 231 and 310

Credit in CSCE 851 will not count towards a graduate degree in computer science and computer engineering. Organization and structure of operating systems. Control, communication, and synchronization of concurrent processes. Processor and job scheduling. Memory organization and management including paging, segmentation, and virtual memory. Resource management. Deadlock avoidance, detection, recovery. File system concepts and structure. Protection and security. Substantial programming.

855. Distributed Operating Systems (3 cr) Lec 3.

Prereq: CSCE 851

Organization and structure of distributed operating systems. Control, communication, and synchronization of concurrent processes in the context of distributed systems. Processor allocation and scheduling. Deadlock avoidance, detection, recovery in distributed systems. Fault tolerance. Distributed file system concepts and structure. A substantial programming project in distributed systems.

856. Parallel Programming (3 cr) Lec 3.

Prereq: CSCE 310 or equivalent programming experience

Introduction to the fundamentals of parallel computation and applied algorithm design. Methods and models of modern parallel computation; general techniques for designing efficient parallel algorithms for distributed and shared memory multiprocessor machines; principles and practice in programming an existing parallel machine.

857. Systems Administration (3 cr) Lec 3.

Prereq: CSCE 310 or equivalent programming experience

Introduction to basic concepts of system administration. Operating systems and networking overview. User and resource management. Networking, systems and Internet related security. System services and common applications, web services, database services, and mail servers. Basic scripting in SHELL, PERL and EXPECT. Systems administration on a UNIX platform.

862. Communication Networks (3 cr) Lec 3.

Prereq: CSCE 230 and 310; STAT/MATH 380 or STAT 880

Introduction to the architecture of communication networks and the rudiments of performance modeling. Circuit switching, packet switching, hybrid switching, protocols, local and metro area networks, wide area networks and the Internet, elements of performance modeling, and network programming. Advanced material spans network security, asynchronous transfer mode (ATM), optical wireless, cellular and satellite networks, and their performance studies.

864. Internet Systems and Programming (3 cr) Lec 3.

Prereq: CSCE 310

Paradigms, systems, and languages for Internet applications. Client-side and server-side programming, object-based and event-based distributed programming, and multi-tier applications. Coverage of specific technologies varies.

865. Introduction to Mathematical Logic I (MATH 865) (3 cr)

Semantical and syntactical developments of propositional logic, discussion of several propositional calculi, applications to Boolean algebra and related topics, semantics and syntax of first-order predicate logic including Godel's completeness theorem, the compactness theorem.

867. Software Quality (3 cr) Lec 3.

Prereq: CSCE 310 or permission

Initial and ongoing software analysis, including metrics, requirements, correctness, performance, testing, and validation. Both frameworks and methods for software quality. Benchmarks and testing, processes for quality assurance, performance and quality models, software quality tools, testable designs, and automated testing.

870. Computer Graphics (3 cr) Lec 3.

Prereq: CSCE 310; MATH 814; or permission

Display and recording devices; incremental plotters, point, vector, and character generation; grey scale displays, digitizers and scanners; digital image storage; interactive and passive graphics; pattern recognition; data structures and graphics software; the mathematics of three dimensions; homogeneous coordinates; projections and the hidden-line problem.

871. Introduction to Bioinformatics (3 cr) Lec 3.

Prereq: CSCE 310; STAT/MATH 380 or STAT 880

Fundamentals and current trends in bioinformatics. Scoring matrices and pairwise sequence alignments via dynamic programming, BLAST, and other heuristics. Multiple sequence alignments. Applications of machine learning methods such as hidden Markov models and support vector machines to biological problems such as family modeling and phylogeny.

872. Digital Image Processing (3 cr) Lec 3.

Prereq: CSCE 156 or permission

Digital imaging systems, digital image processing, and low-level computer vision with emphasis in data structures, algorithms, and system analysis and modeling. Digital image formation and presentation, images statistics and descriptions, operations and transforms, and system simulation. Applications include system design, restoration and enhancement, reconstruction and geometric manipulation, compression, and low-level analysis for computer vision.

873. Computer Vision (3 cr) Lec 3.

Prereq: CSCE 156 or permission

High-level processing for image understanding and high-level vision with an emphasis on data structures, algorithms, and modeling. Low-level representation, basic pattern-recognition and image-analysis techniques, segmentation, color, texture and motion analysis, and representation of 2-D and 3-D shape. Applications include content based image retrieval, digital libraries, and interpretation of satellite imagery.

874. Introduction to Data Mining (3 cr) Lec 3.

Prereq: CSCE 310; STAT/MATH 380 or STAT 880

CSCE 874 requires a project involving application of data mining techniques to real-world problems. Data mining and knowledge discovery methods and their application to real-world problems. Algorithmic and systems issues. Statistical foundations, association delivery, classification, prediction, clustering, spatial data mining and advanced techniques.

875. Multiagent Systems (3 cr) Lec 3.

Prereq: CSCE 310

Distributed problem solving and planning, search algorithms for agents, distributed rational decision making, learning multiagent systems, computational organization theory, formal methods in Distributed Artificial Intelligence, multiagent negotiations, emergent behaviors (such as ants and worms), and Robocup technologies and real-time coalition formation.

876. Introduction to Artificial Intelligence (3 cr) Lec 3.

Prereq: CSCE 310

Introduction to basic principles, techniques, and tools now being used in the area of machine intelligence. Languages for AI programming introduced with emphasis on LISP. Problem solving, search, game playing, knowledge representation, expert systems, and applications.

877. Cryptography and Computer Security (3 cr) Lec 3.

Prereq: CSCE 310, MATH 814 or equivalent

Introductory course on cryptography and computer security. Classical cryptography (substitution, Vigenere, Hill and permutation ciphers, and the one-time pad); Block ciphers and stream ciphers; The Data Encrytion Standard; Public-key cryptography, including RSA and El-Gamal systems; Signature schemes, including the Digital Signature Standard; Key exchange, key management and identification protocols.

878. Introduction to Machine Learning (3 cr) Lec 3.

Prereq: CSCE 310

STAT 380/880 recommended. Introduction to the fundamentals and current trends in machine learning. Applications for game playing, text categorization, speech recognition, automatic system control, data mining, computational biology, and robotics. Decision trees, artificial neural networks, Bayesian classifiers, genetic algorithms, and instance based classifiers.

879. Introduction to Neural Networks (3 cr) Lec 3.

Introduction to the concepts, design and application of connection-based computing begins by simulating neural networks.

Competing alternative network architectures, including sparse distributed memories, Hopfield networks, and the multi-layered feed-forward systems. Construction and improvement of algorithms used for training of neural networks addressed to reduce training time and improve generalization. Algorithms for training and synthesizing effective networks are implemented in high level language programs running on conventional computers. Methods for synthesizing and simplifying network architectures for improved generalization. Pattern recognition, computer vision, robotics medical diagnosis, weather and economic forecasting.

*891. Internship in Computer Practice (1 cr) Fld.

A detailed project proposal must be prepared by the student and approved by the department prior to the start of the project. A final report must be submitted. Experiential learning in conjunction with an approved industrial or governmental agency under the joint supervision of an outside sponsor and a faculty member.

896. Special Topics in Computer Science (1-3 cr per sem, max 24) Lec.

Aspects of computers and computing not covered elsewhere in the curriculum.

*897. Masters Project (1-6 cr)

Prereq: Permission of adviser

Designed for students pursuing a non-thesis option (Option III) to work on a project under the supervision of a member of the computer science and engineering faculty.

898. Computer Problems (3 cr)

Independent project executed under the guidance of a member of the Computer Science faculty. Solution and documentation of a computer problem demanding a thorough knowledge of either the numerical or nonnumerical aspects of computer science.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

910. Information Organization and Retrieval (3 cr)

Prereq: CSCE 810

Aspects of natural language processing on digital computers. Analysis of information content by statistical, syntactic, and logical methods. Search and matching techniques. Automatic retrieval systems, question-answering systems. Evaluation of retrieval effectiveness.

913. Advanced Topics in Database Systems (3 cr)

Prereq: CSCE 813

Database system topics, coverage varying from year to year. Examples: Normalization theory; statistical databases; distributed databases; failure recovery; implementation issues. Readings in the current literature.

914. Constraint Database Systems (3 cr) Lec.

Prereq: CSCE 813 or 913 and permission

Introduction to constraint database systems. Constraint data model, constraint query languages, query optimization and evaluation, constraint data storage and applications. Assignments in both use and the implementation of systems.

920. Formal Languages (3 cr)

Prereq: CSCE 820 and 828 or permission

Definition of formal grammars; arithmetic expressions and precedence grammars, context-free and finite-state grammars. Algorithms for syntactic analysis; recognizers, backtracking, operator precedence techniques. Semantics of grammatical constructs; reductive grammars. Floyd productions, simple syntactical compilation. Relationship between formal languages and automata.

923. Development and Analysis of Efficient Algorithms (3 cr)

Prereq: CSCE 820 and 827

Analysis of performance of algorithms on random access machines and Turing machines, data structures for design of efficient algorithms, sorting algorithms, divide and conquer strategies, algorithms on graphs and their performance bounds, pattern matching algorithms, achievable lower bounds on complexity, NP complete problems.

924. Graph Algorithms (3 cr)

Prereq: CSCE 827, MATH 852, or permission

Review concepts related to analysis of algorithms and graph theory. Classical graph theoretic algorithms including Eulerian paths, Hamiltonian circuits, shortest paths, network flows and traveling salesman. Planar graph algorithms. Theory of alternating chains and algorithms for graph matching problems. Approximate and parallel algorithms. Applications of graph algorithms to engineering and physical sciences.

925. Scheduling Theory (3 cr)

Prereq: Permission

Scheduling theory with particular emphasis to its application in computer science. Polynomial-time algorithms, NP-hardness

proofs and analysis of heuristics. Minimization of makespan and mean flow time. Real-Time scheduling.

930. Advanced Computer Architecture (3 cr)

Prereq: CSCE 830

Recent advances in computer architecture including the effects of VLSI and methods of improving performance. Parallelism, pipelining, vector and array processors, multiprocessors and distributed processors, and data-flow architectures.

932. Fault-Tolerance: Testing and Testable Design (3 cr)

Prereq: CSCE 834 or permission

Increasing density of microelectronic circuits makes them harder to test during production and field operation. Theory and techniques developed to solve this problem. Faults and fault modeling; algorithms for test generation and fault simulation; built-in-self-test methods and standards; design for testability; and self-checking circuits.

933. Fault-Tolerance: System Design and Analysis (3 cr)

Prereq: CSCE 830 or permission

Theory and practice of creating extremely dependable digital systems through online fault-tolerance. Emphasizes modular redundancy in hardware and software to permit detection, masking, and removal of faulty components. Case studies from aerospace, banking, and other disciplines. Fault classification, error detection and diagnosis, dependability metrics, Byzantine Agreement, design trade-offs, and system simulation and modeling (esp. Markov).

935. Mathematical Theory of Finite Automata (3 cr)

Prereq: CSCE 828 or permission

Introductory course in automata theory in which the behavior and structure of automata discussed.

942. Numerical Analysis III (MATH 942) (3 cr)

Prereq: CSCE/MATH 840 or 841 or 847 or permission

Advanced topics in numerical analysis.

952. Advanced Computer Networks (3 cr)

Prereq: CSCE 862

Advanced level course on the recent development in computer networks. Integrated Services Digital Networks (ISDN), Broadband-ISDN and Asynchronous Transfer Mode (ATM), Multimedia Source and Traffic Characteristics, Source Policing, Scheduling and Quality of Service, Wireless Communication, Tracking of Mobile Users, Performance Computer networks.

953. Optical Communication Networks (3 cr) Lec 3.

Prereq: CSCE 462/862 or equivalent

State-of-the-art optical communication networks, encompassing traditional networks operating on optical fiber and next-generation networks such as wavelength division multiplexed (WDM) and optical time division multiplexed (OTDM) networks. Fundamentals of optical network design, control, and management. Optical network design and modeling, routing and wavelength assignment algorithms, optical network simulation tools and techniques.

961. Coding Theory (3 cr)

Prereq: MATH 817 desirable

Channels, introduction to information theory, Shannon's fundamental theorem, Linear codes, Hamming codes, Reed-Muller codes, cyclic codes, idempotents, BCH codes, Reed-Solomon codes, Quadratic residue codes, perfect single-error correcting codes, Sphere packings, the Golay codes, Lloyds theorem, nonexistence theorems, weight enumerators, the MacWilliams equation, association schemes, quasi-symmetric designs, polarities of designs, extension of graphs, self-orthogonal codes and designs.

962. Advanced Software Engineering (3 cr)

Prereq: CSCE 361

Recent advances in the field of software engineering. Software reuse, artificial intelligence approaches to software design, usability and requirements engineering, and design environments. Computer tools for the design of software products. Readings from current software engineering literature discussed and evaluated. Students will participate in a group project which investigates specific software engineering research topics.

963. Software Process Engineering (3 cr) Lec 3.

Prereq: CSCE 361 or permission

Engineering of the software development process including software life-cycle, maturity models, process programming, and process management. Both theory and practice of engineering large, long-lived software systems. Process analysis, modeling, workflows, standards, process environments and tools, automation, and organizational context. Case studies illuminate the application of software process theory to engineering practice. Teams analyze and develop software management plans and tools.

966. Software Architecture and Frameworks (3 cr) Lec 3.

Prereq: CSCE 866 or permission

Architectural aspects of software development including design patterns, frameworks, standardization of architectures and components, and development environments. Methodologies for creating reusable solutions for common problems in a variety of application areas. Experience in the development and use pattern catalogs and design standards.

970. Pattern Recognition (3 cr)

Prereq: MATH 814, STAT 880, CSCE 810, or equivalent

Introduction to statistical decision theory, adaptive classifiers, supervised and nonsupervised training. Pattern recognition systems: transducers, feature extractors, decision units. Applications to optical character recognition, speech processing, remote sensing.

971. Advanced Bioinformatics (3 cr) Lec 3.

Prereq: CSCE 471/871

Advanced algorithmic techniques for bioinformatics. Development and analysis of string matching, graph theoretic and dynamic programming techniques applied to systems and computational biology problems such s multiple sequence alignment, alignment of DNA and protein sequences, genome rearrangements, and phylogeny and haplotypes.

973. Support Vector Machines (3 cr) Lec 3.

Prereq: CSCE 310; STAT/MATH 380 or STAT 880; MATH 314/814

Core theory of the machine learning technique called support vector machines. Margin, kernels, and the formulation of a machine learning problem as an optimization problem that can be solved optimally. Implementation issues, kernel design, the appropriateness of various kernels for different applications, and regularization.

974. Genetic Algorithms (3 cr)

Prereq: CSCE 310 and 876

For students taking this course, no biological sciences background is needed. However, a knowledge of genetic principles may help student to improve current algorithms. Introduction of the motivation and current implementations of advanced genetic algorithms. These algorithms are built on basic principles borrowed from biology. Illustrates how a novel, implicitly-parallel search is implemented to obtain solutions for combinatorically-difficult problems.

975. Computational Algebra (3 cr)

Prereq: MATH 817, CSCE 310, or permission

History of Symbolic and Algebraic Computation, Applications of Computer Algebra Systems to scientific problems. Survey of Symbolic Systems MACSYMA, CAYLEY, CAS, SOGOS, Computational Group Theory Algorithms and their complexity: Coset enumeration, bases and strong generators and the Schreier-Sims algorithm. Centralizer, normalizer algorithms, p-sylow calculus, conjugacy classes, and characters of groups, permutation group algorithms, characters of the symmetric group, maximal subgroups of a group. Transitive and primitive extensions and the Hecke Ring relations. Word problems, lattice dynamical problems, crystallography and other applications.

976. Artificial Intelligence (3 cr)

Prereq: CSCE 876 or equivalent

For students with some sophistication and considerable interest in exploring methods of designing and using algorithms useful for finding adequate answers to combinatorically large problems that require largely symbolic rather than numeric computing. It will be assumed students are highly proficient in one or more high-level computer languages and either are or will be able to function in functional and descriptive languages such as LISP and PROLOG. Study, analyze and critique basic and current research papers and to engage in artificial intelligence projects and experiments either alone or in small groups. Artificial intelligence environments, tools and expert system building. Class participation will be encouraged for the review of the more recent AI literature.

977. Data Encryption (3 cr)

Prereq: STAT 880, CSCE 235 or MATH 817 or permission

History of public cryptology; elements of statistics, combinatorics, number theory, group theory; symmetric and asymmetric cryptosystems, “trap door” functions; public key cryptosystems; RSA and knapsack; levels of cryptographic security; computational complexity of algorithms; National Bureau of Standards-DES (Standard); block and stream cyphers; cypher key management; protection of proprietary software and data.

978. Human Factors in Computer Systems (3 cr)

Prereq: Permission

Human factors area of computer science which has to do with human-computer communication and how to facilitate it. Introduces the behavioral and linguistic background to human factors studies. Human factors in computer systems, including programming, languages and systems, text editing and word processing, command languages, menu-driven systems, natural language interfaces, direct manipulation systems, response times, and speech I/O. Readings from the human factors literature.

979. Advances in Neural Networks and Genetic Algorithms (3 cr) Lec.

Graduate level course requires reading, research, and programming selected to address the open problems of improving the speed and robustness of algorithms for learning in networks and other self-organizing systems. The state-of-the-art methods for supervised training of neural networks followed by the implementation and application of genetic algorithms. Evolution and

self-organization of complex, adaptive, nonlinear systems for solving problems of pattern recognition, cognition, and control. Obtaining insight into the internal workings of neural networks. Current theories and experimental testing used for analysis and testing of connections and thresholds of trained neural networks. Reference materials include research reports, papers, and books on the theory and design of neural network based processors and problem solving systems.

990. Seminar (1-3 cr, max 24) Lec.

Prereq: Permission

Frontiers of an area of computer science.

996. Research Problems Other Than Thesis (1-6 cr)

Investigation of minor research problems to introduce graduate students to the methods of research in computer science by assigning a problem which is of research interest but within the capacity of a graduate student to complete within a semester.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

8330. Digital Computer Design I (4 cr) Lec 3, lab 3.

Prereq: CEEN 3100, 3130

Prereq or coreq: CEEN 3280. Offered on Omaha Campus. Introduction to the architecture of a microprocessor, memory characteristics, designs and applications. Memory and I/O decoding techniques, I/O interfacing, interrupts, programmable support chips, and timing analysis.

8360. Digital Computer Design II (4 cr) Lec 3, lab 3.

Prereq: CEEN 8330, STAT 3800

Prereq or coreq: CSCI 4500. Offered on Omaha Campus. Peripherals for a high speed microcomputer system. Direct memory access (DMA) controllers, interrupt controllers, dynamic RAM hardware interfacing and programmable logic devices (PLD).

8630. Digital Communications Media (4 cr) Lec 3, lab 3.

Prereq: CEEN 3610

Offered on Omaha Campus. Transport of bit streams from one geographical location to another over various physical media such as wire pairs, coaxial cable, optical fiber, and radio waves. Transmission characteristics, media interfacing, delay, distortion, noise, and error detection and correction techniques.

8660. Telecommunications Engineering I (4 cr) Lec 3, lab 3.

Prereq: CEEN 8630

Offered on Omaha Campus. Standard telecommunications protocols, architecture of long distance integrated data networks, local area networks, wide area networks, radio and satellite networks. Network management, internet working, system modeling and performance analysis.

8710. Computer Communication Networks (4 cr) Lec 3, lab 3.

Prereq: CEEN 3250, 4330

Offered on Omaha Campus. Standard protocols and hardware solutions defined by the International Standard Organization (ISO) and Institute of Electrical and Electronics Engineers (IEEE) for the computer communications networks. Included are ISO OSI model, IEEE 802.X (Ethernet, token bus, token ring) and Asynchronous Transfer Mode (ATM) networks.

8730. Mobile and Personal Communications (4 cr) Lec 3, lab 3.

Prereq: CEEN 4630 or equivalent

Offered on Omaha Campus. Basic concepts on mobile and personal communications. System design fundamentals, trunking theory, mobile radio propagation, fading and multipath modulation techniques, spread spectrum, diversity, multiple access techniques, and interference. Examples of mobile communication systems presented including GSM system, IS-136 and IS-95.

8736. Mobile and Personal Communications (4 cr)

Prereq: CEEN 3250 or equivalent

Offered on Omaha Campus. Concepts on mobile and personal communications. Techniques for mobile radio, equalization, diversity, channel coding, and speech coding.

8750. Satellite Communications (4 cr) Lec 3, lab 3.

Prereq: CEEN 4630 or equivalent

Offered on Omaha Campus. Fundamental concepts of satellite communications. Basic communications concepts such as modulation, multiple access, spectrum efficiency and spread spectrum. Integrates propagation, speech coding, radio, standards, internet working, link budget and design. Overview of satellite communications. Current issues in wireless communications.

8756. Satellite Communications (4 cr)

Prereq: CEEN 3250 or equivalent

Offered on Omaha Campus. Fundamental concepts of satellite communications. Emphasis on orbies, launching satellites,

modulation and multiplexing, multiple access, east stations, coding, interference, and special problems in satellite communications.

8760. Wireless Communications (3 cr)

Prereq: Permission

Offered on Omaha Campus. Fundamental concepts of wireless communications. Physics of orbits, launching satellites into orbit, spacecraft design and operation, radio frequency link, moducation and multiplexing, multiple access, satellite transponders, earth stations, interference and special problems in satellite communications.

8766. Wireless Communications (3 cr)

Prereq: Permission

Offered on Omaha Campus. Fundamental concepts of wireless communications. Basic communications concepts such as multiple access and spread spectrum. Integrates propagation, radio standards, and Internet working. Current issues in wireless communications are discussed.

8790. Optical Fiber Communications (4 cr) Lec 3, lab 3.

Prereq: CEEN 4630

Offered on Omaha Campus. Fundamentals of lightwave communication in optical fiber waveguides, physical description of fiber optic systems. Properties of the optical fiber and fiber components. Electro-optic devices: light sources and modulators, detectors and amplifiers; optical transmitter and receiver systems. Fiber optic link design and specification; fiber optic networks.

8920. Individual Study in Computer and Electronics Engineering IV (1-3 cr)

Prereq: Departmentally approved proposal

Offered on Omaha Campus. Individual study at the senior level in a selected computer and electronics engineering area under the supervision and guidance of a computer and electronics engineering faculty member.

8940. Special Topics in Computer and Electronics Engineering IV (3 cr) Lec 3.

Prereq: Permission

Offered on Omaha Campus. Special topics in the newly emerging areas of computer and electronics engineering at the senior level which may not be covered in the other courses in the computer and electronics engineering curriculum.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Steve Goddard, Ph.D.

Graduate Committee Chair: Gregg Rothermel, Ph.D.

The Computer Science and Engineering (CSE) Department hosts advanced research programs in the general areas of

- Computer Science
- Computer Engineering
- Bioinformatics

Graduate students participate in research projects funded by major funding agencies and commercial companies.

The following graduate degree programs are available:

- Master of Science in Computer Science
- Master of Science in Computer Science with a Computer Engineering Specialization
- Master of Computer Science with a Bioinformatics Specialization
- Doctor of Philosophy in Computer Science
- Doctor of Philosophy in Engineering with a Computer Engineering Specialization
- Doctor of Philosophy in Computer Science with a Bioinformatics Specialization
- Joint Doctor of Philosophy in Computer Science and Mathematics

Specific information about Computer Science and Engineering graduate degree programs is available online at **www.cse.unl.edu.**

The CSE Department offers teaching assistantships and research assistantships to highly qualified students.

Master of Science.

Applicants for admission to the master of science degree program are required to submit scores for the general Graduate Record Examination and satisfy the general admission requirements of the Graduate College. Admission to full graduate standing in the MS program requires the equivalent of the undergraduate major in computer science. A TOEFL score of at least 600 (paper-based) and 250 (computer-based) is required for students whose native language is not English and who have not earned a baccalaureate in the US. Recommendation for admission to provisional standing in the MS program may be made in exceptional cases by the Computer Science Graduate Committee. Provisional admissions are limited by available space.

The master of science program may be carried out under Option I or Option III and conforms to the general requirements of the Graduate College. Students interested in computer engineering can take the computer engineering specialization within the master of science program.

Doctor of Philosophy.

Students applying for admission to the doctor of philosophy program in computer science must satisfy the general requirements for full graduate standing in the MS program as stated above. Admission to full graduate standing in the PhD program requires the successful completion of a qualifying examination. Admission to Candidacy for the PhD degree requires: the successful completion of a written comprehensive examination and the submission of an acceptable written proposal for the dissertation research to the student's PhD Supervisory Committee.

Cooperative doctor of philosophy programs are also offered in conjunction with the Department of Mathematics and the College of Engineering.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Choueiry, Berthe -1999; Associate Professor; MS 1974, PhD 1994 Swiss Federal Institute of Technology (Lausanne)
- Cohen, Myra -2004; Assistant Professor; MS 1999 Vermont (Burlington); PhD 2004 Auckland (New Zealand)
- Deogun, Jitender -1981; Professor; MS 1970 Delhi (India); MS 1974, PhD 1979 Illinois (Urbana)
- Dwyer, Matthew -2004; Professpr; MS 1989 Massachusetts (Boston); PhD 1995 Massachusetts (Amherst)
- Elbaum, Sebastian -1999; Associate Professor; BS 1995 Universidad Catolica de Cordoba (Argentina); MS 1997, PhD 1999 Idaho (Moscow)
- Goddard, Steve -1998; Professor and Chair; BA 1985 Minnesota; MS 1995, PhD 1998 North Carolina (Chapel Hill)
- Henninger, Scott -1995; Associate Professor; BS 1983 Southern California; MS 1990, PhD 1993 Colorado (Boulder)
- Jiang, Hong -1991; Professor; BS 1982 Huazhong (China); MS 1987 Toronto; PhD 1991 Texas A&M
- Lu, Ying -2005; Assistant Professor; MS 2001, PhD 2005 Virginia (Charlottesville)
- Ramamurthy, Byrav -1998; Associate Professor; BTech 1993 Indian Institute of Technology Madras (India); MS 1995, PhD 1998 California (Davis)
- Reichenbach, Stephen -1989; Professor; BA 1976 Nebraska (Lincoln); MS 1984 Washington (St. Louis); PhD 1989 William and Mary
- Revesz, Peter -1992; Professor; BS 1985 Tulane (New Orleans); MSc 1987, PhD 1991 Brown (Providence)
- Rothermel, Gregg -2004; Professor; MS 1982 SUNY (Albany); PhD 1996 Clemson
- Samal, Ashok -1988; Associate Professor; BTech 1983 Indian Institute of Technology (Kanpur, India); PhD 1988 Utah
- Scott, Stephen D. -1999; Associate Professor; BS 1992, MS 1994 Nebraska (Lincoln); DSc 1998 Washington (St. Louis)
- Seth, Sharad -1970; Professor; BS 1966 Indian Institute of Technology (Kanpur, India); PhD 1970 Illinois
- Sincovec, Richard F. -2000; Henson Professor; BS 1964 Colorado (Boulder); MS 1967, PhD 1968 Iowa State
- Soh, Leen-Kiat -2001; Associate Professor; BS 1991, MS 1993, PhD 1998 Kansas (Lawrence)
- Srisa-An, Witawas -2002; Associate Professor; MS 1998, PhD 2002 Illinois Institute of Technology
- Surkan, Alvin J. -1969; Professor Emeritus; BS 1954 Alberta; MA 1956 Toronto; PhD 1959 West Ontario
- Variyam, Vinodchandran N. -2001; Associate Professor; BTech 1990 Regional Engineering College (Calicut, India); MS 1993 Indian Institute of Technology (Madras); PhD 1999 Institute of Mathematical Sciences (Chennai, India)
- Vuran, Mehmet Can -2007; Assistant Professor; MS 2004; PhD 2007 Georgia Institute of Technology (Atlanta)
- Xu, Lisong -2004; Assistant Professor; BE 1994, ME 1997 University of Science and Technology Beijing ; PhD 2002 North Carolina State

Criminal Justice

Description

Interim Department Director: John Crank, Ph.D.

The criminal justice program is administered through the University of Nebraska at Omaha and criminal justice graduate courses are primarily taken on the Omaha campus. Certain option courses, however, could be completed on the Lincoln campus in consultation with the student's graduate adviser.

The Department of Criminal Justice offers the student a choice of either a master of science or a master of arts degree in criminal justice and a doctor of philosophy in criminal justice. All degree programs emphasize criminal justice research, theory, planning, and administration.

Master of Arts.

The master of arts degree is a 30-credit-hour program, including thesis. The program is designed to emphasize research activity and independent inquiry, while simultaneously providing fundamental course work. This degree is especially recommended for those students seeking an interim degree prior to obtaining the PhD.

Master of Science.

The master of science degree is a 36-credit-hour non-thesis program. This degree program offers the student a choice of either the standard master of science curriculum or a master of science with an option in public administration or a master of science with an option in counseling.

Doctor of Philosophy

The PhD in criminal justice requires a minimum of 93 credit hours, including credit for 30 hours earned in a master's degree program. The program is organized around five components: 1) a core of required courses in theory and research on the criminal justice system and the nature of crime; 2) a core of required courses on research methods and statistical analysis; 3) elective courses in criminal justice and related fields; 4) comprehensive examinations; and 5) a dissertation. Satisfactory completion of a teaching practicum also is required.

Additional information may be obtained from the: Department of Criminal Justice

University of Nebraska at Omaha
Omaha, NE 68182-0149
(402) 554-2610

or

Department of Criminal Justice
University of Nebraska-Lincoln
1100 Neihardt
540 N 16th Street
P O Box 880633
Lincoln, NE 68588-0630
(402) 472-3677

Faculty

- Anderson, Amy L. -2003; Assistant Professor; BA 1997 Ohio State; MA 2000, PhD 2003, Penn State
- Batton Smith, Candice -1999; Assistant Professor; BA 1991 Nebraska (Lincoln); MA 1993 Kansas State; PhD 1999 Vanderbilt
- Brennan, Pauline K. -2004; Assistant Professor; MA 1989, PhD 1999 SUNY (Albany)
- Crank, John -2006; Professor; MA 1974 Tucson; MPA 1976 Springfield (Illinois); PhD 1987 Colorado
- DeLone, Gregory J. -2003; Assistant Professor; BS 1986 Florida State; MPA 1996, PhD 2002 Nebraska (Lincoln)
- DeLone, Miriam -1992; Associate Professor; BS 1987, MS 1989, PhD 1992 Florida State
- Eskridge, Chris -1978; Professor; BS 1975 Brigham Young; MA 1976, PhD 1978 Ohio State
- Hoffman, Dennis -1980; Professor; BA 1971 Northern Iowa; MA 1974 Drake; PhD 1979 Portland State
- Hughes, Lorine A. -2004; Assistant Professor; MA 1998, PhD 2003 Washington State
- Jacobs, Susan -1990; Associate Professor; PhD 1971 Nebraska (Lincoln)
- Kadleck, Colleen -2001; Assistant Professor; BS 1994 Bowling Green State; MS 1995, PhD 2001 Cincinnati
- Marshall, Christopher E. -1990; Associate Professor; BA 1971, MA 1975, Bowling Green; PhD 1978 Iowa State
- Meier, Robert -1998; Professor and Chair; PhD 1974 Wisconsin (Madison)
- Ogle, Robbin -1995; Associate Professor; BS 1982 Central Missouri State; MS 1990 Missouri (Columbia); PhD 1995 Penn State
- Sample, Lisa -; Assistant Professor; MA 1998, PhD 2001 Missouri (St. Louis)
- Simi, Peter -; Assistant Professor; MA 1999, PhD 2003 Nevada (Las Vegas)
- Wakefield, William -1974; Professor; BA 1965, MA 1970 Nebraska (Omaha); PhD 1976 South Dakota State
- Walker, Samuel -1974; Professor; BA 1965 Michigan; MA 1970 Nebraska (Omaha); PhD 1973 Ohio State
- Zhao, Jihong -1995; Associate Professor; MA 1990, PhD 1994 Washington State

Courses for Economics (ECON)

Economics

803. Money and the Financial System (3 cr)

Prereq: ECON 211 and 212

Basic policy implications of monetary economics with special reference to the role of money in the determination of income, employment, and prices. Demand for and supply of money, commercial and central banking system, monetary policy-making, nonbank financial system, and other issues in monetary economics.

804. Current Issues in Monetary Economics (3 cr)

Prereq: ECON 211 and 212

Money as developed by both classical and modern economists. Origins of money, interest rates, inflation, unemployment, business cycles, rational expectations, fiscal policy, international aspects of monetary policy, and related topics in monetary economics.

809. Applied Public Policy Analysis (3 cr)

Prereq: ECON 210, or 211 and 212; ECON 215 or equivalent

Experience with research methods in economics. Statistical analysis to investigate economic issues and related policies; find relevant data; perform and interpret univariate and multivariate statistical analyses; and formulate and test specific hypotheses.

813. Social Insurance (3 cr)

The nature and causes of economics insecurity. Analysis of public programs such as Social Security, unemployment insurance, workers' compensation, and public assistance.

*814. Insurance Law (LAW 783G) (1-4 cr)

Principles of insurance law. Focuses on features of common insurance contracts and the legislative, judicial and administrative supervision of both insurance contracts and the insurance industry.

*815. Analytical Methods in Economics and Business (AECN 815) (3 cr)

Prereq: MATH 104 or 106

Equilibrium Analysis: Applications in business, finance, and economics. Market equilibria, accumulations, and economics. Optimization: profit, cost, and utility functions. Constrained optimization problems with utility functions. Constrained optimization problems in production and consumer allocations; Kuhn and Tucker conditions; static and dynamic input-output Models.

816. Statistics for Decision Making (3 cr)

Prereq: ECON 215

Decision making under conditions of uncertainty. Introduction to Bayesian methods including main methods of traditional statistics. Both prior knowledge and consequences of decision error are explicitly taken into account in the analysis.

817. Introductory Econometrics (3 cr)

Prereq: ECON 210 or 211 and 212; ECON 215 or equivalent

Basic econometric methods including economic model estimation and analyses of economic data. Hypothesis formulation and testing, economic prediction and problems in analyzing economic cross-section and time series data.

819. Topics in Applied Research (3 cr)

Prereq: ECON 816

Use of quantitative methods in applied research.

821. International Trade (3 cr)

Prereq: ECON 210, or 211 and 212; ECON 312

Determinants of the volume, prices, and commodity composition of trade. Effects of trade, international resource movements, and trade restrictions on resource allocation, income distribution, and social welfare.

822. International Finance (3 cr)

Determinants of exchange rates, international payments, and inflation, unemployment, national income, and interest rates in an open economy. International monetary system and capital and financial markets, and of the mechanisms by which a national economy and the rest of the world adjust to external disturbances.

823. Economics of the Less-Developed Countries (3 cr)

Prereq: ECON 210 or 211 and 212

Advanced survey of development problems and goals; roles of land, labor, capital, entrepreneurship, and technical progress in economic growth of the less developed countries. Theories and strategies relating to international trade and economic development.

826. Government Intervention in Markets (3 cr)

Prereq: ECON 212

Trace the economic and legal incentives for government involvement in the marketplace. Examine why various forms of intervention make sense in certain situations. Attention to defining the limits of allowable competition, and to replacing free market forces with regulation. Analysis of utilities and their evolving regulation.

*827. Land Use Planning (LAW 699G) (1-4 cr)

Legal and administrative aspects of the regulation of land use and development, the problems and techniques of urban planning at the various levels of government, and the relationship of private owners and builders to the government policies involved in shaping the physical environment.

*828. Antitrust and Trade Regulation (LAW 628G) (1-4 cr)

Control of business activities through the federal antitrust laws. Emphasis on monopolies, joint ventures, pricefixing, boycotts, resale price maintenance, exclusive dealing and tying arrangements, territorial restrictions, and mergers.

*829. Unfair Competition (LAW 645G) (1-4 cr)

Federal and state statutory provisions and common law doctrines restricting unfair methods of competition. Includes the law of trademarks, trade secrets, misappropriation, false advertising, disparagement, and the role of the FTC in regulating deceptive practices, together with brief introductions to copyright and patent law.

*830. Products Liability Seminar (LAW 793G) (1-4 cr)

Selected problems in products liability, with emphasis on research and writing projects analyzing the problems.

833. History of Economic Thought (3 cr)

Development and evolution of economic ideas, including diverse mainstream and dissenting schools of thought from ancient Greece to contemporary texts. Consideration of selected influential economists' writings, relation between economic conditions and ideas and the antecedents of current economic controversies.

835. Market Competition (3 cr)

Prereq: ECON 212

Differing schools of thought about how well a market economy performs. Economic analysis and extensive reviews of rivalry among corporations in various sectors of the US economy.

840. Regional Development (3 cr)

Prereq: ECON 210, or 211 and 212

Advanced analysis of regional growth and development. Relationship between national and regional growth as well as local attributes influencing development patterns. Comparisons between developed and developing countries used to highlight similarities and differences in development patterns and policies. Empirical applicability of regional economic models.

842. Regional Analysis (3 cr)

Prereq: ECON 840

Advanced study of techniques for regional analysis. Indexes of spatial dispersion and concentration, shift-share analysis, export base, and input-output analysis. Equips students with the basic analytical tools of regional economic analysis.

850. Economics for Teachers (2-6 cr, max 6)

Structure and functions of the economic system in the United States and some of the problems involved in achieving its goals of efficient allocation of resources, full employment, stable economic growth, and economic security. Often offered in off-campus courses with enrollment limited to high school and grade school teachers, administrators, and supervisors. Structure and functions of the economic system in the United States and some of the problems involved in achieving its goals of efficient allocation of resources, full employment, stable economic growth, and economic security. Often offered in off-campus courses with enrollment limited to high school and grade school teachers, administrators, and supervisors.

851. Economics Issues for Teachers (1-6 cr, max 6)

Application of economic principles to current problems. Evaluation of economic education materials, scope and sequence for development of economic concepts in the primary and secondary school.

*852. Teaching College Economics and Business (3 cr)

Organization and planning, instructional strategies, assessment methods, and related topics for teaching economics and business courses in colleges and universities. Organization and planning, instructional strategies, assessment methods, and related topics for teaching economics and business courses in colleges and universities.

*853. Economics of Education (3 cr)

Survey of methods, theories, and analyses of education from an economics perspective. Education and human capital, educational production and cost functions, cost-benefit analysis, supply and demand for educators, education and economic growth. Survey of methods, theories, and analyses of education from an economics perspective. Education and human capital, educational production and cost functions, cost-benefit analysis, supply and demand for educators, education and economic growth.

*854. Economic Education Research (3 cr)

Survey of research studies in the field of economic education. Research questions, data sources, theoretical models, experimental designs, statistical procedures, and research findings. Survey of research studies in the field of economic education. Research questions, data sources, theoretical models, experimental designs, statistical procedures, and research findings.

857. U.S. Economic History I (HIST 857) (3 cr)

Prereq: ECON 211 and 212 or ECON 210

Transformation of the US economy from an agrarian to an industrial society and the impact of that transformation on peoples lives and livelihoods. Focus on the late eighteenth and nineteenth centuries. Economics of slavery, the impact of the railroads, immigration, and the collective response of business and labor to industrialization.

858. U.S. Economic History II (HIST 858) (3 cr)

Prereq: ECON 211 and 212 or ECON 210

Transformation of the US economy in the twentieth century. Continued consolidation of the business enterprise, business cycle episodes including the Great Depression of the 1930s, organized labor, and the role of government in managing and coping with this transformation in economic life.

866. Pro-seminar in International Relations I (AECN 467; ANTH 879; GEOG 848; HIST 879; POLS 866; SOCI 866) (3 cr)

Prereq: Permission

Open to students with an interest in international relations. Topic varies.

867. Pro-seminar in International Relations II (POLS 867) (3 cr)

Prereq: Permission

Open to students with an interest in international relations. Topic varies.

871. Public Finance (3 cr)

Prereq: ECON 210 or 211 and 212

This course is for economics majors and others wanting a thorough treatment of the topics. Microeconomic analysis of policy issues in public finance, emphasizing taxation. Includes public goods and externalities, analysis of tax incidence, efficiency, and equity, and fiscal federalism.

872. Efficiency in Government (3 cr)

Prereq: ECON 210 or 211 or 212

Prepares students to conduct social and economic planning, program evaluation, and budgeting. Analysis of the delivery of government goods and services consistent with values and societal goals. Includes: philosophy of government, budget theory, social indicators, social fabric matrix, cost effective analysis, technology assessment, evaluation of the natural environment, and time analysis.

*873. Microeconomic Models and Applications (AECN *873) (3 cr)

Prereq: ECON 211, 212, and 215

This course is intended for MA Option II students and others who do not plan to proceed to PhD studies. Analysis of microeconomic decision-making by individuals and firms with emphasis on consumer demand, production, cost and profit, market structure and the economics of games, uncertainty, and information.

*874. Macroeconomic Models and Applications (3 cr)

Prereq: ECON 211, 212, and 215

This course is intended for MA Option II students and others who do not plan to proceed to PhD studies. Analysis of the performance of a market economy developing applications of macroeconomic models with emphasis on imperfect information, expectations, business cycles, growth and stabilization, and policymaking in a stochastic environment.

875. Theory and Analysis of Institutional Economics (3 cr)

Survey of the basic ideas of Veblen, Polanyi, Commons, Ayres, Galbraith, and Myrdal. Applications of institutional analysis to major economic problems and policies. Examination of the economic system as part of holistic human culture, a complex of many evolving institutions. Also see the following Economic courses:
857. US Economic History
858. US Economic History
872. Efficiency in Government
887. The Economy of the Soviet Union
900. Seminar in Economic Theory and Policy

*880. Labor Law (LAW 753G) (1-4 cr)

Legislative and judicial patterns of the modern labor movement; the objectives of labor combinations; the forms of pressure employed for their realization and prevention; strikes, boycotts, picketing, and lockouts; the legal devices utilized in carving out the permissible bounds of damage suits involving labor activity; the labor injunction; the National Labor Relations Board; the nature of collective bargaining agreements; extra legal procedure for settling labor disputes-the techniques of mediation, conciliation, and arbitration.

881. Economics of the Labor Market (3 cr)

Prereq: ECON 210 or 211 and 212

Microeconomics of wages and employment; determinants of labor demand and supply; marginal productivity and bargaining theories of wages; labor mobility and allocation among employers; and the impact of unions, government policy, investment in human capital; discrimination in labor markets.

882. Labor in the National Economy (3 cr)

Prereq: ECON 210 or 211 and 212

Macroeconomics aspects of labor economics; how the labor sector of the economy and the economy's overall performance are interrelated; analysis of the general level of wages, employment, unemployment, business cycles, and inflation.

885. Government and Labor (MNGT 866) (3 cr)

Prereq: MNGT 361 or ECON 381

Government regulation of employment and labor relations. Includes laws and agencies relating to employment practices, pay, hours, equal employment opportunity, labor relations, safety, health pensions, and benefits. Social and economic implications of governmental regulation.

*886. Administrative Law (LAW 633G) (1-4 cr)

Origin and growth of the administrative process, the development of administrative law and its impact upon traditional legal

institutions, analysis of the types of federal and state administrative tribunals, their powers and functions, and problems of administrative procedure, judicial and other controls upon the administrative process.

887. Economics in Transition (3 cr)

Prereq: ECON 210, or 211 and 212

Evolution of formerly centrally planned economies (Soviet Union, central and eastern Europe, China) toward more market-oriented and decentralized economies. Includes comparisons of the speed and pattern of institutional changes, performance outcomes and implications for economic development strategies.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900. Seminar in Economic Theory and Policy (3 cr per sem, max 6)

903. Seminar in Monetary Economics (3 cr)

919. Seminar in Research Methods (3 cr)

921. Seminar in International Trade and Finance (AECN 921) (3 cr) Lec 3.

923. Seminar in Development Economics (3 cr)

927. Seminar in Industrial Organization (3 cr)

954. Seminar in Economic Education Research (3 cr)

957. Econometrics I (3 cr)

Prereq: ECON 815 or equivalent; STAT 880 or equivalent

Matrix-based approach to the construction of statistical economic models, estimation of model parameters, and econometric inference. Multiple hypothesis tests, prediction, and general error structures.

958. Econometrics II (3 cr)

Prereq: ECON 957

Continuation of Econometrics I involving a more advanced treatment of statistical economics models. Identification problem and alternative methods of estimating parameters.

959. Econometrics Seminar (3 cr)

Prereq: ECON 958 with a grade of B or better

971. Public Expenditure, Taxation, and Fiscal Incidence (3 cr)

Prereq: ECON 871 or permission

Administration and organization of the public sector, bureaucracy, and microeconomic theories of taxation. Public goods, externalities, uncertainty, and income redistribution as sources of market failure; private market and collective choice models as possible correcting mechanisms.

972. Fiscal Theory and Its Applications (3 cr)

Prereq: ECON 971

Advanced theory of the influence of fiscal instruments upon stability, growth, employment, balance of payments, and portfolios. Constraints of money and debt management. Generation and control of inflation. Policy applications.

973. Advanced Microeconomic Theory I (3 cr)

Prereq: ECON 312 or equivalent

Survey of the theory of individual choice; demand, supply, production, price formation. Theory of market structure.

974. Advanced Macroeconomic Theory I (3 cr)

Prereq: ECON 311 or equivalent

Survey of aggregate theories of income, price, employment, and interest rate determination in the short run. Determinants of aggregate demand, consumption, investment, money, government expenditure, taxes, and foreign transactions.

975. Seminar in Economic and Business History (2-3 cr)

977. Seminar in Public Finance (3 cr)

Prereq: ECON 971 and 972

981. Seminar in Labor Economics (3 cr)

983. Advanced Microeconomic Theory II (3 cr)

Prereq: ECON 973

Survey of general equilibrium and welfare theory; proof of the existence and stability of equilibrium allocations, their welfare interpretation, welfare functions, externalities, the possibility theorem, the theory of clubs.

984. Advanced Macroeconomic Theory II (3 cr)

Prereq: ECON 974

ECON 974 continued. Impact of stabilization policies and on aggregate theories of economic growth.

996. Directed Reading or Research (1-3 cr per sem)

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary .

Department Chair: Scott M. Fuess, Ph.D.

Graduate Committee Chair: Matthew J. Cushing, Ph.D.

www.cba.unl.edu/dept/economics/gradPrograms/

The Department of Economics offers a doctor of philosophy degree and a master of arts degree.

Master of Arts Degree

Three options are available to MA students: Option I is a 30-hour program that provides the opportunity to write a masters thesis; Option II is a 36-hour applied degree program that includes an outside area of concentration; and Option III is a 36-hour PhD-leading track that provides the opportunity to continue directly into the doctoral program.

All students pursuing the MA degree must demonstrate mastery of microeconomic theory, macroeconomic theory, and econometrics by passing appropriate courses in each of these areas with grades of B or better in each course. MA candidates are required to undergo a comprehensive examination in their field of specialization.

Doctor of Philosophy Degree

All doctoral students must pass a Qualifying Examination in Advanced Economic Theory by the end of the third semester after entry into the program. The department offers courses in advanced micro and macro economic theory to help prepare students for the Qualifying Examination. In addition to advanced economic theory, PhD students are required to pass two econometrics courses with a B or better grade in each course. Furthermore, doctoral candidates choose two major areas of specialization. Six hours of work at the 900 level constitute the formal minimum requirement in a major field. Every doctoral aspirant must undergo comprehensive written and oral examinations covering his/her areas of study. The doctoral dissertation must be a thorough and well-written original investigation in economics.

In all other respects, the requirements for the degrees of master of arts or doctor of philosophy in economics conform to the general rules of the Graduate College. There is no formal language requirement for the PhD degree.

Admission

The minimum general requirement for admission to the economics graduate program is an undergraduate degree from an accredited American or foreign college or university. PhD applicants are required to provide GRE aptitude test scores. MA applicants may substitute GMAT scores.

Course requirements for admission to the masters program without deficiencies are a semester each of intermediate level macroeconomic theory, microeconomic theory, statistics, and calculus. Students are also strongly advised to have additional background in calculus and matrix algebra. The absence of adequate back-ground in probability, statistics, and calculus can be a serious impediment to success in any graduate program in economics. A one semester calculus course for business or social science students often proves to be inadequate preparation.

Applicants to the PhD program (and applicants to the masters program anticipating the possibility of pursuing the PhD degree), should have a full calculus sequence, mathematical statistics, and matrix algebra in their backgrounds.

Applicants who lack required background may be considered for provisional admission. Unless specific prerequisites are indicated, the general prerequisite for all courses in the 800 and 900 series is graduate standing, including the removal of any undergraduate deficiencies, or permission of the instructor teaching the course.

Economics and Law

The joint JD in law and MA in economics is a four-year program administered jointly by the College of Law and the Graduate College. Students entering this program must be formally admitted to the College of Law and to the Graduate College for work toward the masters degree in the Department of Economics. They will complete the following:

Economics Courses
First Year, 21-24
Second Year, 0
Third Year (MA awarded), 0-3
Fourth Year (JD awarded), 0

Total MA Option I: 21
Total MA Option II: 27

Law Courses
First Year, 0
Second Year, 36
Third Year (MA awarded), 12
Fourth Year (JD awarded), 30

Total MA Option I: 78
Total MA Option II: 78

Joint Economics-Law Courses
First Year, 0
Second Year, 0
Third Year (MA awarded), 9
Fourth Year (JD awarded), 0

Total MA Option I: 9
Total MA Option II: 9

The following courses are cross listed in both economics and law. These courses are normally open only to students enrolled in the joint JD in law and MA in economics program, but in all circumstances admission to these courses requires approval of the College of Law. Students not seeking a law degree may be admitted to one or more of these courses with the specific approval of the faculty member teaching the course and the Dean of the College of Law.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Allgood, Sam -1996; Associate Professor; BA 1989, PhD 1993 Georgia
- Anderson, John E. -1991; Professor; BA 1973 Western Michigan; MA 1976, PhD 1977 Claremont
- Asarta, Carlos -2007; Lecturer; BSBA 2001, MA 2004, PhD 2007 Nebraska (Lincoln)
- Butters, Roger B. -2005; Assistant Professor; BA 1996 Brigham Young; PhD 2003 California (Davis)
- Cushing, Matthew J. -1992; Professor; BA 1977, PhD 1985 Virginia (Charlottesville)
- Edwards, Richard C. -1999; Professor; BA 1966 Grinnell; MA 1970, PhD 1972 Harvard
- Fuess, Scott M. -1986; Professor and Chair; BA 1982 Delaware; MS 1983, PhD 1986 Purdue
- Hayden, F. Gregory -1967; Professor; BA 1962 Kansas State; PhD 1968 Texas
- Kim, Benjamin J. C. -1983; Associate Professor; BA 1972 Seoul National; MA 1977 Saskatchewan; PhD 1983 California (Los Angeles)
- MacPhee, Craig R. -1969; Professor; BS 1966 Idaho; MA 1968, PhD 1970 Michigan State
- May, Ann Mari -1987; Associate Professor; BA 1980, PhD 1988 Colorado State
- McGarvey, Mary G. -1992; Associate Professor; BS 1976, PhD 1983 Virginia (Charlottesville)
- Rosenbaum, David I. -1985; Professor; BA 1979 Maryland; MA 1983, PhD 1985 Wisconsin
- Schmidt, James R. -1977; Professor; BS 1973 Nebraska (Lincoln); MA 1977, PhD 1978 Rice
- Thompson, Eric C. -2004; Associate Professor; BA 1986 Chicago; MS 1990, PhD 1990 Wisconsin (Madison)
- van den Berg, Hendrik -1989; Associate Professor; BA 1971, MA 1972 SUNY (Albany); MS & PhD 1989 Wisconsin (Madison)
- Walstad, William B. -1982; Professor; BA 1972 Wisconsin; MA 1975, MS 1981, PhD 1978 Minnesota

Courses for Department of Teaching, Learning and Teacher Education (TEAC)

Courses for Speech-Language Pathology and Audiology (SLPA)

Courses for Special Education (SPED)

Courses for Educational Psychology (EDPS)

Courses for Educational Administration (EDAD)

Courses for Education (EDUC)

Education

Subject Areas

- Education (EDUC)
- Educational Administration (EDAD)
- Educational Psychology (EDPS)
- Special Education (SPED)
- Speech-Language Pathology and Audiology (SLPA)
- Department of Teaching, Learning and Teacher Education (TEAC)

*892. Special Topics in Education (CYAF *892; EDAD *892; EDPS *892; SPED *892; TEAC *892) (1-3 cr, max 12)

Prereq: EDPS 859 or parallel; EDPS 859 or equivalent

Aspects of education not covered elsewhere in the curriculum.

*801. Cross-Cultural Leadership Studies (3 cr)

Prereq: Permission

For those interested in exploring leadership and leadership issues from a cross-cultural perspective. Students construct their understanding of different cultural perspectives on leadership through readings, interviews, and field trips. Provides students with a valuable perspective on their own and other cultural perspectives through the comparison of cultural viewpoints. Native American understanding of leadership.

*811. Practicum in Educational Administration and Supervision (3-4 cr, max 8)

Prereq: Permission

May be repeated for credit. Rating and supervision of teachers; principles and procedures in the development of school policies; selection and promotion of teachers; courses of study and professional ethics.

*813. Administration in Physical Education and Athletics (3 cr)

Organization and administration of physical education and athletic programs in colleges and school systems. Practices and policies as they relate to various situations and problems and in the theoretical base for these practices and policies.

814. Risk Management for Sport Facilities (3 cr)

Legal and risk management aspects of construction, supervision, and management of sport, athletic, and recreation indoor and outdoor facilities.

*820. Dynamics of Small Groups (EDPS *852) (3 cr)

Dynamics, structure, and developmental patterns of small, face-to-face groups in instructional and organizational settings. Group formation, conflict, the emergence and function of role structures, leadership and power, recurring paradoxes and other problems of group life, and the contribution of small groups to personal and social change.

821. Foundations of Human Resource Development (3 cr)

Lays the foundation for further study of Human Resource Development (HRD) by examining the knowledge of HRD professionals, the roles they play, and the organizational settings in which HRD occurs. The design and development of education and training programs, how change occurs in organizations, how career development can optimize the match between individual and organizational goals and needs, and how to improve performance in organizations by analyzing performance opportunities and designing employee training to address these opportunities.

822. Instructional Strategies in Human Resource Development (3 cr)

Prereq: EDAD 821

Examines the role of instruction for enhancing human learning and performance in organizations. The analysis of performance problems/opportunities and design of interventions for learning and performance improvement. The essential components of instruction, selecting instructional methods and media to achieve program objectives, the transfer of learning, and evaluating the effectiveness of instruction. The performance enhancing potential of systematically linking needs analysis, instructional design, and program evaluation.

825. Coordination in Occupational Training Programs (TEAC 825) (1-3 cr)

Foundation and scope of current and projected vocational cooperative educational programs and general educational work experience. Coordination techniques, selection and placement, instructional procedures, youth leadership activities, organization and administration, and evaluation of cooperative occupational education.

*830. Administrative Theory in Educational Organizations (3 cr)

Introduction to classic and contemporary administrative theory as applied to educational organizations. The theoretical nature of the course content is relevant to those with an interest in a broad variety of educational institutions. General organizational theory, organizational models, historical schools of administrative theory, authority, power, motivation, and leadership. Frequently students are involved in studying problems of practice as a means of testing theory.

*833. Educational Finance (3 cr)

Critical analysis of the political and economic elements impacting K-12 school finance. Content and activities address both building and district level concerns with an emphasis on principles, programs, and trends in school finance.

*835. Business Management of Schools (3 cr)

Allocation and management of fiscal resources including aspects of financial planning and reporting, budgeting and accounting procedures, purchasing, risk management and insurance, investing and bond issues, and auxiliary service.

*836. Planning for Change (2-3 cr)

Rationale for planning in a changing environment will be explored; the theoretical base for planning presented; strategic, futuristic planning and operational planning explored; the development of planning strategies, techniques and procedures; the process of evaluation, feedback and revisions explored; and the management of the change process analyzed.

*837. Education Law (1-4 cr)

Evolution, principles, and practice of education law in relation to local, state, and national units of organization. Education law of Nebraska.

*838. Educational Surveys (2-3 cr)

School systems and its educational program in terms of needs of attendance area served. Organization and interpretation of pertinent data and formulation of recommendations for improvement of educational systems. Long-range planning.

*839. Educational Facilities (2-3 cr)

Techniques for planning educational facilities through use of surveys, educational specifications, and standards. Function of the school administrator in school facilities planning, construction, and utilization.

*841. Developing Breakthrough Success with Continuous School Improvement (3 cr) Lec 3.

Theory and research about school improvement. Components of school improvement planning and potential effects of change upon the process. Experiences in a school setting and through interviews, best practice literature, and student performance data. Collect and display initial school profile data to assist in making decisions when planning for improvement.

*842. Development of a School Improvement Plan (2 cr) Lec 2.

Assessment theory and types of assessments used to measure student performance relative to a school improvement goal. Assessment relationships between profile data and baseline data, locally developed classroom assessments, and post data pertaining to school improvement goals and action plans. Develop an initial school improvement plan.

*843. Development of a School Improvement Process (2 cr) Lec 2.

Assessment theory and types of assessments used to measure student performance relative to a school improvement goal. Assessment relationships between profile data and baseline data, locally developed classroom assessments, and post data pertaining to school improvement goals and action plans. Develop an initial school improvement plan.

*844. Developing and Reporting Results of the School Improvement Process (2 cr) Lec 2.

Analysis of data reflecting changes in performance based school improvement goals. Prepare a report of results for proceeding into the next cycle of school improvement.

*851. Faculty and Staff Appraisal (3 cr)

Faculty and support staff in P-12 schools: appraisal, professional learning communities, high standards/high performance and accountability.

*852. School Culture and Student Behavior (3 cr)

School culture and student behavior in P-12 schools. Personalized teaching and learning environments that address student diversity, needs and interests.

*855. Teaching Learners to Learn (EDPS *855; NUTR *855; SPED *855; TEAC *855) (3 cr)

Effective teachers facilitate student learning. Facilitating student learning depends on understanding learning principles and on designing instruction that is compatible with learning principles. Instructors can provide learning-compatible instruction that helps students learn more effectively and ultimately teaches them how to learn. Assists teachers to teach in learning-compatible ways and helps them embed within their curriculum a program for teaching learners to learn.

*856. Supervising Special Education (SPED *856) (3 cr)

For principals or other administrators who have special education programs in their buildings. Overview of disabilities, related law, special education programs, personnel issues, etc., and instructional methods and administrative support for effective integration of disabled students into regular programs.

*857. Special Education Administration (SPED *857) (3 cr)

Intensive preparation for special educators who intend to administer special education programs in the public schools. Information about best practices in special education, including programming, supervision, legal/regulatory issues, financing, personnel, as well as current controversial topics which are affecting these programs in the schools.

*858. Special Education Law (SPED *858) (3 cr)

Body of law that pertains to the organization, administration, and implementation of special education programs in PreK-12 schools. Substantive and procedural rights of disabled students, and the authority and responsibility of states and school districts that are grounded in state and federal law.

*870. Constitutional Law I (LAW 609G) (1-4 cr)

Structure of the federal government, including the history and judicial interpretation of the Constitution, federalism, interstate commerce, due process, equal protection, and separation of powers.

*871. Constitutional Law II (LAW 732G) (1-4 cr)

Emphasizes protected individual civil liberties. The origin and modern applicability of the state action concept in constitutional litigation; the scope of congressional power to enforce the post Civil War amendments; freedom of speech, association, and press; and constitutional principles enforcing the first amendment's command that "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof."

*872. Introduction to Law, Legal Process, and Legislation (LAW 511G) (3 cr I)

How law is made and changed, the role of the individual, the business corporation, the private association, the administrative agency, the voting public, the legislature, and the courts in making and changing law.

*874. Torts I (LAW 503G) (1-6 cr, max 6)

Legal protection afforded in civil proceedings against interference with the security of one's person, property, relations, and other intangible interests. Substantive principles that govern tort claims (ranging from claims for intentional wrongdoing, to negligence claims, to claims that the defendant is strictly liable for harms caused to the plaintiff), and the theoretical bases and practical implications of such claims.

*875. Torts II (LAW 504G) (1-6 cr, max 6)

For course description, see LAW 503G.

880B. Designing Instructional Technology K-12 (1-3 cr, max 3)

*890. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*892. Special Topics in Education (CYAF *892; EDPS *892; EDUC *892; SPED *892; TEAC *892) (1-3 cr, max 12)

Prereq: EDPS 859 or parallel; EDPS 859 or equivalent

Aspects of education not covered elsewhere in the curriculum.

*893. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*896. Independent Study (1-6 cr)

Prereq: Permission

Selected topic with the direction and guidance of a staff member.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900J. Historical Methods in Educational Research (EDPS 900J) (3 cr) Lec 3.

Prereq: EDPS *800 or equivalent; EDPS 459/859 or equivalent

Connections in the general study of history to the study of the history of education. Concepts employed in educational historical research and the methods used by historical researchers. The methodology of historical research.

901. System-Level School Improvement (3 cr)

Knowledge and skills required for system-level leaders to bring about school improvement and enhance student achievement. Creating systems that engage the public, performing in complex political environments, and delivering needed services to schools and classrooms.

902. Issues in Educational Organization Theory (3 cr)

Useful theory from the field of organizational literature in order to inform the practice of educational administration. Schools of organizational theory, professional and bureaucratic conflicts, motivation, power, leadership, and organizational culture.

903. Issues in Community Relations (3 cr)

Principles of community relations and public relations; development of school and community understanding; collaboration of educators and community agents and agencies; communication tools and evaluation.

904. Issues in System Level Administration (3 cr)

Prereq: Masters degree or equivalent

Selected system level issues faced by PreK-12 school administrators.

905. Issues in Governance of Educational Institutions (1-3 cr, max 3)

Issues in the governance of K-12 schools including administrator-school board roles and relationships.

906. Issues in Economics of Education (1-4 cr)

Current trends and topics related to issues of human capital, productivity, cost-benefit analysis, rates of return, and the role of education in promoting economic growth.

907. Issues in Educational Politics and Policies (3 cr)

Analyze and evaluate policy processes involved in making choices; develop understanding, apply and evaluate knowledge about key political concepts and theories to the analysis of educational policy issues; analyze and evaluate issues as points of political conflict between institutional structures with competing interests; understand people as the actors in roles they occupy in the political system.

908/929. Seminar in Adult and Continuing Education (EDPS 929) (1-6 cr)

909. Seminar in Human Resource Development (1-3 cr)

Prereq: EDAD 821 or 822

Current research and theory within the field of human resource development, broadly defined. Stresses key problems affecting the training, development, and education of human resources within organizational settings.

910. The Higher Education Environment (3 cr)

Universities are adaptive, living systems interacting with their environment. Equips participants with the skills required to analyze and assess the environment of higher education institutions. Environment concepts, components and structures are studied together with analysis techniques and methodological approaches to future study.

912. Educational Leadership in Higher Education (3 cr) Lec 3.

Strategic thinking, application of leadership theories in the educational setting. Develop a clear personal philosophy of leadership and engage in collaborative active-learning. Multi-media simulations and/or scenarios and role playing to examine options, consequences, and leadership effectiveness in decision-making.

921. Administrative Issues in Postsecondary Education (3 cr)

Introduction to contemporary issues in the administration of postsecondary education with a focus on the scholarly literature, a comparative analysis of administration in types of institutions, leadership and planning, institutional and environmental issues, and selected topics.

922. Finance in Postsecondary Education (3 cr)

Federal and state government funding, institutional planning, technological and community influences, human resources finance, budgeting, and sources of financial support as they relate to postsecondary education institutions and agencies.

923. The Community/Junior College (3 cr) Lec.

Designed particularly for those interested in upper secondary and college levels. Junior college movement; relationship of movement to provisions for an adequate educational program; functions of the junior college; legal status and basis for extension of junior college; problems of organization, administration, and curriculum.

924. Administration of Postsecondary Education Instructional Programs (3 cr)

Administration of postsecondary educational instructional programs. Exploration of curricular issues including an assessment of program quality and reputation, program reallocations, retrenchments, and expansions.

925. Law and Postsecondary Education (3 cr)

Examination of legal principles applicable to postsecondary education institutions. Overview of the legal system, postsecondary education institutions as legal entities, authority for governance and administration, faculty rights and responsibilities, student rights and responsibilities, institutional and personal liability, and other selected issues.

926. The American Professoriate: An Administrative Perspective (3 cr)

Contemporary faculty issues in postsecondary education institutions from the perspective of college administrators. Current status of faculty, assigning faculty workloads and monitoring performance levels, evaluating faculty performance, structuring development activities, and special topics.

932. Global Issues in Higher Education (3 cr) Lec 3.

Selected issues affecting global educational policies and practices.

934. College Teaching (3 cr) Lec 3.

Issues that impact higher education.

948. Instructional Leadership: Emerging Trends and Practices (TEAC 948) (3 cr)

Changing roles for persons engaged in instructional and curricular leadership in educational institutions. Literature on staff development, assessment and evaluation, and effective schools serve as the basis for studying and applying this information to a variety of educational settings. Issues such as teacher empowerment and site-based management, along with cooperative learning provide the focus of the activities.

956. Employment Law Seminar (LAW 759G) (1-4 cr)

Selected current national and state legal issues pertaining to private and public employment.

959. Law and Educational Administration (LAW 695G) (1-4 cr)

Current legal issues of national significance relating to educational institutions; analysis of constitutional provisions, statutes, and court decisions affecting education; separation of church and state; rights of equality; student rights, responsibilities, and discipline; application of criminal and juvenile provisions; use of school property; control of the curriculum and extracurricular activities; contractual and tort liability; hiring, collective actions, tenure, outside activities, discharge, and retirement of teachers; confidentiality; accrediting agencies; and similar current legal matters.

960. Public Employment Law (LAW 760G) (1-4 cr)

Legal issues relating to public employment with particular emphasis on public schools and colleges; collective bargaining by public employees, impasse, and resolution of public employee disputes; grievances, arbitration, and enforcement of agreements; civil rights of public employees; and laws applicable to public employment apart from collective bargaining, such as discrimination acts, wage and hour laws, retirement plans, and public records.

961. Trial Advocacy (LAW 761G) (1-4 cr)

Prereq: LAW 646/G

Students perform weekly exercises which are videotaped and critiqued and will try a case. Fundamentals of trial practice. Emphasis on questioning witnesses, selecting and addressing the jury, and admitting items into evidence.

963. Legislation Seminar (LAW 777G) (1-4 cr)

Development of further skills in drafting and interpreting statutes, understanding legislative processes and decision making, and evaluating the role of legislation in governmental regulation. Opportunity for in-depth study of subjects pertaining to or involving legislation, centering on subjects considered by the Nebraska Legislature and the Nebraska legislative process.

964. Local Government Law (LAW 788G) (1-4 cr)

Law of local government units with emphasis on current problems in the operation and administration of local government, models and theories of local government.

966. Seminar in Educational Administration (1-3 cr, max 6)

Prereq: Permission

Education administration problems with an analysis of research and literature pertaining to these problems.

968. Education Law Seminar (LAW 621G) (1-4 cr)

Selected current national and state legal issues pertaining to education.

970. Criminal Law (LAW 508G) (3 cr)

Substantive criminal law, focusing on the theoretical foundations, general principles, and doctrines that govern the rules of liability and defenses, both in the common law tradition and under the Model Penal Code.

971. Evidence (LAW 646G) (1-4 cr)

Relevancy and admission of evidence, including hearsay, opinions, privileges, other exclusionary rules, examination of witnesses, judicial notice, and physical evidence.

973. Jurisprudence (LAW 672G) (3 cr)

What is good and what is bad about law; the judicial process; principal schools of jurists; theories of the nature of law and the legal order; the American social system and the law; obligations to obey or to disobey the law; and ideas of justice.

973A. Evaluation Theory and Practice (EDPS 973A) (2-3 cr)

Theories and strategies of evaluation examined within the context of society at large and educational and human service programs in particular. Key evaluation models examined as they relate to judgments and decisions about programs. Methodological, social, and political issues in evaluation which pertain equally to an educational program or a human service agency.

976. Legal Control of Discrimination (LAW 680G) (1-4 cr)

Selected legal issues pertaining to the legal control of discrimination.

977/980. American Legal History: Clarence Darrow (EDPS 977; LAW 619G) (1-4 cr)

Through the use of biography, history, autobiography, fiction, theatre, film, and the Internet, exploration of the life and times of Clarence Darrow.

978. Mass Communications Law (LAW 649G) (1-4 cr)

In-depth focus on the first amendment. Includes legal distinctions between the print and broadcast media, free press and fair trial, access to media, and licit and illicit ideas.

979. Seminar in College Student Personnel Work (EDPS 979) (2-3 cr per sem, max 6)

Current professional issues related to the organization and administration of student personnel within higher education. Exploration of research literature, some field experiences, and in-depth examination of special topics.

981. Introduction to Research (1-6 cr)

A written report is required. Investigation and analysis of current problems in education administration and supervision.

988. Dissertation Proposal Development (3 cr)

Prereq: Admission to a doctoral program

Intended for students who are working on the development of their dissertation proposal. Component parts of the dissertation proposal. Students from all areas of Teachers College and the University of Nebraska who are in the process of developing their proposal will find this course to be of use. Typically the course should be taken after the research tools have been completed.

989. Survey of Administrative Research (3 cr)

Intended primarily for students of education who are candidates for doctoral degrees. Readings, discussions, and an analysis of educational problems and research.

990. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

991. Field Studies in Education (NUTR 991; TEAC 991) (1-3 cr, max 6)

Prereq: Permission

Identification and solutions of problems associated with program planning; organizational, administrative, and instructional procedures within an institutional setting. Designing, implementing, and evaluating new or modified patterns of operation and teaching within a public school, postsecondary institution, or adult education agency.

993. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

995. Doctoral Seminar (3 cr, max 18)

Prereq: Permission

Students are immersed in outcome-based scholarly activities with a faculty mentor. Working on either an individualized or small group basis, students develop, execute and report one or more projects addressing the interaction between research and practice. Intended primarily for doctoral students, although non-doctoral graduate students may be admitted with special permission of the instructor.

998. Seminar: Internship in Educational Administration (1-6 cr, may be repeated, max 12 cr)

Prereq: Permission

Opportunity for educational administrators to gain an understanding of administering changes or innovations, and to obtain supervised field experience. Consideration will be given antecedents of change, change models, the role of government, forces that restrict or stimulate change, tools to implement change, and evaluation.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

*800. Foundations of Educational Research (3 cr) Lec 3.

Prereq: EDPS 459/859 or equivalent or parallel EDPS 859

Purposes and characteristics of research process, selection of research problems in education and social sciences, critical review of published research, research ethics and institutional review, sampling methods, threats to validity in research.

809. Community Services for Older Adults (3 cr)

Developing community services to meet the needs of older adults. Services to meet health, financial, transportation, education, legal, housing, recreational, safety, and spiritual needs including means of initiating, financing, and administering, coordinating, and evaluating service delivery systems.

*810. Educational Gerontology (GERO 810) (3 cr)

Introduction to the field of education for and about the aging. Institutions and processes of education will be analyzed to determine their relationships and value to persons who are now old and those who are aging.

*845. Computer-Assisted Research Data Analysis (3 cr) Lec 3.

Prereq: One statistics course beyond EDPS 859

Pass/No Pass only.

Statistical software packages for both mainframe and microcomputers. How to develop and manage data files; how to transfer data files between computers; and principles of data transformation and selection.

*846. Foundations of Health Behavior (NUTR *846) (3 cr)

The epidemiological, developmental and cognitive foundation of health-related behaviors and identifies opportunities for health promotion and education.

*847. Theoretical Models of Health Behavior Change (NUTR *847) (3 cr)

Application of widely used theoretical models of health behavior change. Specification of behaviors and development and evaluation of theory-based interventions to reduce health-related risks.

850. Child Psychology (3 cr)

Advanced study of the behavior and development of preschool and elementary school children.

851. Psychology of Adolescence (3 cr)

Mental, social, and emotional development of boys and girls during the adolescent period.

*852. Dynamics of Small Groups (EDAD *820) (3 cr)

Dynamics, structure, and developmental patterns of small, face-to-face groups in instructional and organizational settings. Group formation, conflict, the emergence and function of role structures, leadership and power, recurring paradoxes and other problems of group life, and the contribution of small groups to personal and social change.

*853. Psychological Assessment I (3 cr)

Prereq: EDPS 870 or equivalent

Basic assessment and testing skills including “behavioral observation”, psychometric issues, intake/diagnostic interviewing, psychological testing, test interpretation feedback, and integrative report writing. Commonly used screening instruments, personality tests, career interest inventories, and symptom-based tests.

854. Human Cognition and Instruction (3 cr)

Basic survey of cognitive psychology and its applications in instruction. Memory, problem solving, cognitive process in reading, research approaches, and applications to teaching.

*855. Teaching Learners to Learn (EDAD *855; NUTR *855; SPED *855; TEAC *855) (3 cr)

Effective teachers facilitate student learning. Facilitating student learning depends on understanding learning principles and on designing instruction that is compatible with learning principles. Instructors can provide learning-compatible instruction that helps students learn more effectively and ultimately teaches them how to learn. Assists teachers to teach in learning-compatible ways and helps them embed within their curriculum a program for teaching learners to learn.

859. Statistical Methods (3 cr)

Computation and interpretation of measures of central position, variability and correlation; introduction to sampling, probability, and tests of significance.

*860. Applications of Selected Advanced Statistics (3 cr)

Prereq: EDPS 859

Variety of parametric and nonparametric analyses, including analysis of variance (completely randomized design and various factorial designs), regression analysis, analysis of covariance, full model stepwise multiple regression, chi square Mann-Whitney U, and Wilcoxon test. Understanding and application of these analyses. Appropriate mainframe and microcomputer statistical packages utilized to assist in the numerical analysis of data.

862. Psychology of Disability (3 cr)

Examination of the research and theoretical literature related to the relationship between various disabling conditions and the psychological functioning of the person with disability.

863. Human Behavior Analysis (3 cr)

Research methods and findings, concepts, and principles of operant conditioning as related to the experimental analysis of human behavioral events and to the development of behavior engineering technologies.

*866. Counseling Pre-Practicum (3 cr)

Counseling skills required for basic, entry-level clinical work. Practicing skills, receiving peer/instructor performance feedback, and role-playing clinical situations.

*867. Roles and Functions in School Psychological Services (3 cr)

Foundations, models, and practices of contemporary school psychology and an exploration of transitions and future developments in the profession. Investigations of the major legal and ethical systems affecting specialists in the schools and the application of standards for ethical professional practice.

*868. Multicultural Counseling (3 cr)

Prereq: EDPS *866 or comparable course or permission

Ethnic subcultures in the US, cross-cultural communication systems, and change strategies. Cultural cues and barriers in counseling, personal assumptions and values, and active experiencing of cultural diversity in the counseling relationship.

869. Developmental Psychopathology (3 cr)

Investigation of the etiology, course, classification, and treatment of the psychological problems encountered by children, youth, and their families. Current research and theoretical view points regarding psychopathological behavior.

870. Introduction to Educational and Psychological Measurement (3 cr)

Prereq: EDPS 859 or equivalent

Introduction to the construction, evaluation, and ethical use of measurement instruments commonly used in education and psychology. Test construction principles, item analysis, reliability, validity, ethical issues in testing, and evaluation of standardized tests.

871. Human Sexuality and Society (CYAF 871; PSYC 871; SOCI 871) (3 cr) (UNL)

Prereq: Permission

Open to advanced students planning careers in the professions in which knowledge of human behavior and society is important (e.g., helping professions, medicine, law, ministry, education, etc.).

Interdisciplinary approach to human sexuality in terms of the psychological, social, cultural, anthropological, legal, historical, and physical characteristics of individual sexuality and sex in society.

878. Pro-seminar in Latin American Studies (ANTH 878; GEOG 878; HIST 878; LAMS 478; MODL 878; POLS 878; SOCI 878; SPAN *878) (3 cr, max 6) Lec 3.

Prereq: Permission

Interdisciplinary analysis of the mechanics and consequences of cultural continuity and social change in Latin America.

881. Psychopharmacology of Addiction (3 cr)

Psychological and pharmacological aspects of drug and alcohol use and abuse. Review of the field emphasizes aspects that are important for the chemical dependency counselor. Physiology of drug use, major drugs of abuse, and psychoactive medications.

882. Treatment Methods and Modalities in Chemical Dependency (3 cr)

Survey of common, and not so common approaches to treating chemical dependency (e.g., inpatient vs. outpatient treatment, halfway houses, Alcoholics Anonymous). Alcohol and drug abuse subpopulations reviewed, with special consideration given to their needs in treatment.

*890. Workshop Seminar (1-12 cr, max 12)

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*892. Special Topics in Education (CYAF *892; EDAD *892; EDUC *892; SPED *892; TEAC *892) (1-3 cr, max 12)

Prereq: EDPS 859 or parallel; EDPS 859 or equivalent

Aspects of education not covered elsewhere in the curriculum.

*893. Workshop Seminar (1-12 cr, max 12)

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

896. Directed Field Experience (1-24 cr)

Prereq: Permission

*897J. Gifted/Talented

898. Special Topics (1-6 cr, max 6)

Prereq: Permission

Seminar on current issues or topics in educational psychology. Topic varies.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900A. Correlational and Experimental Methods in Educational Research (3 cr) Lec 3.

Prereq: EDPS 459/859 or equivalent; EDPS *800 or equivalent

Integrated view of correlational and experimental research in education and social sciences. Builds on idea of relationships among variables and concept of casual relationships between variables. Possible research designs in light of these general principles.

900B. Single Case/Small N Methods in Educational Research (3 cr) Lec 3.

Prereq: EDPS 459/859 or equivalent; EDPS *800 or equivalent

General issues related to the use of single case and/or small N methods, in which individuals are observed over time before and subsequent to experimental intervention. Comparison to traditional experimental methods. Repeated measurement techniques. Various research designs appropriate to single case methods.

900D. Survey Methods in Educational Research (3 cr)

Prereq: EDPS 459/859 or equivalent; EDPS *800 or equivalent

Principles and applications of survey research. Use of appropriate sampling techniques and applications of survey methods to the study of relative incidence, distribution, and interrelations of educational, sociological, and psychological variables.

900J. Historical Methods in Educational Research (EDAD 900J) (3 cr) Lec 3.

Prereq: EDPS *800 or equivalent; EDPS 459/859 or equivalent

Connections in the general study of history to the study of the history of education. Concepts employed in educational historical research and the methods used by historical researchers. The methodology of historical research.

900K. Qualitative Approaches to Educational Research (3 cr)

Prereq: EDPS 459/859 or equivalent; EDPS *800 or equivalent

Uses of qualitative research methods in education. The theoretical premises of research using qualitative methods and the application of this information through critique and planning research. Qualitative methods for data collection.

905. Research and Evaluation Literature on Health Promotion (NUTR 905) (3 cr)

Philosophical and empirical review and critique of contemporary literature on school, community, work place and health care-based health promotion and education programs.

929. Seminar in Adult and Continuing Education (EDAD 908/929) (1-6 cr)

930. Sociological/Anthropological Research Methods in Education (CYAF 930; NUTR 930; TEAC 930) (1-3 cr, max 15)

Empirical and theoretical research into the sociocultural problems and the lived experiences of people across educational, family and community settings.

A. Ethnographic Methods (1-3 cr, max 3)
B. Special Topics in Qualitative and/or Quantitative Research Methods (1-3 cr, max 3)
D. Discourse Analysis Across School, Home and Community Settings (1-3 cr, max 3)
E. Introduction to Linguistic Analysis of Classroom Interaction (1-3 cr, max 3)
J. Hermeneutic Traditions in Education (1-3 cr, max 3)
K. Quantitative Research Traditions in Education (1-3 cr, max 3)

935. Seminar in Qualitative Research (TEAC 935) (3 cr)

Prereq: EDUC 900K or permission

Seminar intended for doctoral-level students who have completed an initial qualitative research methodology course and who want to increase their skills in qualitative research. Data collection and analysis strategies and the application of those strategies to research problems.

936. Mixed Methods Research (3 cr) Lec 3.

Prereq: EDUC 800 or equivalent, and EDUC 900K

EDPS 936 is for students already familiar with quantitative and qualitative research. An introduction to mixed methods research as

a distinct methodology in social science research Topics include the value and use of this approach, philosophical assumptions, various types of design, and approaches to designing and conducting mixed methods research.

941. Intermediate Statistics: Experimental Methods (SRAM 941) (3 cr)

Prereq: EDPS 859

Computation, interpretation, and application of analysis of variance techniques, including factorial and mixed model designs. Computer and microcomputer software accessed.

942. Intermediate Statistics: Correlational Methods (SRAM 942) (3 cr)

Prereq: EDPS 859 or equivalent

Various correlational-based statistical procedures presented, including linear and nonlinear regression, multiple regression, statistical control, analysis of interactions, the general linear model, factor analysis, and discriminant analysis.

948. Multicultural Issues in School Psychological Service Delivery (3 cr)

Current issues related to psycho-educational service delivery to children and families from different cultural and linguistic backgrounds. Integrating research and field experiences to provide students with skills to develop, implement, and deliver culturally sensitive and effective school psychological services.

949. Cognitive and Behavioral Therapy with Children and Adolescents (3 cr)

Prereq: Permission

Cognitive and behavioral techniques. Theoretical issues, application and evaluation of major empirically-validated therapeutic treatments that represent best practices in child and adolescent therapy.

950. Intellectual Assessment (1-4 cr)

Prereq: or coreq: EDPS 859, 870, and permission

Formal evaluative methods for the investigation of children's learning difficulties, including supervised practicum in administration, scoring, and interpretation of individually administered tests of cognitive abilities.

951. Academic and Behavioral Assessment (1-4 cr)

Prereq: EDPS 950 and permission

Advanced study of the theory and practice in the assessment of educational and psychological problems of children and youth to include assessment of systems that impact on the behavior of children and youth. Assessment techniques include environmental observation, interviewing, standardized assessment procedures for academic skills, adaptive behavior, social and emotional problems, curriculum based assessment, and functional analysis and assessment. Ecological-behavioral basis of assessment is explored. A complete psychological and educational evaluation is conducted in a school or other relevant setting.

952. Systems of Consultation in School Psychology (3 cr)

Prereq: EDPS 863

Intensive analysis of the theory and practice of various systems of mental health consultation in the schools with special emphasis and practicum with mental health service models other than conventional clinical, psychometric, and direct psychoeducational remediation models.

953. Psychological Assessment II (4 cr)

Prereq: EDPS *853 or equivalent

Advanced assessment and testing skills. Selection, administration and interpretation of a battery of psychological tests and integration and synthesis of relevant test and non-test data into an accessible report writing format. Development of effective consultation and test interpretation feedback skills.

954. Interventions in School Psychology (3 cr) Lec 3.

Prereq: EDPS 463/863, EDPS 951 or parallel; and permission

Prepares school psychologists to plan and provide evidence-based psychoeducational interventions for children, youth, families and schools. Application of ecobehavioral theory, models of school mental health, the scientist-practitioner model, the practice of psychotherapy, and empirical evidence of the effectiveness of interventions for culturally and linguistically diverse students.

955. Child Therapy (4 cr, max 12)

Prereq: EDPS 949

Advanced practicum course that facilitates students' scholarly acquisition of principles and concepts relevant to conducting therapy, and provides opportunities for practical integration of knowledge and skills essential to conducting individual, group, and family psychotherapy. Students acquire competencies in developing, implementing and evaluating interventions by conducting therapy sessions, observing sessions, exchanging feedback with peers, and receiving supervision.

956. Externship in School Psychology (3 cr)

Prereq: Doctoral standing in professional psychology program and permission

Supervised clinical experience working with children, adolescents and families in a variety of school and community settings.

957. Clinical Practice in School Psychology: Consultation, Assessment, and Intervention
(2-8 cr, max 24) Lec, lab, fld.

Prereq: EDPS 952, 954 and permission

Supervised clinical practice related to academic, social, behavioral and emotional disorders of children and adolescents. Parent and family treatment and behavior interventions emphasized.
A. Clinic-based Practicum (2-8 cr, max 12) Practicum experience provided in the Department of Educational Psychology Clinic.
B. School-based Practicum (2-8 cr, max 12) Practicum experience provided in local school districts.

958A. Internship in School Psychology (Non-doctoral) (2-3 cr per sem, max 12)

Prereq: Permission of the director of the School Psychology Program

Full-time supervised practice of school psychology in the facilities of public or private schools or educational service agencies.

958B. Practicum in School Psychology Consultation Techniques (1-4 cr per sem, max 8)

Prereq: EDPS 863, 952, 997D or equivalent, and permission

Practicum experience in ecological/behavioral, mental health, and organizational consultation techniques within a school or related setting. Supplemented by individual and small group supervisory/feedback sessions each week.

959. Professional Psychology Internship (Doctoral) (1-3 cr per sem, max 15)

Prereq: Permission of program director

Full-time or half-time supervised practice of psychology and related research in schools and supportive mental health and health agencies. Assessment and treatment of mental, emotional, and behavioral disorders.

960. Problem Solving and Concept Learning in Humans (3 cr)

Prereq: EDPS 850 or 851 and 854

Critical examination of the non-Piagetean research literature and theory which examines higher mental processes in humans through the lifespan.

961. Cognitive Development (3 cr)

Prereq: EDPS 850 or 851 and permission

Critical examination of theories and research on cognitive development throughout the lifespan, including Piagetean and alternative perspectives.

962. Research Literature in Personality and Social Development (3 cr)

Prereq: EDPS 850 or 851 and permission

Critical examination of the concepts and principles derived from the study of personality and social development with special emphasis on the research literature.

963. Developmental Psychobiology (3 cr)

Prereq: EDPS 850 or 851 and permission

Biological foundations of human psychological development, including anatomical, physiological, and evolutionary considerations.

964. Counseling Theories and Intervention Techniques (3 cr)

Prereq: EDPS *866

Parallel: EDPS 997A and permission of counseling area. Overview of theoretical approaches to counseling. Close examination of selected theories and intervention procedures.

965A. Group Counseling: Social Psychological Aspects (3 cr)

Prereq: EDPS *866

Parallel: EDPS 964 and 997A. Develops student competencies in analyzing organizational contexts, designing group counseling experiences, and evaluating group experiences.

965B. Group Counseling II: Group Leadership Practicum (3 cr)

Prereq: EDPS 965A and 997A

Advanced practicum aimed at enhancing student competencies in designing group counseling interventions, in analyzing group dynamics, in developing and leading various types of groups from pre-group intakes to group closure, and in evaluating group experiences and students' leadership skills.

966. Psychology of Learning (3 cr)

Prereq: EDPS 854 and 870

Theories of learning and experimental investigation in the field of animal and human behavior and their application to the classroom.

969. Nonparametric Statistical Methods (3 cr)

Prereq: EDPS 859 or equivalent

Presentation of statistical procedures that do not require fundamental assumptions about the distribution property of the variables to be analyzed. Chi Square tests, rank tests of location (Wilcoxen, Mann Whitney, Kruskal-Wallis, Friedman), tests of goodness of fit (Chi Square, Kolmogorov-Smirnoff), tests of randomness (Runs).

970. Theory and Methods of Educational Measurement (SRAM 970) (3 cr)

Prereq: EDPS 859 and 870; EDPS/SRAM 941; or equivalent

Presentation of various measurement theories and concepts, including classical true-score theory, reliability and validity, test construction, item response theory, test equating, test bias, and criterion-referenced tests.

971. Structural Equation Modeling (SRAM 971) (3 cr)

Prereq: EDPS/SRAM 942 and 970; or equivalent

Introduction to the techniques of path analysis, confirmatory factor analysis, and structural equation modeling with emphasis on the set-up and interpretation of different models using the LISREL program. Model testing and evaluation, goodness-of-fit indices, violations of assumptions, specification searches, and power analyses.

972. Multivariate Analysis (SRAM 972) (3 cr)

Prereq: EDPS/SRAM 941 and 942

Techniques of multivariate analyses, including multivariate analysis of variance and covariance, multivariate multiple regression, multigroup discriminant analysis, canonical analysis, repeated measures (Multivariate model), and time series. Mathematical models presented and analyzed. Instruction complemented by appropriate statistical software packages.

973A. Evaluation Theory and Practice (EDAD 973A) (2-3 cr)

Theories and strategies of evaluation examined within the context of society at large and educational and human service programs in particular. Key evaluation models examined as they relate to judgments and decisions about programs. Methodological, social, and political issues in evaluation which pertain equally to an educational program or a human service agency.

973B. Evaluation Practicum (2-3 cr)

Prereq: EDPS 973A or permission

Actual supervised evaluation of a program or project.

974. Guidance and Counseling in Schools (3 cr)

Survey of elementary, middle and secondary school comprehensive models of guidance. Ingredients of effective helping relationships with students in schools. Analysis of school violence, risk assessment models, multicultural influences, prevention models, and guidance roles of teachers/administrators.

975. Occupations and Vocational Psychology (3 cr)

Evaluation and uses of occupational and educational information; job analysis; psychological and behavioral attributes relating to work and life-styles; occupational taxonomies; career-development theories; impact of accelerating changes on personal and social planning; investigations of value-oriented expectations as sources of work satisfaction and dissatisfaction; critical assessment of the concept of vocational choice. For counselors and educators.

976. Advanced Counseling Psychology I: Counseling Theory and Practice (3 cr)

Prereq: Doctoral level counseling students and others by permission

Counseling methodology in relationship to personality theory and research. Consideration of various theories and research in relation to counseling practice.

977. American Legal History: Clarence Darrow (EDAD 977/980; LAW 619G) (1-4 cr)

Through the use of biography, history, autobiography, fiction, theatre, film, and the Internet, exploration of the life and times of Clarence Darrow.

978. Advanced Counseling Psychology II: Research in Counseling (3 cr)

Prereq: EDPS 976; EDUC 900A and either EDUC 900B or 900K

Research strategies appropriate for counseling psychology. Identification of researchable problem and completion of research proposal including literature review, design, and proposed data analysis procedures.

979. Seminar in College Student Personnel Work (EDAD 979) (2-3 cr per sem, max 6)

Current professional issues related to the organization and administration of student personnel within higher education. Exploration of research literature, some field experiences, and in-depth examination of special topics.

980. Item Response Theory (3 cr)

Prereq: EDPS 870 and 970; or permission

Principles of item response theory (IRT) and its application to a variety of issues in educational and psychological measurement. Theoretical foundations of IRT discussed along with its assumptions and varied applications. Experience using IRT calibration and scoring computer software.

984. Ethics and Ethical Decision Making in Counseling and Education (3 cr)

Ethical principles in the practice of counseling. Application of ethical guidelines and development of ethical decision-making models relevant to school and mental health contents.

985. Couple and Family Counseling (3 cr) Lec 3.

Prereq: EDPS *866 or equivalent

Couple and family systems and change strategies. Active, brief forms of couple and family counseling and enrichment formats.

987. Developmental Perspectives on Gender and Sexuality in Counseling (3 cr) Lec 3.

Issues related to gender and sexuality in the process of counseling and psychotherapy. Developmental issues related to gender differences, gender bias, gender identity, gender discrimination, and gender-based disorders. Feminist and affirmative therapy techniques.

989. Psychology of Reading (TEAC 989) (3 cr)

Prereq: TEAC *811 or 841 or SPED 886

Relationship of psychological processes of attention, perception, memory and problem solving to reading and reading comprehension. Theories and models of reading, especially of the comprehensive process, applied to all levels of reading from beginning reading through mature reading.

990. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

991. Seminar in Educational Psychology and Measurements (1-12 cr, max 12) Lec.

Prereq: Permission

993. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

995. Doctoral Seminar (3-4 cr per sem, max 18) Lec.

Prereq: Permission

CYAF 995 is intended primarily for CYAF doctoral students, although other graduate students may be admitted with permission. Develop, execute, and report on one or more projects on an individual or small group basis. Immersion in outcome-based scholarly activities under a CYAF faculty mentor. The interaction between research and practice.

996A. Research Other Than Thesis (1-12 cr, max 12)

Independent operational research under faculty supervision.

996B. Readings in Educational Psychology (1-12 cr, max 12)

Prereq: Permission

Readings on selected problems in educational psychology.

997A. Practicum in Counseling (2-4 cr)

Prereq: Masters admission in educational psychology or permission of counseling area, EDPS *866

Parallel: EDPS 964. Supervised laboratory clinic-based experiences in counseling.

997B. Field Placement in Counseling (2-4 cr)

Prereq: EDPS 997A

Supervised field experiences in school counseling, college student personnel, and community social service agencies.

997D. Practicum in Behavior Management Technologies (3 cr per sem, max 6)

Prereq: EDPS 863 and permission

Supervised practicum in the design, implementation, evaluation, and reporting of various behavior modification technologies for individuals and groups; social systems engineering.

997E. Practicum in Counselor Supervision (2 cr)

Prereq: EDPS 997G or equivalent

Supervised counseling supervision experience emphasizing process methods and evaluation.

997G. Advanced Practicum in Counseling (2-4 cr)

Prereq: EDPS 997A and permission

Supervised counseling experience in university, schools, and community agencies.

997J. Advanced Practicum in Gifted Education (SPED 997J) (3 cr)

Prereq: Permission

Advanced practicum in the education of the gifted/talented child. Psychodiagnostic procedures; theory and research; and program organization, operation, and evaluation in a field setting.

997K. Advanced Practicum in School Psychology (3 cr, max 12)

Prereq: Admission to the doctoral program in School of Psychology and permission

Supervised experience in supervising graduate students in practicum settings. Refinement of consultation, assessment, diagnosis, and treatment skills.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

800. Characteristics of Exceptional Persons (3 cr)

Etiology, growth and development, and characteristics of persons who differ from the norm.

801A. Accommodating Exceptional Learners in the Elementary School Classroom (3 cr)

Prereq: Admission to the Teacher Education Program; EDPS 362; TEAC 297; and one methods course

Legal and ethical requirements for educating exceptional learners; identification, referral, and placement procedures; development and use of the Individual Education Program; strategies for teaching and evaluating; managing the academic and social behaviors of a range of exceptional and other at-risk learners in the elementary school.

801B. Accommodating Exceptional Learners in the Secondary School Classroom (3 cr)

Prereq: Admission to the Teacher Education Program; EDPS 362; TEAC 297

Legal and ethical requirements for educating exceptional learners; identification, referral, and placement procedures; development and use of the Individual Education Program; strategies for teaching and evaluating; managing the academic and social behaviors of a range of exceptional and other at-risk learners in the secondary school.

*802. Advanced Assessment Techniques (3 cr)

Prereq: SPED 800 or equivalent; or permission

Comprehensive study of criterion-referenced and normative-referenced assessment instruments used by school resource personnel.

*803. Effective Instruction for Learners with Special Needs (3 cr)

Prereq: SPED 800 and *802; or permission

Interaction of classroom-based assessment and effective instructional strategies for use with individual and group formats. Development of individual education plans, curriculum analysis, delivery of instruction, curriculum-based measurement, and specific and generic instructional strategies.

*804. Managing Challenging Behavior (3 cr)

Prereq: SPED 800, *802, *803; or permission

Functional approaches that can be used by teachers and mental health practitioners for assessing, preventing, and managing children's challenging behavior. Basics of applied behavior analysis, functional analyses of behavior, individual- and group-oriented interventions, self-management training, and strategies for promoting generalization.

805. Code-based Reading Instruction (1-3 cr, max 6) Lec.

Prereq: Parallel SPED 805A

Direct, systematic, multi-sensory techniques for teaching reading, writing and spelling to students who have severe reading problems.

805A. Reading Center Practicum I (1-3 cr, max 3) Fld.

Prereq: Permission

SPED 405A/805A requires two hours per week in a Reading Center. Teaching/tutoring experience evaluating and instructing students with reading problems in a Reading Center. Assessment, lesson planning and teaching using direct instruction, and code-based instructional strategies.

806. Reading and Writing Disabilities: Adolescents (TEAC 806) (1-3 cr, max 6) Lec.

Prereq: Parallel SPED 806A

Theory and techniques for assessing and teaching word identification, vocabulary, comprehension and writing skills in grades 7 to 12.

806A. Reading Center Practicum II (TEAC 806A) (1-3 cr, max 3) Fld.

Prereq: Permission

SPED/TEAC 806A requires two hours per week in a Reading Center. Teaching/tutoring experience evaluating and instructing students with reading problems in a Reading Center. Assessment, instructional planning, delivery of instruction, writing diagnostic reports and parent communication.

807. Teaching Students with Disabilities in the Secondary School (3 cr)

Prereq: SPED 201 or 800

Information about the mildly/moderately disabled secondary-level student; including characteristics, assessment, models for programs, social skill training, behavior management, working with parents, and curriculum modification.

808. Issues in Secondary Programs for Students with Mild Disabilities (3 cr)

Prereq: Special Education Professional Semester and SPED 407 or 807

Issues in secondary education for students with mild disabilities based on current literature and needs of individual students.

*809. Introduction to Autistic Spectrum Disorders (3 cr)

Prereq: SPED 800 or equivalent

Introduction to the unique characteristics and associated features of Autistic-Spectrum Disorder (ASD). Influence of characteristics on strengths and needs, key features and empirical support for educational interventions, historical and legal influences on educational assessment and intervention.

815. Reading and Writing Disabilities: Elementary Students (1-3 cr, max 6) Fld.

Prereq: Parallel SPED 815A

For elementary education majors: SPED 201, TEAC 311 and 313. For SPED majors: SPED 201, 302, 303, and 304; or equivalent. Theory and techniques for assessing and teaching early literacy skills in small groups and one-on-one for children who struggle with literacy.

A. Reading Center Practicum: Elementary Students (1-3 cr, max 3)

*831. Characteristics of Specific Learning Disabilities (3 cr)

Prereq: SPED 800 or permission

History, theories, etiologies, and assessment methodologies for children and adolescents with specific learning disabilities. Characteristics of specific learning disabilities and instructional models.

834. Introduction to Special Vocational Needs (3 cr)

Foundational course emphasizing the characteristics and identification of special needs learners in vocational settings. Determines needs, interests, and abilities of these students.

835. Instructional Strategies for Special Vocational Needs Learners (3 cr)

Identification and utilization of appropriate instructional strategies for special needs learners.

836. Career Education for the Special Needs Student (3 cr)

Prereq: SPED 434 or permission

Philosophical and practical base of career education as it relates to special needs students. Career education units developed for infusion into subject matter areas.

837. Directed Field Experiences in Special Vocational Needs (3 cr)

Class participants observe and work in the field. Field sites selected on class participant preference.

*841. Emotional and Behavioral Disorders (3 cr)

Prereq: SPED 800 or permission

Etiology, theories and assessment of child and adolescent emotional and behavioral disorders. Addresses issues of definitions and classification (DSM-IV and special education) or deviant behavior and psychopathology, as well as an overview of service delivery systems in education and mental health.

*846. Foundations of Visual Impairment: Programs and Services for Individuals with Visual Impairments (3 cr)

Prereq: Admission to visually impaired program; hold or concurrently earn subject/field endorsement

Current educational programs and services for children with visual impairments, as well as children with multiple disabilities. History of educational services, developmental characteristics, psycho-social aspects, history of legislation, and grade I Braille.

*847. Introduction to Eye Anatomy of Students with Visual Impairments (3 cr)

Prereq: SPED *846 or permission

Structure and function of the visual system, conditions that effect visual ability, and the functional and environmental implications of low vision. Strategies for enhancing visual ability in children with visual impairments and children who have additional disabilities.

*849. Braille Codes and Material Adaptations for Students with Visual Impairments (3 cr)

Prereq: SPED *846 and *847, or permission

Basic skills in literary Braille transcription and codes. Acquire competence in reading and writing Braille and using the Perkins

braillewriter and slate/stylus.

*851. Intermediate Braille Codes and Instructional Material Adaptations for Students with Visual Impairments (3 cr)

Prereq: SPED *846, *847, and *849

Advanced skills in Nemeth (mathematics code) and/or Literary code. Basic activities in braille formatting, foreign language, music and identification of braille technology devices and resources.

*852. Instructional Methods for Teachers of Students with Visual Impairments (3 cr)

Prereq: SPED *846, *847, *849, and *851

Methods and materials for educating children who are totally blind or have low vision, including students with multiple impairments. Practical skills in selecting, designing, and/or modifying materials for content area subjects: mathematics, science, social studies, creative arts, foreign language, and other subjects.

*852A. Applied Technology Methods for Students with Visual Impairments (1 cr)

Prereq: SPED *846 and *847, or equivalents

Theory and skill development in the selection and use of technology for students with visual impairments. Technology assessments, data collection, equipment feature, source of equipment, funding sources, writing technology instructional plans, and demonstration of using various equipment and technology.

*852B. Applied Instructional Methods to Teach Students with Visual Impairments (2 cr)

Prereq: SPED *846, *847, *849, *851, and *852; or equivalents

Practice using appropriate instructional methods and materials for educating the blind and low vision child.

*853. Orientation and Mobility Skills for Students with Visual Impairments (3 cr)

Prereq: SPED *846, *847, *849, *851, and *852

Theory and applied practice in basic orientation and mobility techniques for use with students with visual impairments. Practical methods for work in concept development, orientation skills, travel skills and techniques, personal safety and independent travel. Needs of specific populations such as people with low vision and individuals with additional disabilities. Vision simulators and occluders. An introduction to the history and development of the profession.

*855. Teaching Learners to Learn (EDAD *855; EDPS *855; NUTR *855; TEAC *855) (3 cr)

Effective teachers facilitate student learning. Facilitating student learning depends on understanding learning principles and on designing instruction that is compatible with learning principles. Instructors can provide learning-compatible instruction that helps students learn more effectively and ultimately teaches them how to learn. Assists teachers to teach in learning-compatible ways and helps them embed within their curriculum a program for teaching learners to learn.

*856. Supervising Special Education (EDAD *856) (3 cr)

For principals or other administrators who have special education programs in their buildings. Overview of disabilities, related law, special education programs, personnel issues, etc., and instructional methods and administrative support for effective integration of disabled students into regular programs.

*857. Special Education Administration (EDAD *857) (3 cr)

Intensive preparation for special educators who intend to administer special education programs in the public schools. Information about best practices in special education, including programming, supervision, legal/regulatory issues, financing, personnel, as well as current controversial topics which are affecting these programs in the schools.

*858. Special Education Law (EDAD *858) (3 cr)

Body of law that pertains to the organization, administration, and implementation of special education programs in PreK-12 schools. Substantive and procedural rights of disabled students, and the authority and responsibility of states and school districts that are grounded in state and federal law.

*860. Issues in Early Childhood Special Education (3 cr)

Introduction to the history, philosophy, and research related to early intervention practices with children 0-5 years of age. Discussion of issues related to legal mandates, model programs, family involvement, integration, transitions, service delivery systems, teamwork and assessment for young children.

*861. Intervention for Infants with Disabilities (3 cr)

Assessment and intervention strategies are presented for developing appropriate early intervention programs for infants and toddlers with disabilities. Rationale and principles for conducting home-based, family-centered, transdisciplinary services.

*862. Classroom Programs for Preschool Children with Disabilities (3 cr)

Selection, design and implementation of developmentally appropriate classroom interventions are presented for preschool children with disabilities. Activity-based instruction is emphasized as students consider such instructional factors as classroom arrangements, activity planning, home-school communications, team collaboration and systematic use of instructional programs.

*863. Medically Fragile Infants (3 cr)

Unique needs, family-coping strategies, specialized medical staff, and various health-care settings of chronically ill infants and toddlers. Overview of etiology, characteristics, and developmental implications of selected medical conditions related to developmental disabilities.

872. Psychology and Sociology of Deafness (3 cr)

Brief overview of education of the hearing impaired including history of, professional roles in, and educational programming within this field. Overview of social/psychological theories as related to the hearing impaired. Patterns of social/emotional development, psychological characteristics, issues of the family stress and social adaptation and discussion of counseling techniques.

*873. Teaching the Content Areas to the Hearing Impaired (3 cr) Lec 3.

SPED 873 is for all students in the hearing impaired program.

Methods for teaching content areas (science, math, and social studies) to hearing impaired students from preschool through grade12. Adapting curricula and materials from these areas for the hearing impaired students.

*874. Language Arts and Literacy for the Hearing Impaired (3 cr) Lec 3.

Assessment instruments, curricula and instructional methods for developing language and literacy in classrooms for hearing impaired children, preschool through grade 12. Methods for coordinating speech and/or language and/or auditory training program in the classroom with that in the speech and/or language therapy program.

*875. Itinerant Teaching Methods for Students who are Deaf or Hard of Hearing (3 cr) Lec 3.

Methods for providing services for students with hearing loss, using itinerant and consultative models. Professional and parent in-service development, team-based problem solving, curriculum based pull-out services. Ecological assessment and management of deafness related technology in inclusive settings. Supervision of interpreters and paraprofessionals.

*880. A Lifespan Approach to Mental Retardation (3 cr)

A lifespan approach that can be used by teachers, psychologists, and multi-disciplinary educational personnel for understanding individuals with mental retardation. Issues regarding definitions, identification, best practice standards and research in educational, residential, and vocational programming introduced. Analysis of current legal and ethical issues in developmental disabilities.

*881. Teaching Students with Retardation or Severe Disabilities (3 cr)

Prereq: SPED *880 or permission

Planning, implementing, and evaluating effective longitudinal education for individuals with moderate-profound retardation, severe impairments and multiple disabilities. Knowledge and skill regarding best practices within inclusive education settings for these learners emphasized using an ecological and functional model that addresses useful skills in current and future environments.

*882. Instructional Strategies for Educating Students with Multiple Disabilities (1 cr each or 3 cr, max 3)

Prereq: SPED *881 (for the Severely/Multihandicapped endorsement program) or SPED *862 (for Preschool Handicapped endorsement program) or permission

Students with Mild/Moderate Disabilities or other special education endorsement completed prior to 1996, are to complete a packet of assigned readings and submit summaries of these prior to the first class meeting or complete SPED *881. SPED *882 may be taught as a 3-credit-hour course or as three, 1-credit-hour, mini-courses (as listed below). Selection, design, and implementation of best practices for students with physical and multiple disabilities in school settings. Applying course content to school-aged students.

A. Physical, Visual, and Dual Sensory Impairments (1 cr)
B. Autism, Profound Disabilities and Health Care Procedures (1 cr)
D. Sensorimotor/Cognitive, Augmentative Communication, and Self Care Skills (1 cr)

*886. Assessment, Evaluation, and Instruction of (TEAC *886) (1-3 cr, max 6) Lec.

*TEAC/SPED *886 includes case study and planning for special student populations.*

Analysis and use of informal and formal assessment and instructional strategies in clinic and classroom settings.
A. Special Topics in Literacy Assessment (SPED *886A) (1-3 cr) Lec.
B. Internship in Literacy Assessment and Instruction (SPED *886B) (1-3 cr)

*890. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*892. Special Topics in Education (CYAF *892; EDAD *892; EDPS *892; EDUC *892; TEAC *892) (1-3 cr, max 12)

Prereq: EDPS 859 or parallel; EDPS 859 or equivalent

Aspects of education not covered elsewhere in the curriculum.

*893. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*895. Independent Study in Special Education (1-3 cr)

Prereq: Prior arrangement with and permission of individual faculty member

Special research or reading project under direction of a staff member in the department.

*896. Directed Field Experience (1-6 cr, max 12)

Prereq: Permission

B. Behavior Disorders
D. Deaf/Hard of Hearing
E. General Special Education
J. Gifted/Talented
L. Learning Disabilities
M. Mildly/Moderate Disabilities
P. Severe Disabilities
Q. Early Childhood Special Education
T. Transition
V. Visual Impairments
Y. Inclusion

*897. Student Teaching: Exceptional Learners (1-9 cr, max 15)

Prereq: Permission

Laboratory and teaching experience in the area(s) of specialization.

A. Mainstream (1-12 cr)
B. Behavior Disorders
D. Deaf/Hard of Hearing
E. General Special Education
J. Gifted/Talented (EDPS *897J)
L. Learning Disabilities
M. Mildly/Moderate Disabilities
P. Severe Disabilities
Q. Early Childhood Special Education
V. Visual Impairments
Y. Inclusion
Z. Multicultural Education

*899. Masters Thesis (1-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

907. Seminar in Special Education (1-3 cr, max 12)

Prereq: Permission

B. Behavior Disorders
D. Deaf/Hard of Hearing
E. General Special Education
J. Gifted/Talented
L. Learning Disabilities
M. Mildly/Moderate Disabilities
P. Severe Disabilities
Q. Early Childhood Special Education
V. Visual Impairments

908. Resource Consultation Services (3 cr)

Prereq: SPED 800, and one of the following: *831, *851, *861, *881; or permission

Roles and functions of school resource personnel in serving as educational consultants to regular school staff.

932. Cognitive Strategy Instruction (3 cr)

Prereq: SPED 800, *803, and *831 or permission

How to implement cognitive strategy instruction with students learning difficulties. Practical model which allows students to successfully teach cognitive strategies. Metacognition, attribution training, and attention deficit disorders.

942. Strategic Approaches for EBD (1-3 cr, max 6)

Prereq: SPED 800, *804, and *841; or permission

Strategic therapy techniques for assessment and treatment of EBD.
A. Special Topics in EBD (1-3 cr)

960. Family-Centered Services for Children with Disabilities (3 cr)

Prereq: Professional experience or completion of one practicum/field experience with children who have disabilities

Impact of having a child with a disability on the normal and stressed family system. Understanding family-professional relationships that promote family members as partners in assessment and intervention programs for the child. Communication skills necessary for effective interviewing, consulting and collaborating with family members and other community team members.

976. Seminar on Special Needs Hearing Impaired (3 cr)

Prereq: Permission

Students must enroll in 1 cr hour of SPED 896 concurrently to enrolling in this course. In-depth survey of the literature on issues related to educational programming for hearing impaired students with additional handicapping conditions or from multicultural and/or bilingual backgrounds.

980. Collaborative Assessment for Students with Retardation and Severe Disabilities (2 cr)

Prereq: SPED 880, *881, *882; or permission

Designed to meet the needs of teachers, psychologists, and professional staff who conduct assessment of students with moderate-profound retardation and multiple disabilities in school settings. Strategies emphasize assessing student's capabilities and needs in relationship to valued life outcomes. Processes of assessment conducted in actual classroom and community settings.

981. Functional Alternatives to Challenging Behavior (2 cr)

Prereq: SPED 882 or permission

Students with retardation or severe disabilities with examination of the context in which individuals exhibit stereotypic, self-injurious, and aggressive behavior. Use of an educative approach will include elements of functional analysis of behavior, communicative function and a wide variety of programmatic, curricular, ecological interventions. Processes of assessment conducted in actual classroom and community settings.

987E. Seminar in Special Education (1-12 cr)

Prereq: SPED 980 and 981

990. Workshop Seminar (1-12 cr)

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

995. Doctoral Seminar (3 cr, max 18)

Prereq: Permission

The course is intended primarily for doctoral students, although non-doctoral graduate students may be admitted with special permission of the instructor. Students are immersed in outcome-based scholarly activities with a faculty mentor. Working on either an individualized or small group basis, students develop, execute and report one or more projects addressing the interaction between research and practice.

996A. Research Other Than Thesis

(1-12, max 12) Independent operational research under faculty supervision.

996B. Readings in Special Education

Prereq: Permission

(1-12, max 12) Readings on selected problems in special education.

997E. Resource Teacher Externship (1-6 cr)

Prereq: SPED *802, *803

Extensive practicum experience in school settings for individuals preparing to serve as school resource teachers and consultants.

997J. Advanced Practicum in Gifted Education (EDPS 997J) (3 cr)

Prereq: Permission

Advanced practicum in the education of the gifted/talented child. Psychodiagnostic procedures; theory and research; and program organization, operation, and evaluation in a field setting.

*999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

*850. Audiology for Educators of the Deaf and Hard of Hearing (3 cr)

Anatomy and physiology of hearing, components of adequate evaluation for placement and educational planning; diagnosis using audiogram, functional and communication assessment; stimulation and utilization of residual hearing; and management of

assistive/augmentative devices.

*851. Clinical Phonology: Assessment and Management (3 cr)

Prereq: SLPA 250 and 464 or permission

Theoretical foundations; applied clinical phonology.

852. Normal Language Development During School Years (3 cr)

Information about normal syntactic semantic, and pragmatic language development in school-age children and youth. Primary topics are: complex syntax, semantic development, pragmatic development, using language to learn, language-literacy relations, and abstract language development.

*853. Neurological Foundations of Speech and Language (3 cr)

Basic concepts of neurology, protection and blood supply of the Central Nervous System (CNS), anatomical structures of the CNS, neuromotor control of speech, cranial nerves for speech production and neuron motor disorders.

854. Research Methodology in Speech Pathology and Audiology (3 cr)

Prereq: Undergraduate major in speech pathology and audiology or admission to graduate studies

Introduction to research methods, design, and analysis in communication disorders and related fields.

861. Language Disorders: Preschool Level (3 cr)

Characteristics of language impaired preschool children and the nature of their disorders. Introduction to principles of assessment and treatment.

*862. Language Disorders in Special Populations (2-3 cr)

Advanced information about language disorders, assessment, and intervention in various populations.
A. Birth to Three: Communication Assessment and Intervention
B. Elementary School-Aged Children
E. Preadolescents and Adolescents
J. Severe Disabilities and Autism: Communication Assessment and Intervention
K. Special Topics in Language Disorders

*865. Voice Disorders (3 cr)

Prereq: SLPA 455

Etiology and symptoms of voice disorders, procedures used in clinical evaluation, and methods and procedures used in therapy.

*884. Speech and Language Development of the Hearing Impaired (3 cr)

Theories of speech and language development as they apply to hearing impaired children. Evaluation and intervention of speech and language with emphasis on maintenance of communicative skills.

*885. Fluency Disorders (3 cr)

Research related to the nature, diagnosis and clinical management of stuttering is considered. Therapy models are presented along with data bearing on the efficacy of particular approaches. Specific rehabilitation procedures.

886. Augmentative Communication (2-3 cr)

Speech pathology students must register for 3 cr only; special education students may register for 2-3 cr. Introduction to the augmentative communication options for persons unable to speak or write because of physical, language, or cognitive disability.

*887. Language and Learning Disorders (3 cr)

Prereq: For non-SLPA majors only

Review of prominent theories relating language to cognitive development and learning; student interaction on how varying styles and abnormal skills influence normal learning; how modifications can be made in materials content and classrooms to accommodate a child that has a language and learning disorder.

888. Linguistic Needs of Bilingual and Culturally Different Students (3 cr)

Prereq: SLPA 250 and 251 or permission

Provides theoretical and applied information about situational factors which have an impact on spoken and written language; addresses how individual differences due to gender, handicapping condition, socioeconomic status, and cultural-ethnic background contribute to diversity in communication patterns and often act as a barrier to successful interactions in learning and social settings.

*890. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*891. Special Topics in Human Sciences (CYAF *891; HUMS *891; NUTR *891; TEAC

*891; TXCD *891) (1-3 cr, max 12)

Aspects of human sciences not covered elsewhere in the curriculum.

896. Readings and Research in Speech Pathology and Audiology (1-3 cr)

Prereq: Permission

Readings or research in a special area in speech pathology, language pathology, language and learning disorders, audiology, or speech and hearing science.

*897. Advanced Practicum (1-3 cr per sem in each area, overall max 6) Fld.

Prereq: Completion of the undergraduate preprofessional program

Supervised practicum experiences provided with difficult speech, language and/or hearing problems in a variety of clinical, medical, geriatric, rehabilitational and public school settings.
A. Audiology (1-3 cr per sem)
B. Speech/Language Pathology (1-3 cr per sem)
D. Differential Diagnosis (1-3 cr per sem)
E. Externship (1-3 cr per sem)
G. Public Schools (1-3 cr per sem)
L. Language-Learning (1-3 cr per sem)
M. Medical Aspects (1-3 cr per sem)
R. Counseling and Behavior Issues in Speech Language Pathology (1-3 cr per sem)
T. Externship in Audiology (1-6 cr per sem, max 12)

*898. Special Topics in Speech Pathology and Audiology (1-24 cr)

Prereq: Permission

Special topics in speech pathology and audiology.

*899. Masters Thesis (1-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

902. Advanced Clinical Evaluation (3 cr)

Instruction and practice in understanding, applying, and interpreting advanced clinical tests. Understanding the use of differential diagnostic tests used in assessment of peripheral and central lesions.

904. Basic Instrumentation (3 cr) Lec, lab.

Basic electrical theory and practical electronic information for the audiologist. Basic electrical and electronic information applicable to hearing, perception and acoustics. Basic electronics and electronic components, analog and digital circuits, transducers, calibration of audiometric instruments, amplifiers, attenuators and test equipment.

906. Advanced Clinical Assessment II (3 cr)

Issues of professionalism and the development of best-practice models in Audiology. Relationship-centered patient care and the impact of multicultural issues on the practice of Audiology. Use of clinical decision analysis and evidence-based practice. Application to the common clinical assessment tools discussed in the “Advanced Audiological Assessment I” course.

908. Physiological Acoustics (3 cr)

Pneumatic/mechanical/hydraulic/electrical interfaces involved in the transduction of acoustic energy through the auditory system. Investigation of external ear biophysics, the middle ear transfer function, cochlear hydrodynamics and hydro-mechanics, and auditory biopotentials.

910. Auditory Signal Processing (3 cr)

Principles of signal processing relevant to tests of hearing and to theories of functioning of the auditory system. Introduction of concepts in mathematics, vibration and acoustics. Time- and frequency-domain representations of signals, digital filtering, analysis of lumped-element circuits, linear and nonlinear signal analyses, modulation theory, and the effect of noise on measurements. Applications relevant to audiology including hearing aid performance and measurements, middle-ear transmission, cochlear mechanics, and auditory-nerve firing patterns. Application of these models to understanding physiological sources of conductive and sensorineural hearing loss.

912. Psychoacoustics (3 cr)

Psychoacoustic aspects of audition, including psychoacoustic instrumentation, masking level differences, psychoacoustical scaling, difference limen for intensity and frequency, loudness, critical bands and critical ratios, absolute threshold measurement, differential threshold measurement, and temporal summation. Brief investigations of certain psychoacoustic phenomena.

916. Medical Aspects of Audiology (3 cr)

Effects of, and principles of, medical management of disorders of the cochlea, retrocochlear region, and central auditory mechanism. Anatomy and physiology of the inner ear and central auditory pathways, function and physiology of the vestibule and labyrinth, and histology and biochemistry of the inner ear and ascending auditory tracts.

918. Auditory Assessment of Infants and Children (3 cr)

Prereq: SLPA 271 or equivalent

Development of the auditory system in infants and young children. Techniques used in differential diagnosis, and screening of auditory disorders in the pediatric population.

920. Electrophysiological Assessment of Hearing (3 cr)

Instrumentation and procedures for electrophysiologic evaluation of the auditory system. Procedures and special tests include Electrocochleography, Auditory Brainstem Response, Middle Latency Response, Late Cortical Response, and others.

922. Electrophysiology II (3 cr)

Builds on SLPA 908 and 920. Clinical applications of objective tests of auditory function.

924. Sensory Technology and Rehabilitation for the Hearing Impaired I (4 cr)

Prereq: SLPA 271 or equivalent

Students will initiate and carry out directed laboratory assignments. Conventional analog hearing aids which includes: the design and operation of hearing aids, electroacoustic measurements and accompanying instrumentation, earmold and plumbing acoustics, evaluation and selection procedures (adults), orientation

926. Sensory Technology and Rehabilitation for the Hearing Impaired II (1-3 cr)

Prereq: SLPA 271 or equivalent

Students will be expected to engage in class presentations. Various assistive technologies, other than conventional analog hearing aids, utilized by persons who are deaf and hard of hearing. Technologies such as cochlear implants, tactile devices, radio frequency systems, digital hearing aids, and telephone, television and alerting devices. Information regarding pediatric amplification, counseling, and speechreading introduced.

928. Hearing Conservation and Industrial Audiology (2 cr)

Theories and basic resources for participation in industrial, government, or community hearing conservation programs.

930. Genetics of Hearing Loss (3 cr) Lec 3.

The genetic basis for hearing loss.

932. Vestibular Assessment I (3 cr)

The first of a two-course series on the normal and pathophysiology of the human balance system and tools for its investigation and treatment. Normal anatomy and physiology of the balance and ocular motor systems, contrasted with a wide range of pathological conditions. Electronystagmography (video-nystagmography two- and three-dimensional recordings) and assessment of the otolith organs.

934. Vestibular Assessment II (3 cr)

The second of a two-course series on the normal and pathophysiology of the human balance system and tools for its investigation and treatment. Advanced techniques for patient assessment using rotational chair and posturography protocols. Techniques for full assessment in an office situation without extensive equipment. Options for treatment and management of this group of patients. Vestibular and balance rehabilitation therapy program development.

936. Implantable Prosthetics (3 cr)

Design, operation, candidacy, assessment, surgical procedures, fitting, verification, and rehabilitation procedures related to implantable prosthetic devices for individuals who are deaf and hard of hearing. Cochlear implants, bone anchored hearing aids, implantable middle ear devices, and auditory brainstem implants.

938. Private Practice and/or Clinic Management (2 cr) Lec 2.

Principles and procedures for starting and surviving as an independent practitioner in audiology. Practice management strategies for use in any audiological setting.

940. Aural Rehabilitation Across the Lifespan (3 cr) Lec 3.

Habilitation (for pre-lingual deaf and hard of hearing infants and toddlers) and rehabilitation efforts for individuals of all ages who ar deaf or hard of hearing.

942. Seminar in Audiology (2 cr)

Research and clinical procedures; findings and implications in audiology and hearing science.

956. Language Study of Teachers of Deaf and Hard of Hearing (DHH) Lec 3.

(3 cr) Theoretical and practical aspects of American Sign Language (ASL) structure. Issues relevant to the use of sign language in education, written English as a second language, classroom discourse, and educational interpreting. Sociolinguistic aspects of sign language among deaf and hearing individuals.

964. Speech Perception and Processing (3 cr)

Prereq: SLPA 250 and 456 or permission

Human and computer perception and processing of speech. The speech code and its representation in the brain, laboratory techniques for perceptual experimentation, acoustic analysis of speech, and computer synthesis of speech.

966. Swallowing Disorders (2 cr)

Swallowing disorders of children and adults. Procedures used in assessment, diagnosis, and intervention.

967. Cleft Palate (2 cr)

Prereq: SLPA 464 or equivalent

Communication, dental, medical, and associated problems related to cleft palate.

968. Motor Speech Disorders (2 cr)

Prereq: SLPA *853

Motor speech disorders resulting from neuropathology of the central and peripheral nervous systems as found in cerebral palsy, Parkinsonism, and other developmental and acquired neuromotor problems of children and adults.

980A. Seminar in Speech Physiology (3 cr)

Prereq: SLPA 455 and 456 or equivalent

Research procedures, findings, and implications in speech and hearing science (experimental phonetics) in the areas of physiology, acoustics, and psychoacoustics.

980B. Seminar in Speech Acoustics (3 cr)

Prereq: SLPA 455 and 456 or equivalent

Research procedures, findings, and implications in speech and hearing science (experimental phonetics) in the areas of physiology, acoustics, and psychoacoustics.

981. Seminar in Speech Pathology (1-3 cr per sem, max 6 cr)

Prereq: SLPA *851, *865, 967, and/or 968

Research procedures, findings and clinical implications in the following areas:
B. Fluency Disorders (1-3 cr)
D. Voice Disorders (1-3 cr)
E. Motor Speech Disorder (1-3 cr)

983. Seminar in Language (1-3 cr per sem, max 6 cr)

Prereq: SLPA 251 or 852 or permission

Research procedures, findings and implications in language pathology and treatment in the areas of development, evaluation and habilitation.
A. Child Language Development and Disorders (1-3 cr)
B. Adolescent/Adult Language Development and Disorders (1-3 cr)
E. Augmentative/Alternative Communication (1-3 cr)

984. Seminar in Augmentative Communication (3 cr)

Prereq: SLPA 886

Advanced seminar on research literature in the augmentative communication field.

985. Traumatic Brain Injury (2 cr)

Prereq: SLPA *853

Assessment and treatment of child and adult cognitive and communication disorders resulting from traumatic brain injury.

987. Aphasia in Adults (3 cr)

Prereq: SLPA *853

Adult language disorders resulting from stroke or other acquired central nervous system insult. Includes historical/theoretical development of understanding, cerebral dominance for language, classifications, rationale for diagnostic and therapeutic management, prognostic factors, agnosias and apraxia.

990. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

994. Doctoral Capstone Thesis (3 cr, max 9) Ind.

Selection of the topic for this project should take place no later than the summer of the third year by consultation with the project adviser. Enrollment in SLPA 994 is required during each semester that the project is underway. Capstone experience prepared in the form of a research project paper containing a significant treatment of some aspect of audiology.

995. Doctoral Seminar (3 cr, max 18)

Prereq: Permission

The course is intended primarily for doctoral students, although non-doctoral graduate students may be admitted with special permission of the instructor. Students are immersed in outcome-based scholarly activities with a faculty mentor. Working on either an individualized or small group basis, students develop, execute and report one or more projects addressing the interaction between research and practice.

996. Research Problems Other Than Thesis (1-9 cr)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

*800. Inquiry into Teaching and Learning (3 cr)

Contemporary educational research from multiple theoretical perspectives.

*801. Curriculum Inquiry (3 cr)

The relationship between curriculum theory and/or research to educational practices.

802. Contemporary Children's Literature: Principles and Practices (3 cr)

Prereq: TEAC 302 and successful completion of student teaching or permission

Contemporary literature for children, all forms and genres; development of meaningful and creative learning activities for children; exploration and study of professional readings and research related to children's literature.

*803. Student Teaching Internship Seminar (1-2 cr)

Prereq: Parallel TEAC 897

Analysis of school programs with attention to teacher certification, teacher/student rights/responsibilities, proper conduct of teachers, selected legal aspects of education, methods of communicating with parents and community members, and current issues.

A. Elementary (K-6) (1-2 cr) Parallel TEAC 897A.
B. Elementary Art (1-2 cr) Parallel TEAC 897B.
G. Elementary Foreign Language (1-2 cr) Parallel TEAC 897G.
I. Secondary Art (1-2 cr) Parallel TEAC 897I.
N. Secondary Language Arts (1-2 cr) Parallel TEAC 897N.
P. Secondary Mathematics (1-2 cr) Parallel TEAC 897P.
Q. Middle School (1-2 cr) Parallel TEAC 897Q.
R. Secondary Modern Language (1-2 cr) Parallel TEAC 897R.
V. Secondary Science (1-2 cr) Parallel TEAC 897V.
W. Secondary Social Science (1-2 cr) Parallel TEAC 897W.
Y. Mainstreaming (1-2 cr) Parallel TEAC 897Y.
Z. Multicultural (1-2 cr) Parallel TEAC 897Z.

*805. Advanced Teaching Strategies (ALEC *805; NUTR *806) (3 cr) Lec.

Contemporary and innovative teaching strategies, emphasizing learner-centered instruction, suitable to teaching in college and postsecondary institutions, outreach programs public schools, and other settings. Students participate in active learning as they apply learning theory in practice, prepare and demonstrate teaching methods, and plan for instruction in discipline areas of their choice.

806. Reading and Writing Disabilities: Adolescents (SPED 806) (1-3 cr, max 6) Lec.

Prereq: Parallel SPED 806A

Theory and techniques for assessing and teaching word identification, vocabulary, comprehension and writing skills in grades 7 to 12.

806A. Reading Center Practicum II (SPED 806A) (1-3 cr, max 3) Fld.

Prereq: Permission

SPED/TEAC 806A requires two hours per week in a Reading Center. Teaching/tutoring experience evaluating and instructing students with reading problems in a Reading Center. Assessment, instructional planning, delivery of instruction, writing diagnostic reports and parent communication.

808. Improvement of Instruction in Elementary School Mathematics (3 cr)

Prereq: TEAC 308 or equivalent

Techniques, plans, and procedures for improving instruction in elementary school arithmetic; analysis of current instructional and supervisory practices; evaluation of research and instructional materials.

811. Reading Processes and Practices (3-9 cr)

Overview of reading processes and programs, with special attention to strategies for comprehension and word identification, approaches, and materials.

A. Teaching Reading (3 cr)
B. Special Topics in Reading (1-6 cr)

812. Improvement of Instruction in Elementary School Science (3 cr)

Prereq: 12 hrs education including TEAC 315 or permission; teaching experience or student teaching

Techniques, plans, and procedures for improving instruction in elementary school science. Current practices, issues, and trends; evaluation of instructional materials.

813. Studies in Teaching English as a Second Language (1-3 cr, max 18)

Preparation for teaching K-12 learners whose language of nurture is not English.
A. ESL: Acquisition (1-3 cr, max 3)
B. ESL: Teaching and Curriculum (1-3 cr, max 3)
D. ESL: Assessment (1-3 cr, max 3)
E. Special Topics in Teaching ESL (1-6 cr, max 6)
G. Cross-Cultural Communication (1-3 cr, max 3)
K. Linguistics for ELL Teachers (1-3 cr, max 3)

*814. Evaluation in Career and Technical Education (CYAF *814) (3 cr)

Two aspects of evaluation in the classroom: 1) selection and use of evaluation in assessing learning, and 2) consideration of conceptual and methodological issues in conducting evaluation to determine and account for the effectiveness of programs.

*815. Development and Organization of Vocational Education (ALEC *815) (1-3 cr) Lec.

For teachers, administrators, and guidance personnel. Vocational and practical education, their place in the community school; planning comprehensive programs in agriculture, business, homemaking, and industrial education.

816. Unified Primary Schooling (3 cr, max 9)

Prereq: Admission into the Inclusive Early Childhood Education (Birth to Grade 3) Teacher Preparation Program; CYAF 160 or EDPS 250 or PSYC 289 or equivalent; CYAF 270 and 270L or equivalent; and parallel TEAC 397 or 894

Creation and implementation of developmentally appropriate instruction in literacy, mathematics, science and social studies for students in grades K-3. Role of teacher/facilitator in relationship to curriculum content and the learning community.
A. Curriculum (3 cr)
B. Interdisciplinary Planning (3 cr)
D. Methods and Teaching K-3 (3 cr)

*817. Emerging Reading and Language (3 cr)

Prereq: Elementary endorsement

Research, theory and practice associated with literacy development in children from birth to age 8. Language and concept development, emerging reading and writing behaviors, appropriate materials and evaluation within a holistic view teaching and learning.

818. Teaching Writing (3 cr)

Learning and teaching of writing with consideration given to developmental factors of children and adolescents.

820. Teaching Foreign Language in the Elementary School (3 cr)

Theory, research and practice of most recent foreign language teaching models and strategies.

*822. Principles and Practices in Social Studies Education (1-3 cr/max 9)

Current issues and trends in the curriculum and teaching of social studies.
A. Special Topics (1-3 cr)

825. Coordination in Occupational Training Programs (EDAD 825) (1-3 cr)

Foundation and scope of current and projected vocational cooperative educational programs and general educational work experience. Coordination techniques, selection and placement, instructional procedures, youth leadership activities, organization and administration, and evaluation of cooperative occupational education.

*828. Improvement of Instruction in Industrial Education (3 cr)

Special contemporary curricular and teaching aspects of industrial education. Research, curriculum content, teaching strategies, and the application to the instructional setting.

830. Introduction to Philosophy of Education (3 cr)

Introduction to fundamental ideas and skills that students use to begin to form personal philosophical perspectives on education that can be justified intellectually, practically, and ethically. Using case studies of realistic school situations and the theoretical work of a range of writers in education, students explore conceptions of teaching, learning, curriculum, and the relationship between school and society.

831. Studies in the Foundations of Education (3 cr ea, max 12) Lec 3.

Social and cultural analyses of curriculum, teaching, and education policy from disciplinary perspectives.
A. The Anthropology of Education (3 cr)
B. The History of Education (3 cr)
E. The Sociology of Education (3 cr)
J. Special Topics (3 cr)

832. Higher Education in America (3 cr)

Prereq: 12 hrs education; 1 yr American History or permission

History and development of America's colleges and universities and a study of some recent trends and problems in higher education.

833. Comparative Education (3 cr)

Foundations, trends, and problems of selected national systems of education as seen in cultural perspective.

834. Ethics and Education (1-3 cr, max 12)

Study of theory, policies, and practices in ethics and education.
A. Policies and Practices for Moral Education (1-3 cr, max 3)
B. Readings in Moral Theory for Education (1-6 cr, max 6) Prereq: TEAC 834.
D. Special Topics in (1-3 cr, max 3)

*835. Ethnic Minorities and American Education (3 cr)

Chronological entry of European immigrant groups into an American society during the formative years of the development of the American public school system. Record of American social and educational history is replete with examples of inter- and intra-group human conflict as each immigrant group attempted to carve out its niche in a New World setting during a period of mass migration from Europe. Historical, sociological, and psychological barriers that became inherent during a dynamic period of nation building.

836. Professional Development in Education (3 cr) Lec 3.

Equip professionals to contextualize their training in the whole school setting. Issues in the teacher change process, professional development practices, program needs assessment and administration, literacy assessment, materials selection, individuals coaching, and intervention design.
A. Literacy Coaching (3 cr)
B. Special Topics (3 cr)

838. Linguistics for the Classroom Teacher (3 cr)

Analysis of various aspects of linguistic study including dialects, usage, modern grammar, semantics, lexicography, etc., and their application in the K-12 classroom. Investigation and clarification of language concepts and the development of teaching materials that can be used in the classroom.

839. Literature for Adolescents (3 cr)

Wide range of young adult literature available for use in schools. Critical and rhetorical tools for responding to a variety of literary texts and techniques for eliciting a wider range of responses to literature; special consideration for readers 11-16.

*840. Culture and Schooling (1-3 cr, max 15)

Description and explanation of cultural values as they relate to education.
A. Gender (1-3 cr)
B. Gender and Science (1-3 cr)
D. Special Topics (1-6 cr)
E. Rural Education (1-3 cr)

841. Content Area Reading, Grades 4-12 (3 cr)

Simultaneous teaching of academic content and functional teaching of reading in the content areas; assessment of comprehension, vocabulary/concept attainment; analyses of text; improvement of content area learning through reading/writing development.

*842. Objectives and Methods of Science Teaching (1-3 cr)

Development of objectives, course offerings, and organization of subject matter and methods of instruction in science courses. Current national science education curriculum trends.
A. Elementary
B. Middle School
D. Secondary and Community College
E. Special Topics (1-6 cr)

*844. School Media Programs (1-3 cr)

Role of the media specialist as a member of the instructional team.
A. Administration (3 cr)

B. Reference (3 cr)
D. Cataloguing (3 cr)
E. Selection (3 cr)
J. Special Topics in School Media

*845. Historical and Philosophical Foundations of American Music Education (MUED *845) (2-3 cr, max 3) Lec.

Prereq: Undergraduate degree in MUED

MUED *845 is required for a graduate degree in music education. Historical overview of American music education practices from the Singing School tradition to today. Major philosophical influences in American music education, writings regarding aesthetic education, equity, ethical practice, meaning, and profundity. The writings of Murcell, Dewey, Langer, Reimer, Elliott, Bowman, and others.

*846. Studies in Middle Level Schooling (1-9 cr, max 9)

Historical development, philosophy, and current literature of the middle school.
A. Curriculum (1-3 cr, max 3)
B. Leadership (1-3 cr, max 3)
D. Teacher-Based Advisory (1-3 cr, max 3)
E. Special Topics (1-3 cr, max 9)

*847. Principles of Business Education (3 cr)

Principles, philosophy, historical development, and emerging role of business education in America. Current issues in business education, resource development, examination of learning theories, and needs assessment.

*848. Introduction to Curriculum Studies (1-3 cr)

Historical development and philosophy of high school curricula. Review of research on schooling, curriculum trends, and school organizational structures.
A. Elementary Schools
B. Middle Schools
D. Secondary Schools
E. Special Topics in Curriculum (1-6 cr)

*849. Instruction of the Transescent Student (3 cr)

Not open to students with credit in TEAC 449. Reading, discussion and research of new instructional methods and materials for transescent students. Experimental programs and methods for improving instructional quality.

850. American Cultural Perspectives through Popular Music and Guitar (MUED 850; MUNM 450) (3 cr)

Exploration of the historical, social and cultural context of late 19th and 20th century America through learning to play jazz and popular music on the guitar to provide an authentic, performance-based encounter in music.

851. Learning and Teaching Principles and Practices (3-4 cr)

Prereq: Admission to the Teacher Education Program; completion of 80 percent of subject-area course work with a grade of C+ (2
33) or better. Theoretical issues in the area of teaching and learning as applied to the individual disciplines.
I. Secondary Art Prereq: As listed above and TEAC 306 or 806.
L. Information Technology (3 cr)
N. Secondary Language Arts (3 or 4 cr) Prereq: As listed above, including ENGL 357 and 377; TEAC 438/838; and a grade average of "B" (3.0) or better in subject-area.
P. Secondary Mathematics Prereq: As listed above.
R. Secondary Modern Languages Prereq: As listed above.
V. Secondary Science Prereq: As listed above; concurrent registration in TEAC 397.
W. Secondary Social Science Prereq: As listed above.

852. Curriculum Principles and Practices (2-3 cr)

Prereq: Admission to the Teacher Education Program and completion of 80% of the subject-area course work with a grade of C+ (2
33) or better. Practical issues in the area of teaching and learning as applied to the individual disciplines.
I. Secondary Art Prereq: As listed above and TEAC 306 or 806.
N. Secondary Language Arts Prereq: As listed above and parallel TEAC 397.
P. Secondary Mathematics Prereq: As listed above and TEAC 851P with a grade of C+ or better.
R. Secondary Modern Languages Prereq: As listed above.
V. Secondary Science Prereq: As listed above and TEAC 851V.
W. Secondary Social Science Prereq: As listed above.

*854. Literary in Education (1-9 cr, max 9)

Comparative analyses of literature and the role of the reader as a meaning maker in educational settings.

A. Literary Response and Analysis (3 cr)
B. Multiethnic Literature for Children and Adolescents (3 cr)
E. Special Topics (1-3 cr)

*855. Teaching Learners to Learn (EDAD *855; EDPS *855; NUTR *855; SPED *855) (3 cr)

Effective teachers facilitate student learning. Facilitating student learning depends on understanding learning principles and on designing instruction that is compatible with learning principles. Instructors can provide learning-compatible instruction that helps students learn more effectively and ultimately teaches them how to learn. Assists teachers to teach in learning-compatible ways and helps them embed within their curriculum a program for teaching learners to learn.

*858. Utilization of Modern Technology (3 cr)

Strategies of incorporating modern technology into the professional workplace; provides a thorough understanding of the operation and evaluation of integrating technology into the curriculum.

*859. Instructional Message Design (3 cr)

Using selected principles from behavior science (perception, memory, attitudes, concepts), students analyze and design instructional messages. Systematic process for instructional development.

*860. Production and Utilization of Instructional Materials (3 cr)

This course is meant to be taken after and in sequence with TEAC *859. Unique characteristics and contributions of selected instructional media and technologies to the teaching/learning and communication processes. Students produce materials for specific instructional messages.

*861. Education for a Pluralistic Society: Foundation and Issues (3 cr)

Educational practices and policies for people from historically oppressed groups in the United States Foundation of multicultural education. Discussion of contemporary educational issues within the context of multicultural and cultural diversity. Critique of curricular materials and resources promoting a multicultural perspective.

*869. Chemistry for Secondary School Classrooms (BIOC *869; BIOS *883; CHEM *869) (1 cr, max 12)

Credit in this course will not count towards a graduate degree in chemistry or biochemistry or biological sciences. Course taught via World Wide Web. Chemistry content for high school teachers organized according to the National Science Education Standards. Individual course coverage includes: content, integration with other sciences and mathematics, graphing calculators, probe-experiments, simulations, at-home experiments, teaching materials, and industrial applications related to the title description.
A. Structure and Properties of Matter: Water and Solutions (1 cr)
B. Structure and Properties of Matter: Periodicity (1 cr)
D. Structure and Properties of Matter: Bonding and Structure (1 cr)
E. Structure and Properties of Matter: Carbon Chemistry and Polymers (1 cr)
J. Structure and Properties of Matter: Gases and the Atmosphere (1 cr)
K. Chemistry of Life Processes: Biomolecules (1 cr)
L. Structure and Properties of Matter: Condensed States and Materials Science (1 cr)
M. Interactions of Matter and Energy (1 cr)
N. Chemistry of Life Processes: DNA (1 cr)
P. Chemistry of Life Processes: Energy and Metabolism (1 cr)
Q. Chemical Reactions: Equations and their Consequences (1 cr)
R. Chemical Reactions: Acids and Bases (1 cr)
T. Chemical Reactions: Kinetics (1 cr)
U. Chemical Reactions: Oxidation, Reduction and Electrochemistry (1 cr)
V. Equilibrium: Unifying Theme (1 cr)
W. Conservation of Energy and the Increase in Disorder: Thermodynamics (1 cr)
Y. Inquiry and the Nature of Science: Analysis and Instrumentation (1 cr)
Z. Structure of Atoms: Nuclear Chemistry (1 cr)

873. Approaches to Middle School General Music (MUED 873) (3 cr)

Prereq: MUED 344 or permission

For prospective new and experienced general music/middle school teachers. Includes characteristics of middle school students, materials, methodology, guitar and recorder techniques, and curriculum development.

*874. Topics in Chemical Pedagogy (CHEM *874) (1-3 cr, max 12)

A maximum combined total of 12 hours from TEAC *869 and/or *874 may be counted toward a masters degree. Credit in this course will not count towards a graduate degree in chemistry. Courses are Web-based. Topical chemistry content for high school teachers organized according to the National Science Education Standards.
A. Green Chemistry (2-3 cr)
D. Demonstrations for High School Chemistry (1-3 cr)
E. Experiments for High School Chemistry (1-3 cr)
J. Developing a Safety Culture (1 cr)
K. Chemistry of Life Processes: Biomolecules (1-3 cr)

L. Addressing Misconceptions (1-3 cr)
M. Mathematics Integration (MATH 874M) (2-3 cr) May be counted towards the MAT and MScT degrees in mathematics and statistics, not the MA, MS, or PhD.
N. Inquiry Strategies (1-3 cr)
P. Chemistry in the Workplace (1-3 cr)
Y. Graphing Calculator Activities (2-3 cr)

*875. Chemical Pedagogy in the High School Laboratory (CHEM *875) (1-3 cr, max 6)

Credit in this course will not count towards a graduate degree in chemistry. Laboratory-based courses addressing specific issues connected with teaching laboratory work in high school chemistry programs.
A. Small-scale Experiments (1-3 cr)
B. Technology Integration (3-6 cr)
E. Inquiry Experiments (1-3 cr)
K. At-home Experiments (1-3 cr)
P. Probe Experiments (1-3 cr)
T. Traditional Experiments (1-3 cr)

880. Teaching with Technology (1-3 cr, max 15)

Survey and analysis of the application of technology to improve teaching. Research and related literature on learning, teaching, and curriculum. Critical application of technology and the development of teaching strategies.
A. Survey of Instructional Technology (1-3 cr)
B. Designing Instructional Technology K-12 (EDAD *880B) (1-3 cr, max 3)
E. Instructional Technology in Mathematics (1-3 cr)
J. Instructional Technology in Language Arts (1-3 cr)
K. Instructional Technology in Science (1-3 cr)
L. Instructional Technology in Social Sciences (1-3 cr)
M. Technology Supported Assessment and Evaluation (1-3 cr)
N. Web Teaching (1-3 cr)
P. Special Topics (1-3 cr)

*881. Music in Early Childhood Education (MUED *881) (3 cr)

Prereq: MUED 344 or 370 or permission

Prepares the teacher of the young child (3-8 years) in the musical skills, methodology, and materials needed to carry out a successful program of music in the public and private schools, the nursery schools, and day-care centers.

882. Instructional Applications of Technology (1-3 cr, max 15)

Prereq: Permission

Task-oriented practicum for the demonstration of fluency with advanced technology and the application of instructional design to the development of educational resources. Supervised task-centered experiences.
A. Modern Programming Tools (1-3 cr)
B. Database and Interactive Web Development (1-3 cr)
D. Interactive Media (1-3 cr)
E. Advanced Web Design and Management (1-3 cr)
G. Creation of Instructional Activities for Portable Devices (1-3 cr)
J. Special Topics (1-3 cr)

*886. Assessment, Evaluation, and Instruction of (SPED *886) (1-3 cr, max 6) Lec.

*TEAC/SPED *886 includes case study and planning for special student populations.*

Analysis and use of informal and formal assessment and instructional strategies in clinic and classroom settings.
A. Special Topics in Literacy Assessment (SPED *886A) (1-3 cr) Lec.
B. Internship in Literacy Assessment and Instruction (SPED *886B) (1-3 cr)

887. Effecting High School Improvement (3 cr) Lec 3.

The relationships and interactions among the high school student, a teacher, and the curriculum to the issues of school district, higher education, philanthropy, state department of education, and federal involvement in high school improvement efforts. The imperative and challenges for improving high schooling for all students.

*888. Teacher as Scholarly Practitioner (1-3 cr, max 3)

Prereq: TEAC 800 and 801, or permission

Seminar on the principles of practitioner inquiry and development of a proposal for an inquiry project.
A. Special Topics in Inquiry

*889. Masters Seminar (1-3 cr, max 9)

Prereq: Permission

Working with a faculty mentor on either an individual or small-group basis, the student plans, conducts, and reports a summative work project.

*890. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*891. Special Topics in Human Sciences (CYAF *891; HUMS *891; NUTR *891; SLPA *891; TXCD *891) (1-3 cr, max 12)

Aspects of human sciences not covered elsewhere in the curriculum.

*892. Special Topics in Education (CYAF *892; EDAD *892; EDPS *892; EDUC *892; SPED *892) (1-3 cr, max 12)

Prereq: EDPS 859 or parallel; EDPS 859 or equivalent

Aspects of education not covered elsewhere in the curriculum.

893. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*894. Professional Practicum Experiences (1-10 cr, max 10) Fld.

Prereq: Admission to Teacher Education Program

TEAC *894 does not count toward the MA or MEd degree. P/N only. Guided observations and/or clinical experiences in schools and/or agencies offering programs for children/youth.
A. Elementary (K-6) (1-10 cr)
B. Elementary Art (1-10 cr)
E. English as a Second Language (1-10 cr)
G. Elementary Foreign Language (1-10 cr)
I. Secondary Art (1-10 cr)
J. Business Education (1-10 cr)
L. Information Technology (1-10 cr, max 10)
M. Industrial Education (1-10 cr)
N. Secondary Language Arts (1-10 cr)
O. Marketing Education (1-10 cr)
P. Secondary Mathematics (1-10 cr)
Q. Middle School (1-10 cr)
R. Secondary Modern Language (1-10 cr)
T. Reading (1-10 cr)
V. Secondary Science (1-10 cr)
W. Secondary Social Science (1-10 cr)
Y. Mainstreaming (1-10 cr)
Z. Multicultural (1-10 cr)

895. Independent Study (1-6 cr)

Prereq: Permission

Selected topic with the direction and guidance of a staff member.

896. Problems in Secondary Education (1-6 cr, max 6)

Prereq: Permission

Develop plans, procedures, or experiments directed to the improvement of the curriculum or administration of the secondary school.

*897. Student Teaching Internship (1-10 cr) (UNL)

Prereq: Admission by application only

(See "Admission to Student Teaching" in the UNL Undergraduate Bulletin.) This course will not count towards the MA or MEd degree. P/N only. Supervised teaching experience in schools.
A. Elementary (K-6)
B. Elementary Art
E. English as a Second Language
D. Elementary Physical Education
G. Elementary Foreign Language
I. Secondary Art
J. Business Education
K. Health
M. Industrial Education
N. Secondary Language Arts
P. Secondary Mathematics
Q. Middle School
R. Secondary Modern Language
U. Secondary Physical Education

V. Secondary Science
W. Secondary Social Science
Y. Mainstreaming
Z. Multicultural

898. Problems in Education (1-3 cr, max 6)

Opportunities to develop plans, procedures, experiments, and models directed to the improvement of education.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Supervision and Administration in Vocational Education (1-3 cr) Lec/act.

For course description, see ALEC 901.

902. Colloquium in Educational Policy and Practice (1-3 cr, max 6)

Educational policy and practice and their interconnection.
A. Special Topics in Educational Policy and Practice (1- 3 cr)

903. Current Trends in the Education of Young Children (2-3 cr)

Participation in special problems of teachers in service. Guidance, evaluations, research.

905. Practicum in Postsecondary Teaching (ALEC 905) (1-3 cr) Lab.

Prereq: ALEC *805 or permission
Work with a faculty mentor in a discipline of choice and an instructional supervisor to prepare instruction and teach students in a postsecondary setting. Practicum students are assisted in arranging for the practicum and are provided consultation and feedback during the practicum. Lesson planning and reflective papers are part of the practicum experience.

907. Seminar in Elementary School Mathematics (3 cr)

Prereq: TEAC 808 or equivalent
Theories, literature, and research procedures relative to elementary mathematics education.

908. Seminar in Teacher Education (1-12 cr, max 12)

Overview of literature and scholarship in teacher education.
A. Supervision of Pre-service Teachers (1-3 cr)
B. Teacher Development (3 cr)
D. Initial Teacher Preparation (1-3 cr)
E. Special Topics in Teacher Education (1-3 cr)

911. Seminar in Elementary School Science (3 cr)

Prereq: 12 hrs laboratory science including courses in both physical and biological fields; TEAC 403 or 804 or equivalent; teaching experience
Literature which deals with research and experimentation in science for the elementary school. Aspects of the teaching and supervision of elementary school science that require investigation and research.

920. Seminar in Curriculum and Teaching of Career and Technical Education (3 cr)

Current research and theory within the curriculum and teaching of career and technical education.

921. Seminar in Literacy Studies (1-3 cr, max 9 cr)

Research in literacy and schooling.
A. Curriculum and Teaching (3 cr)
B. Special Topics (1-3 cr)
D. Language, Culture, and Education (1-3 cr)

922. Seminar in the Learning and Teaching of Foreign Languages (1-21 cr, max 21)

Prereq: Undergraduate teaching major in a foreign language and teaching experience in a foreign language
Critical review and evaluation of current literature, research and theory.
A. Reading in the Foreign Language Classroom (1-3 cr, max 3)
B. Writing in the Foreign Language Classroom (1-3 cr, max 3)
D. Listening in the Foreign Language Classroom (1-3 cr, max 3)
E. Speaking in the Foreign Language Classroom (1-3 cr, max 3)
J. Planning in the Foreign Language Classroom (1-3 cr, max 3)
K. Technology-Enhanced Language Instruction (1-3 cr, max 3)

923. Seminar in the Curriculum and Teaching of Secondary School Mathematics (3 cr)

Prereq: Undergraduate teaching major and teaching experience in mathematics

Critical evaluation of current literature, yearbooks, research, and experiments in the curriculum and teaching of mathematics.

924. Seminar in the Curriculum and Teaching of Science (1-3 cr)

Prereq: Undergraduate teaching major and teaching experience in science, and TEAC 842 and EDPS 859

Exploration of current literature, yearbooks, research, and experiments in the curriculum and teaching of science.
A. Elementary
B. Middle School
D. Secondary
E. Inclusive Science Teaching
J. Special Topics (1-6 cr)

925. Seminar in the Curriculum and Teaching of Social Sciences (3 cr, max 12)

Current research and literature in social sciences education.
A. Elementary (1-3 cr)
B. Middle School (1-3 cr)
D. Secondary (1-3 cr)
E. Great Plains Studies (1-3 cr)
G. Special Topics in Social Sciences (1-3 cr)

929. Seminar in Individualized Instruction for Gifted, Talented, and Creative Students (3 cr)

Nature of curricular and instructional programs and practices for gifted, talented, and creative students in elementary and secondary schools. Range of learner outcomes, identification of instructional principles, personalizing instruction for this group of learners.

930. Sociological/Anthropological Research Methods in Education (CYAF 930; EDPS 930; NUTR 930) (1-3 cr, max 15)

Empirical and theoretical research into the sociocultural problems and the lived experiences of people across educational, family and community settings.
A. Ethnographic Methods (1-3 cr, max 3)
B. Special Topics in Qualitative and/or Quantitative Research Methods (1-3 cr, max 3)
D. Discourse Analysis Across School, Home and Community Settings (1-3 cr, max 3)
E. Introduction to Linguistic Analysis of Classroom Interaction (1-3 cr, max 3)
J. Hermeneutic Traditions in Education (1-3 cr, max 3)
K. Quantitative Research Traditions in Education (1-3 cr, max 3)

931. Research in the History of Education (3 cr)

Historical research methods in education culminating in the research and writing of a historical article as publication report.

932. Contract Studies in International Education (1-6 cr)

Prereq: Permission

Student proposed course of studies in international education: may include field experiences, individual/group research, participation in mini-seminars, etc.

935. Seminar in Qualitative Research (EDPS 935) (3 cr)

Prereq: EDUC 900K or permission

Seminar intended for doctoral-level students who have completed an initial qualitative research methodology course and who want to increase their skills in qualitative research. Data collection and analysis strategies and the application of those strategies to research problems.

936. Seminar in College Teaching (1-3 cr, max 3)

Overview of teaching in post-secondary settings.

937. Philosophy of Science and Educational Research (3 cr)

Major themes in philosophy of science and relates these to conceptions of research on human beings and social institutions, particularly as this is applied to schooling. Students consider such fundamental issues as whether educational research is a science, the form and purpose of educational research, and what research might imply for practice.

944. Seminar in Curriculum Studies (1-3 cr, max 15)

Critical examination of issues in curriculum development with an analysis of research and literature on the subject.
A. Curriculum as Aesthetic Text (1-3 cr)
B. Special Topics in Curriculum (1-3 cr)
D. Curriculum Evaluation (1-3 cr)
E. Curriculum as Spatial Text (1-3 cr)

946. Instructional Improvement and Decision Making (1-3 cr)

Study and application of teaching models and techniques based on research, theory, and exemplary practice.
A. Instructional Assessment
B. Special Topics in Instruction

948. Instructional Leadership: Emerging Trends and Practices (EDAD 948) (3 cr)

Changing roles for persons engaged in instructional and curricular leadership in educational institutions. Literature on staff development, assessment and evaluation, and effective schools serve as the basis for studying and applying this information to a variety of educational settings. Issues such as teacher empowerment and site-based management, along with cooperative learning provide the focus of the activities.

949. Seminar in Education (1-3 cr, max 6)

Critical analysis of literature and research on teaching, learning, and schooling.
A. Special Topics in Education (1-3cr)

950. Contextual Research in English/Language Arts (3 cr)

Uses of qualitative research in English language arts; interpreting, planning, conducting, and reporting contextual research results.

951. Seminar in Reading Education (3-9 cr, max 9)

Scholarship in reading education, including the nature, results and implications of past and present research and non-research and contributions of historically significant scholars in the field of reading.
A. Research in Reading Education (3 cr)
B. Special Topics (1-6 cr, 6 max)

952. Language and Learning (3 cr)

Role that language plays in empowering and constraining children as they attempt to make sense of their world. Consideration of application of language scholarship for general instruction.

953. Seminar on Writing in the Curriculum (3 cr)

Writing development, writing instruction, and the use of writing in the content areas. Consideration of application of scholarship in writing for general learning and instruction.

959. Portfolio in Instructional Technology Competencies (1-12 cr)

Prereq: Permission

No more than six credits of TEAC 959 may be counted towards a masters degree. Portfolio components represent a significant contribution to the solution of an instructional problem and reflect broadly the major competencies of instructional technology: problem definition, learner analysis, media selection and message design, production, and evaluation.

960. Topical Seminar in Instructional Technology (1-3 cr)

Prereq: Permission

Critical analysis of research in a delimited problem area within instructional technology (e.g., ITV, CAI, videodisc, simulations, programmed instruction). Empirically testable research questions related to the topic.

961. Current Approaches to Elementary Music Education (MUED 961) (3 cr)

Prereq: Teaching experience

Implementation of current programs, materials, and techniques for the improvement of music instruction in the elementary school.

989. Psychology of Reading (EDPS 989) (3 cr)

Prereq: TEAC *811 or 841 or SPED 886

Relationship of psychological processes of attention, perception, memory and problem solving to reading and reading comprehension. Theories and models of reading, especially of the comprehensive process, applied to all levels of reading from beginning reading through mature reading.

990. Workshop Seminar (1-12 cr, max 12)

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

991. Field Studies in Education (EDAD 991; NUTR 991) (1-3 cr, max 6)

Prereq: Permission

Identification and solutions of problems associated with program planning; organizational, administrative, and instructional procedures within an institutional setting. Designing, implementing, and evaluating new or modified patterns of operation and teaching within a public school, postsecondary institution, or adult education agency.

993. Workshop Seminar (1-12 cr, max 12)

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

995. Doctoral Seminar (3 cr, max 18)

Prereq: Permission

Intended primarily for doctoral students, although non-doctoral graduate students may be admitted with special permission of the instructor. Students are immersed in outcome-based scholarly activities with a faculty mentor. Working on either an individualized or small group basis, students develop, execute and report one or more projects addressing the interaction between research and practice.

996. Individual Research Projects (1-10 cr, max 10)

Prereq: Permission

Individual research under faculty supervision.

997. Minor Research (1-6 cr)

Individual research on approved topics in Elementary Education.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Contents

-
  -
  -
  -
  -
-

Description

The College of Education and Human Sciences (CEHS) offers graduate degree programs through its seven CEHS departments: Child, Youth and Family Studies; Educational Administration; Educational Psychology; Nutrition and Health Sciences; Special Education and Communication Disorders; Teaching, Learning and Teacher Education; and Textiles, Clothing and Design. In addition to graduate degree programs, CEHS also offers graduate, non-degree programs leading to certification in areas such as teaching, curriculum leadership and school administration.

Workshop Seminars in Education

The purpose of the Workshop Seminars (890, 893, 990 or 993) is to give students in the departments of education an opportunity to work singly or in groups on practical educational problems which are of special focused interest but which are not included in other professional education courses. Workshops are offered on a variety of topics by College faculty and selected educational consultants. As a rule, the individual or group is expected to produce some kind of a product as a part of the workshop experience. The amount of credit in a Workshop Seminar at either the 800 or 900 level may not exceed 12 semester hours in meeting requirements for the masters degree. Upon approval, a maximum of 12 additional semester hours may be included in the program for the doctoral degree.

CEHS offers three masters degrees in nine majors and the education specialist degree in three majors. The MEd is offered only in Educational Administration; Special Education and Communication Disorders; and Teaching, Learning, and Teacher Education. The following requirements for the MEd are College requirements. Departmental requirements may exceed these. In work for the master of education degree, at least 6 semester hours selected from College of Education and Human Sciences courses outside the major must be included and supporting work may be substituted for the minor(s). For information on masters and specialist degree programs, consult the relevant department's listing in this bulletin.

CEHS offers two doctoral degrees, both the EdD and the PhD, under three majors: educational studies, human sciences, and psychological studies in education. In addition, CEHS participates in two additional doctoral majors.

The Educational Studies major includes six specializations. Instructional Technology; Internet-based Education; and Teaching, Curriculum and Learning are hosted by the Department of Teaching, Learning and Teacher Education. Special Education is sponsored by the Department of Special Education and Communication Disorders. The Department of Educational Administration hosts Educational Leadership and Higher Education and co-hosts, with Architecture, Architecture Education.

The Human Sciences major includes five specializations. Communication Disorders is housed in the Department of Special Education and Communication Disorders; Child, Youth and Family Studies is sponsored by the Department of Child, Youth and Family Studies; Nutrition and Health Sciences is hosted by the Department of Nutrition and Health Sciences; Textiles, Clothing and Design is based in the Department of Textiles, Clothing and Design; and Leadership Studies is housed in the Department of Agricultural Leadership, Education and Communication.

The Psychological Studies in Education major includes four specializations, all hosted by the Department of Educational Psychology: Cognition, Learning and Development; Counseling Psychology; Qualitative and Quantitative Methodologies in Education; and School Psychology.

In addition, the Department of Educational Administration--in cooperation with UNO's Department of Educational Administration--offers a major in Educational Administration, and the Department of Nutrition and Health Sciences participates in the Interdepartmental Nutrition major.

Specific program and application information is available under each department's listing in this bulletin. Up-to-date information is also available on-line at cehs.unl.edu. Inquiries may be directed to cehsgrad@unl.edu or to (402) 472-5333.

Educational Administration

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Larry L. Dlugosh, Ph.D.

Graduate Committee: Professor Bryant (chair); Professors Dlugosh, Grady, Griesen, Joekel, Stick; Associate Professors Cejda, Isernhagen, LaCost, Torraco, Uerling; Senior Lecturers Hoover, Lammel

The Department of Educational Administration offers programs leading to a masters degree (MEd, MA) to the certificate of specialization in educational administration and supervision, and doctoral programs (PhD, EdD). There are three approved doctoral areas of emphasis: 1) Educational Leadership and Higher Education (ELHE), which leads to either the PhD or EdD degree in education studies, 2) a shared program in Architecture Education (also ELHE) which leads to a PhD degree in education studies, and a jointly operated program with UNO (EDJT) which leads to the EdD in educational administration., The department offers specializations at the masters level in the community college, student affairs, and human resource development. A departmental minor in human resource development and a certificate program in community college leadership are also offered.

The Department offers most of its course work online and has been a campus leader in reaching out to students who need or wish to study from off campus., The primary emphasis in all courses is on the principles, processes, and practical skills necessary for the leadership, organization, and administration of educational institutions.

Further information about graduate degree programs and about certification programs may be located on the department's Website, located at cehs.unl.edu/edad.

Prerequisite.

The prerequisite for the following courses is 18 hours in education, the stated course prerequisite, or permission.

The dual degree program leading to a regular law degree, the JD (juris doctor), and a PhD in administration, curriculum, and instruction is a program administered cooperatively by the College of Law, the Teachers College, and the Graduate College.

The primary objective of this program is to produce lawyer-administrators whose training will enable them to perform both the tasks of an attorney and an administrator.

To earn both degrees each student will be expected to study at least five academic years within the program. Since the objective of this program is to provide the student with a fully integrated approach to studying law and educational administration, the curriculum reflects this integration by requiring students to mix their study in each field.

Admission.

Each college will separately admit or reject each candidate by its normal procedures. The Dual Degree Committee will then consider those students accepted into both the College of Law and the Graduate College for admission to the dual degree program.

The following courses are cross listed in both educational administration and law. These courses are normally open only to students enrolled in the joint JD in law and PhD in administration, curriculum, and instruction program, but under any circumstances admission to these courses requires approval of the College of Law. Students not seeking a law degree may be admitted to one or more of these courses with the specific approval of the faculty member teaching the course and the Dean of the College of Law.

Educational Psychology

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: R. J. De Ayala, Ph.D.

Graduate Committee Chair: Charles J. Ansorge, Ph.D.

Website: edpsyc.unl.edu

The Department of Educational Psychology consists of four program areas: counseling psychology, cognition, learning and development (CLD), quantitative, qualitative, and psychometric methods (QQPM), and school psychology. All students who wish to work toward a masters degree in educational psychology or a doctoral degree in psychological studies in education must take the aptitude portion of the Graduate Record Examination (GRE). International students must complete the TOEFL. Each applicant should arrange to have the scores reported to the Graduate Studies Office at the University of Nebraska-Lincoln. Early submission of the scores is important because the application file will not be considered until it is complete. Applications and information

concerning the GRE may be obtained from the Professional and Graduate School Testing, 225 Nebraska Union (Career Services). Full information concerning the tests and testing locations may be obtained from the Educational Testing Service, Princeton, NJ 08540. Students considering advanced degrees (masters, educational specialist, or doctoral) should submit information about experiences in research and program development, teaching and human relations, and writing.

Masters Degree.

The master of arts (MA) degree may be obtained with a specialization in cognition, learning and development (CLD program), counseling psychology, or research and psychometric methods (QQPM program). Individuals in the CLD program may select the general CLD specialization or an option in health behavior or in college learning center. Endorsement programs are offered in secondary school counseling, and elementary school counseling.

Educational Specialist Degree

The Department of Educational Psychology offers the educational specialist degree (EdS) (67-72 hours beyond the BA) in school psychology. The EdS in school psychology leads to certification as a school psychologist.

Doctoral Degrees.

The PhD degree is available to students wishing careers in cognition, learning and development, research methods, measurement, counseling psychology, and school psychology through the field of educational specialization called psychological studies in education. For further information, see and contact the chair of the Department's Graduate Committee.

Psychological and Educational Diagnosis.

The Counseling and School Psychology Clinic in the Department of Educational Psychology serves the dual function of providing training for qualified students and of making thorough clinical analyses and treatment available to individuals, to public schools, families, and other agencies which deal with problems of emotion and behavior. The clinic is prepared to render service in psychological testing, educational problems, and emotional maladjustments. Special provision is also made for educational and vocational guidance. Service is provided by appointment.

Buros Center for Testing

The Buros Center for Testing comprises two separate institutes dedicated to improving the quality of contemporary assessment practices. Founded by Oscar K. Buros in 1937, the Buros Institute of Mental Measurements (BIMM) publishes critical evaluations of commercially available tests. In addition to its international reputation for providing test reviews, BIMM maintains the largest collection of tests and testing materials in the world. The Buros Institute for Assessment Consultation and Outreach (BIACO) was established in 1994 to expand the range of available assessment services to proprietary testing programs that include credentialing, state educational assessment, employment testing, and assessment literacy. Together, the two Buros Institutes advance the goals of the Department of Educational Psychology and the College of Education and Human Sciences by providing consultation and instructional services to graduate programs, by training and supporting graduate students in current assessment practices, and by serving assessment outreach needs both within and outside the state of Nebraska.

Special Education and Communication Disorders

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: John E. Bernthal, Ph.D.

Graduate Committee Chair: Newell Decker, Ph.D.

The Department of Special Education and Communication Disorders offers graduate programs leading to the master of science degree in speech-language pathology and the master of arts and master of education degrees in special education. The department administers a PhD in human sciences with a specialization in communication disorders and the PhD or EdD in educational studies with a specialization in special education. The department also offers the professional doctor of audiology (AuD) degree in audiology. For more information on doctoral programs in education, see .

The department also offers programs leading to the educational specialist degree in special education.

The masters degree program in speech-language pathology and the AuD program in audiology are accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association.

For more information regarding graduate and professional programs offered by the Department of Special Education and Communication Disorders, please call (402) 472-2141 or visit our Website at www.unl.edu/barkley.

Masters Degree Programs. Students seeking admission into a masters program should: 1) apply on-line to the Office of Graduate Studies at www.unl.edu/gradstudies, and 2) obtain the departmental application materials from the Web site at www.unl.edu/barkley or by emailing the Graduate Secretary at special@ unl.edu. Three letters of recommendation, preferably from former instructors, should be submitted to the departmental Graduate Governance Committee Chair along with the departmental application. Each applicant should also arrange to have a current academic transcript and scores for the General Test of the Graduate Record Examination submitted to the Graduate Studies Office at the University of Nebraska-Lincoln. Early submission of the scores is important because the application file cannot be given full consideration until the file is complete.

For a master of science degree in speech-language pathology, completion of an appropriate undergraduate or preprofessional

program is required for full graduate standing. Students with strong potential but without an academic background in the major may be admitted on a provisional basis until deficiencies have been met. Completion of the masters degree requires a minimum of 45 hours of approved graduate work, including appropriate clinical practicum experiences for those seeking certification/licensure.

Certification and the Masters Degree. Masters degrees may be obtained with teaching certificate endorsements for special education and speech-language pathology. Candidates in special education must qualify for a Nebraska Teaching Certificate (see the Undergraduate Bulletin) for employment in the public schools.

Distance Education. The Department has several masters degrees, an educational specialist degree, and/or teaching endorsement programs which are available for distance education students. These include Behavior Disorders, Early Childhood Special Education, Deaf and Hard of Hearing, Visual Impairments, Severe Disabilities, and Supervisor of Special Education (joint with Educational Administration) programs. Distance courses are delivered via the Internet with Blackboard and/or Breeze software. Some distance courses may also require weekend meetings, telephone or Breeze connections to on-campus course section, and may have scheduled participation requirements. Field experience and practicum courses can be arranged in or near local communities but may require special fees. Where required courses are not currently available via distance delivery an equivalent course (either on-campus or at a distance) from another institution can be substituted with the approval of the advisor or may be taken on the UNL campus during the summer. See Department website for information computer requirements for distance on-line courses and distance course availability.

Educational Specialist (EdS) Degree. This program in special education provides opportunity for practitioners in the field to upgrade their skills and/or develop leadership skills as a special educator in a particular area of specialization. Two years successful professional experience as a special educator is a minimum requirement for admission. A minimum of 66 credit hours past the bachelors degree are required, with at least 24 credits to be taken after admission to UNL's EdS program. These include at least 40 hours of core content courses, 6 credits of electives of practica and 3 credits of research. Relevant course work completed as part of a prior masters degree can be used toward this degree. The program also requires a written comprehensive examination. Degree requirements can be used for additional teaching endoresements. Other relevant information and the application form can be found online at: www.unl.edu/barkley/sped/eds.shtml.

Doctor of Audiology (AuD) Degree. The Department of Special Education and Communication Disorders offers a professional audiology degree, the doctor of audiology (AuD) degree. The AuD program is a four-year course of study designed to provide students with academic and clinical practicum experiences that will meet or exceed the requirements of the American Speech-Language-Hearing Association (ASHA) for the Certificate of Clinical Competence in Audiology (CCC-AUD) as well as licensure requirements in most states.

Students seeking admission to the AuD program should download the application from www.unl.edu/barkley. Three letters of recommendation, preferably from former instructors, should be submitted to the AuD program coordinator along with the departmental application. Students do not apply to the Office of Graduate Studies and submission of the Graduate Record Examination is not required for admission. Students should contact the Graduate Support Staff at special@unl.edu for further application instructions.

Doctoral Degree Programs. Students planning to work toward PhD or EdD degrees will follow essentially the same procedures for admission as described above under the masters degree programs. Students seeking admission into a doctoral program should: 1) apply online to the Office of Graduate Studies at www.unl.edu/gradstudies, and 2) obtain the departmental application materials from the Web site at www.unl.edu/barkley or by emailing the Graduate Support Staff at special@unl.edu. They should submit three letters of recommendation along with the department application, a copy of their masters thesis and other relevant publications (if the student completed a thesis or has published) to the departmental Graduate Committee Chair. A current academic transcript and scores for the General Test of the Graduate Record Examination need to accompany the application when it is submitted to the Graduate Studies Office. Initial review of all applications is made within the Department of Special Education and Communication Disorders where consideration is given to whether or not an applicant meets the qualifications for entrance into the program and if a student's interests are in accord with the type of education and direction which can be provided by the department. Final review of an application is made by the appropriate doctoral field graduate committee, in special education or communications disorders.

Teaching, Learning and Teacher Education

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Thomas M. McGowan, Ph.D.

Graduate Committee Chair: Margaret Macintyre Latta, Ph.D.

The Department of Teaching, Learning and Teacher Education (TLTE) provides masters, specialist and doctoral degree courses and programs for teachers, administrators, and other educational leaders and practitioners with a focus on scholarship and practice in curriculum and instruction in schools and non-school educational settings. Graduate endorsements are also offered in Reading Specialist K-12 and ESL.

Masters Degrees.

The aim of the TLTE masters program is to help educators build on their own experience, achieve a broad and deep understanding of educational practice, develop a professional identity, and engage in informed conversations about important teaching and learning issues towards making wise judgements regarding the many complex issues educators face. All candidates must

complete a program which conforms to the requirements (see). There are two masters degrees available in TLTE: the MA and MEd. Both degree programs offer a good deal of flexibility to enable the student--in concert with a faculty adviser--to develop a course of study that meets the student's needs and interests.

Educational Specialist (EdS) Degree.

This program in curriculum and instruction provides an opportunity for practitioners in the field to upgrade their professional skills. Two years of successful professional experiences is a minimum requirement for admission. Sixty-six hours beyond the bachelors degree, research competence, practicum experiences, and a written comprehensive examination are basic requirements for the program. It is recommended that you contact the department Graduate Chair before applying.

Doctoral Programs.

The EdD and PhD degrees are available under the major heading Educational Studies (refer to doctoral programs in education on page). The EdD is recommended for those whose primary interest is in the application of theory and knowledge to improve educational practice. The PhD is designed for students seeking to conduct research in order to generate new knowledge or reform educational theory. The Department of Teaching, Learning and Teacher Education administers three doctoral-level specializations, available for both the EdD and PhD in Educational Studies. Teaching, Curriculum and Learning focuses on teaching and learning processes; Instructional Technology focuses on using technology as a learning tool in various educational settings; and Internet-based Education focuses on using the Internet as a platform for teaching and learning. The most current information on these doctoral specializations is available on-line at cehs.unl.edu.

For additional information, see or of this bulletin. The Graduate Record Examination (GRE) is required for admission to the doctoral programs and foreign students must also submit a TOEFL score.

Faculty

Educational Administration

For a brief description of the program, application requirements and contact information, view the graduate program summary.

- Armstrong, Gene -1997; Lecturer; BA 1958 Kearney State College; MA 1964 Northern Colorado; PhD 2000 Nebraska (Lincoln)
- Benning, Don -1997; Senior Lecturer; BS 1958, MS 1961 Omaha; EdD Nebraska (Lincoln)
- Bryant, Miles T. -1985; Professor; BA 1964, MA 1969 Middlebury; EdD 1985 Stanford
- Cejda, Brent -2006; Associate Professor; BME 1977, MME 1982 Wichita State; PhD 1990 Bowling Green State
- Dlugosh, Larry -1990; Professor and Chair; BS 1965, MEd 1970 Nebraska (Lincoln); EDSP 1978 Nebraska (Omaha); PhD 1981 Nebraska (Lincoln)
- Grady, Marilyn L. -1986; Professor; BA 1971 St. Mary's; MS 1972 Eastern Illinois; PhD 1980 Ohio State
- Griesen, James -2005; Professor; BA 1962, MBA 1968, PhD 1971 Ohio State
- Hoover, Richard E. -2000; Senior Lecturer; BA 1965 Penn State; MEd 1967 Rutgers; PhD 1970 Florida State
- Ihrig, James -1998; Senior Lecturer; BS 1961 Dana; MS 1967, EdD 1974 Nebraska (Lincoln)
- Isernhagen, Jody C. -1998; Associate Professor; BS 1970 James Madison; MA 1981, EdD 1988 Virginia Polytechnical Institute
- Joekel, Ron -1965; Professor Emeritus; BA 1956 Nebraska Wesleyan; MEd 1959, EdD 1966 Nebraska (Lincoln)
- LaCost, Barbara Y. -1990; Associate Professor; BS 1964 Illinois State; MEd 1981 Illinois; PhD 1988 Louisiana State
- Lammel, John -2002; Senior Lecturer; BA 1963 Doane; MEd 1966, EDS 1969, EdD 1973 Nebraska (Lincoln)
- McNulty, L. Joseph -1999; Lecturer; BS 1965, MEd 1968, PhD 1977 Nebraska (Lincoln)
- Seagren, Alan -1963; Professor Emeritus; BS 1953, MEd 1958, EdD1962 Nebraska (Lincoln)
- Stick, Sheldon L. -1971; Professor; BA 1960 Northeastern; MA 1966 Kansas; PhD 1972 Michigan
- Torraco, Richard J. -1994; Associate Professor; MS 1983 Boston; PhD 1994 Minnesota
- Uerling, Donald F. -1979; Associate Professor; BS 1962, MS 1970 Kearney; EdS 1972, JD 1979, PhD 1980 Nebraska (Lincoln)

Educational Psychology

For a brief description of the program, application requirements and contact information, view the graduate program summary.

- Ansorge, Charles J. -1972; Professor; BS 1962 Valparaiso; MA 1967, PhD 1971 Iowa
- Bovaird, James A. -2005; Assistant Professor; BS and BA 1997 Baker; MS 2000, PhD 2002 Kansas
- Bruning, Roger H. -1968; Professor; BA 1963, MA 1965, PhD 1968 Nebraska (Lincoln)
- Buhs, Eric S. -2002; Assistant Professor; BA 1985 Southern Illinois; MEd 1988, PhD 2002 Illinois
- Creswell, John -1978; Professor; BA 1967 Muskingum; MA 1971, PhD 1974 Iowa
- Daly, Edward J. -2002; Professor; BA 1985 Gannon; MS 1990, PhD 1992 Syracuse
- Davidson, Megan -2007; Assistant Professor; BS 1999 Maryland; MA 2001, PhD 2005 Missouri
- De Ayala, Rafael J. -1998; Professor; BA 1979 Connecticut; PhD 1987 Texas (Austin)
- Doll, Beth -2000; Professor; BA 1974 Michigan State; MS 1976 Eastern Michigan; PhD 1983 Kentucky
- Evans, Sharon -1988; Associate Professor; BS 1980 Scranton; MA 1982 Connecticut; PhD 1988 Michigan State
- Geisinger, Kurt F. -2006; Professor and Director of Buros Institute of Mental Measurements; AB 1972 Davidson; MS 1977 Georgia; PhD 1977 Pennsylvania State
- Kauffman, Douglas -2008; Assistant Professor
- Kiewra, Kenneth A. -1988; Professor; BA 1977 SUNY (Oneonta); PhD 1982 Florida State
- McCurdy, Merilee -2001; Assistant Professor; BA 1995, MS 1998, PhD 2002 Mississippi State

- Moshman, David -1977; Professor; BA 1971 Lehigh; MS 1975, PhD 1977 Rutgers
- Newman, Ian M. -1970; Professor; BS 1963, MS 1964 George Williams; PhD 1968 Illinois
- Plake, Barbara -1977; Professor Emeritus; BA 1968 Colorado; MA 1972, PhD 1976 Iowa
- Santmire, Toni E. -1968; Associate Professor Emeritus; BS 1960, MEd 1968, EdD 1970 Rochester
- Scheel, Michael -2000; Associate Professor; BS 1973 Nebraska (Lincoln); MEd 1975 Idaho; PhD 1993 Nebraska (Lincoln)
- Sheridan, Susan. -1998; Professor; BS 1982, MS 1984 Western Illinois; PhD 1989 Wisconsin (Madison)
- Swearer, Susan M. -1997; Associate Professor; BA 1987 Swarthmore; MS 1989 Pennsylvania State; PhD 1997 Texas
- Weissinger, Ellen M. -1986; Professor; BS 1980 Nebraska (Lincoln); MA 1982 Iowa; PhD 1985 Maryland
- Williams, Vernon -1964; Professor Emeritus; BA 1954 Southwestern; MS 1959, PhD 1963 Michigan
- Wright, Gregg F. -1983; Associate Professor; BS 1969 California Technical; MD 1974 Case Western Reserve; MEd 1972 Massachusetts
- Yakushko, Oksana -2004; Assistant Professor; BA 1995 Biola; MS 1998 Kentucky; PhD 2004 Missouri

Special Education and Communication Disorders

For a brief description of the program, application requirements and contact information, view the graduate program summary.

- Bernthal, John E. -1984; Chair and Professor; BFA in Ed 1962 Wayne State; MA 1964 Kansas; PhD 1971 Wisconsin
- Beukelman, David R. -1985; Distinguished Professor; BA 1965 Western Michigan; MA 1968, PhD 1971 Wisconsin
- Boney, Stephen -1986; Senior Lecturer; BA 1972, MA 1974 Kent State; PhD 1986 Vanderbilt
- Carrell, Thomas D. -1994; Associate Professor; BA 1976 California (Berkeley); PhD 1984 Indiana
- Cress, Cynthia J. -1998; Associate Professor; BA 1982 Michigan; MS 1984 Manchester (England); MA 1990, PhD 1993 Wisconsin
- Decker, T. Newell -1977; Professor; BA 1966 Washington; MEd 1969 East Washington State; PhD 1975 Washington
- Eccarius, Malinda -2004; Senior Lecturer; BA 1971 Iowa; MS 1983, PhD 2004 Nebraska (Lincoln)
- Epstein, Michael H. -1998; Distinguished Professor; BA 1969, MEd 1971 American; EdD 1975 Virginia
- Green, Jordan R. -2003; Associate Professor; BA 1988, MA 1991 California State (Chico); PhD 1998 Washington
- Healey, E. Charles -1977; Professor; BA 1971, MA 1973 Kentucky; PhD 1977 Purdue
- Hogan, Tiffany P. -2008; Assistant Professor; BS 1997, MS 1998 Central Missouri; PhD 2006 Kansas
- Hux, Karen A. -1990; Associate Professor; BA 1981, MA 1983 Michigan State; PhD 1989 Northwestern
- Kemp, Suzanne E. -2003; Senior Lecturer; BA 1987 Northern Colorado; MA 1991 Colorado (Colorado Springs); PhD 2003 Nebraska (Lincoln)
- Maag, John W. -1989; Professor; BA 1981, MA 1983, PhD 1988 Arizona State
- Marvin, Christine A. -1988; Associate Professor; BS 1972, MA 1974 Eastern Michigan; PhD 1985 Oregon
- Meers, Gary D. -1974; Professor; BSE 1966 Northwest Missouri State; MEd 1970, EdD 1972 Missouri (Columbia)
- Nelson, J. Ron -2000; Associate Professor; BS 1983 Wisconsin; MS 1987 Eastern Montana; PhD 1990 Utah State
- Peterson, Reece L. -1978; Professor; BA 1970 Chicago; MAT 1971 Brown; PhD 1980 Minnesota
- Reid, Robert C. -1991; Professor; BEd 1972, MEd 1975 Missouri (Columbia); PhD 1991 Maryland (College Park)
- Sanger, Dixie D. -1978; Professor; BA 1967 Nebraska (Lincoln); MA 1970 Long Beach State; PhD 1981 Nebraska (Lincoln)
- Scheffler, Marilyn -1984; Research Assistant Professor; BS 1969 Nebraska (Lincoln); MS 1974, EdS 1976 Kearney State; EdD 1983 Nebraska (Lincoln)
- Siegel, Ellin -1993; Associate Professor; BA 1974, MS 1978 California State (Fullerton); PhD 1986 Kansas
- Vasa, Stanley F. -1974; Professor; BS 1960 Chadron; MA 1964 Colorado State; EdD 1971 Nebraska (Lincoln)
- Willman, Amy R. -2001; Lecturer; BA 1992 Gallaudet; MS 1994 Western Maryland

Teaching, Learning and Teacher Education

For a brief description of the program, application requirements and contact information, view the graduate program summary.

- Andrews, Larry K. -1969; Professor; BS 1963, MEd 1967, PhD 1969 Missouri
- Arth, Alfred -1988; Professor; BA 1962, MA 1966 Patterson State (New Jersey); EdD 1968 Oklahoma
- Bonnstetter, Ronald J. -1984; Professor; BS 1973, Mankato State; MS 1976, PhD 1984 Iowa
- Brooks, David W. -1973; Professor; BA 1962 New York; MA 1962, PhD 1965 Columbia
- Chan, Elaine -2006; Assistant Professor; BA 1991, BEd 1992, MEd 1996 Queen's; PhD 2004 Toronto
- Edwards, Carolyn Pope -1997; Professor; EdD 1974 Harvard
- Fowler, David -1991; Associate Professor; AB 1962 Harvard; MA 1988, PhD 1991 Nebraska (Lincoln)
- Garcia, Ricardo L. -1996; Professor; BA 1963 New Mexico Highlands; MA 1971, EdD 1973 Denver
- Giesecke, Joan R. -1995; Professor and Dean of Libraries; BA 1973 SUNY (Buffalo); MLS 1973 Maryland; MA 1979 Central Michigan; DPA 1988 George Mason
- Hamann, Edmund T. -2005; Assistant Professor; BA 1991 Brown; MA 1995 Kansas; PhD 1999 Pennsylvania
- Harnisch, Delwyn L. -2000; Professor; BS 1971 Concordia (Seward); MEd 1977, PhD 1980 Illinois (Urbana-Champaign)
- Heaton, Ruth M. -1996; Associate Professor; BA 1979 Minnesota; MEd 1987 Vermont; PhD 1994 Michigan
- Hostetler, Karl D. -1987; Associate Professor; BA 1976 Dartmouth; MAT 1977 Northwestern; EdD 1987 Columbia
- Macintyre Latta, Margaret -2000; Associate Professor; BEd 1978 Lethbridge; MA 1992, PhD 2000 Calgary
- McGowan, Thomas M. -2002; Professor; BA 1970 Boston; MA 1974, PhD 1983 Nebraska (Lincoln)
- Moeller, Aleidine J. -1990; Professor; AB 1969 Creighton; MA 1971 Wisconsin (Madison); PhD 1979 Nebraska (Lincoln)
- Nierman, Glenn E. -1977; Professor; BM 1972 Washburn; MM 1977, DME 1979 Cincinnati
- O'Hanlon, James P. -1966; Professor; BA 1957 Nebraska (Lincoln); MA 1958 Ohio State; EdD 1964 Nebraska (Lincoln)
- Raible, John -2006; Assistant Professor; BA 1983, MEd 2000, EdD 2005 Massachusetts

- Reeves, Jenelle -2005; Assistant Professor; BA 1991 Central College; MEd 1996 Washington; PhD 2002 Tennessee
- Sarroub, Loukia -2001; Associate Professor; BA 1994 Chicago; PhD 2000 Michigan State
- Sawyer, R. McLaran -1967; Professor Emeritus; BS 1952 Southeast Missouri State; MA 1953 Illinois; PhD 1966 Missouri
- Steckelberg, Allen L. -1998; Associate Professor; BS 1974, MA 1978, PhD 1992 Nebraska (Lincoln)
- Swidler, Stephen A. -1995; Associate Professor; BA 1985 St. Norbert; MSW 1989 Michigan; PhD 1995 Michigan State
- Trainin, Guy -2002; Assistant Professor; BA 1994 Tel Aviv; MA 1999, PhD 2002 California (Riverside)
- Walter, L. James -1977; Professor; BA 1965 Kearney; MS 1969 Oregon; EdD 1973 Nebraska (Lincoln)
- Wandzilak, Thomas -1987; Professor; BA 1971, MS 1974 Queens; PhD 1977 Ohio State
- Wilson, David E. -1988; Professor; BA 1976, MA 1984 Iowa; MA 1986 Middlebury; PhD 1988 Iowa
- Wilson, Kathleen -2001; Assistant Professor; BA 1988 Chapman; MS 1995 California (Fullerton); PhD 2001 California (Riverside)
- Wunder, Susan K. -1996; Associate Professor; BA 1969, MA 1971 Iowa; PhD 1994 Nebraska (Lincoln)

Courses for Metallurgical Engineering (METL)

Courses for Mechanical Engineering (MECH)

Courses for Industrial and Management Systems Engineering (IMSE)

Courses for Environmental Engineering (ENVE)

Courses for Engineering Mechanics (ENGM)

Courses for Electrical Engineering (ELEC)

Courses for Construction (CNST)

Courses for Construction Engineering (CONE)

Courses for Civil Engineering (CIVE)

Courses for Chemical and Biomolecular Engineering (CHME)

Courses for Biomedical Engineering (BIME)

Courses for Biological Systems Engineering (BSEN)

Courses for Agricultural Engineering (AGEN)

Courses for Architectural Engineering (AREN)

Courses for Engineering (ENGR)

Engineering

Subject Areas

- Engineering (ENGR)
- Architectural Engineering (AREN)
- Agricultural Engineering (AGEN)
- Biological Systems Engineering (BSEN)
- Biomedical Engineering (BIME)
- Chemical and Biomolecular Engineering (CHME)
- Civil Engineering (CIVE)
- Construction Engineering (CONE)
- Construction (CNST)
- Electrical Engineering (ELEC)
- Engineering Mechanics (ENGM)
- Environmental Engineering (ENVE)
- Industrial and Management Systems Engineering (IMSE)
- Mechanical Engineering (MECH)
- Metallurgical Engineering (METL)

856. History of Modern Technology (3 cr) Lec 3.

This course is not to be used for graduate credit in engineering and technology. Survey of the developments in the various types of technology with emphasis on the time period after 1750. Social and economic impacts of technological developments are considered. In-depth studies of three important developments in different fields of technology are undertaken.

8690. Technology, Science and Civilization (3 cr) Lec 2, disc 2.

Prereq: Permission

Offered on Omaha Campus. Development of technology as a trigger of change upon humankind, from the earliest tools of Homo

Habilis to the advent of the radio telescope in exploring the creation of the universe. Traces the paths from early science to development of the sciences and technologies that will dominate the new millennium.

*801. Graduate Design Project I (3 cr) Ind.

Prereq: (UNO) AE 4010 or 4020; or (UNO) CIVE 3140; and permission

*AREN *801/(UNO) AE *8010 requires a professionally-written report and oral presentation that demonstrates both mastery of the subject and a high level of writing and oral communication skills.*

Perform a detailed investigation in the Option Area of the master of architectural engineering degree.

*802. Graduate Design Project II (3 cr) Ind.

Prereq: AREN *801/(UNO) AE *8010; and permission

*Second of a two-course capstone design project for the MAE degree. AREN *802/(UNO) AE *8020 requires a professionally-written report and oral presentation that demonstrates both mastery of the subject and a high level of writing and oral communication ski*

Complete a detailed investigation in the Option Area of the master of architectural engineering degree.

*803. Building Communication Systems (3 cr) Lec, lab. (UNO)

Prereq: AE 3220

Integration of voice, data and video systems into overall building design. Scalability; wireless systems; interference; project management; current industry standards and protocols.

*805. Sustainable Building Design (3 cr)

Prereq: CIVE 341 or ARCH 332; AE 310 or AREN 841 or ARCH 333

Integrates building design with the principles of minimum resource use, energy conservation and healthy indoor environments.

*806. Architectural Engineering Professional Practice I (3 cr)

Prereq: ISMG 2060

Investigation of issues related to the integration of building design processes with professional architectural engineering practice. Aspects of building design project finance, budgets, contracts, legal issues, professional licensure, professional responsibility and professional ethics. The perspective of life-cycle costing.

*807. Architectural Engineering Professional Practice II (3 cr) Lec 3.

Prereq: IMSE 206/(UNO) IMSG 2060; and AREN *806/(UNO) AE *8060

Continuation of investigation of issues related to the integration of building design processes with professional architectural engineering design practice.

Building design specifications, estimating, bidding, building construction contract negotiations, building design project management, project team personnel management, project risk, and key regulatory measures.

*808. Applied Experimental Design and Statistical Analysis (3 cr) Lec 3.

Prereq: STAT 380/(UNO) 3800

Overview of advanced experimental design methods and statistical analysis techniques. Application of these to the planning, execution, analysis, and description of research in architectural engineering.

810. Solar Energy Systems (3 cr)

Prereq: MECH 820 or permission

Fundamentals of solar energy system modeling analysis and design. Solar radiation modeling, surface properties of opaque and glazing materials, flat-plate collector design, solar energy storage, solar system thermal calculation, system application and design.

811. Indoor Air Quality Engineering (3 cr) Lec 3. (UNO)

Prereq: AE 3120

Indoor air quality. Codes, standards, HVAC equipment, commissioning, operation, maintenance, investigation, and remediation.

*812. Building Control and Automation Systems (3 cr) (UNO)

Prereq: MATH 3350 ; AE 3100, 4120, 4120

Fundamental concepts of building control theory and automation. Building control: state-variable plant and closed-loop system representation, time and frequency response, stability, root-locus methods and design of building control systems. Automation: thermostats, dampers, valves, direct digital control, control of air handling units, terminal units, primary building systems, supervisory control and system optimization, communication systems, BACnet, and DDC system design and implementation.

814. Building Energy Systems-Primary Energy Systems (4 cr)

Prereq: MENG 300

Design and analysis of primary energy systems; vapor compression chillers, absorption chillers, central cooling plants, boilers

systems and heating plants, cooling storage systems and plants, and cogeneration systems and plants. Experiments and team projects. Boiler performance and chiller performance evaluations. Team projects to develop innovative engineering solutions to contemporary design problems.

*815. Building Energy Simulation and Performance Contracting (3 cr) (UNO)

Prereq: AE 3100, 4120, 4140, and 4400

Integrated approach to deliver energy improvement retrofit projects that provide economical and ecological benefits. Proficiency in EnergyPlus or DOE-2 and in retrofit cost estimation will be attained and integrated into an engineering economic analysis. Partnering configurations, contracts, financing, and measurement and verification. Concepts applied to a practical class project.

817. Theory and Application of Thermal Systems Measurement (3 cr) (UNO)

Prereq: STAT 8805 or equivalent

Analysis, theory, and methods of instrumentation for thermal system energy consumption measurement and scientific research testing. Emphasis on sensors, traducers, and error analysis.

818. Indoor Air Quality Design (3 cr)

Prereq: AREN 811 or permission

Fundamentals of project management within the mechanical and electrical contracting industry. Emphasis on codes, contract documents, productivity, coordination, project control and administration, scheduling, safety, and project closeout, all from a speciality contracting perspective.

820. Lighting II: Theory, Design and Application (4 cr) (UNO)

Prereq: AE 3200

Lab sessions include photometric measurements and computer applications. Design and analysis of lighting systems; integration between lighting design process and technical foundations for building lighting. Design criteria; lighting design procedures, lighting modes and subjective effects; and calculation tools.

821. Lighting II: Advanced Design Practice (3 cr)

Prereq: AREN 820

Design and analysis of lighting for outdoor sports, floodlighting and interior applications; economic analysis; modeling algorithms; advanced photometrics.

*822. Electrical Systems for Buildings II (3 cr) Lec, lab. (UNO)

Prereq: AE 3220

Power systems analysis and design, integration of electrical system components into functional, safe and reliable power distribution systems for commercial and industrial facilities. Per unit analysis, fault analysis, power quality, grounding, overcurrent protection coordination and complete power system design.

823. Light Sources (3 cr)

Prereq: AREN 820

Fundamental science and principles of light generation in modern electric light sources; characteristics that influence applications of light sources.

*824. Lighting Metrics (3 cr) (UNO)

Prereq: AE 3200 or equivalent

Critical survey and application of measures developed to characterize the effects of lighting systems on human perception and performance. Contrast, visibility, visual performance (Relative Visual Performance, Visibility Level); visual comfort probability; discomfort glare rating system; and unified glare rating system.

825. Daylighting (3 cr)

Prereq: AREN 820

Use of natural light in building design. Solar position, sky luminance, distribution models, daylighting equipment, calculation methods, and psychological concepts. Extensive use of computer modeling and scale models.

830. Advanced Noise Control (3 cr) (UNO)

Prereq: AE 3300 or equivalent

Characterization of acoustic sources; use and measurement of sound power and intensity; sound-structure interaction; acoustic enclosures and barriers; muffling devices; vibration control; and active noise control.

833. Advanced Architectural Acoustics (3 cr) (UNO)

Prereq: AE 3300 or equivalent

Advanced study of the behavior of sound in rooms. Design of acoustical spaces; physical and computational modeling; measurement techniques; and introduction to sound reinforcement in rooms.

*835. Electroacoustics (3 cr) (UNO)

Prereq: AE 3300 or equivalent

Electrical-mechanical-acoustical circuit analogies; transducers, loudspeakers, microphones, and accelerometers; directivity; calibration techniques; and sound reinforcement systems in rooms.

*841. Building Energy and Acoustical Systems (3 cr)

Prereq: Admission to MEng program or permission

Building energy and acoustical systems: energy systems, including psychometric processes and applications; load calculations; distribution systems; acoustic fundamentals; room acoustics; and noise control.

913. Dynamic Programming and Optimal Control (3 cr) (UNO)

Prereq: AE 3100, 4120, 4140 ; AREN 812

Concepts and implementation of dynamic programming for building optimal and adaptive control. Deterministic shortest-path applications and continuous-time optimal control, inventory control, perfect and imperfect state information, suboptimal and adaptive control, discounted infinite horizon and stochastic shortest-path problems including Q-Learning.

915. Modern Building Control Applications (3 cr) (UNO)

Prereq: AE 3100, 4120, 4140 ; AREN 812

Neuro-dynamic programming/reinforcement learning methodology, fuzzy logic methods, and evolutionary/genetic algorithms (GA) to building control problems. Concepts applied to case studies from problem areas.

916. Building Energy Systems Modeling, Control and Optimization (3 cr) Lec, lab.

Prereq: AE 420 and AREN 812; or permission

Modeling, control, and optimization of the secondary building energy systems: building envelope, room comfort zones, air handling units, cooling and heating water loops.

917. Primary Energy Systems Modeling, Control and Optimization (3 cr)

Prereq: AREN 812, 814 or permission

Modeling, control, and optimization of the primary building energy systems: central distribution systems, chiller systems, boiler systems, central coding plants, central heating plants, and thermal storage systems.

918. Computational Fluid Dynamics Modeling of Indoor Environments (3 cr)

Prereq: AREN 811, MECH 810, or permission

Application of computational fluid dynamics software to modeling of indoor environments. Turbulence modeling, boundary conditions, natural and forced convection flows, species transport, and fire modeling.

920. Color Theory (3 cr)

Prereq: AREN 820

Theories of color vision; theoretical and mathematical basis for chromaticity, color temperature, color rendering metrics, color matching functions, and color spaces; spectral weighing functions; and measurement of color.

921. Current Research in Illumination Engineering (3 cr)

Current research in illumination engineering. Experimental methodologies and research practices. Technical papers from current lighting journals.

922. Behavioral Sciences for Lighting Research (3 cr)

Experimental design methods and statistical analysis techniques, specifically as these are applied to the planning, execution, analysis and description of lighting experiments.

923. Psychological Aspects of Lighting (3 cr)

Review of research investigating the effects of light and color on human physiology, psychological processes, and human subjective response to lighting.

930. Current Topics in Architectural Acoustics (3 cr)

Prereq: AREN 833

Current topics in architectural acoustics. Objective versus subjective measures in performance spaces, electronic enhancement of rooms, advanced computational modeling techniques, and auralization.

997. Research Other Than Thesis (1-6 cr, max 6)

Prereq: Permission

Supervised non-thesis research and independent study.

998. Special Topics (1-3 cr, max 3)

Prereq: Permission

Advanced topics in architectural engineering.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

824. Machine Design in Agricultural Engineering (3 cr I) Lec 3.

Prereq: ENGM 325

Design of machine elements. Definition, analysis, and solution of a design problem in agricultural engineering.

841. Animal Waste Management (BSEN 841) (3 cr I) Lec 3.

Characterization of wastes from animal production. Specification and design of collection, transport, storage, treatment and land application systems. Air and water pollution, regulatory and management aspects.

853. Irrigation and Drainage Systems Engineering (BSEN *853) (3 cr II) Lec 2, lab/rct 2.

Prereq: MECH or CIVE 310, and BSEN 344 or permission

Analytical and design consideration of evapotranspiration, soil moisture and water movement related to irrigation and drainage systems; analysis and design of components of irrigation and drainage systems including water supplies, pumping plants, sprinkler systems, including center-pivots.

860. Instrumentation and Controls (BSEN 860) (3 cr I) Lec 2, lab 2.

Prereq: Permission

Analysis and design of instrumentation and controls for agricultural and biological production, management and processing. Theory of basic sensors and transducers, analog and digital electrical control circuits, and the interfacing of computers with instruments and controls. Signal analysis and interpretation for improving system performance.

*889. Seminar I (BSEN *889) (1 cr)

All entering biological systems engineering students and all agricultural engineering students are required to register for *889. Introduction into departmental and campus resources, professionalism, preparation and delivery of presentations, technical writing, and additional topics as arranged by enrolled students.

*896. Special Problems (BSEN *896) (1-6 cr)

Prereq: Permission

Investigation and written report on engineering problems not covered in sufficient depth through existing courses. Topic varies by semester.

*898. Internship (BSEN *898) (1-6 cr)

Prereq: Permission

Students required to write an internship report of their creative accomplishments after completion of the internship. Students may spend up to nine months at the cooperating partner's workplace. Solution of engineering or management problems through a non-academic experience within the private sector or a government agency. The experience entails all or some of the following: research, design, analysis, and testing on an engineering problem. A plan, which documents how the individual will demonstrate creativity during the internship must be approved prior to the internship.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

923. Advanced Design in Agricultural Engineering (3 cr) Lec 2, lab 3.

Prereq: Agricultural engineering or permission

The use of theories of failure, fatigue, stress concentrations, shock and impact analysis in the design of machine members. Laboratory work includes an in-depth study of the testing and analysis of machine components.

941. Agricultural Waste Management (BSEN 941) (3 cr) Lec 3.

Prereq: Permission

Aerobic, anaerobic, and physical-chemical treatment, energy recovery and protein synthesis processes for high-strength organic materials; agricultural applications including composting, ammonia stripping, nitrification, denitrification, and land disposal of organic and chemically treated materials.

953. Advanced Irrigation and Drainage Systems Engineering (3 cr)

Prereq: AGEN 853, MATH 821 or permission

Advanced analytical considerations of environmental aspects of soil-plant systems; movement of water in soils; water movement through plants; and irrigation and drainage systems for controlling water in the soil-plant environment.

954. Hydrologic Modeling of Small Watersheds (2 cr) Lec 2.

Prereq: AGEN 854 and CIVE 822

Mathematical modeling of the runoff process for small rural and urban watersheds. Appraisal of techniques for estimating runoff volume and peak discharges for ungaged watersheds; hydrograph synthesis; composite hydrographs; and frequency relationships of rainfall and runoff.

955. Solute Movement in Soils (AGRO 955; CIVE 955; GEOL 985) (3 cr II) Lec 3.

Prereq: MATH 208; AGRO 861 or GEOL 888 or MSYM 852 or CIVE 858

Knowledge of a programming language. MATH 821 recommended. Offered even-numbered calendar years. Examination of the theory and experimental evidence available to characterize the movement of chemicals in soil. Both saturated and unsaturated flow conditions examined. Initial presentation of basic theoretical concepts. Remainder of class a discussion of the literature.

989. Seminar II (BSEN 989) (1 cr II)

All PhD students in biological systems engineering or agricultural engineering must register for 989. Developing a graduate program, orientation to research, grant and research proposal preparation, experimental design and analysis, manuscript preparation and review, preparations and delivery of technical presentations, and research management.

998. Advanced Topics (BSEN 998) (1-6 cr, max 6)

Prereq: Permission

Individual study in advanced engineering topics that are not covered in regular course work or thesis. Topic varies by term.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

814. Medical Imaging Systems (3 cr) Lec 3.

Prereq: BSEN 311 or ELEC 304

Underlying physics, instrumentation and signal analysis of biomedical and biological imaging modalities. MRI, X-ray, CT, ultrasound, nuclear medicine and the human visual system. Energy-tissue interactions. Resolution, point spread function, contrast, diffraction, comparisons. Information content in images for biological systems.

822. Pollution Prevention: Principles and Practices (CIVE 822) (3 cr)

Prereq: Permission

Introduction to pollution prevention (P2) and waste minimization methods; practical applications to small businesses and industries. Legislative and historical development of P2, benefits of P2, systems analysis, waste estimation, P2 methods, P2 economics and sources of P2 information.

841. Animal Waste Management (AGEN 841) (3 cr I) Lec 3.

Characterization of wastes from animal production. Specification and design of collection, transport, storage, treatment and land application systems. Air and water pollution, regulatory and management aspects.

846. Unit Operations of Biological Processing (3 cr II) Lec 2, rct 1.

Prereq: BSEN 225 and CHEM 332 or equivalent

Application of heat, mass, and moment transport in analysis and design of unit operations for biological and agricultural materials. Evaporation, drying, distillation, extraction, teaching, thermal processing, membrane separation, centrifugation, and filtration.

*853. Irrigation and Drainage Systems Engineering (AGEN 853) (3 cr II) Lec 2, lab/rct 2.

Prereq: MECH or CIVE 310, and BSEN 344 or permission

Analytical and design consideration of evapotranspiration, soil moisture and water movement related to irrigation and drainage systems; analysis and design of components of irrigation and drainage systems including water supplies, pumping plants, sprinkler systems, including center-pivots.

855. Nonpoint Source Pollution Control Engineering (CIVE 855) (3 cr)

Prereq: BSEN/CIVE 326; BSEN/AGEN 350 or CIVE 352

Identification, characterization, and assessment of nonpoint source pollutants; transport mechanisms and remediation technologies; design methodologies and case studies.

858. Groundwater Engineering (CIVE 858) (3 cr)

Prereq: CIVE 352 or AGEN/BSEN 350 or equivalent

Application of engineering principles to the movement of groundwater. Analysis and design of wells, well fields, and artificial recharge. Analysis of pollutant movement.

860. Instrumentation and Controls (AGEN 860) (3 cr I) Lec 2, lab 2.

Prereq: Permission

Analysis and design of instrumentation and controls for agricultural and biological production, management and processing. Theory of basic sensors and transducers, analog and digital electrical control circuits, and the interfacing of computers with instruments and controls. Signal analysis and interpretation for improving system performance.

*889. Seminar I (AGEN *889) (1 cr)

All entering biological systems engineering students and all agricultural engineering students are required to register for *889.

Introduction into departmental and campus resources, professionalism, preparation and delivery of presentations, technical writing, and additional topics as arranged by enrolled students.

*896. Special Problems (AGEN *896) (1-6 cr)

Prereq: Permission

Investigation and written report on engineering problems not covered in sufficient depth through existing courses. Topic varies by semester.

*898. Internship (AGEN *898) (1-6 cr)

Prereq: Permission

Students required to write an internship report of their creative accomplishments after completion of the internship. Students may spend up to nine months at the cooperating partner's workplace. Solution of engineering or management problems through a non-academic experience within the private sector or a government agency. The experience entails all or some of the following: research, design, analysis, and testing on an engineering problem. A plan, which documents how the individual will demonstrate creativity during the internship must be approved prior to the internship.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

912. Advanced Ultrasound Imaging (3 cr)

Prereq: BSEN 311 or ELEC 304 Engineering design and analysis of medical ultrasound applications

Beamforming, diffraction, wave space, scattering, imaging. Interactions of mechanical energy and tissue. Linear and phased arrays. Doppler estimation of blood flow velocity. Tumor and cyst characterization. Other modern research topics in medical ultrasound.

935. Analysis of Engineering Properties of Biological Materials (3 cr) Lec 2, lab 2.

Prereq: BSEN 846 or equivalent

Current and relevant mechanical, rheological, thermal, electrical, and optical properties as related to the engineering of processing, storage, handling, and utilization systems for biological materials are selected for analysis.

941. Agricultural Waste Management (AGEN 941) (3 cr) Lec 3.

Prereq: Permission

Aerobic, anaerobic, and physical-chemical treatment, energy recovery and protein synthesis processes for high-strength organic materials; agricultural applications including composting, ammonia stripping, nitrification, denitrification, and land disposal of organic and chemically treated materials.

943. Bioenvironmental Engineering (3 cr) Lec 3.

Prereq: MATH 821

An engineer analysis of livestock, their environment and the interaction between the two; mathematical models, heat transfer, energy balances, environmental measurements, physiological measurements, calorimetry.

951. Advanced Mathematical Modeling in Biological Engineering (3 cr) Lec 3.

Advanced mathematical modeling techniques and applications. Specific topics from current literature and vary depending on research interests.

954. Turbulent Transfer in the Atmospheric Surface Layer (NRES 954) (3 cr)

Prereq: MATH 821; MECH 310 or NRES 808 or BIOS 857; or equivalent or permission

Offered spring semester of odd-numbered calendar years.

989. Seminar II (AGEN 989) (1 cr II)

All PhD students in biological systems engineering or agricultural engineering must register for 989. Developing a graduate program, orientation to research, grant and research proposal preparation, experimental design and analysis, manuscript preparation and review, preparations and delivery of technical presentations, and research management.

998. Advanced Topics (AGEN 998) (1-6 cr, max 6)

Prereq: Permission

Individual study in advanced engineering topics that are not covered in regular course work or thesis. Topic varies by term.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

*805. Multiple Contact Separation Processes (3 cr)

Prereq: CHME 823 and permission

Application of the principles of physical kinetics and the equilibrium stage to separation processes such as absorption, extraction, and distillation.

*815. Advanced Chemical Engineering Analysis (3 cr)

Prereq: CHME 833, MATH 820 or 821

Application of advanced mathematics to chemical engineering design, with emphasis upon the derivation of differential equations describing physical situations as well as upon the solution of these equations. Design methods for tubular and stirred tank reactors, ion exchange units, pebble heaters, gas absorbers, mixers, etc.

823. Chemical Engineering Thermodynamics and Kinetics (3 cr)

Prereq: CHME 322, 833

CHME 322 continued with application of kinetics to reactor design.

*825. Theoretical and Applied Thermodynamics for Chemical Engineers (3 cr)

Prereq: CHME 823 or CHEM 982, MATH 820 or 821 or equivalent

Application of classical engineering and chemical thermodynamics to problems in chemical engineering.

830. Chemical Engineering Laboratory (4 cr I) Lec 1, lab 4.

Prereq: CHME 203, 833

Prereq or parallel: CHME 842. Selected experiments in chemical engineering. Experimental design, interpretation of results, and formal oral and written reports.

832. Transport Operations (3 cr)

Prereq: MATH 208, CHME 260, or MECH 200

Mass, momentum, and energy transport phenomena and their applications in chemical engineering.

833. Transport Operations (3 cr)

Prereq: CHME 832

Chemical engineering 832 continued.

834. Diffusional Operations (3 cr)

Prereq: CHME 823 and 833, MATH 820 or 821

Application of diffusional theory to the design of processing equipment required for absorption, adsorption, leaching, drying, and chemical reactions.

*835. Transport Phenomena (3 cr)

Prereq: MATH 821; CHME 832 and 833 or equivalent

Advanced consideration of molecular and turbulent momentum, energy and mass transport.

842. Chemical Reactor Engineering and Design (3 cr)

Prereq: CHME 823 or permission

Basic principles of chemical kinetics are coupled with models descriptive of rates of energy and mass transfer for the analysis and design of reactor systems.

*845. Advanced Chemical Engineering Kinetics (3 cr)

Prereq: CHME *815, 823, *835, 842

Kinetics of chemical reactions in several categories of reactors for interpretation of experimental data and design of equipment.

*847. Principles and Applications of Catalysis in Reaction Engineering (3 cr)

Prereq: CHME 842 or equivalent

Kinetics of chemical reactions in several categories of reactors for interpretation of experimental data and design of equipment.

852. Chemical Engineering Process Economics and Optimization (3 cr I)

Credit toward the degree may be earned in only one of: IMSE 206 or CHME 452/852. Criteria of chemical process engineering economics: cost and asset accounting, time value of money, profitability, alternative investments, minimum attractive rate of return, sensitivity and risk analysis. Process optimization in: plant operations, cyclic operations, unit operations, using successive calculations, linear programming and dynamic programming.

853. Chemical Engineering Process Design (3 cr II) Lec 1, lab 4.

Prereq: CHME 203, 833, 842, 852

Design and evaluation of chemical engineering process applications.

854. Chemical Process Engineering (3 cr)

Prereq: CHME 830; CSCE 855 or ENGM 880 recommended

Practical and theoretical aspects of chemical process analysis, simulation, and synthesis. Case studies used to illustrate principles. Use of the digital computer as a tool of the process engineer is stressed.

860. Automatic Process Control Laboratory (1 cr)

Prereq: or parallel: CHME 862

Selected laboratory experiments to demonstrate the theory of the dynamics and control of chemical processes.

862. Automatic Process Control (3 cr)

Prereq: CHME 833, MATH 821

Analysis and design of automatic control systems. Dynamic responses of measuring instruments, control elements, and process equipment included in control loops.

873. Biochemical Engineering (3 cr) Lec 3.

Prereq: CHEM 262

Dynamics of microbial growth and death. Engineering processes for microbiological synthesis of cellular material and industrial products, with emphasis on food and pharmaceutical production by bacteria and fungi.

874. Advanced Biochemical Engineering (2-6 cr)

Prereq: CHME 873 or permission

Recent theoretical and technical developments in biochemical engineering.

875. Biochemical Separations (3 cr)

Prereq: CHME 833

Analytical perspective on separation and purification of compounds of biological origin. Application of unit operations for these separations.

882. Polymers (3 cr)

Prereq: CHEM 262 and 264

Introduction to polymer technology stressing polymerization kinetics, methods of resin manufacture, and applications.

886. Electrochemical Engineering (3 cr II) Lec 3.

Prereq: CHME 312, 833 and 842 or permission

Thermodynamic and kinetic principles of electrochemistry are applied to the design and analysis of electrochemical processes, including chemical production, batteries, fuel cells and corrosion prevention.

889. Air Pollution, Assessment and Control (3 cr)

Prereq: Permission

Survey of the present status of the air pollution problem and the application of engineering and scientific principles to its practical and effective coordinated control.

896. Advanced Topics in Chemical Engineering Computation (1-6 cr, max 6) Lec.

Prereq: CHME 312 or CSCE 455/855 or ENGM 480/880, and permission

Intensive treatment of special topics of current research interest in such areas as steady-state and dynamic process simulation, design optimization, chemical process synthesis, computer-aided product research, stochastic optimization, and numerical methods applied to transport problems.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900. Seminar in Chemical Engineering (1 cr per sem, max 6)

Discussion of research projects and review of current literature in chemical engineering.

915. Systems Analysis in Chemical Engineering (3 cr)

Prereq: CHME 496/896

Computational methods of process optimization. Techniques of process systems analysis and their application in digital simulators. Process simulation in the presence of uncertainty.

925. Transport Properties (3 cr)

Prereq: CHME *835, CHEM 882

Application of the kinetic theories of gases, liquids, and solids to the prediction and correlation of transport properties.

935. Membrane Principles and Processes (3 cr)

Prereq: CHME 823 and 833

Fundamental principles relating to membrane effects, the structure and properties of membranes, and applications in electrodialysis, ultrafiltration, diffusion control, artificial organs, and other processes.

965. Advanced Process Dynamics and Control (3 cr)

Prereq: CHME 862 or permission

Transient behavior of typical industrial processes and systems --heat exchangers, dryers, distillation columns, absorbers, chemical reactors, etc.--emphasis on the control of such processes. Introduction to systems engineering.

995. Special Problems in Chemical Engineering (1-9 cr)

Prereq: CHME 823, 833 or equivalent

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

801. Civil Engineering Systems (3 cr) Lec 3.

Prereq: MATH 821

Systems analysis approach to civil engineering problems. Systems model elements and principles of systems theory with applications to civil engineering.

819. Flow Systems Design (3 cr) Lec 3.

Prereq: CIVE 326 or CIVE 327; parallel CIVE 352

Application of hydraulic principles to the design of water distribution systems, sanitary and stormwater collection systems, channelized flow systems, and pumping facilities.

821. Hazardous Waste Management and Treatment (3 cr)

Prereq: CIVE/BSEN 326 or permission

The US hazardous waste management system and state and federal hazardous waste regulations. Chemical characteristics or hazardous waste and unit operations and processes used for treatment of soil, water and air.

822. Pollution Prevention: Principles and Practices (BSEN 822) (3 cr)

Prereq: Permission

Introduction to pollution prevention (P2) and waste minimization methods; practical applications to small businesses and industries. Legislative and historical development of P2, benefits of P2, systems analysis, waste estimation, P2 methods, P2 economics and sources of P2 information.

*823. Physical and Chemical Treatment Processes in Environmental Engineering (3 cr)

Prereq: CIVE 326, 425 or permission

Evaluation and analysis of physical and chemical unit operations and processes applied to the treatment of water, wastewater, and hazardous wastes.

824. Solid Waste Management Engineering (3 cr) Lec 3.

Prereq: CIVE 326, 334

Planning, design, and operation of solid waste collection, processing, treatment, and disposal systems including materials, resources and energy recovery systems.

826. Design of Water Treatment Facilities (3 cr)

Prereq: CIVE 425 or permission

Analysis of water supplies and design of water treatment and distribution systems.

827. Design of Wastewater Treatment and Disposal Facilities (3 cr)

Prereq: CIVE 425 or permission

Analysis of systems for wastewater treatment and disposal.

*828. Quantitative Methods in Environmental Engineering (3 cr) Lec 2, lab 3.

Prereq: CIVE 326 or equivalent

Applications of chemistry, chemical processes, and biological processes in water and wastewater treatment. Laboratory methods used in environmental engineering. Basic water quality parameters, pathogen detection methods, and treatment of water/wastewater samples. QA/QC methods.

*829. Biological Waste Treatment (3 cr) Lec 3.

Prereq: CIVE 326 or equivalent

Principles of biological processes and their application in the design of waste treatment systems.

830. Fundamentals of Water Quality Modeling (3 cr)

Prereq: CIVE 326

Water quality and the effects of various water pollutants on the aquatic environment; modeling of water quality variables.

831. Small Treatment Systems (3 cr) Lec 3.

Prereq: CIVE/MECH 310 and CIVE/BSEN 326

Design of small and decentralized wastewater management.

832. Bioremediation of Hazardous Wastes (3 cr) Lec 3.

Prereq: CIVE/MECH 310 and CIVE/BSEN 326

Principles, applications, and limitations of bioremediation of hazardous wastes and design of some bioremediation systems.

834. Soil Mechanics II (3 cr) Lec 3.

Prereq: CIVE 334

(Optional lab CIVE 834L 1 cr) Application of the effective stress principle to shear strength of cohesive soil; analysis of stability of slopes. Development of continuum relationships for soil; solutions for stresses and displacements for elastic continuum. Solution of the consolidation equation for various initial and boundary conditions.

834L. Soil Mechanics II Lab (1 cr) Lab 1.

Prereq: CIVE 334

Determination of shear strength, deformation characteristics, permeability, and custom soil testing protocols to characterize soil behavior as part of slope stability analysis and design, solid waste containment, and finite element modeling.

*835. Experimental Soil Mechanics (2 cr)

Prereq: CIVE 834 or permission

Advanced soil testing procedures including consolidated undrained triaxial tests with pore pressure measurements; determination of pore pressure parameters A and B; back pressure confined compression; triaxial loading along various stress paths to failure.

836. Foundation Engineering (3 cr) Lec 3.

(Optional lab CIVE 836L 1 cr) Subsoil exploration and interpretation; selection of foundation systems; determination of allowable bearing capacity and settlement; design of deep foundations; pile driving analysis; control of groundwater.

836L. Foundation Engineering Lab (1 cr) Lab 1.

Prereq: CIVE 334

Determination of shear strength, consolidation characteristics, and custom soil testing protocols to characterize soil behavior as part of foundation analysis and design.

*839. Design and Rehabilitation of Transportation Infrastructure (3 cr) Lec 3.

Prereq: CIVE 341, and CIVE 446/846 or 447/847

Design and rehabilitation of flexible and rigid pavements, retaining walls, bridge piers, abutments and foundations, steel girder bridges and prestressed concrete girder bridges. Problems related to fatigue and corrosion. Field testing of bridges.

840. Reinforced Concrete Design (3 cr) Lec 3.

Prereq: CIVE 341

CIVE 840 may not be taken for graduate credit by students in civil engineering. Introduction to the design concepts for reinforced concrete building components. Design of beams for moment, shear, deflections, crack control, and bond strength. Design of compression members. Member behavior and limit states design of members. The working stress design method.

*842. Structural Dynamics (3 cr)

Prereq: CIVE 443

Dynamic behavior of civil engineering structures. Free and forced vibrations of multi degree-of-freedom systems. Response of continuous beam and frames. Elasto-plastic behavior. Moving loads on bridges. Analysis and design considerations for buildings and bridges subjected to seismic loadings. Application of computer-aided numerical procedures.

844. Structural Design and Planning (3 cr) Lec 2, lab 2.

Prereq: CIVE 440 and 441

CIVE 844 will not count toward a graduate degree in CIVE. Principles of design of steel and reinforced concrete structural building systems, planning of building vertical and horizontal load resisting systems, and bridge systems. Several design projects involve indeterminate analysis and design concepts for both steel and reinforced concrete.

845. Structural Analysis III (3 cr)

Prereq: CIVE 341

Computation of stress resultants in statically indeterminate structures including beams, planar and three-dimensional frames and trusses, using matrix formulations (finite element method), advanced moment distributing techniques, and column analogy. Consideration of shearing and axial deformations in addition to the usual flexural deformations. Effects of temperature and pre-strain, support displacements, elastic supports, and axial-flexural interaction.

846. Steel Design II (3 cr)

Prereq: CIVE 441

Continuation of CIVE 844, but directed toward building systems. Steel and timber structural systems are studied.

847. Reinforced Concrete II (3 cr)

Prereq: CIVE 440

Reinforced concrete design principles in special applications including columns and footings, and study of additional design concepts including deflections, prestressing, and torsion.

*848. Nonlinear Structural Analysis (3 cr)

Prereq: CIVE 443 or permission

Development and application of nonlinear matrix analysis solution techniques. Analysis of trusses and frames with geometric and material nonlinearities, linearization techniques and stability of equilibria. Computer programs.

*849. Reinforced Masonry Design (3 cr)

Prereq: CIVE 440 or permission

Analysis and design of reinforced masonry structures. Clay and concrete materials. Flexure, shear, bond, and axial force. Foundations, columns, walls. Design for lateral forces.

*850. Prestressed Concrete (3 cr)

Prereq: CIVE 341 and 440

Analysis and design of prestressed concrete members. Axial force, bending, shear, torsion, prestress losses, initial and long-term deflection, partial prestressing, statically indeterminate structures.

851. Introduction to Finite Element Analysis (ENGM 851) (3 cr)

Prereq: ENGM 325 and 880 or permission

Matrix methods of analysis. The finite element stiffness method. Computer programs. Applications to structures and soils. Introduction to finite element analysis of fluid flow.

852. Water Resources Development (3 cr)

Prereq: CIVE 352

Theory and application of systems engineering with emphasis on optimization and simulation techniques for evaluating alternatives in water resources developments related to water supply, flood control, hydroelectric power, drainage, water quality, water distribution, irrigation, and water measurement.

853. Hydrology (NRES 853) (3 cr)

Prereq: MATH 106

Credit in CIVE 353/853/NRES 853 will not count towards a major in civil engineering. Introduction to the principles of hydrology, with emphasis on the components of the hydrologic cycle: precipitation, evaporation, groundwater flow, surface runoff, infiltration, precipitation runoff relationships.

854. Hydraulic Engineering (3-4 cr) Lincoln, lec 2, lab 3; Omaha, lec 3.

Prereq: CIVE 352

Fundamentals of hydraulics with applications of mechanics of solids, mechanics of fluids, and engineering economics to the design of hydraulic structures. Continuity, momentum, and energy principles are applied to special problems from various branches of hydraulic engineering.

855. Nonpoint Source Pollution Control Engineering (BSEN 855) (3 cr)

Prereq: BSEN/CIVE 326; BSEN/AGEN 350 or CIVE 352

Identification, characterization, and assessment of nonpoint source pollutants; transport mechanisms and remediation technologies; design methodologies and case studies.

856. Surface Water Hydrology (3 cr)

Prereq: CIVE 352 or 853 or permission

Stochastic analysis of hydrological data and processes including rainfall, runoff, infiltration, temperature, solar radiation, wind and non-pint pollution. Space-time hydrologic modeling with emphasis on the application of techniques in the design of engineering projects.

*857. Applied Structural Analysis (3 cr)

Prereq: CIVE 851

Review of basic concepts. Mesh generation using a preprocessor. 2D and 3D Model generation. Boundary conditions. Implicit and explicit solution algorithms. Interpretation of analysis results using a post-processor. Solution of problems using existing FE software.

858. Groundwater Engineering (BSEN 858) (3 cr)

Prereq: CIVE 352 or AGEN/BSEN 350 or equivalent

Application of engineering principles to the movement of groundwater. Analysis and design of wells, well fields, and artificial recharge. Analysis of pollutant movement.

859. Reliability of Structures (3 cr) Lec 3.

Prereq: CIVE 341

Fundamental concepts related to structural reliability, safety measures, load models, resistance models, system reliability, optimum safety levels, and optimization of design codes.

861. Urban Transportation Planning (3 cr)

Prereq: CIVE 361

Development of urban transportation planning objectives and goals. Data collection procedures, land use and travel forecasting techniques, trip generation, trip distribution, modal choice analyses, and traffic assignment. Site development and traffic impact analysis.

862. Airport Planning and Design (3 cr)

Prereq: CIVE 361

Planning and design of general aviation and air-carrier airports. Landside components include vehicle ground access systems, vehicle circulation parking, and terminal buildings. Airside components include aircraft apron-gate area, taxiway system, runway system, and air traffic control facilities and airspace. Emphasis on design projects.

*863. Highway Geometrics (3 cr)

Prereq: CIVE 361

Principles of highway geometrics. Sight distance, design vehicles, vehicle characteristics, horizontal and vertical alignment, cross section elements, at-grade intersections, and interchanges.

*864. Traffic Characteristics (3 cr)

Prereq: CIVE 361 and MATH 380

Principles of traffic engineering, control and operation of highway transportation facilities. Intersection and arterial street capacity, pretimed and actuated signals, and signal coordination. Driver and pedestrian characteristics.

865. Traffic Engineering Laboratory (1 cr) Lab 3.

Prereq: CIVE 361 and STAT 880

Traffic engineering experiments and field studies used to measure traffic characteristics and driver/pedestrian behavior. Measurements of traffic flow, speed, density, travel time, delay, platoon dispersion, saturation flow, parking characteristics, and traffic conflicts. Perception-reaction time and gap acceptance measurements.

*866. Transportation Planning and Economics (3 cr)

Prereq: Permission

Community growth and development based on planning decisions regarding land use whereby transportation facilities are fitted to land use. Economic studies consider the consequences to transportation agencies, users, and nonusers. Agency expenditures include capital outlay and annual expenses for maintenance and operations. User consequences include items such as vehicle operating costs; commercial time costs; accident costs; discomfort and inconvenience costs; and assignment of money valuations to pleasure, recreation, and culture. Nonusers consequences include items such as cost reductions or increases in public services; increases in value of crops and natural resources where areas become more readily accessible; changes in business and industrial activities; and increase or decrease of residential property values.

*867. Transportation Safety Engineering (3 cr)

Prereq: Permission

Safety criteria in the planning, design, and operation phases of highway, rail, airport, mass transit, pipeline, and waterway transportation systems. Background of safety legislation and funding requirements. Identification of high accident locations and methods to determine cost/effectiveness of improvements.

868. Bituminous Materials and Mixtures (3 cr) Lec 2, lab 1.

Prereq: CIVE 378 or equivalent

Physical, chemical, geometrical, and mechanical characteristics, and practical applications of bituminous materials and mixtures. Fundamental mechanics for elastic and inelastic materials and basic theories associated with mechanical data analyses and designs. Recent advances and significant research findings. Applications of theories to laboratory testing.

869. Pavement Design and Evaluation (3 cr) Lec 3.

Prereq: CIVE 334

Thickness design of flexible and rigid pavement systems for highways and airports; design of paving materials; evaluation and strengthening of existing pavements.

*870. Analysis and Estimation of Transportation Demand (3 cr)

Prereq: Permission

Introduction to conceptual, methodological and mathematical foundations of analysis and design of transportation services; review of probabilistic modeling; application of discrete choice models to demand analysis.

*871. Analysis and Design of Transportation Supply Systems (3 cr)

Prereq: Permission

Operations research techniques for modeling system performance and design of transportation services; routing and scheduling problems, network equilibration and partially distributed queuing systems.

872. Application of Geographic Information Systems (GIS)

to Transportation (3 cr) GIS structure, functions and concepts such as spatial data models, relational databases and spatial analyses. GIS project planning, management and applications to transportation-related issues.

875. Water Quality Strategy (AGRO 875; CRPL 875; GEOL 875; MSYM 875; NRES 875; POLS 875; SOCI 875; SOIL 475; WATS 475) (3 cr II) Lec 3.

Prereq: Permission

Holistic approach to the selection and analysis of planning strategies for protecting water quality from nonpoint sources of contamination. Introduction to the use of methods of analyzing the impact of strategies on whole systems and subsystem for selecting strategies; and for evaluating present strategies.

880. Engineering Economy (2 cr)

Prereq: Permission

Economic comparison of engineering alternatives. Equipment selection and replacement, depreciation, break-even points, and minimum-cost points.

885. Computer-aided Interchange Design (3 cr) Lec 1, lab 1.

Prereq: CIVE 460

Principles of high-speed traffic operations, safety, and decision making, related to critical design parameters used for optimal interchange geometric designs. Development of an interchange design project using graphical and civil engineering software.

898. Special Topics in Civil Engineering (1-6 cr, max 24) Lec.

Prereq: Permission

Special problems, topics, or research in civil engineering.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

915. Water Resources Engineering (3 cr)

Prereq: MATH 821, CIVE 852 and permission

Techniques for relating economic objectives, engineering analysis, and government planning.

916. Environmental Law and Water Resource Management Seminar (LAW 774G; NRES 916) (1-4 cr, max 4)

Prereq: Permission

An interdisciplinary seminar with the Department of Civil Engineering. Contemporary environmental issues and water resource management.

921. Advanced Topics in Hazardous Waste Treatment (3 cr)

Prereq: CIVE 822 or permission

Application of existing and innovative technologies in the remediation of hazardous wastes, including methods for treatment and disposal of contaminated soil, surface waters, groundwaters, and gases.

926. Advanced Topics in Water Treatment (3 cr)

Prereq: CIVE *826 or 830

Theoretical basis of water treatment, advanced and emerging systems for water treatment, purification and reclamation.

927. Advanced Topics in Wastewater Treatment (3 cr) Lec 3.

Prereq: CIVE 825 or 829

Theoretical basis of wastewater treatment, study of advanced and emerging systems for wastewater treatment and reclamation.

928. Industrial Waste Management Engineering (3 cr) Lec 2, lab 3.

Prereq: CIVE *828, *829

Industrial waste sources, characteristics, treatment and disposal.

929. Industrial Waste Laboratory (1 cr)

Prereq: or parallel: CIVE 927

Determination of the characteristics of industrial wastewaters and evaluation of treatment methods, including field surveys, laboratory analyses, and pilot plant studies.

930. Advanced and Industrial Wastewater Treatment (3 cr)

Prereq: CIVE *826

Parallel: CIVE *829. Characteristics of municipal and industrial wastewaters, theory of treatment, and design of unit processes for wastewater reclamation.

934. Theoretical Soil Mechanics II (3 cr)

Prereq: CIVE 834 or permission; MATH 821

Analytical and approximate solutions to seepage problems encountered in the analysis of earth structures that impound water. Problems dealing with estimating the quantity of seepage, definition of the flow domain, uplift pressure, piping, and slope stability.

936. Advanced Foundation Engineering (3 cr)

Prereq: CIVE 836 or permission

Case histories of select projects in foundation engineering; current procedures for design and construction of excavations, foundations, and earth-retaining structures.

937. Applied Soil Mechanics (3 cr)

Prereq: CIVE 834, 836, or permission

Case histories representing state-of-the-art solutions of geotechnical problems, e.g., structures composed of soil, preloading, slope stability, seismic design, emphasizing geological, analytical, experimental, and judgmental factors.

940. Behavior of Steel Members (3 cr) Lec 3.

Prereq: CIVE 446/846

Behavior and/or design of structural steel members and their connections. Torsion effects on open and closed thin walled members. Frame buckling and stability considerations in structural steel frames. Dynamic analysis and seismic design considerations.

941. Behavior of Reinforced Concrete Members (3 cr)

Prereq: CIVE 847

Rigorous treatment of the behavior of structural components of reinforced concrete, both conventionally reinforced and prestressed, as interpreted by experimental evidence and related theory, when subjected to loads producing elastic or plastic strains or a combination of both. Selected laboratory demonstrations on the behavior of reinforced concrete members.

942. Structural Systems in Steel (3 cr)

Prereq: CIVE 940

Behavioral characteristics of structural systems composed of hot rolled steel components. Requirements defined by currently approved national specifications or codes. Selected laboratory demonstrations of the behavioral characteristics of structural steel systems.

943. Structural Systems in Reinforced Concrete (3 cr)

Prereq: CIVE 941

Behavioral characteristics of structural systems composed of reinforced concrete components are studied in detail. Specific requirements within the limits defined by currently approved national specifications or codes. Selected laboratory demonstrations of the behavioral characteristics of structural systems of reinforced concrete.

944. Behavior of Miscellaneous Structural Materials (3 cr)

Prereq: CIVE 845, MATH 820 or 821

Analysis of the behavior of structural components and systems composed of such materials as light gage cold-formed steel, aluminum, timber, plywood, brick and concrete block, compressed fibrous materials, and composite arrangements of structural materials. Use is made of currently approved national specifications or codes. Selected laboratory demonstrations of the behavior of members constructed from miscellaneous structural materials.

945. Structural Design for Dynamic Loads (3 cr)

Prereq: ENGM 880, CIVE 845

Behavior of structural materials and systems under dynamic loads. Analysis and design for dynamic loads. Computational techniques. Selected laboratory demonstrations of the dynamic behavior of structural systems.

946. Advanced Structural Engineering (2-6 cr)

Prereq: Permission

Contemporary developments in the analysis and design of space-spanning and space-enclosing structures, including appropriate mathematical and mechanical methods of analysis. Laboratory instruction in the testing and interpretation of the behavior of space-spanning and space-enclosing structures.

947. Design of Thin Shell Structures (3 cr)

Prereq: CIVE 846, 847

Analysis and design of hyperbolic paraboloids, folded plates, cylindrical shells, and domes. Required specialized construction techniques.

948. Blast-resistant Structural Design (3 cr)

Prereq: CIVE 842

Introduction to explosion effects. Air-blast. Fragmentation. Single-Degree-of-Freedom (SDOF) analysis. Equivalent SDOF systems. Pressure-impulse diagrams. Energy solutions. Steel design. Reinforced concrete design. Masonry design. Progressive collapse. Windows and doors.

949. Bridge Design (3-6 cr)

Prereq: CIVE 836, 846, 847

Design and analysis of steel and concrete bridges for short-, medium-, and long-span crossings. Slab, beam, and girder bridges; truss, arch, cable-stayed, and suspension bridges. Interpretation and application of bridge design codes and specifications. Analysis for erection and secondary stresses. Comparative design projects done by students. Special study areas for individuals may include such topics as fatigue, cracking problems, fracture control, and reliability design.

952. Water Resources Planning (3 cr)

Prereq: CIVE 852 or permission

Techniques of solving topical water problems including groundwater contamination control, conflict resolution and risk analysis for contamination and river sediment management. Research and teamwork, including presentation.

954. Advanced Hydraulics (3 cr)

Prereq: CIVE 854 or equivalent and permission

Advanced studies involving pipe and culvert hydraulics, rapidly-varied flow in open channels, sediment transport, river mechanics, control, and design.

955. Solute Movement in Soils (AGEN 955; AGRO 955; GEOL 985) (3 cr II) Lec 3.

Prereq: MATH 208; AGRO 861 or GEOL 888 or MSYM 852 or CIVE 858

Knowledge of a programming language. MATH 821 recommended. Offered even-numbered calendar years. Examination of the theory and experimental evidence available to characterize the movement of chemicals in soil. Both saturated and unsaturated flow conditions examined. Initial presentation of basic theoretical concepts. Remainder of class a discussion of the literature.

958. Groundwater Mechanics (3 cr)

Prereq: CIVE 858 or equivalent

Theory of fluid and contaminant movement in groundwater systems. Analytic modeling of aquifers, wells and well fields, and transport.

959. Groundwater Modeling (3 cr)

Prereq: CIVE 858 or equivalent

Modeling techniques for groundwater systems, finite difference, finite element methods and other numerical techniques applied to both flow and transport problems. Applications to both groundwater hydrology and geotechnical engineering.

961. Mass Transit Systems (3 cr)

Prereq: Permission

The place of mass transit in solving urban transportation problems: transit system and terminal characteristics and planning criteria. Speed, capacity, accessibility, and operation of mass transit systems. Future prospects in transit technology and case studies of existing systems.

964. Theory of Traffic Flow (3 cr)

Prereq: At least 1 sem probability and statistics, CIVE 864 or permission

Analysis of traffic characteristics applied to traffic engineering facility design and flow optimization. Capacity of expressways, ramps, weaving sections, and intersections. Analytical approaches to flow analysis, queueing theory, flow density relationships, and traffic simulation.

965. Traffic Control Systems (3 cr)

Prereq: CIVE 864 or equivalent

Principles of traffic control. Design and analysis of intersection, arterial street, network, and freeway control systems. Traffic surveillance and driver information systems.

989. Seminar in Civil Engineering (1 cr per sem, max 6)

Prereq: Permission

Current topics, research projects, and review of current literature in the various areas of civil engineering.

998. Special Problems in Civil Engineering (1-6 cr)

Prereq: Permission

Reading and evaluation of technical publications concerned with theory and/or experimental data. Subsequent assignments are coordinated with the student's particular interests in his/her field of specialization.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

850. Sustainable Construction (3 cr) (UNL) Lec 3.

(UNL, UNO) Sustainable construction and its application to the green building industry. LEED certification process, sustainable building site management, efficient wastewater applications, optimizing energy performance, indoor environmental issues, performance measurement and/or verification, recycled content and certified renewable materials.

*866. Heavy and/or Civil Estimating (3 cr) (UNL, UNO) Lec 3.

Prereq: CONE/CNST 241 and 378; CONE 485/CNST 485/885

Estimating techniques and strategies for heavy and/or civil construction. Unit pricing, heavy and civil constructions takeoffs and estimating, equipment analysis, overhead cost and allocations, estimating software and government contracts.

881. Highway and Bridge Construction (3 cr) Lec 3.

Prereq: CONE/CNST 241

Methods and equipment required in the construction of roads and bridges. Methods and equipment necessary for roads and bridges including substructure and superstructures, precast and cast-in-place segments, and standard and specialized equipment.

882. Heavy and/or Civil Construction (CNST 882) (3 cr) Lec.

Prereq: Graduate standing in ARCH, AREN, CIVE, CNST, or CONE

Application of management principles to the construction of heavy and/or civil projects. History, theory, and methods of planning and constructing heavy and/or civil projects. Emerging equipment and new equipment capabilities. Economical use of equipment and managing costs associated with production.

883. Support of Excavation (3 cr) Lec 3.

The design and placement of excavation supports according to OSHA requirements and industry standards. A variety of routine to moderately complex support systems. Open excavations, heet piling and cofferdams, soil mechanics, lateral loads, hydrology, and pumping methods.

999. Doctoral Dissertation (1-24 cr, max 24) Ind.

Prereq: Admission to doctoral degree program and permission of supervisory committee chair.

815. Mechanical/Electrical Project Management (3 cr)

Fundamentals of project management within the mechanical and electrical contracting industry. Codes, contract documents, productivity, coordination, project control and administration, scheduling safety, and project closeout, all from a speciality contracting perspective.

820. Professional Practice and Ethics (3 cr)

Orientation to professional practice through a study of the designers' and the contractors' relationships to society, specific clients, their professions, and other collaborators in environmental design and construction fields. Ethics, professional communication and responsibility, professional organization, office management, construction management, professional registration, and owner-designer-contractor relationships.

*826. Occupational Health and Safety for Construction (3 cr)

Prereq: Permission

Open only to students in engineering, construction management, architecture, or other closely related fields. Investigation of occupational health and safety hazards in the construction environment. Accident causation and illness exposure models, construction safety and health programs and contract requirements, project safety and health management, special problems in construction safety, OSHA/EPD/ADA regulation and compliance issues, health assessment and monitoring, safe building methods design, toxic substance exposures, abatement methods, and worker training and protection.

834. Professional Trends in Design/Build (3 cr)

Prereq: Permission; master in engineering in construction or a related discipline

Organizational, managerial, ethical, and legal principles in the delivery of Design/Build as a construction project delivery system.

*835. Design/Build: Methods and Application (3 cr)

Prereq: Permission

Open only to students in engineering, construction management, architecture, or other closely related fields. Investigation, documentation, and application of current Design/Build processes and methodology used in commercial construction. Principles and practices of Design/Build as a project delivery system.

841. Industrialized Systems Building (3 cr)

Historical background of industrialized systems building; its economic and social relevance in modern society; and its influence on the traditional role of the contractor within the construction industry. Changes industrialized systems building will impose on the contractor's approach to finance, management, and construction methods and equipment.

850. Sustainable Construction (3 cr) Lec 3.

Prereq: Graduate standing in ARCH, CET, CIVE, or CNST

Application of Leadership in Energy and Environmental Design (LEED) best practices in building procurement and delivery systems. History, theory, and state-of-the-art practices in designing and constructing green buildings. Basic principles required to make the multitude of decisions when designing or constructing a green building. LEED construction practices (emerging practices that are economical, produce esthetically pleasing structures, and are environmentally sound).

880. Productivity and Human Factors in Construction (3 cr)

Prereq: CNST 242 and MNGT 360

Motivation and productivity improvement methods in the management of construction workers in their typical job environments along with methods to improve working environment in the field as well as the office. Various procedures and mechanisms to implement human behavior concepts for enhanced productivity and safety.

882. Heavy and/or Civil Construction (CONE 882) (3 cr) Lec.

Prereq: Graduate standing in ARCH, AREN, CIVE, CNST, or CONE

Application of management principles to the construction of heavy and/or civil projects. History, theory, and methods of planning and constructing heavy and/or civil projects. Emerging equipment and new equipment capabilities. Economical use of equipment and managing costs associated with production.

883. Management of Limited Scope Permitting (3 cr) Lec 2, lab 1.

Prereq: Graduate standing in ARCH, CET, CIVE, or CNST

Building code permitting process associated with all projects. Phased projects that require one or more limited scope permits prior to receiving the final full construction permit. How to improve coordination and reduce the confusion and risk associated with managing the permitting process. The permitting process that is applicable to both large and small projects and that can be easily adapted and used in all jurisdictions throughout the United States.

885. Construction Project Scheduling and Control (3 cr) Lec 3.

Prereq: CNST 282 and 379; or permission for non-construction management majors

Planning, scheduling, and controlling construction projects based on the critical path method (CPM). Construction applications of CPM network graphic variations as well as bar charts and program evaluation review techniques (PERT). Assessment of computer-aided scheduling and control systems. Organizational restraints in all applications.

886. Construction Management Systems (3 cr)

Prereq: CNST 282 (or equivalent background in calculus, statistics, and computer science)

Application of selected topics in systems analysis (operations research) to construction management: competition strategy, linear programming, queueing, transportation, time-cost trade-off, learning curves, and other models. Computer applications.

*887. Construction Leadership and Strategic Planning (3 cr)

Prereq: Permission

Open only to students in engineering, construction management, architecture, or other closely related fields. New models of construction leadership for the 21st Century. Application of transformational leadership to strategic planning and marketing in construction contracting. Leadership and strategic problem solving constructs and methods.

*890. Masters Project I (3 cr)

Prereq: Admission to the master of engineering degree program with an emphasis in construction, and permission

First course in a two-course sequence required for the masters degree. Technical report, technical paper, or portfolio project, culminating in a final document and oral presentation.

*891. Masters Project II (3 cr)

Prereq: CNST *890 and permission

Second course in a two-course sequence required for the masters degree. Technical report, technical paper, or portfolio project, culminating in a final document and oral presentation.

898. Special Topics in Construction Management (1-6 cr, max 6) Lec.

Prereq: Master of engineering in construction or related discipline and permission

A signed student-instructor learning contract is required. Individual or small group investigation of special topics in construction management. Topic varies.

999. Doctoral Dissertation (1-24 cr, max 24) Ind.

Prereq: Admission to doctoral degree program and permission of supervisory committee chair.

800. Electronic Instrumentation (3 cr)

Applications of analog and digital devices to electronic instrumentation are studied. Transducer, instrumentation amplifiers, mechanical and solid-state switches, data acquisition systems, phase-lock loops and modulation techniques. Demonstrations with working circuits and systems.

806. Power Systems Analysis (3 cr)

Prereq: ELEC 838

Symmetrical components and fault calculations, power system stability, generator modeling (circuit view point), voltage control system, high-voltage DC transmission, and system protection.

807. Power Systems Planning (3 cr)

Prereq: ELEC 305

Economic evaluation, load forecasting, generation planning, transmission planning, production simulation, power plant reliability characteristics and generation system reliability.

808. Engineering Electromagnetics (3 cr)

Prereq: ELEC 306

Laboratory experiments. Applied electromagnetics in digital electronics and communication. Quasistatic electric and magnetic fields (magnetic circuits and electromechanical conversion); guided waves (metallic waveguides and optical fibers); radiation and antennas (line and aperture antennas and arrays).

810. Multivariate Random Processes (3 cr)

Prereq: ELEC 305

Probability space, random vectors, multivariate distributions, moment generating functions, conditional expectations, discrete and continuous-time random processes, random process characterization and representation, linear systems with random inputs.

816. Materials and Devices for Computer Memory, Logic, and Display (3 cr I)

Prereq: PHYS 212

Survey of fundamentals and applications of devices used for logic, memory, and display. Magnetic, superconductive, semiconductive, and dielectric materials.

817. Semiconductor Fundamentals II (3 cr) Lec 3.

Prereq: ELEC 421/821

BJT's and MOSFET's from a first principle materials viewpoint. Static and dynamic analysis and characterization. Device fabrication processes.

820. Plasma Processing of Semiconductors (3 cr)

Physics of plasmas and gas discharges developed. Basic collisional theory, the Boltzman equation and the concept of electron energy distributions. Results related to specific gas discharge systems used in semiconductor processing, such as sputtering, etching, and deposition systems.

821. Principles of Semiconductor Materials and Devices I (3 cr) Lec 3.

Prereq: PHYS 213

An introduction to semiconductor fundamentals, charge carrier concentration and carrier transport, energy bands, and recombination. PN junctions, static and dynamic, and special PN junction diode devices.

822. Introduction to Physics and Chemistry of Solids (PHYS 822) (3 cr) Lec 3.

Prereq: PHYS 213 or CHEM 881; MATH 820 or 821; or permission

Introduction to structural, thermal, electrical, and magnetic properties of solids, based on concepts of atomic structure, chemical bonding in molecules, and electron states in solids. Principles underlying molecular design of materials and solid-state devices.

828. Power Electronics (3 cr) Lec 3.

Prereq: ELEC 304 and 316

Basic analysis and design of solid-state power electronic devices and converter circuitry.

838. Introduction to Electric Power Engineering (3 cr)

Prereq: ELEC 216

Power systems principles, three phase circuits, transmission line parameters, transmission line modeling, transformers, per unit analysis, generator modeling, and power flow analysis.

842. Basic Analytical Techniques in Electrical Engineering (3 cr)

Prereq: MATH 821

Applications of partial differential equations, matrices, vector analysis, complex variables, and infinite series to problems in electrical engineering.

844. Linear Control Systems (3 cr)

Prereq: ELEC 304

Classical (transfer function) and modern (state variable) control techniques. Both time domain and frequency domain techniques. Traditional proportional, lead, lag, and PID compensators examined, as well as state variable feedback.

851. Linear System Analysis and Design (3 cr)

Prereq: ELEC 304

In-depth introduction to the theory of linear systems. The concept of state and state-variable models of both time-varying and time-invariant continuous and discrete-time systems; linear state feedback, controllability and pole placement design; observability and observer design, stability theory; and realization theory.

854. Power Systems Operation and Control (3 cr)

Prereq: ELEC 838

Characteristics and generating units. Control of generation, economic dispatch, transmission losses, unit commitment, generation with limited supply, hydrothermal coordination, and interchange evaluation and power pool.

861. Modern Active Filter Design (3 cr I)

Prereq: ELEC 304 and 361

Fundamental design concepts, trade-offs and design techniques of modern active filters are studied. Active R networks, compensation of op-amp imperfections, switched capacitor filters introduced.

862. Communication Systems (3 cr)

Prereq: or parallel: ELEC 305

Principles of modulation and demodulation, communication in the presence of noise. Introduction to signal sets and computer communication networks.

863. Digital Signal Processing (3 cr II)

Prereq: ELEC 304

Discrete system analysis using Z-transforms. Analysis and design of digital filters. Discrete Fourier transforms.

864. Digital Communication Systems (3 cr)

Prereq: ELEC 862

Principles of digital transmission of information in the presence of noise. Design and analysis of baseband PAM transmission systems and various carrier systems including ASK, FSK, PSK.

865. Introduction to Data Compression (3 cr)

Prereq: ELEC 305

Introduction to the concepts of Information Theory and Redundancy removal. Simulation of various data compression schemes such as Delta Modulation, Differential Pulse Code Modulation, Transform Coding and Runlength Coding.

867. Electromagnetic Theory and Applications (3 cr)

Prereq: ELEC 306

Engineering application of Maxwell's equations. Fundamental Parameters of Antennas. Radiation, analysis and synthesis of antenna arrays. Aperture Antennas.

868. Microwave Engineering (3 cr)

Prereq: ELEC 306

Applications of active and passive devices to microwave systems. Impedance matching, resonators, and microwave antennas.

869. Analog Integrated Circuits (3 cr I)

Prereq: ELEC 361

Analysis and design of analog integrated circuits both bipolar and MOS. Basic circuit elements such as differential pairs, current sources, active loads, output drivers studied and used in the design of more complex analog integrated circuits.

870. Digital and Analog VLSI Design (3 cr)

Prereq: ELEC 316

Introduction to VLSI design techniques for analog and digital circuits. Fabrication technology and device modeling. Design rules for integrated circuit layout. LSI design options with emphasis on the standard cell approach of digital and analog circuits. Lab experiments, computer simulation and layout exercises.

871. Continuous System Simulation (3 cr I) Lec 2, lab 1.

Prereq: ELEC 305 or equivalent

Basic operation of analog computers, analog simulation, Z-transforms, analysis of digital integration algorithms.

875. Digital Systems (3 cr) Lec 3.

Prereq: ELEC 370

Synthesis using state machines; design of digital systems; microprogramming in small controller design; and hardware description language for design and timing analysis.

878. Microprocessor Hardware, Software and Interfacing (3 cr)

Prereq: ELEC 392 or 876

Students taking this course are expected to write programs in assembly language or in C and assembly language and to design hardware. Personal computers, I/O, LSI integrated circuits, programming, DOS operating system, interfacing, and micro-controllers.

879. Digital Systems Organization and Design (3 cr)

Prereq: ELEC 876

Hardware development languages, hardware organization and realization, microprogramming, interrupt, intersystem communication, and peripheral interfacing.

880. Introduction to Lasers and Laser Applications (PHYS 880) (3 cr I)

Prereq: PHYS 213

Physics of electronic transitions producing stimulated emission of radiation. Threshold conditions for laser oscillation. Types of lasers and their applications in engineering.

881. Fourier Optics, Image Analysis, and Holography (3 cr II)

Prereq: Permission

Application of Fourier transforms to image analysis, optical computing, and holography. Other selected applications.

883. Radar Systems (3 cr)

Prereq: ELEC 308

Prereq or parallel: ELEC 867. Radar range equation, radar systems and subsystems, detection in noise, clutter phenomena, pulse compression, radar tracking, synthetic aperture radar, and radar polarimetry.

884. Radar Signal Processing (3 cr)

Prereq: ELEC 305 and 306

Introduction to the design and operation of various types of atmospheric and meteorological Doppler radar, including weather radar and wind profilers. Signal processing concepts used with modern Doppler radar systems.

886. Applied Photonics (3 cr) Lec 2, lab 1.

Prereq: ELEC 306 or permission

Introduction to the use of electromagnetic radiation for performing optical measurements in engineering applications. Basic electromagnetic theory and light interaction with matter are covered with corresponding laboratory experiments conducted.

898. Special Topics in Electrical Engineering IV (1-6 cr, max 6) Lec.

Prereq: Permission

ELEC 898 is offered as the need arises. Electrical engineering topics not covered in other courses.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

P/N only.

911. Communication Theory (3 cr)

Prereq: ELEC 862, and 864 or 810

Applications of probability and statistics to signals and noise; correlation; sampling; shot noise; spectral analysis; Gaussian processes; filtering.

912. Error Control Coding (3 cr)

Prereq: ELEC 410/810 and 464/864, or permission

Fundamentals of error correction and detection in digital communication and storage systems. Linear and algebraic block codes;

Hamming, BCH and Reed-Solomon codes; algebraic decoding techniques; structure and performance of convolutional codes, turbo codes, and trellis coded modulation; MAP, Viterbi, and sequential decoding techniques.

915. Adaptive Signal Processing (3 cr) Lec 3.

Prereq: ELEC 410/810, 463/863, and permission

Adaptive filtering algorithms, frequency and transform domain adaptive filters, and simulation and critical evaluation of adaptive signal processing for real world applications.

930. Advanced Digital Signal Processing (3 cr)

Prereq: ELEC 810 and 863 or permission

Analysis and design of adaptive digital signal processing algorithms. Signal processing system concepts and implementation issues.

945. Optimal Control Theory (3 cr)

Prereq: ELEC 851 or permission

Theory of optimal control by means of various techniques. Calculus of variations, dynamic programming, the maximum principle, gradient techniques and linear programming applied to control systems.

946. Optimal Filtering, Estimation and Prediction (3 cr)

Prereq: ELEC 810 and 851 or permission

Techniques for optimally extracting information about the past, present, or future status of a dynamic system from noise-corrupted measurements on that system.

957. Advanced Computer Methods in Power System Analysis (3 cr)

Prereq: ELEC 806

Power system matrices, sparsity techniques, network equivalents, contingency analysis, power flow optimization, state estimation, and power system restructuring examined via computer methods.

960. Solid-State Devices (3 cr)

Prereq: ELEC 315 or equivalent

Gallium arsenide and silicon devices. Device properties based on structure and physical properties of the materials.

965. Passive Microwave Components, (3 cr)

Prereq: ELEC 867 or 868

Application of Maxwell's Equations to the analysis of waveguides, resonant cavities, filters and other passive microwave devices.

966. Active Microwave Components (3 cr)

Prereq: ELEC 867 or 868

Analytical treatment of microwave amplifiers and generators.

967. Introduction to Quantum Electronics (3 cr)

Introduction to the quantum aspects of electron devices.

968. Electron Theory of Solids I (3 cr)

Prereq: ELEC 967 or permission

Quantitative development of the fundamentals of the quantum-mechanical theory of electrons in solids.

970. Electron Theory of Solids II (3 cr)

Prereq: ELEC 968 or permission

Quantitative description of selected quantum-electronic phenomena in solids-electron transport, superconductivity, optical properties, magnetic properties and plasma effects.

971. Seminar (1-12 cr)

975. Optical Properties of Materials (3 cr)

Prereq: ELEC 967, equivalent, or permission

Quantum mechanical description of the optical properties of solids (complex refractive index and its dispersion, effects of electric and magnetic fields, temperature, stress; additional special topics as desired).

978. Solar Cells: Theory and Applications (3 cr)

Prereq: ELEC 315 or equivalent

Solar cells of several types. Pn homojunctions and heterojunctions, Schottky barriers, MIS, and SIS cells. Materials aspects considered. Interconnection of solar cells for applications.

986. Optoelectronics (3 cr)

Prereq: ELEC 886

Modern phenomena associated with optoelectronics. Electro-optical effect such as Pockel effect, Kerr effect, and nonlinear optical phenomena. Material and devices used in modern communications, femtosecond lasers, and optical computer systems.

991. Independent Study (1-24 cr)

Prereq: Permission

Selected topic under the direction and guidance of a faculty member.

996. Topics in Electrical Engineering (3 cr, max 24) Lec 3.

Prereq: Permission

Selected topics in electrical engineering.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

P/N only.

*801. Analytical Methods in Engineering I (3 cr)

Basic topics in real analysis and linear algebra with examples of applications from diverse branches of engineering and applied physics.

*802. Analytical Methods in Engineering II (3 cr)

Prereq: ENGM *801 or permission

Continuation of ENGM *801 topics in complex analysis, linear algebra, ordinary and partial differential equations, and other areas of applied mathematics. Examples of applications from diverse branches of engineering and applied physics.

*843. Introduction to Piezoelectricity with Applications (3 cr)

Prereq: ENGM 325, 373, or equivalent, or permission

Electrostatics, equations of piezoelectricity, static solutions, propagation of plane waves, waves in plates, surface waves, equations for piezoelectric rods and plates in extension and flexure, finite element formulation, finite element analysis of static, time-harmonic, and transient problems with applications in smart structures and piezoelectric devices.

847. Advanced Dynamics (3 cr)

Prereq: ENGM 373 and MATH 821

Particle dynamics using Newton's laws, energy principles, momentum principles. Rigid body dynamics using Euler's equations and Lagrange's equations. Variable mass systems. Gyroscopic motion.

848. Advanced Mechanics of Materials (3 cr)

Prereq: ENGM 325 or 373

Stresses and strains at a point. Theories of failure. Thick-walled pressure vessels and spinning discs. Torsion of noncircular sections. Torsion of thin-walled sections, open, closed, and multicelled. Bending of unsymmetrical sections. Cross shear and shear center. Curved beams. Introduction to elastic energy methods.

850. Introduction to Continuum Modeling (3 cr II)

Prereq: MATH 821, ENGM 325, 373

Basic concepts of continuum modeling. Development of models and solutions to various mechanical thermal and electrical systems. Thermo-mechanical and electro-mechanical coupling effects. Differential equations, dimensional methods and similarity.

851. Introduction to Finite Element Analysis (CIVE 851) (3 cr)

Prereq: ENGM 325 and 880 or permission

Matrix methods of analysis. The finite element stiffness method. Computer programs. Applications to structures and soils. Introduction to finite element analysis of fluid flow.

852. Experimental Stress Analysis I (3 cr) Lec 2, lab 2.

Prereq: ENGM 325

Investigations of the basic theories and techniques associated with the analysis of stress using mechanical strain gages, electric strain gages, brittle lacquer, photoelasticity and membrane analogy.

*875. Vibration Theory and Applications (3 cr)

Prereq: ENGM 373 and MATH 821

Variational principles, Lagranges' equation. Equations of motion for multi-degree of freedom systems. Free vibration eigenvalue problem: modal analysis. Forced vibrations: general solutions, resonance, effect of damping, and superposition. Vibrations of continuous systems: vibrations frequencies and mode shapes for bars, membranes, beams, and plates. Experimental methods and

techniques.

880. Numerical Methods in Engineering (3 cr I) Lec 3.

Prereq: MATH 221/821; Computer programming and permission. Linear algebra recommended

Credit toward the degree cannot be earned in both CSCE/MATH 340/840 and ENGM 480/880.

Numerical algorithms and their convergence properties in: solving nonlinear equations; direct and iterative schemes for linear systems of equations; eigenvalue problems; polynomial and spline interpolations; curve fitting; numerical integration and differentiation; initial and boundary values problems for Ordinary Differential Equations (ODEs) and systems of ODEs with applications to engineering; finite difference methods for partial differential equations (potential problems, heat-equation, wave-equation).

*888. Nonlinear Optimization in Engineering (IMSE *888) (3 cr) Lec 3.

Prereq: MATH 208/208H and 314/814; ENGM 480/880; and permission

Nonlinear optimization using gradient-based and evolutionary methods. Constrained and unconstrained nonlinear optimization, Karush-Kuhn-Tucker conditions, penalty and barrier methods. Applications to optimal design in sciences and engineering.

891. Special Topics in Engineering Mechanics (1-6 cr, max 6) Lec.

Prereq: Permission

See current Schedule of Classes for offerings Treatment of special topics in engineering mechanics by experimental computational and/or theoretical methods. Topic varies from term to term.

*899. Masters Thesis (1-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

910. Continuum Mechanics (3 cr)

Prereq: ENGM 848 and permission

The continuum. Geometrical foundations of continuum mechanics. Rectilinear and curvilinear frames. Elements of tensor analysis. Analysis of stress. Analysis of strain. Equations of motion. Constitutive equations. Fundamental laws. Applications to deformable systems.

915. Stress Waves in Solids (3 cr) Lec 3.

Prereq: ENGM 847, 848, or permission

Waves in rods, beams, strings, and membranes. Sound waves in air. Dilational and distortional waves. Reflection and refraction of waves. Rayleigh surface waves. Love waves. Applications of transform theory and the method of stationary phase to wave analysis. Waves in anisotropic and viscoelastic media.

916. Theory of Plates and Shells I (3 cr)

Prereq: ENGM 848 and MATH 821

Basic equations for the bending and stretching of thin plates with small deformations. General theory of deformation of thin shells with small deflections. Large deformations theories of plates and shells. Effect of edge conditions.

917. Theory of Plates and Shells II (3 cr) Lec 3.

Prereq: ENGM 916

ENGM 916 continued. Large deflection shell theory. Critical examination of effects of boundary conditions. Additional topics from folded plates, orthotropic plates and shells, sandwich plates and shells, use of complex transformations, etc.

918. Fundamentals of Finite Elements (3 cr) Lec 3.

Derivation and implementation of the finite element method. Introduction to the theory of finite element methods for elliptic boundary-value problems. Applications to time-independent physical phenomena (e.g., deformation of elastic bodies, heat conduction, steady-state fluid flow, electrostatics, flow through porous media). Basic coding techniques. A basic understanding of ordinary differential equations and matrix algebra as well as some programming skills are assumed.

919. Nonlinear Mechanics (3 cr) Lec 3.

Prereq: ENGM 847, 848, or permission

Physical systems in solid mechanics which lead to nonlinear differential equations. Graphical, numerical, and exact solutions of the governing differential equations. Physical interpretation of the solution.

920. Theory of Elastic Stability (3 cr)

Prereq: ENGM 325 or 373 and MATH 821

Lateral buckling of beams; failure of columns; bending and buckling of thin plates and shells. Consideration of classical and modern theories.

922. Theory of Elasticity I (3 cr)

Prereq: ENGM 848 and MATH 821

Plane stress and strain. Solution of two-dimensional problems by polynomials. Two-dimensional problems in polar coordinates. Triaxial stress and strain. Torsion of noncircular cross section. Bending of prismatical bars. Hydrodynamical analogies.

923. Theory of Elasticity II (3 cr)

Prereq: ENGM 922

ENGM 922 continued. Foundation of the theory of large deformation. Equations of linear elasticity. Complex representation of the general solution of the equations of plane theory of elasticity. Conformal mapping. Solutions of problems in three-dimensional elasticity in terms of potential functions. Axially symmetric problems. Variational methods.

925. Viscoelasticity (3 cr)

Prereq: ENGM 848 or 910, and MATH 821 or 822; or permission

Introduction to linear and nonlinear viscoelastic material behavior. One dimensional response. Linearity of material response. Quasi-static and dynamic problems. Time-temperature superposition. Viscoelastic beams. Multidimensional response. Nonlinear response.

930. Mechanics of Composite Materials (3 cr) Lec 3.

Prereq: ENGM 848 or permission

Introduction to composite materials. Properties of an anisotropic lamina. Laminated composites. Failure theories. Analysis of composite structures.

940. Fracture Mechanics (3 cr I or II)

Prereq: ENGM 848 or permission

Modes of failure. Elastic stress field near cracks. Theories of brittle fracture. Elastic fracture mechanics. Elastic-plastic analysis of crack extension. Fracture toughness testing.

941. Mechanics of Dislocations and Cracks (3 cr)

Prereq: ENGM 848 or permission

Mathematical theory of straight dislocations in isotropic and anisotropic elastic media. Dislocations on and near an interface. Dislocation interactions. Discrete and continuously distributed dislocations. Applications to mechanics of materials: grain boundaries and dislocation pile-ups. Applications to fracture mechanics: Griffith-Inglish crack, Zener-Stroh-Koehler crack, Bilby-Cottrell-Swinden-Dugdale crack.

942. Theory of Plasticity (3 cr)

Prereq: ENGM 922

Basic concepts of plasticity. Yield conditions and yield surfaces. Torsion of cylindrical bars and Saint Venant-Mises and Prandtl-Reuss theories. General theory of plane strain and shear lines. Steady and pseudo-steady plastic flow. Extremum principles. Engineering applications.

951. Advanced Topics in Finite Element Methods (3 cr)

Prereq: ENGM 851 or 918, or permission

Theory and application of finite element methods. Topic varies with interest of instructor and may include: finite elements for the analysis of fracture; mixed variational formulations; hybrid stress elements; plasticity; non-linear elasticity; large deformations of structures; plate and shell elements; transverse shear effects in beams, plates and shells; “locking” phenomena; treatment of singularities; dynamics of large systems; “enhanced” strain methods; methods for solving non-linear algebraic systems; architecture of computer codes for non-linear finite element analysis; and treatment of constraints arising in nearly incompressible material models.

952. Experimental Stress Analysis II (3 cr) Lec 2, lab 3.

Prereq: ENGM 848 and 852

Surface strains and their measurement, principally by bonded wire resistance strain gages. Static and dynamic measurements using both oscilloscope and direct writing oscillograph, associated electrical circuits. Use of brittle coating in conjunction with strain gages. Evaluation of stresses from strain data.

975. Advanced Vibrations (3 cr)

Prereq: ENGM *875

Variational mechanics, Hamilton’s principle, and energy formulations for linearly elastic bodies. Eigenvalue and boundary value problems. Non-self adjoint systems. Approximate methods: Ritz and Galerkin. Gyroscopic systems. Nonconservative systems. Perturbation theory for the eigenvalue problem. Dynamics of constrained systems.

991. Advanced Investigations in Engineering Mechanics (1-12 cr, max 12)

Prereq: Permission

See current Schedule of Classes for offering. Treatment of advanced topics in engineering mechanics by experimental, computational, and/or theoretical methods. Topic varies from term to term.

996. Seminar in Engineering Mechanics (1 cr per sem, max 24)

Prereq: Permission

Pass/No Pass only. Only 1 credit hour of ENGM 996 will count towards the MS degree. Presentation and discussion of topics in the various branches of engineering mechanics.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

851. Soil Environmental Chemistry (NRES 851) (3 cr II) Lec 3.

Prereq: CHEM 252

Offered even-numbered calendar years. Theory, mechanisms and processes related to chemical behavior in soil-water environments. Application of computer simulation models for predicting contaminant fate in soil. Basic chemical and biological principles of remediating contaminated soil and water.

*890. Practium in Environmental Engineering (1-6 cr, max 6) Fld.

Prereq: Permission

ENVE 890 requires, in advance, the approval of the practicum and the written documentation of how demonstrated creativity will occur i the practicum. At the completion of the practicum, a written report of the creative accomplishments is required.

Problems in engineering or management in a non-academic experience within the private sector or a government agency. Research, design, analysis, and testing.

*898. Special Problems in Environmental Engineering (1-6 cr)

Prereq: Permission

Special research-oriented problems in current topics in environmental engineering.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

990. Seminar in Environmental and Water Resources Engineering (1 cr)

Prereq: Permission

Current research topics and projects in environmental and water resources engineering and closely allied areas.

998. Special Topics in Environmental Engineering (1-6 cr)

Prereq: Permission

Independent library and/or experimental research, analysis, evaluation and presentation of current and advanced topics in environmental engineering and closely related areas.

801. Products Liability (LAW 755G) (3 cr II) Lec 3.

Liability issues arising out of manufacturing defects, design defects and warning defects in various product categories. Specific issues related to product liability, such as identifying proper defendants, establishing causation and the issue of post-sale warnings. Broader policy questions about the role of litigation versus regulation in a democracy and a market economy.

805. Analysis of Engineering Management I (3 cr)

Prereq: IMSE 206

General concepts and principles of engineering management applied to cases.

806. Decision and Risk Analysis (3 cr)

Prereq: IMSE 206; IMSE 321 or STAT 880

Theory and practice of decision making under uncertainty. Graphical modeling techniques. Influence diagram and decision trees. The value of information. Utility theory foundations, risk preference and multi-attribute decision models. Economic justification of projects.

807. Project Management (3 cr) Lec 3.

Project development, role of the project manager, project selection, project planning, budgeting and cost estimation, project scheduling, and project termination.

*810. Ergonomics (3 cr)

Not open to students with credit in IMSE 315. (Delivered via WWW.) Introduction to the principles of ergonomics. Information processing, human output and control, workplace design and environmental conditions.

812. Occupational Safety-A Systems Analysis (3 cr)

Prereq: IMSE 321

Analysis of safety performance, attribution of cost, identification and analysis of accident potential. Fault Tree analysis. Systems safety and reliability.

815. Cognitive Ergonomics (3 cr) Lec 2, lab 3.

Prereq: IMSE 821 or permission

Human factors affecting work. Focus on humans: energy requirements, lighting, noise, monotony and fatigue, learning, simultaneous versus sequential tasks. Experimental evaluation of concepts.

816. Physical Ergonomics (3 cr) Lec 2, lab 3.

Prereq: IMSE 821 or permission

Human performance in work. Focus on human's response to various environmental and task-related variables with emphasis on physical and physiological effects.

817. Occupational Safety Hygiene Engineering (3 cr)

Prereq: Permission

Introduction to occupational hygiene engineering with emphasis on work place environmental quality. Heat, illumination, noise, and ventilation.

821. Applied Statistics and Quality Control (3 cr)

Prereq: IMSE 321

Systematic analysis of processes through the use of statistical analysis, methods, and procedures: statistical process control, sampling, regression, ANOVA, quality control, and design of experiments.

822. Industrial Quality Control (3 cr II) Lec 2, lab 3.

Prereq: IMSE 321

Statistical process control and quality assurance techniques in manufacturing. Control charts, acceptance sampling, and analyses and design of quality control systems.

823. Reliability Engineering (3 cr)

Prereq: IMSE 828

System and component reliability analyses of series, parallel and complex systems. Concepts of reliability, availability, and maintainability in design of systems. Methods of reliability testing and estimation.

828. Stochastic Operations Research Models (3 cr)

Prereq: IMSE 321

Techniques for understanding and predicting stochastic system behavior. Probability, Markov chains, queueing analysis, dynamic programming and reliability.

831. Stochastic Processes (3 cr)

Prereq: IMSE 828

Fundamentals of stochastic processes and their application in modeling production/inventory control, maintenance and manufacturing systems. Markov and semi-Markov chains, Poisson processes, renewal processes, regenerative processes and Markov decision processes.

832. Scheduling (3 cr)

Prereq: IMSE 334

The problem of scheduling several tasks over time, including measure of performance, single-machine sequencing, flow shop scheduling, the job shop problem and priority dispatching.

840. Discrete Event Simulation Modeling (3 cr)

Prereq: IMSE 206 and 321; CSCE 155

Development of simulation models of discrete systems. Model development, Monte Carlo techniques, random number generators and output analysis.

860. Packaging Engineering (3 cr)

Prereq: IMSE 206, 321, ENGM 373

Investigation of packaging processes, materials, equipment, and design. Container design, material handling, storage, packaging, and environmental regulations, and material selection.

861. Radio Frequency Identification (3 cr) Lec 3.

Fundamentals of how radio frequency identification (RFID) components of tag, transponder, and antennae are utilized to create RFID systems. Best practices for implementation of RFID systems in common supply chain operations.

870. Theory and Practice of Materials Processing (3 cr) Lec 2, lab 3.

Prereq: IMSE 370

Theory, practice and application of conventional machining, forming and nontraditional machining processes with emphasis on tool life, dynamics of machine tools and adaptive control.

871. Tool and Die Design (3 cr)

Prereq: IMSE 370

General consideration in tool designing, design of tool and workholding devices, forming machines and presswork tools; application of computer graphics and finite element techniques, and prediction of tool paths in CNC machines.

875. Manufacturing Systems I (3 cr)

Prereq: IMSE 375, 428

Principles of automated production lines; analysis of transfer lines; group technology; just-in-time; and optimization strategies for discrete parts manufacturing systems.

876. Manufacturing Information Systems (3 cr)

Prereq: CSCE 155 or equivalent

Information systems and their impact on a manufacturing environment. Software, hardware, database systems, enterprise resource planning, networking and the Internet.

877. Robotics (3 cr) Lec 2, lab 3.

Prereq: IMSE 375

Basic robotics technology; application in manufacturing, manipulators and mechanical design; programming languages; intelligence and control.

881. Supply Chain Optimization (3 cr) Lec 3.

Concepts of the economic and service trade-offs in supply chain and logistics management. Using decision support system (DSS) to design optimal logistics network model with given requirements and operational parameters using leading software packages to model problems arising in strategic management of logistics networks.

882. Material Planning in Logistic Systems (3 cr)

Prereq: IMSE 321 and 328

Theory, practice and application of inventory, demand and supply planning techniques in multistage environments. Managing economies of scale, uncertainties, capacity constraints, and product availability in a supply chain. Integrated planning, supply chain coordination and technology enablers.

883. Logistics in the Supply Chain (3 cr)

Prereq: IMSE 334

Process of planning, implementing and controlling the efficient, effective flow and storage of goods, services and related information from the point of origin to the point of consumption. Domestic transportation systems, distribution centers and warehousing, international logistics, logistics system controls and re-engineering logistics systems.

*888. Nonlinear Optimization in Engineering (ENGM *888) (3 cr) Lec 3.

Prereq: MATH 208/208H and 314/814; ENGM 480/880; and permission

Nonlinear optimization using gradient-based and evolutionary methods. Constrained and unconstrained nonlinear optimization, Karush-Kuhn-Tucker conditions, penalty and barrier methods. Applications to optimal design in sciences and engineering.

898. Laboratory Investigation (1-6 cr, max 6) Lab.

Investigation and written report of research into a specific problem in any area of industrial or management systems engineering.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Total Quality Management Using Six Sigma Techniques (3 cr) Lec 3.

Introduction to advanced topics in Engineering Management and the foundations of Total Quality Management (TQM). Costs of quality, statistical tools, initiating change, advanced topics, and TQM in practice. Using DMAIC, DFSS, and COPQ along with the other industry-accepted Six Sigma Quality Techniques.

905. Analysis of Engineering Management II (3 cr)

Prereq: IMSE 805

Continuation of concepts and principles of engineering management applied to production cases.

906. Financial Engineering (3 cr)

Prereq: IMSE 806

Applications of principle and financial economics in industrial and systems engineering. Term structure of interest, capital asset pricing and other capital allocation models. Evaluation of real-options using binomial lattice, Black-Scholes and other pricing models.

914. Physiological Aspects of Ergonomics (3 cr)

Prereq: IMSE 816 or permission

Lecture and laboratory study of physiological factors affecting human performance during work. Includes evaluation and testing of physical work capacity, applied work physiology, and factors affecting work performance in stress producing environments.

915. Biomechanics (3 cr) Lec 2, lab 3.

Prereq: IMSE 816

Introduction and historical developments, theoretical fundamentals of the mechanics of the body. The link system of the body and kinematic aspects of extremity joints. of human motion.

916. Biotechnology (3 cr)

Prereq: IMSE 815, 816

Focus on man in system; man-man and man-machine communication. Design and arrangement of controls and displays. Experimental evaluation concepts.

919. Determinants of Occupational Performance (3 cr)

Prereq: IMSE 815, 816 or permission

Focus on the individual in the industrial working environment. Emphasis on evaluation of fatigue, training, shift work, perception, vigilance, and work-rest scheduling as they relate to the working environment.

922. Quality Engineering: Use of Experimental Design and Other Techniques (3 cr)

Extension of industrial quality control methods and techniques. Off-line and online quality control methods. Development of quality at the design stage through planned experiments and analyses. Experimental design methods include factorial, 2k, 3k, and factional factorials designs. Includes applied project in design of quality.

923. Manufacturing and Dynamic Systems Modeling (3 cr)

Prereq: MATH 821 and IMSE 822 or equivalent

Difference and differential equation models directly from series of observed data. Underlying system analysis including impulse response, stability and feedback interpretation. Forecasting and accuracy of forecasts. Periodic and exponential trends in seasonal series. Modeling two series simultaneously. Minimum mean squared error control and forecasting by leading indicators. Illustrative applications to real life data in science and engineering.

970. Advanced Manufacturing Processes (3 cr)

Prereq: IMSE 870 or permission

Theory, practice and technology of advanced manufacturing processes, with emphasis on process mechanism, surface integrity, tool and machine design, adaptive control and expert systems.

975. Manufacturing Systems II (3 cr) Lec 3.

Prereq: IMSE 875

Concepts and models of programmable automation and materials handling systems; use of artificial intelligence for shop floor control; design and analysis of flexible manufacturing systems.

984. Advanced Simulation Modeling (3 cr)

Prereq: IMSE 840

Philosophy, principles and methodology for discrete-event simulation modeling. Use of simulation in the planning of manufacturing and service systems. Simulation modeling perspectives and languages, variance reduction techniques, model verification and validation, and output analysis.

991. Seminar (1-3 cr)

Prereq: Permission

Presentation and discussion of current topics in the field of industrial engineering.

996. Advanced Topics in Industrial Engineering (3 cr each, max 12)

Current topics in major areas of study with the Department of Industrial and Management Systems Engineering that are pertinent to IMSE graduate students, in the areas of:
A. Engineering Management
B. Human Factors Engineering
D. Manufacturing Engineering
E. Operations Research

998. Advanced Laboratory Investigation (1-12 cr)

Prereq: Permission

Semester projects involving research into a specific problem in industrial or management systems engineering.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

802. Turbomachinery (3 cr) Lec 3.

Prereq: MECH 300 and MECH/CIVE 310

Thermodynamic analysis and design of axial and radial flow turbines, compressors and pumps. Fundamentals of the operating characteristics and performance parameters of turbomachines. Cavitation and blade element theory.

803. Internal Combustion Engines (3 cr I, II) Lec 3, lab 2.

Prereq: MECH 300 or equivalent

Basic cycle analysis and engine types, fundamental thermodynamics and operating characteristics of various engines analyzed, combustion processes for spark and compression-ignition engines, fuels, testing procedures and lubrication systems evaluated. Thermodynamic evaluation of the performance and the basic operation of various engine types.

804. Theory of Combustion (3 cr, I) Lec 3.

Prereq: MECH 300, 820 or permission

Stoichiometric analysis of combustion processes. Energy transfer, flame propagation and transformation velocities during combustion. Combustor applications and design considerations. Emission formation and methods of control.

806. Air Conditioning Systems Design (3 cr) Lec 3.

Prereq: MECH 300 or equivalent

A comprehensive design project is an integral part of course. Application of thermodynamic and fluid dynamic principles to the design of air conditioning systems.

807. Power Plant Systems Design (3 cr) Lec 3.

Prereq: MECH 300 or equivalent

A comprehensive design project is an integral part of course. Application of thermodynamic and fluid dynamic principles to the design of power plants.

808. Heat Exchanger Design (3 cr) Lec 3.

Prereq: MECH 300 or equivalent

Practical exercises in actual design tasks. Design methodology for various heat exchangers employed in mechanical engineering. Introduction to computer-aided design as applied to heat exchangers.

*810. Viscous Flow I (3 cr II) Lec 3.

Prereq: MECH 310 and MATH 821

Dynamics and kinematics of laminar flows of viscous fluids. Development of the equations of motion in general and some exact solutions to them. Flows with small to large (laminar) Reynolds numbers including fundamental concepts of the boundary layer on a flat plate.

*812. Viscous Flow II (3 cr I, II) Lec 3.

Prereq: MECH *810, MATH 822 or 824 or MECH *890

Vorticity dynamics. Ideal flows in a plane and in axisymmetric and three-dimensional geometries. Advanced boundary layer theory. Introduction to stability and turbulent flows.

813. Aerodynamics (3 cr) Lec 3.

Prereq: MECH 200 and 310

Subsonic and supersonic airflow theory, dynamics of flight performance parameters, rotor analysis and special topics.

814. Compressible Flow (3 cr) Lec 3.

Prereq: MECH 300 and 310

Analysis of the flow of compressible fluids by means of the momentum equation, continuity equation, and the laws of the thermodynamics and some application of thermodynamics laws to incompressible fluids.

815. Two-Phase Flow (3 cr) Lec 2, lab 3.

Prereq: or parallel: MECH 310 and 380

Transport phenomena of homogeneous and heterogeneous types of mixtures such as solid-liquid, solid-gas, liquid-liquid and liquid-gas. Properties of components and mixtures. Flow induced vibrations and parameter distributions. Optimization and design problems in multiphase systems.

816. Engineering Acoustics (3 cr) Lec 3.

Prereq: MECH 310 and MATH 821

Transverse and longitudinal traveling waves; acoustic wave equation of fluids; reflection, transmission, radiation, reception, absorption and attenuation of sound; acoustic cavities and waveguides; and sound propagation in pipes, resonators and filters.

820. Heat Transfer (3 cr I, III) Lec 3.

Prereq: MECH 310

Heat transfer by conduction, convection and radiation. Correlation of theory with experimental data and engineering design.

824. Laser Material Processing with Compressible Flow Perspective (3 cr) Lec 3.

Prereq: Permission

Fundamentals of laser material processing. Laser material interactions from the compressible flow perspective. Analytical, semi-analytical, and numerical approaches.

825. Solar Energy Engineering (3 cr) Lec 3.

Prereq: MECH 820 or permission

Conversion of solar energy into more useful forms with emphasis on environmental heating and cooling applications. Includes solar energy availability, solar collectors and design, solar systems and their simulation and solar economics.

826. Heat Transfer at Nanoscales and in Ultrashort Time Domains (3 cr I, II)

Prereq: MECH 820

Heat transfer in nanoscale and nanostructured materials. Heat transfer in ultrafast laser materials processing.

831. Computational Heat Transfer and Fluid Flow (3 cr II) Lec 3.

Prereq: MECH 310; MATH 814; MECH 820 or parallel

Finite difference methods for steady and transient diffusion and convection-diffusion problems. Finite volume technique for the solution of multidimensional fluid flow, and heat and mass transfer problems.

836. Introduction to Continuum Biomechanics (3 cr) Lec 3.

Prereq: ENGM 373; MECH 310 and 820

Introduction to biomechanics including basic anatomy, biomaterials, kinematics, dynamics, viscoelasticity, bio-fluid mechanics, and bio-heat transfer.

842. Intermediate Kinematics (3 cr) Lec 3.

Prereq: MECH 342

Analytic cam design. The geometry of constrained plane motion and application to the design of mechanisms. Analysis and synthesis of pin-jointed linkage mechanisms.

844. Intermediate Dynamics of Machinery (3 cr) Lec 3.

Prereq: MECH 342 and 350

Fundamentals of vibration, vibration and impact in machines, balance of rotors, flexible rotor dynamics and instabilities, parametric vibration, advanced dynamics and design of cam mechanisms, dynamics of flywheel.

845. Mechanical Engineering Design Concepts (3 cr) Lec 2, lab 3.

Prereq: MECH 200, 310, 342, and 350

Development of design concepts. Introduction to synthesis techniques and mathematical analysis methods. Applications of these techniques to mechanical engineering design projects.

850. Mechanical Engineering Control Systems Design (3 cr) Lec 2, lab 2.

Prereq: MECH 350

Applications of control systems analysis and synthesis for mechanical engineering equipment. Control systems for pneumatic, hydraulic, kinematic, electromechanical and thermal systems.

852. Digital Control of Mechanical Systems (3 cr) Lec 2, lab 3.

Prereq: MECH 450

Introduction to digital measurement and control of mechanical systems. Applications of analysis and synthesis of discrete time systems.

853. Robotics: Kinematics and Design (3 cr) Lec 3.

Prereq: MECH 350

Robotics synthesize some aspects of human function by the use of mechanisms, sensors, actuators and computers.

855. Vehicle Dynamics (3 cr) Lec 3.

Prereq: MECH 343 and 350

Introduction to basic mechanics governing automotive vehicle dynamic acceleration, braking, ride, handling and stability. Analytical methods, including computer simulation in vehicle dynamics. The difference components and subsystems of a vehicle that influence vehicle dynamic performance.

856. Dynamics of Internal Combustion Engines (3 cr I) Lec 3.

Prereq: MECH 342 and 343.

Basics of design of the internal combustion engine. Design of various engine parts such as pistons, connecting rods, valve trains

and crankshafts, and the vibration dampers. Dynamic study of the engine, the crankshaft assembly, the valve train, and balancing of the engines.

857. Mechatronic Systems Design (3 cr) Lec 3, lab 2.

Prereq: ELEC 231; MECH 350 or parallel

Lab sessions allow for constructing mechatronic systems. Lab time arranged. A comprehensive design project included. Theory, application, simulation, and design of systems that integrate mechanical, computer, and electronic components.

881. Introduction to Nuclear Engineering (3 cr) Lec 3.

Prereq: MATH *820 or 821

Introduction to nuclear physics, radiation interaction with matter, reactor fundamentals, and the application of equipment and principles associated with reactor safety and operations.

*890. Advanced Analysis of Mechanical Engineering Systems (3 cr I) Lec 3.

Engineering mathematics review. Formulation and solution of engineering problems including basic laws, lumped parameter models, and continuous systems. Examples drawn from all areas of mechanical engineering.

898. Laboratory and Analytical Investigations (1-6 cr, max 6, I, II, III) Lab.

Investigation and written report of research into a specific problem in any major area of mechanical engineering.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900. Advanced Thermodynamics (3 cr) Lec 3.

Prereq: Permission

Classical thermodynamics providing precise and true understanding; advanced methodologies and applications to mechanical engineering tasks; axiomatic foundations of classical thermodynamics, engineering applications to working substances in motion; systematic generalizations to exotic substances; and selected topics as illustrations.

904. Advanced Combustion Theory (3 cr) Lec 3.

Prereq: MECH 804 or equivalent

Detailed analysis of modern combustion wave theory, particularly chain reaction calculations and flame temperature determination. Gas dynamics of flames. Advanced mass transfer as applied to combustion. Aerodynamics of flame stabilization by vortices. Critical examination of present experimental techniques and results.

912. Advanced Topics in Fluid Dynamics (3 cr) Lec 3.

Prereq: MECH *812 or permission

Selected topics from one or two of the following fields: magneto-fluid-mechanics, three-dimensional boundary layers, fluid-mechanical stability, hypersonic flow, theory of turbulence, rarefied gas dynamics or other current research interest area.

916. Turbulent Flows (3 cr I, II) Lec 3.

Prereq: MECH *812

Methods of description and basic equations of turbulent flows. Isotropic and homogeneous turbulence, energy spectra and correlations. Introduction to measurements. Transition theory and experimental evidence. Wall turbulence, engineering calculations of turbulent boundary layers. Free turbulent jets and wakes.

922. Conduction Heat Transfer (3 cr) Lec 3.

Prereq: MECH 820 or permission

Theory of heat conduction; analytical, numerical, graphical and analog methods of solution.

923. Convection Heat Transfer (3 cr) Lec 3.

Prereq: MECH 820 or permission

Theory of heat transfer by convection. Analytical, numerical, and empirical solutions. Selected applications.

924. Radiation Heat Transfer (3 cr) Lec 3.

Prereq: MECH 820 or permission

Theory of heat transfer by thermal radiation. Formulation and analytical and numerical solutions. Selected applications.

932. Advanced Finite Element Methods (3 cr) Lec 3.

Prereq: MECH 831, *890

Review of basic finite element methods including field problems and continuum solid mechanics problems. Advanced linear methods: eigenvalues and mode superposition, convection-diffusion problems, Stokes flow problems. Nonlinear methods for heat transfer, fluid flow, and solid mechanics.

943. Machine Design (3 cr) Lec 2, lab 3.

Prereq: MECH 842 or permission

The student's competence in designing machine members to withstand various static and dynamic loads, to analyze failure, and to design members for optimum balance of weight, cost, and reliability is advanced to a level beyond that of MECH 843. Impact loading, fatigue, optimum design of mechanical components, lubrication, and environmental considerations (mechanical properties at high and low temperature, creep, stress corrosion, fretting corrosion, etc.) are tested. Laboratory includes completion of one or more realistic individual design projects and the use of engineering case studies to illustrate more complex interactive design than would be feasible to actually carry out in one semester.

945. Probabilistic Design of Machine Elements (3 cr)

Prereq: MECH 845; STAT 880; or permission

Application of probability to the design of machine elements. Rational determination of component factor of safety based on probability densities of strength and of in-service stress. Statistical study of cumulative damage resulting from varying magnitude stress cycles. Probability of survival of fatigue-life design.

950. Impact Engineering (3 cr) Lec 3.

Prereq: ENGM/CIVE 851

Design and analysis of structures that undergo impact. Nonlinear, large-deformation finite element analysis of structures. Vehicle crashworthiness, roadside safety design, sheet metal forming, and projectile impacts.

958. Advanced Mechatronics (3 cr) Lec 3, lab 2.

Prereq: MECH 457/857 or permission

Theory, application, simulation, and design of systems that integrate mechanical, computer, and electronics components. Analyze, design, simulate, and build mechatronic systems.

991. Seminar (1 cr each)

996. Laboratory and Analytical Investigations (1-12 cr)

Semester projects involving research into a specific problem in any major area of mechanical engineering.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

860. Mechanical Aspects of Materials (3 cr) Lec 3.

Prereq: ENGM 325; METL 360 or ENGM 335 or equivalent

Principles at the atomistic or molecular level that relate mechanical properties and behavior of different classes of materials to their structure and environment.

861. Materials Laboratory II (3 cr) Lab 6.

Prereq: METL 360

Application of scientific principles in the laboratory to the analysis of materials problems and selection of engineering materials.

862. X-ray Diffraction (3 cr) Lec 3.

Prereq: PHYS 212

Principles of crystallography. Production and properties of X-rays. The interaction of X-rays with atoms and the nature of diffraction (direction and the intensities of diffracted beams). Diffraction patterns and intensity measurements.

*864. Thin Films and Surface Engineering (3 cr) Lec 3.

Prereq: Graduate standing in engineering, physics, chemistry, or permission

Thin films play an important role in a myriad of applications ranging from magnetic recording media, architectural glass panels, and microelectronics to coatings for reduction of wear and corrosion in components on board the space shuttle. Includes: vacuum science and technology; pumping systems and instrumentation; thin film deposition techniques; surface modification techniques; characterization of thin film properties; microstructural, physical and mechanical properties; and comparisons of surface enhancement techniques in terms of suitability, performance, and cost.

865. Applied Physical Metallurgy and Design (3 cr) Lec 3.

Prereq: METL 360 or equivalent

Principles of alloying, alloy selection, modification of the physical properties of structural alloys by thermal, mechanical and chemical treatment, solidification and joining phenomena.

866. Materials Selection for Mechanical Design (3 cr) Lec 2, lab 2.

Prereq: METL 360 and ENGM 325; or permission

Rational selection procedure for the most suitable materials for each particular mechanical design. Introduction of materials selection charts and the concept of materials performance indices. Case studies in mechanical design, taking materials selection,

shape and process into account. Projects on materials selection at the design concept and the design embodiment stages.

867. Principles of Powder Metallurgy (3 cr) Lec 2, lab 3.

Prereq: MECH 200; ENGM 325; METL 360 or ENGM 335 or equivalent

Basic principles of powder metallurgy, with emphasis on methods of producing metal powders, determination of their characteristics; the mechanics of powder compaction; sintering methods and effects; and engineering applications.

868. Failure Analysis: Prevention and Control (3 cr) Lec 2, lab 2.

Prereq: ENGM 325; METL 360 or ENGM 335 or equivalent

Several projects involving case analyses and design are included. Metallurgical tools for analysis of failures; types and modes of failures; sources of design and manufacturing defects. Case histories utilized to illustrate modes of failures and principles and practices for analysis. Design concepts and remedial design with case studies.

869. Physical Materials Systems (3 cr) Lec 3.

Prereq: PHYS 212 and METL 360

The principles controlling the formation of the structure of engineering materials. Phase diagrams, diffusion, interfaces and microstructures, solidification and diffusional transformation and diffusionless transformations.

870. Thermodynamics of Alloys (3 cr) Lec 3.

Prereq: METL 360; MECH 200; MATH 208 or equivalent

Materials thermodynamics of closed systems, introduction to liquid and solid solution alloys, relationship to gas phase, application to binary systems.

871. Electron Microscopy of Materials (3 cr) Lec 2, lab 2.

Prereq: PHYS 212

Introduction to electron beam instruments. Electron interactions with materials. Basic aspects of electron diffraction, image formation and spectrum generation by materials. Acquisition and analysis of images, diffraction patterns and spectral data. Resolution and sensitivity limits of electron probe methods. Practical experience in the use of electron microscopes for characterization of materials.

872. Kinetics of Alloys (3 cr) Lec 3.

Prereq: METL 360 or equivalent; and MATH 821

Kinetics of gas-liquid-solid reactions in alloy systems, analysis of diffusion models applicable to such systems.

873. Corrosion (3 cr) Lec 3.

Prereq: CHEM 109 or equivalent

Fundamentals of corrosion engineering, underlying principles, corrosion control and materials selection, and environmental control.

874. Extractive Metallurgy (3 cr) Lec 3.

Prereq: METL 360 or equivalent; MECH 200 or equivalent

Unit operations and processes utilized in production of ferrous, nonferrous and refractory metals. Examples of production techniques for metal bearing ores, scrap metals, and domestic waste. Control of impurity and alloy content and their relationship to physical properties.

*875. Glass and Ceramic Materials (3 cr) Lec 3.

Prereq: METL 860 and 870, or permission

Principles underlying the processing and microstructure evolution in nonmetallic materials, particularly glasses and ceramics. Structure-property relations in ceramics for engineering applications.

898. Laboratory and Analytical Investigation (1-6 cr, max 6, I, II, III) Lab.

Investigation and written report of research into specific problems in any major area of materials engineering.

960. Materials Aspects of Fracture (3 cr) Lec 3.

Prereq: METL 860, 870

Utilization of certain aspects of applied elasticity, plasticity, and materials physics to explain the relationship between materials structures and mechanical properties. Includes review of various types of material failure and mechanical tests employed to predict behavior of materials with emphasis on metals.

962. Imperfections in Crystals (3 cr) Lec 3.

Prereq: CHEM 882, METL 860

Fundamental properties of defects in solids. Energy considerations for point, line, and plane defects. Equilibrium and nonequilibrium concentrations of defects and annealing theory. Mutual interactions of defects and formation of secondary defects. Interaction of defects with other perturbations of the crystal lattices.

970. Advanced Thermodynamics of Materials (3 cr) Lec 3.

Prereq: METL 870, MATH 821 or equivalent

Applications of thermodynamic concepts to phase equilibria in materials systems. Systematics of solution theories and lattice modeling. Experimental methods; computer modeling in materials thermodynamics.

972. Transformation in Materials (3 cr) Lec 3.

Prereq: CHEM 882, METL 870

Classical nucleation theory, homogeneous and heterogeneous nucleation. Precipitation studies in solids including transition precipitates. Kinetics of growth of precipitates. Diffusion controlled transformation process.

997. Research Other Than Thesis (1-6 cr, max 6)

Prereq: Advanced graduate standing and permission

Supervised non-thesis research and independent study.

998. Advanced Materials Topics (1-3 cr per sem, max 9)

Prereq: Permission

Course offered as the need arises to teach advanced topics in materials characterization, processing, synthesis or properties not covered in other 900-level courses.

Contents

-
  -
  -
  -
  -
  -
  -
  -
  -
  -
  -
  -
  -
  -
  -
  -
  -
-

Description

Unified Doctoral Engineering Program

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Graduate Engineering Board: Professor Perez (Director of Graduate Studies); Professors Bishu, Foster, Hanna, Liu, Robertson, Rothermel, Sharif, Tadros, To; Associate Professors Balkir, Berryman, Dvorak, Farritor, Negahban

Courses of study in engineering leading to the doctoral degree are offered through a Unified PhD Engineering Program which is governed by a graduate board of faculty members elected from each participating field in the college. In addition to addressing the traditional engineering fields, this program encourages multidisciplinary approaches to engineering research. Faculties of the various engineering departments and programs (agricultural and biological systems, architectural, chemical, civil, computer science and engineering, electrical, engineering mechanics, industrial and management systems and mechanical engineering) staff eleven PhD fields of study: agricultural engineering; architectural engineering; biological systems engineering; biomedical engineering; civil engineering; chemical and materials engineering; computer engineering; electrical engineering; engineering mechanics; industrial, management systems and manufacturing engineering; and mechanical engineering. Students interested in studies leading to the PhD degree in engineering should contact the:

Director of Graduate Studies
College of Engineering and Technology
University of Nebraska-Lincoln
114 Othmer Hall
PO Box 880642
Lincoln, NE 68588-0642

Students with a BS degree in engineering or in a related science or mathematics field may apply for direct admission to the engineering PhD program. An engineering MS degree is not required for admission to the PhD program; however, students with

only a BS degree may be required to complete an engineering MS degree before PhD program admission is granted. Students with a degree in a discipline other than their chosen field of study for the PhD degree may be required to take prerequisite deficiencies.

Admission to the PhD program depends upon the student's previous academic performance and their preparedness to pursue advance research and course work. It is highly recommended that all students submit GRE scores, three letters of recommendation, and a statement of purpose for pursuing the degree. Faculty members associated with each PhD field will review the merit of the application as a whole in establishing whether to recommend admission; thus a student may be required to provide additional application materials beyond that which is required by the Graduate College. Submission materials should be sent directly to the Director of Graduate Studies to avoid unnecessary delays during the application review process. Graduates from unaccredited engineering programs or from non-engineering programs must submit GRE scores. Graduates from foreign universities are required to submit GRE scores, as well as TOEFL scores, where appropriate for evaluation before admission.

Demonstration of foreign language proficiency or of competence in special research techniques is not a general requirement for the engineering PhD degree. Decisions concerning such requirements are within the purview of the individual supervisory committees and will be consistent with the educational objectives of the student.

Master of Engineering Program

Master of Engineering Board: Professors Riley (chair), Merkel, Foster; Associate Professors Berryman, Liu, Nguyen; Assistant Professor Goddard

The master of engineering is a professional practice-oriented degree program in engineering. It is designed for individuals who possess at least one degree in engineering but is also available for exceptional individuals who have significant engineering practice and a degree in a related field. The MEng degree program provides a student with additional broad-based technical education in a selected area of concentration. The student must select an area of concentration. Currently available areas of concentration are:

- Construction (CNST)
- Engineering Management (EMGT)
- Telecommunications Engineering (TELE)
- Architectural Engineering (AREN)

The area of concentration graduate committees will evaluate the qualifications of the students for admissions and make recommendations to the Master of Engineering Board and to the Dean of Graduates Studies. Each area of concentration has different requirements consistent with its focus.

Concentrations

- **Construction**

This area of concentration requires two years of engineering or equivalent construction work experience, a bachelor of science (or higher) degree in engineering or quantitative area, one semester of analytic geometry/calculus I, and one semester of statistics. The program requires 36 graduate hours which includes 18 hours of core courses in construction focus areas, 9 hours of business electives and 9 hours of secondary area electives. Eighteen of the 36 hours must be from courses open only to graduate students. The program is designed for individuals who wish to pursue advanced studies in construction related areas. Flexibility within the program allows students to pursue a variety of related topics that will impact any construction oriented organization. The graduate coordinator for this area of concentration is Dr. Wayne Jensen.

- **Engineering Management**

This area of concentration requires two years of engineering work experience, a BS in engineering or quantitative area, at least one year of calculus, a calculus-based probability and statistics course, an engineering economy course and at least one engineering science course for admission. The program requires 36 graduate hours which includes 18 hours from industrial and management systems engineering and 9 hours from management or business administration. Eighteen of the 36 hours completed must be open exclusively to graduate students. The program is for those who wish to acquire knowledge and skills for the administration and management in the engineering profession. The degree combines advanced engineering and management education. This area of concentration can be completed entirely via on-line course work. The graduate coordinator for this area of concentration is Dr. Ram Bishu.

- **Telecommunications Engineering**

This area of concentration requires two years of practical engineering experience and a BS degree in electronics engineering, computer engineering, electrical engineering, electronics engineering technology or related degree with sufficient engineering mathematics for admission. The program requires 36 graduate hours including 12 hours in core of computer and electronics engineering course, 9 hours of approved courses in telecommunications from computer and electronics engineering, electrical engineering, computer science and engineering, and information science and technology, and 9 hours from approved courses in information systems, business administration, and mathematics and statistics. The program prepares the student for the engineering practice in the advanced areas of telecommunications engineering such as high-speed networks, wireless communications and optical communications. The graduate coordinator for this area of concentration is Dr. Hamid Sharif-Kashani.

- **Architectural Engineering**

This area of concentration requires at least six months of architectural engineering or related engineering area work experience, a bachelors degree in engineering, completion of all engineering mathematics and physics courses required by the College of Engineering for a bachelor of engineering degree. The program requires 36 graduate hours which includes 27 hours of architectural engineering and related areas and 9 hours of management or business administration. Twelve of the 36 hours must be from courses open exclusively to graduate students. This degree program is for individuals with a degree in engineering or a quantitative area who have engineering work experience and who wish to acquire knowledge and skills for higher level technical work, and who want an introduction to administration and management in the engineering profession. The graduate coordinator for this area of concentration is Dr. Mingsheng Liu.

Architectural Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Program Director Clarence Waters, Ph.D.

Graduate Chair: Mingsheng Liu, Ph.D.

Three graduate programs are offered in architectural engineering through the University of Nebraska-Lincoln Graduate Studies. One is an area of concentration within the College of Engineering and Technology's college-wide master of engineering (MEng) degree program. This program is intended primarily for graduates of engineering programs in fields other than architectural engineering who are now working in architectural engineering related positions. The second is the master of architectural engineering (MAE) degree, intended primarily for students who have graduated with a bachelor of science degree in architectural engineering (BSAE) from the University of Nebraska. Both of the above degrees are professional degrees based on course work and design work, without a thesis. The third graduate program offered in architectural engineering is the doctor of philosophy (PhD), offered as a field of specialization within the College of Engineering and Technology's college-wide PhD degree program. A general description of the PhD program in engineering is presented in the UNL Graduate Bulletin.

Biological Systems Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: Ronald Yoder, Ph.D.

Graduate Committee: Professors Hanna (chair), Eisenhauer, Martin, Schinstock; Associate Professors Adamchuk, Woldt; Assistant Professor Irmak, S.

The Department of Biological Systems Engineering offers graduate programs leading to the master of science with a major in agricultural and biological systems engineering and the PhD in engineering with a specialization in agricultural and biological systems engineering or biomedical engineering. Also, the department offers a master of science with a major in mechanized systems management and is a cooperating department offering a master of science with a major in environmental engineering.

Students wishing to pursue graduate work in agricultural and biological systems engineering must meet the admission requirements for students in engineering. Graduate study in this area may be directed to the fields of agricultural power and machinery systems, control systems, soil and water conservation, irrigation system design, ground and surface water management, water quality, plant environment, bioprocessing, animal well being, risk assessment, environmental engineering, animal waste management, solid and hazardous waste management, materials handling and processing systems, food process engineering, computer applications, monitoring and controlling biological systems, decision support systems, global positioning systems, geographic information systems, and other areas of engineering science and design related to agricultural and biological systems. The program in meteorology and climatology is available with degree options in engineering, agronomy, or horticulture.

Masters Degree.

Graduate programs leading to the degree of master of science with a major in agricultural and biological systems engineering are governed by the general requirements for graduate degrees and the rules of the Graduate College. With approval of the departmental Graduate Committee and the Graduate Council, course work at the graduate level from other areas of engineering may be used as part of the course work constituting a major in agricultural and biological systems engineering. Minors in Environmental Studies and Water Resources Planning and Management are available.

Doctor of Philosophy Degree.

Studies leading to a PhD degree in engineering are conducted under the engineering doctoral program.

Biomedical Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Field Chair: Shane Farritor, Ph.D.

This program in the College of Engineering is designed to promote interdisciplinary research at the graduate level within the College and within the University system as a whole. Students come from undergraduate degrees in various branches of engineering, physics, chemistry, biology, and mathematics. They take 24 graduate-level engineering classes, and at least 12 graduate-level credit hours in biomedical sciences.

At this time, there is no formal degree program in biomedical engineering at the masters degree level, however, students can obtain masters degrees in traditional degree programs of their strength, with an emphasis in biomedical research programs.

Chemical and Biomolecular Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: William H. Velander, Ph.D.

Graduate Committee: Associate Professor Larsen (chair); Professor Viljoen; Assistant Professor Noureddini

To begin candidacy for the masters degree, a student must have completed an undergraduate major in chemical engineering or have completed all required deficiency courses.

All applicants for admission must take the verbal, quantitative, and analytical sections of the Graduate Record Exam (GRE) and should arrange to have the scores reported to the Graduate Studies Office at the University of Nebraska-Lincoln at the earliest possible date since action on admitting the applicant will not be taken before these scores are received. In order to receive favorable consideration for admission an applicant should score at least 400 on the verbal and 700 on the quantitative and analytical sections of the GRE. The Advanced Engineering Test is recommended for applicants for financial aid. The Department of Chemical Engineering reserves the right to consider admission without the GRE in exceptional cases. All international applicants must complete the TOEFL with at least a score of 550.

Masters Degree.

The masters degree requires a minimum of 30 credit hours which includes a required thesis. Of these 30 credit hours, 12 are in required core courses (Advanced Chemical Engineering Analysis, Theoretical and Applied Thermodynamics for Chemical Engineers, Transport Phenomena, and Advanced Chemical Engineering Kinetics) and 6 in a required thesis. Students must take required core courses the first time they are offered. All elective courses must be approved by the student's thesis supervisor or the Chair of the Department's Graduate Committee. Students are required to pass either a comprehensive examination or a final oral examination, at the discretion of the thesis supervisor.

Doctor of Philosophy Degree.

Courses of study leading to the doctoral degree are offered through a unified PhD program in engineering which is governed by a graduate board of faculty members elected from each participating department. In addition to addressing the traditional engineering fields, this program encourages multidisciplinary approaches to engineering research.

Civil Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Mohamed F. Dahab, Ph.D., P.E.

Graduate Committee: Professors Tadros (chair), Azizinamini, Zhang; Associate Professor Jones; Assistant Professors Guo, Kim

Graduate work in civil engineering is governed by the general requirements of the Graduate College. Selection of the option and program are subject to approval by the student's adviser and the departmental Graduate Committee.

A student applying for admission should designate the primary area in which he/she wishes to study. Major work for the master of science degree may be selected from the areas of environmental, geotechnical, structural, transportation, and water resources engineering. A minor area may be designated from any one of the related civil engineering areas or from other related departments such as in construction management. Other supporting courses may be selected from advanced or graduate courses having some relation to the major group.

Masters-level specializations available:

Environmental Studies; Geotechnical Engineering; Structural Engineering; Transportation Engineering; Water Resources Planning and Management.

Doctor of Philosophy Degree.

Studies leading to a PhD degree in engineering are conducted under the engineering doctoral program. Refer to the main "Engineering" section.

Construction

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Interim Program Director: Mike Riley, Ph.D., P.E.

Degree programs leading to the master of engineering with a concentration in construction and doctor of philosophy in engineering (with a specialization in construction) are offered in a unique blend of courss and graduate research in business,

construction management, construction engineering, engineering, architecture, law, and related disciplines. The emphasis is on advanced studies in construction with application to a broad range of construction activities and applied research. For more informaiton on the MEng program, refer to the "Master of Engineering Program" section.

A doctoral specialization is available in construction in the unified engineering major.

Electrical Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Jerry Hudgins, Ph.D.

Graduate Committee Chair: Sina Balkir, Ph.D.

Website: www.ee.unl.edu

The graduate program in the Department of Electrical Engineering is governed by the general requirements of the Graduate College. In addition, the department requires the aptitude and analytical parts of the Graduate Record Examination of all students. A student who wishes to work toward a graduate degree in electrical engineering must have completed a substantial undergraduate program in electrical engineering or its equivalent.

Doctor of Philosophy Degree.

Studies leading to a PhD degree in engineering are conducted under the engineering doctoral program, see .

Engineering Mechanics

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Joseph A. Turner, Ph.D.

Graduate Committee Chair: Mehrdad Negahban, Ph.D.

Website: www.unl.edu/emhome/grad/default.html

Candidates for an advanced degree in engineering mechanics must be graduates of an accredited program in engineering or a closely related area.

Graduate study in this department places strong emphasis on the fundamentals of engineering science. This is combined with advanced study in specialty areas in mechanics, materials, mathematics and physical sciences. The program of study is closely related to the research program. Current areas of research are: **analytical mechanics,** including dynamics, vibrations, nonlinear mechanics and stress waves; **computational mechanics,** including finite and boundary element methods, meshless methods, and optimization of materials and structures; **mechanics of materials,** including the study of static, dynamic, thermal, and other effects in metals, polymers, nanomaterials, nanofibers, and composites; **mechanics of solids,** including linear and nonlinear elasticity, plasticity, viscoelasticity, piezoelectricity, damage, fatigue and fracture mechanics.

The Department provides a simultaneous double master in Mechanics and Materials with the University of Rouen (UR) in France. Students in this program spend one year at UNL and one year at UR. Upon satisfactory completion of the program, students are simultaneously awarded a master of science in engineering mechanics from UNL and a master of science in materials (InCoMatex CEPMI) from UR.

Admission and financial assistance is offered on a competitive basis. Graduates of foreign universities or of non-accredited engineering programs are strongly urged to submit GRE scores. Foreign applicants whose native language is not English must submit a TOEFL score of 213 or better for the computer-based TOEFL. Further information about the MS and PhD degree programs is available upon request from the Chairperson of the Graduate Committee.

Master of Science Degree.

It is expected that all students in this program will have the necessary prerequisites for, or credits in, ENGM 847 (Advanced Dynamics) or 875 (Vibration Theory and Applications), and ENGM 848 (Advanced Mechanics of Materials).

Doctor of Philosophy Degree.

Studies leading to a PhD degree in engineering are conducted under the engineering doctoral program. Candidates for this degree are required to take a qualifying examination conducted by the Engineering Mechanics Graduate Committee.

Environmental Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Program Director: Bruce I. Dvorak, Ph.D., P.E.

Program Committee: Professors Comfort, Hendrix, Schulte; Associate Professors Dvorak (chair), Zhang

Cooperating Departments: Biological Systems Engineering, Civil Engineering, Chemical Engineering

The Departments of Biological Systems Engineering, Civil Engineering, and Chemical Engineering at the University of Nebraska jointly administer a multi-disciplinary program of teaching and research leading to the masters of science in environmental engineering (MS) degree. Environmental engineering faculty members in the three departments offer a balance of expertise covering four major areas of environmental engineering, as sanctioned by the American Academy of Environmental Engineers (AAEE). The fields in which students may concentrate include: water supply engineering, wastewater engineering, hazardous waste management engineering, and solid waste management engineering. In addition, a fifth area in diffuse (non-point) and agricultural waste management engineering is offered.

The area committee evaluates the qualifications of students for admission into the program. Students can work toward the degree under either Option I or Option II, and all requirements under those options must be met. All students are required to complete CIVE 828 (Quantitative Methods in Environmental Engineering, 3 cr), CIVE 829 (Biological Treatment Processes, 3 cr), and CIVE 823 (Physical Chemical Treatment Processes, 3 cr). All students must also take ENVE 990 (Seminar in Environmental Engineering, 1 cr). Attendance and participation in another seminar also may be required by the student's home department. Students having equivalent courses from a previous degree program may substitute or waive a core course or courses, with the express written approval of the MSEE Graduate Committee. Working with their advisers, students are expected to formulate coherent programs of research and study. Any student receiving support as a teaching and/or research assistant from the program is expected to enroll under Option I and complete a thesis.

In addition, the courses listed below are offered by the participating departments.

Offered in the Department of Biological Systems Engineering
AGEN 853. Irrigation & Drainage Systems Engineering
AGEN 953. Advanced Irrigation & Drainage Systems Engineering
AGEN 954. Hydrologic Modeling of Small Watersheds
AGEN 955. Solute Movement in Soils (AGRO 955, CIVE 955)
BSEN 846. Unit Operations of Biological Processes
BSEN 855. Nonpoint Source Pollution Control Engineering (CIVE 855)
BSEN 941. Agricultural Waste Management
BSEN 943. Bioenvironmental Engineering

Offered in the Department of Chemical Engineering
CHME 832. Transport Operations
CHME *835. Transport Phenomena
CHME 842. Chemical Reactor Engineering & Design
CHME *845. Advanced Chemical Engineering Kinetics
CHME 873. Biochemical Engineering
CHME 892. Air Pollution Assessment & Control

Offered in the Department of Civil Engineering
CIVE 819. Flow Systems Design
CIVE 821. Hazardous Waste Management
CIVE 822. Hazardous Waste Treatment
CIVE 823. Physical/Chemical Treatment Processes
CIVE 824. Solid Waste Management Engineering
CIVE 826. Design of Water Treatment Facilities
CIVE 827. Design of Wastewater Treatment & Disposal Facilities
CIVE 828. Quantitative Methods in Environmental Engineering
CIVE *829. Biological Waste Treatment
CIVE 830. Fundamentals of Water Quality Modeling
CIVE 852. Water Resources Development
CIVE 853. Hydrology
CIVE 854. Hydraulic Engineering
CIVE 855. Nonpoint Source Pollution Control Engineering (BSEN 855)
CIVE 856. Surface Water Hydrology
CIVE 858. Groundwater Engineering
CIVE 875. Water Quality Strategy (AGRO 875, etc.)
CIVE 915. Water Resources Engineering
CIVE 916. Interdisciplinary Seminar in Engineering Economics & Legal Aspects of Water Resources Systems
CIVE 921. Advanced Topics in Hazardous Waste Treatment
CIVE 926. Advanced Topics in Water Treatment
CIVE 927. Advanced Topics in Wastewater Treatment
CIVE 929. Industrial Waste Lab
CIVE 930. Advanced & Industrial Wastewater Treatment
CIVE 952. Water Resources Planning
CIVE 954. Advanced Hydraulics
CIVE 955. Solute Movement in Soils (AGEN 955, AGRO 955)
CIVE 958. Groundwater Mechanics
CIVE 959. Groundwater Modeling

Industrial and Management Systems Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Interim Department Chair: Kamlakar Rajurkar, Ph.D.

Graduate Committee Chair: Professor Bishu

Programs leading to the master of science and doctor of philosophy degrees are offered by the Department of Industrial and Management Systems Engineering. Major work for these degrees may be selected from systems management, ergonomics, operations research, or manufacturing.

Masters Degree.

It is expected that all students in this program have the necessary prerequisites or additional work may be required.

Doctor of Philosophy Degree.

Studies leading to a PhD degree in engineering are conducted under the engineering doctoral program.

Manufacturing Systems Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

(Interdepartmental Area)

Area Committee Chair: Professor Cochran

Departments Cooperating: Electrical Engineering, Industrial and Management Systems Engineering, Mechanical Engineering, and Management

The Area Committee will evaluate the qualifications for the admission of students leading to the master of science degree. The work for the degree may be done under either Option I or Option II, and all requirements under those options must be met. In place of the usual major requirements, the masters program must include at least one half of the program from courses listed as the core area. Course work must be taken in at least three of the participating areas. The minor, if needed, must include 9 hours in any one of the participating departments, and these 9 hours may include core courses if they have not been used on the program to meet core course requirements in the major. Additional courses other than those listed may be used in the program upon approval of the Area Graduate Committee.

Courses listed below are offered by the participating departments.

Offered in the Department of Electrical Engineering
851. Linear System Analysis & Design
863. Digital Signal Processing
871. Continuous System Simulation
944. Digital & Sampled Data Control Systems
945. Optimal Control Theory
946. Optimal Filtering, Estimation & Prediction

Offered in the Department of Industrial and Management Systems Engineering
805. Analysis of Engineering Management
806. Decision and Risk Analysis
807. Project Management
810. Ergonomics
812. Occupational Safety - A Systems Analysis
815. Cognitive Ergonomics
816. Physical Ergonomics
817. Occupational Safety Hygiene Engineering
821. Applied Statistics and Quality Control
822. Industrial Quality Control
823. Reliability Engineering
828. Stochastic Operations Research Models
831. Stochastic Processes
832. Scheduling
840. Discrete Event Simulation Modeling
860. Packaging Engineering
861. Radio Frequency Identification
870. Theory and Practice of Materials Processing
871. Tool and Die Design
875. Manufacturing Systems I
876. Manufacturing Information Systems
877. Robotics

881. Supply Chain Optimization
882. Material Planning in Logistic Systems
883. Logistics in the Supply Chain
898. Laboratory Investigation
899. Masters Thesis
901. Total Quality Management Using Six Sigma Techniques
905. Analysis of Engineering Management II
906. Financial Engineering
914. Physiological Aspects of Ergonomics
915. Biomechanics
916. Biotechnology
919. Determinants of Occupational Performance
922. Quality Engineering. Use of Experimental Design and Other Techniques
923. Manufacturing and Dynamic Systems Modeling
970. Advanced Manufacturing Processes
975. Manufacturing Systems II
984. Advanced Simulation Modeling
991. Seminar
996. Advanced Topics in Industrial Engineering
998. Advanced Laboratory Investigation

Offered in the Department of Mechanical Engineering
850. Mechanical Engineering Control Systems
952. Digital Control of Mechanical Systems

Offered in the Department of Management
931. Operations Planning & Control Systems
994. Seminar in Selected Topics I
995. Seminar in Selected Topics II

Materials Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Mechanical Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Interim Department Chair: John P. Barton, Ph.D.

Graduate Committee: Professors To (chair), Robertson; Associate Professors Farritor, Zhang

Programs leading to the master of science and the doctor of philosophy degrees are offered by the Department of Mechanical Engineering. There are three primary areas of emphasis: thermal-fluids engineering, systems-design engineering, and metallurgical engineering.

Students entering the graduate program are expected to have undergraduate training substantially equivalent to that of a bachelors degree in mechanical engineering. Students with undergraduate backgrounds in fields other than mechanical engineering may be required to take additional prerequisite course work. Foreign students without degrees from United States institutions are required to take the TOEFL and GRE general examinations with a minimum TOEFL score of 550 paper based (213 computer based, 79 Internet based) and minimum GRE scores of 600 quantitative and 2.5 writing. Further details concerning Departmental application requirements and procedures can be obtained by contacting the Departmental Graduate Chair.

Masters Degree.

Unless specific permission is given, the student must complete requirements for the degree under Option I. For Option I, a minimum total of 30 hours of graduate credit, consisting of a minimum of 24 hours of regular course work and a minimum of 6 hours of masters thesis, is required. Of the 24 hours of regular course work: a minimum of 12 hours must be taken within the Mechanical Engineering Department, at least one 3-hour mechanical engineering course must be taken in an area outside the student's primary area of emphasis, and at least one 3-hour course must be taken in engineering mathematics. A transfer of a maximum of 6 credit hours is allowed with approval by the Department Graduate Committee. The student may complete requirements for the degree under Options II and III. Further details concerning departmental masters degree requirements can be obtained by contacting the Departmental Graduate Chair.

Students may get a masters degree in mechanical engineering with an area of specialization in materials science engineering or metallurgy. Further details concerning Departmental requirements concerning the materials science engineering area of specialization can be obtained by contacting Dr. Brian Robertson.

Doctor of Philosophy Degree.

Studies leading to a PhD degree in engineering are conducted under the engineering doctoral program.

Telecommunications Engineering

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Dr. Bing Chen

Graduate Chair: Dr. Hamid Sharif

The Department of Computer and Electronics Engineering offers courses of study leading to the master of science in telecommunications engineering. This program provides advanced education and research to develop breadth of knowledge and depth of expertise in the engineering of telecommunication networks and systems. Strong emphasis is placed on the areas of High Speed/Broadband Computer Communications Networks, Optical Communications, and Wireless/Satellite Communications. Specialized state-of-the-art laboratories and computer facilities are available in the above three areas.

This program is a **UNL** program offered in Omaha at the **Peter Kiewit Institute.** Students may take some of the courses through the Electrical Engineering and the Computer Science and Engineering Departments on the Lincoln Campus. For more information, please visit the department's Website: **www.ceen.unomaha. edu.**

For admission to this program, a student must have a bachelor of science degree in computer engineering, electrical engineering, electronics engineering or a closely related area.

The CEEN Department offers three areas of concentrations leading to the MS degree in Telecommunications Engineering. The choice of MS option depends on the interests and future plans of the student. The length of time necessary to complete the MS program varies, but is typically two years for full-time enrollment.

- **Option I:** The vast majority of MS students in the CEEN Department choose Option I. Students considering a PhD degree would also generally choose this option. For this degree option, a minimum of 30 credit hours which includes a written thesis are required. At least 6 credit hours must be taken as thesis research. Of the remaining hours, a minimum of 24 hours of formal course work must be taken with at least 9 credit hours in **graduate-only courses.** Of the total minimum of 30 credit hours, at least 15 credit hours must be **CEEN credits.**
- **Option II:** Option II does not require thesis research and provides the student with a broader range of courses in his/her program. Normally, this option is not appropriate for students interested in continuing with a PhD degree. A minimum of 36 credit hours of formal course work are required and a single minor must be designated. The program must consist of a minimum of 18 credit hours in **CEEN** and 9 hours in the **minor field.** A minimum of 12 credit hours of **graduate-only courses** are required.
- **Option III:** Option III does not require a master's thesis but has a minimum course requirement of 36 credit hours. At least 18 credit hours must be earned in **graduate-only courses.** A minimum of 18 credit hours must be **CEEN courses.** No minor is required.

Faculty

Architectural Engineering

For faculty research interests and contact information, view the graduate program summary.

- Alahmad, Mahmoud -2006; Assistant Professor; BS 1989, MS 1991, PhD 2005 Idaho
- Erdogmus, Ece -2004; Assistant Professor; BS 1999 Middle East Technical (Turkey); MS 2001, PhD 2004 Penn State
- Henze, Gregor -1999; Associate Professor; MS 1991 Oregon State; PhD 1995 Colorado (Boulder)
- Houser, Kevin -1998; Associate Professor; BAE 1993; PhD 1997 Penn State
- Li, Haorong -2005; Assistant Professor; BS 1997 Nanchang (China); MS 2000 Tsinghua; PhD 2004 Purdue
- Liu, Mingsheng -1999; Professor; BS 1981, MS 1984 Harbin Institute of Architectural and Civil Engineering (China); PhD 1992 Texas A&M
- Merkel, Kenneth G. -1978; Professor; MBA 1969, MS 1975 Case Western; MA 1983, PhD 1984 Fielding Institute
- Tiller, Dale -1999; Associate Professor; BA 1983 Carleton; PhD 1989 Oxford (UK)
- Wang, Lily -2000; Associate Professor; BSE 1993 Princeton; PhD 1999 Penn State
- Waters, Clarence -2000; Associate Professor; BS 1978, MS 1988 Kansas State; PhD 1993 Penn State
- Yuill, Grenville. -1998; Professor; BS 1959 Manitoba; MS 1961 Birmingham; PhD 1972 Minnesota

Biological Systems Engineering

For faculty research interests and contact information, view the graduate program summary.

- Adamchuck, Viacheslav I. -2001; Associate Professor; BS 1996 National Agriculture (Ukraine); MS 1998, PhD 2000 Purdue
- Bashford, Gregory R. -2003; Assistant Professor; BS 1991 Nebraska (Lincoln); PhD 1995 Duke
- Billesbach, David P. -1999; Research Assistant Professor; BS 1979, MS 1982, PhD 1987 Nebraska (Lincoln)
- Brown-Brandl, Tami M. -1998; Adjunct Associate Professor, Biological Systems Engineering and US Meat Animal Research Center; BS 1993, MS 1995 Nebraska (Lincoln); PhD 1998 Kentucky
- Dickey, Elbert C. -1978; Dean, Cooperative Extension and Professor; BS 1970, MS 1974, PhD 1978 Illinois
- Dvorak, Bruce I. -1999; Associate Professor; BS 1987 Nebraska (Lincoln); MS 1990, PhD 1994 Texas (Austin)
- Easterly, Dwight -2006; Lecturer; BA 2006 Hastings
- Eigenberg, Roger A. -1995; Adjunct Associate Professor, Biological Systems Engineering and US Meat Animal Research Center; BS 1970 Hastings; MS 1976, PhD 1994 Nebraska (Lincoln)
- Eisenhauer, Dean E. -1975; Professor; BS 1971, MS 1973 Kansas State; PhD 1984 Colorado State

- Franti, Thomas G. -1993; Associate Professor; BS 1983 Wisconsin (Madison); MS 1985 Iowa State; PhD 1987 Purdue
- Gilley, John E. -1982; Adjunct Professor; BS 1972 Southern Colorado; MS 1974 Minnesota; PhD 1982 Colorado State
- Hanna, Milford A. -1975; Director, Industrial Agricultural Products Center and Kenneth E. Morrison Professor, Biological Systems Engineering and Food Science & Technology; BS 1969, MS 1971, PhD 1973 Penn State
- Hay, DeLynn R. -1981; Extension Program Leader, Cooperative Extension and Assistant Professor; BS 1966, MS 1967 Nebraska (Lincoln)
- Hay, F. John -2006; Extension Educator; BS 2001 Nebraska (Lincoln); MS 2003 Texas A&M
- Howell, Terry -1990; Adjunct Professor; BS 1969, MS 1970, PhD 1974 Texas A&M
- Hoy, Roger -2006; Professor; BS 1984 Georgia; MS 1986, PhD 1990 North Carolina State
- Hubbard, Kenneth G. -1981; Professor School of Natural Resource Sciences; BS 1971 Chadron State; MS 1973 South Dakota School of Mines; PhD 1981 Utah State
- Irmak, Suat -2003; Assistant Professor; BS 1992 Cukurova (Adana, Turkey); MS 1996 Mediterranean (Antalya, Turkey); PhD 2002 Florida
- Istanbullouglu, Erkan -2005; Assistant Professor; BS 1996, MS 1998 Uludag (Turkey); PhD 2003 Utah State
- Jones, David D. -1989; Professor; BS 1984, MS 1986 Texas A&M; PhD 1988 Oklahoma State
- Kocher, Michael F. -1990; Associate Professor; BS 1979, MS 1983 Nebraska (Lincoln); PhD 1986 Oklahoma State
- Kranz, William L. -1985; Associate Professor, Biological Systems Engineering and Northeast Research and Extension Center; BS 1976 South Dakota State; MS 1981 Nebraska (Lincoln); PhD 1998 Iowa State
- Martin, Derrel L. -1982; Professor; BS 1975, MS 1979 Nebraska (Lincoln); PhD 1984 Colorado State
- Meyer, George E. -1978; Professor; BS 1967 Cornell; MS 1971, PhD 1972 Massachusetts
- Nienaber, John A. -1971; Adjunct Professor, Biological Systems Engineering and US Meat Animal Research Center; BS 1970, MS 1971 Nebraska (Lincoln); PhD 1981 Missouri
- Pannier, Angela K. -2007; Assistant Professor; BS 2001, MS 2002 Nebraska (Lincoln); PhD 2007 Northwestern
- Schinstock, Jack L. -1977; Professor, Biological Systems Engineering and Associate Dean, College of Agricultural Sciences and Natural Resources; BA 1970 Brockport State; MA 1974 Florida State; EdD 1977 Virginia Tech
- Schulte, Dennis D. -1978; Professor; BS 1968 Nebraska (Lincoln); MS 1970, PhD 1975 Cornell
- Shelton, David P. -1976; Professor, Biological Systems Engineering and Northeast Research and Extension Center; BS 1975, ME 1976 Cornell
- Smith, John A. -1981; Professor, Biological Systems Engineering and Panhandle Research and Extension Center; BSME 1970 Tri-State; MSAE 1978 Wyoming
- Stowell, Richard R. -2001; Associate Professor; BS 1985, MS 1988 Wisconsin; PhD 1997 Michigan State
- Subbiah, Jeyamkondan -2004; Assistant Professor; BS 1997 Tamil Nadu Agricultural (India); MS 1999 Manitoba (Canada); PhD 2004 Oklahoma State
- van Donk, Simon -2007; Assistant Professor; BS 1982, MS 1985 Wageningen (The Netherlands); PhD Georgia
- Verma, Shashi B. -1974; Professor School of Natural Resource Sciences; BS 1965 Ranchi (India); MS 1967 Colorado; PhD 1971 Colorado State
- Weller, Curtis L. -1992; Professor, Biological Systems Engineering and Food Science and Technology; BS 1977, MS 1983, PhD 1987 Illinois
- Woldt, Wayne E. -1991; Associate Professor, Biological Systems Engineering and Civil Engineering; BS 1978 Colorado State; MS 1986, PhD 1990 Nebraska (Lincoln)
- Woodbury, Bryan -1999; Adjunct Assistant Professor; BS 1989, MS 1993 Montana State; MS 1996, PhD 1998 Nebraska (Lincoln)
- Yang, Yiqi -2001; Professor; MS 1984 China Textile; PhD 1991 Purdue
- Yoder, Ronald E. -2004; Professor; BS 1976 Drexel; MS 1978 Clemson; PhD 1988 Colorado State
- Yonts, C. Dean -1980; Associate Professor, Biological Systems Engineering and Panhandle Research and Extension Center; BS 1974, MS 1978 Wyoming

Chemical and Biomolecular Engineering

For faculty research interests and contact information, view the graduate program summary.

- Brand, Jennifer I. -1992; Associate Professor; BS 1973, MS 1978 Michigan; PhD 1992 California (San Diego)
- Hendrix, James L. -1994; Professor; BS 1966, MS 1968, PhD 1969 Nebraska (Lincoln)
- Inan, Mehmet -2003; Research Assistant Professor; PhD 2003 Nebraska (Lincoln)
- Larsen, Gustavo -1993; Associate Professor; BS 1985 Mar del Plata (Argentina); PhD 1992 Yale
- Lauderback, Lee L. -1990; Associate Professor; BS 1975, MS 1977, PhD 1982 Purdue
- Meagher, Michael -1989; Professor; BS 1980 Colorado State; MS 1984, PhD 1987 Iowa State
- Noureddini, Hossein -1993; Associate Professor; BS 1975 Tulsa; MS 1977, PhD 1991 Nebraska (Lincoln)
- Saraf, Ravi -2004; Professor; BS 1980 Indian Institute of Technology; MS 1986, PhD 1987 Massachusetts
- Sinha, Jayanta -2003; Research Assistant Professor; PhD 1999 Indian Institute of Technology
- Subramanian, Anuradha -2002; Assistant Professor; PhD 1995 Virginia Tech
- Swanson, Stephen T. -2001; Research Assistant Professor; PhD 1993 California (San Diego)
- Timm, Delmar C. -1967; Professor; BS 1962, MS 1965, PhD 1967 Iowa State
- Van Cott, Kevin -2004; Associate Professor; PhD 1996 Virginia Tech
- Velander, William H. -2003; Chair and Professor; BS 1977 Illinois Benedictine; PhD 1987 PSU
- Viljoen, Hendrik J. -1992; Associate Professor; BA 1979, MS 1981, PhD 1988 Pretoria (South Africa)

Civil Engineering

For faculty research interests and contact information, view the graduate program summary.

- Admiraal, David M. -1999; Assistant Professor; BS 1991 Calvin; MS 1993, PhD 1998 Illinois
- Azizinamini, Atorod -1989; Professor; BS 1977 Oklahoma; MS 1982, PhD 1985 South Carolina
- Bartelt-Hunt, Shannon L. -2006; Assistant Professor, BS 1998, MS 2000 Northwestern; PhD 2004 Virginia (Charlottesville)
- Benak, Joseph, V. -1967; Professor; BS 1952 Nebraska (Lincoln); MS 1956, PhD 1967 Illinois
- Berryman, Charles W. -1996; Assistant Professor; BS 1991, MS 1992, PhD 1995 Texas A&M
- Bogardi, Istvan -1988; Professor; BS 1959, MS 1960, PhD 1965, MS 1969 Technical (Budapest)
- Dahab, Mohamed F. -1983; Professor and Chair; BS 1974 Iowa; MS 1976, PhD 1982 Iowa State
- Dvorak, Bruce I. -1994; Associate Professor; BS 1987, MS 1990 Nebraska (Lincoln); PhD 1994 Texas (Austin)
- Faller, Ronald K. -1998; Research Assistant Professor; BS 1986, MS 1989, PhD 1998 Nebraska (Lincoln)
- Guo, Junke -2005; Assistant Professor; BS 1983 Wuhan (China); MS 1995 Purdue; PhD 1998 Colorado State
- Jones, Elizabeth G. -1996; Associate Professor; BS 1984 Colorado State; MS 1988, PhD 1996 Texas (Austin)
- Khattak, Aemal J. -2000; Assistant Professor; BS 1988 N-W.F.P. (Pakistan); MS 1995 Penn State; PhD 1999 North Carolina State
- Kim, Yong Rak -2003; Assistant Professor; BS 1997 Hanyang (Korea); MS 1999, PhD 2003 Texas A&M
- Krause, Gary L. -1994; Associate Professor; BS 1982, MS 1986 Cincinnati; PhD 1990 Michigan
- Moore, Raymond K. -1996; Professor; BS 1966, MS 1968 Oklahoma State; PhD 1971 Texas (Austin)
- Moussavi, Massoum -1987; Associate Professor; BS 1980 West Virginia; MS 1982, PhD 1984 Virginia Polytechnic
- Nowak, Andrzej, S. -2005; Professor; MS 1970, PhD 1975 Politechnika Warszawka (Warsaw, Poland)
- Rilett, Laurence, R. -2004; Professor; BS 1982, MS 1987 Waterloo (Ontario); PhD 1992 Queen's (Ontario)
- Rohde, John R. -1992; Associate Professor; BS 1981, MS 1983, PhD 1986 Iowa State
- Sicking, Dean L. -1992; Professor; BS 1980, MS 1987, PhD 1992 Texas A&M
- Stansbury, John S. -1995; Associate Professor; BS 1972 Kearney State; MS 1989, PhD 1991 Nebraska (Lincoln)
- Tadros, Maher K. -1979; Professor; BS 1967, MS 1971 Assiut (Egypt); PhD 1975 Calgary
- Tuan, Christopher Y. -1996; Associate Professor; BS 1977 National (Taiwan); MSCE 1979, MS 1980, PhD 1983 Wisconsin (Madison)
- Zhang, Tian C. -1995; Associate Professor; BS, Wuhan Polytechnic (China); MS 1982 Tsinghua (China); PhD 1994 Cincinnati

Construction

For faculty research interests and contact information, view the graduate program summary.

- Berryman, Charles W. -1996; Associate Professor; BS 1991, MS 1992, PhD 1995, Texas A&M
- Fischer, Bruce A. -2001; Assistant Professor; BSAS 1979, MArch 1982 Nebraska (Lincoln)
- Jensen, Wayne G. -2001; Assistant Professor; BS 1973 Nebraska (Lincoln); MS 1983 Southern California; PhD 2001 Wyoming
- Stegeman, Jerold D. -2004; Assistant Professor; BSCE 1982 Colorado State; MSE 1993, PhD 2001 Nevada (Las Vegas)
- Stentz, Terry L. -1998; Associate Professor; BA 1970, BS 1974, MS 1996, PhD 1997, Nebraska (Lincoln); MA 1989 Dartmouth; MPH 2000 Harvard

Electrical Engineering

For faculty research interests and contact information, view the graduate program summary.

- Alexander, Dennis R. -1976; Kingery College Professor; BS 1971, MS 1973, PhD 1976 Kansas State
- Asgarpoor, Sohrab -1989; Associate Professor; BS 1978, MS 1981, PhD 1986 Texas A&M
- Bahar, Ezekiel -1967; George Holmes Professor; BS 1958, MS 1960 Institute of Technology (Israel); PhD 1964 Colorado
- Balkir, Sina -1998; Associate Professor; BS 1987, MS 1989, PhD 1992 Northwestern
- Boye, A. John -1974; Professor; BS 1968, MS 1973, PhD 1984 Nebraska (Lincoln)
- Gursoy, Mustafa C. -2004; Assistant Professor; BS 1999, PhD 2004 Princeton
- Hoffman, Michael W. -1993; Associate Professor; BS 1985 Rice; MS 1987 Southern California; PhD 1992 Minnesota
- Hudgins, Jerry L. -2004; Professor and Chair; BSEE 1980, MSEE 1982, PhD 1985 Texas Tech
- Ianno, Natale J. -1981; Professor; BS 1978, MS 1980, PhD 1981 Illinois
- Lu, Yongfeng -2002; Professor; BS 1984 Tsinghua (China); MS 1988, PhD 1991 Osaka (Japan)
- Perez, Lance C. -1996; Associate Professor; BS 1987 Virginia; MS 1989, PhD 1994 Notre Dame
- Sayood, Khalid -1982; Professor; BS 1977, MS 1979 Rochester; PhD 1982 Texas A&M
- Schubert, Mathias -2006; Associate Professor; PhD 1997 Leipzig (Germany)
- Snyder, Paul G. -1985; Associate Professor; BS 1979 Texas Tech; MS 1981, PhD 1984 Southern California
- Soukup, Rodney J. -1976; Professor; BS 1961, MS 1964, PhD 1969 Minnesota
- Vakilzadian, Hamid -1985; Associate Professor; BS 1971 Arya-Mehr (Iran); MS 1978, PhD 1985 Arizona
- Varner, Jerald L. -1959; Associate Professor; BS 1963, MS 1965, PhD 1972 Nebraska (Lincoln)
- Velipasalar, Senem -2007; Assistant Professor; BS 1999, MS 2002, MA 2004, PhD 2006 Princeton
- Woollam, John A. -1979; George Holmes Distinguished Professor; BS 1961 Kenyon; MS 1963, PhD 1967 Michigan State; MS 1978 Case Western

Engineering Mechanics

For faculty research interests and contact information, view the graduate program summary.

- Allen, David H. -2002; Dean, College of Engineering; Professor; MS 1977, PhD 1980 Texas A&M
- Baesu, Eveline M. -1998; Associate Professor; MS 1988 Bucharest; PhD 1998 California (Berkeley)
- Bobaru, Florin -2001; Associate Professor; BS 1995, MS 1997 Bucharest; PhD 2001 Cornell
- Beatty, Millard F. -1990; Professor Emeritus; BS 1959, PhD 1964 Johns Hopkins
- Chandra, Namas -2006; Associate Dean of Research, College of Engineering; Professor; MS 1983 Houston; PhD 1986 Texas

A&M
- Chou, Seh-leh -1964; Professor Emeritus; BS 1955 Taiwan; MS 1960, PhD 1965 Wisconsin
- Dzenis, Yuris A. -1994; Professor; MS 1982 Latvian State; PhD 1990 Latvian Academy of Sciences; PhD 1994 Texas (Arlington)
- Feng, Ruqiang -1997; Associate Professor; BS 1982 Shanghai University of Science and Technology (China); MS 1991, PhD 1992 John Hopkins
- Kersten, Leendert -1957; Professor Emeritus; BA 1956, BS 1960, PhD 1971 Nebraska (Lincoln)
- Martin, Charles W. -1965; Professor Emeritus; BS 1954, MS 1959, PhD 1962 Iowa State
- Negahban, Mehrdad -1989; Associate Professor; BS 1982 Iowa State; MS 1984, PhD 1988 Michigan
- Pao, Yen-Ching -1966; Professor Emeritus; MS 1959, MA 1961 Utah; PhD 1965 Cornell
- Tan, Li -2005; Assistant Professor; BE 1994, ME 1997 Tsinghua; PhD 2002 Michigan
- Turner, Joseph A. -1997; Professor and Chair; BS 1988, MEngr 1988 Iowa State; PhD 1994 Illinois
- Yang, Jiashi -1997; Associate Professor; BS 1982, MS 1985 Tsinghua (China); PhD 1994 Princeton

Environmental Engineering

For faculty research interests and contact information, view the graduate program summary.

- Admiraal, David M. -1999; Assistant Professor, Civil Engineering; BS 1991 Calvin; MS 1993, PhD 1998 Illinois
- Bartelt-Hunt, Shannon -2006; Assistant Professor, Civil Engineering; BS 1959, MS 1960, PhD 1965, MS 1969 Technical (Budapest)
- Bogardi, Istvan -1988; Professor, Civil Engineering; BS 1959, MS 1960, PhD 1965, MS 1969 Technical (Budapest)
- Comfort, Steven D. -1992; Professor, Natural Resource Sciences; BS 1981 Wisconsin (Madison); MS 1984 Minnesota (St Paul); PhD 1988 Wisconsin (Madison)
- Dahab, Mohamed F. -1983; Professor and Chair, Civil Engineering; BS 1974 Iowa; MS 1976, PhD 1982 Iowa State
- Dvorak, Bruce -1994; Associate Professor, Civil Engineering; BS 1987, MS 1990 Nebraska (Lincoln); PhD 1994 Texas (Austin)
- Eisenhauer, Dean E. -1975; Professor, Biological Systems Engineering; BS 1971, MS 1973 Kansas State; PhD 1984 Colorado State
- Franti, Thomas G. -1993; Associate Professor, Biological Systems Engineering; BS 1983 Wisconsin (Madison); MS 1985 Iowa State; PhD 1987 Purdue
- Gilley, John E. -1982; Adjunct Professor, Biological Systems Engineering; BS 1972 Southern Colorado; MS 1974 Minnesota; PhD 1982 Colorado State
- Guo, Junke -2005; Assistant Professor, Civil Engineering; BS 1983 Wuhan (China); MS 1995 Purdue; PhD 1998 Colorado State
- Harvey, F. Edwin -1997; Assistant Professor, Natural Resource Sciences; BS 1986 Olivet Nazarene; MS 1990 Purdue; PhD 1996 Waterloo (Ontario)
- Hendrix, James -1994; Professor; BS 1966, MS 1968, PhD 1969 Nebraska (Lincoln)
- Istanbulluoglu, Erkan -2005; Assistant Professor, Biological Systems Engineering and Geosciences; BS 1996, MS 1998 Uludag (Turkey); PhD 2003 Utah State
- Koelsch, Richard K. -1995; Associate Professor, Biological Systems Engineering; BS 1975, MS 1977 Kansas State; PhD 1992 Cornell
- Larsen, Gustavo -1993; Associate Professor, Chemical Engineering; BS 1985 Mar del Plato (Argentina); PhD 1992 Yale
- Schulte, Dennis -1978; Professor, Biological Systems Engineering; BS 1968 Nebraska (Lincoln); MS 1970, PhD 1975 Cornell
- Shea, Patrick J. -1981; Professor, Natural Resource Sciences; BS 1975 Fordham; MS 1979 Connecticut; PhD 1981 North Carolina State
- Skopp, Joseph -1980; Associate Professor, Natural Resource Sciences; BS 1971 California (Davis); MS 1975 Arizona; PhD 1980 Wisconsin
- Stansbury, John -1995; Associate Professor, Civil Engineering (UNO); BS 1972 Kearney State; MS 1989, PhD 1991 Nebraska (Lincoln)
- Stowell, Richard R. -2001; Assistant Professor, Biological Systems Engineering and Animal Science; BS 1986, MS 1988 Wisconsin; PhD 1997 Michigan State
- Woldt, Wayne E. -1991; Associate Professor, Biological Systems Engineering; BS 1978 Colorado State; MS 1986, PhD 1990 Nebraska (Lincoln)
- Yoder, Ronald E. -1999; Professor, Biological Systems Engineering; BS 1976 Drexel; MS 1978 Clemson; PhD 1988 Colorado State
- Zhang, Tian C. -1995; Professor, Civil Engineering (UNO); BS, Wuhan Polytechnic (China); MS 1982 Tsinghua (China); PhD 1994 Cincinnati

Industrial and Management Systems Engineering

For faculty research interests and contact information, view the graduate program summary.

- Adams, Stephanie G. -1998; Associate Professor; BME 1989 North Carolina A&T; MS 1991 Virginia; PhD 1998 Texas A&M
- Ballard, John L. -1974; Professor; BSIE 1971, MSIE 1972, PhD 1974 Arkansas
- Bishu, Ramaratnam -1985; Professor; BTech 1970 Indian Institute of Technology (Madras); MS 1983, PhD 1986 SUNY (Buffalo)
- Choobineh, Fred -1978; Professor; BSEE 1972, MSIE 1976, PhD 1979 Iowa State
- Cochran, David J. -1972; Professor; BA 1964, MS 1970, PhD 1973 Oklahoma
- Hallbeck, M. Susan -1989; Associate Professor; BS 1984 Iowa State; MS 1985 Texas Tech; PhD 1990 Virginia Polytech Institute
- Hoffman, Richard O. -1970; Professor; BS 1963, MS 1966 Iowa State; PhD 1971 Virginia Polytech Institute
- Jones, Erick C. -2003; Assistant Professor; BS 1993 Texas A&M; MS 1996, PhD 2003 Houston

- Ko, Jeonghan -2007; Assistant Professor; BS 1993 Seoul National University; MS 2000 Seoul National University; MS 2004 University of Michigan (Ann Arbor); PhD 2006 University of Michigan (Ann Arbor)
- Rajurkar, Kamlakar P. -1983; Professor; BE 1966 Jabalpur (India); MS 1978, PhD 1981 Michigan Tech
- Riley, Michael W. -1975; Professor; BSEE 1968 Missouri (Rolla); MSME 1973 New Mexico State; PhD 1975 Texas Tech
- Savory, Paul A. -1994; Associate Professor; BS 1988, MS 1989 Oregon State; PhD 1993 Arizona State
- Schneider, Morris H. -1965; Professor Emeritus; BS 1959 Nebraska (Lincoln); MS 1961 Kansas State; PhD 1966 Oklahoma State
- Williams, Robert E. -1993; Associate Professor; BS 1984 Lehigh; MS 1989, PhD 1993 Nebraska (Lincoln)

Manufacturing Systems Engineering

For faculty research interests and contact information, view the graduate program summary.

- Bishu, Ramaratnam -1985; Professor; BTech 1970 Indian Institute of Technology (Madras); MS 1983, PhD 1986 SUNY (Buffalo)
- Choobineh, Fred -1978; Professor; BSEE 1972, MSIE 1976, PhD 1979 Iowa State
- Cochran, David J. -1972; Professor; BA 1964, MS 1970, PhD 1973 Oklahoma
- Hoffman, Richard O. -1970; Professor; BS 1963, MS 1966 Iowa State; PhD 1971 Virginia Polytech Institute
- Rajurkar, Kamlakar P. -1983; Professor; BE 1966 Jabalpur (India); MS 1978, PhD 1981 Michigan Tech
- Riley, Michael W. -1975; Professor and Chair; BSEE 1968 Missouri (Rolla); MSME 1973 New Mexico State; PhD 1975 Texas Tech
- Schneider, Morris H. -1965; Professor Emeritus; BS 1959 Nebraska (Lincoln); MS 1961 Kansas State; PhD 1966 Oklahoma State
- Williams, Robert E. -1993; Associate Professor; BS 1984 Lehigh; MS 1989, PhD 1993 Nebraska (Lincoln)

Materials Engineering

For faculty research interests and contact information, view the graduate program summary.

- Brand, Jennifer I. -1992; Associate Professor; BS 1973, MS 1978 Michigan; PhD 1992 California (San Diego)
- Dzenis, Yuris A. -1994; Professor; MS 1982 Latvian State; PhD 1990 Latvian Academy of Sciences; PhD 1994 Texas (Arlington)
- Feng, Ruqiang -1997; Associate Professor; BS 1982 Shanghai University of Science and Technology (China); MS 1991, PhD 1992 John Hopkins
- Ianno, Natale J. -1981; Professor; BS 1978, MS 1980, PhD 1981 Illinois
- Istanbulluoglu, Erkan -2005; Assistant Professor, Biological Systems Engineering and Geosciences; BS 1996, MS 1998 Uludag (Turkey); PhD 2003 Utah State
- Negahban, Mehrdad -1989; Associate Professor; BS 1982 Iowa State; MS 1984, PhD 1988 Michigan
- Robertson, Brian W. -1990; Professor; BSc 1975, PhD 1979 Glasgow (Scotland)
- Rohde, Suzanne L. -1992; Professor; BS 1985 Iowa State; MS 1988, PhD 1991 Northwestern
- Saraf, Ravi -2004; Professor; BS 1980 Indian Institute of Technology; MS 1986, PhD 1987 Massachusetts
- Shield, Jeffrey E. -2001; Professor; BS 1975 Morningside; PhD 1980 Iowa State
- Tan, Li -2005; Assistant Professor; BE 1994, ME 1997 Tsinghua; PhD 2002 Michigan
- Turner, Joseph A. -1997; Professor and Chair; BS 1988, MEngr 1988 Iowa State; PhD 1994 Illinois

Mechanical Engineering

For faculty research interests and contact information, view the graduate program summary.

- Barton, John P. -1986; Professor; BS 1973 Missouri; MS 1974, PhD 1980 Stanford
- Cole, Kevin D. -1988; Associate Professor; BS 1977 Iowa State; MS 1979 Minnesota; PhD 1986 Michigan State
- DeAngelis, Robert J. -1990; Professor Emeritus; BS 1956 Case Western; MS 1961, PhD 1968 Northwestern
- Ehlers, Lawrence E. -1966; Professor Emeritus; BS 1957, MS 1960 Kansas State; PhD 1969 Oklahoma State
- Farritor, Shane -1998; Associate Professor; BS 1992 Nebraska (Lincoln); MS 1994, PhD 1998 MIT
- Gogos, George -1993; Professor; BS 1980 MIT; MS 1982, PhD 1986 Pennsylvania
- Johnson, Donald L. -1963; Professor Emeritus; METE 1950, MS 1956 Colorado Mines; PhD 1968 Nebraska (Lincoln)
- Lou, David Y.S. -1993; Professor; BS 1959 National (Taiwan); MS 1963, ScD 1967 MIT
- Nelson, Carl -2005; Assistant Professor; BS 2000 Oklahoma; MS 2002, PhD 2005 Purdue
- Nelson, Russell C. -1961; Professor Emeritus; BS 1948 Lehigh; MS 1949, DSc 1951 Colorado Mines
- Reid, John D. -1993; Professor; BS 1981, MS 1983, PhD 1990 Michigan State
- Robertson, Brian W. -1990; Professor; BSc 1975, PhD 1979 Glasgow (Scotland)
- Rohde, Suzanne L. -1992; Professor; BS 1985 Iowa State; MS 1988, PhD 1991 Northwestern
- Schade, George R. -1979; Associate Professor; BS 1987 South Dakota School of Mines; PhD 1992 Iowa State
- Shield, Jeffrey E. -2001; Professor; BS 1975 Morningside; PhD 1980 Iowa State
- Szydlowski, Wieslaw M. -1992; Associate Professor; MS 1966, PhD 1975 Technical (Warsaw, Poland)
- To, C. W. Solomon -1996; Professor; BS 1973 Southampton; MS 1975 Calgary; PhD 1980 Southampton
- Wolford, James C. -1954; Professor Emeritus; BS 1947, MS 1952 Nebraska (Lincoln); PhD 1956 Purdue
- Wu, Lin -2003; Assistant Professor; BS 1993 Aeronautics and Astronautics (Beijing); MS 1997 Arizona State; PhD 2001 California (Berkeley)
- Zhang, Zhaoyan -2002; Assistant Professor; BS 1990 North China Institute of Electric Power; MS 1995 Beijing Institute of Polymer Technology; PhD 2000 Penn State

Telecommunications Engineering

For faculty research interests and contact information, view the graduate program summary.

- Chen, Bing -1965; Professor; MS 1970, PhD 1978 Nebraska (Lincoln)
- Ci, Song -2006; Assistant Professor; MS 1998 Chinese Academy of Sciences; PhD 2002 Nebraska (Lincoln)
- Jang, Won Mee -1998; Assistant Professor; BA 1984 Minnesota; MS, MA 1987 George Mason; DSC 1996 George Washington
- Liu, Chunsheng -2003; Assistant Professor; MS 2000 Tsinghua; PhD 2003 Duke
- Nguyen, Lim -1996; Associate Professor; BS 1983 MIT; MS 1991 Caltech; PhD 1996 Rice
- Peng, Dongming -2002; Assistant Professor; MS 1996 Aeronautics and Astronautics (Beijing); PhD 2003 Texas A&M
- Sharif, Hamid -1986; Professor; MS 1984 Missouri; PhD 1996 Nebraska (Lincoln)
- Yang, Yaoqing (Lamar) -2006; Assistant Professor; MS 1986 Beijing Broadcast Institute; PhD 2006 Texas (Austin)

Courses for English (ENGL)

English

801. Drama (3 cr)

Particular historical periods or other groupings of dramas, examining the relation of the writers both to one another and to the aesthetic and intellectual climate of their times. Examples: drama survey, modern drama, American drama, Shakespeare's contemporaries in drama.

801K. Gay and Lesbian Drama (3 cr)

Overview of contemporary gay and lesbian drama.

802. Poetry (3 cr) Lec 3.

Epic, Renaissance, Romantic, Victorian, American, and contemporary poetry.

802L. Romantic Poetry (3 cr) Lec 3.

Survey of British poetry, 1780-1835. The traditional major authors and some of the many other poets whose works were popular and influential. The social, historical, and cultural context.

803. American Short Story (3 cr) Lec 3.

The narrative genre of the short story, as represented by stories from American authors of the 19th century to the present day.

805. Fiction (3 cr) Lec 3.

Fiction, primarily novels, in particular historical periods or other groups. The relation of the writers both to one another and to the aesthetic and intellectual climate of their time.

805A. 19th Century British Novel (3 cr) Lec 3.

The most popular and influential literary genre in the 19th century, the novel, through representative Romantic, Victorian, and "fin de siecle" (end of century) works.

805B. 18th Century British Novel (3 cr) Lec 3.

Survey of British fiction (primarily novels), 1780-1850. Major and minor authors whose works illustrate the tastes and trends of British fiction in the early modern period. The literary, social, and cultural context.

805E. Modern Fiction (3 cr) Lec 3.

Key British and American novels and short stories from about 1910 to 1950. Modernism as a literary and cultural practice. Modernism's interpretation of the revolutionary changes in culture and society in the first half of the 20th century. The relation between modernism and postmodernism.

805J. 20th Century British Fiction (3 cr) Lec 3.

Twentieth century British novels and short stories. Modernism and postmodernism as aesthetic, cultural, and social movements and phenomena.

805K. Canadian Fiction (3 cr) Lec 3.

Survey of modern Canadian novels and short stories from 1920 to the present plus some other genres. The historical and cultural context.

805M. American Novel I (3 cr) Lec 3,

Survey of novels written by a variety of men and women of diverse backgrounds in the United States from the late 18th century to 1900.

805N. American Novel II (3 cr) Lec 3.

Survey of novels written by a variety of men and women of diverse backgrounds in the United States from 1900 to the present day.

806. Genre (3 cr)

History and theory of the concept of genre as exemplified in literary works in various forms. Examples: comedy, tragedy, and satire.

810. Studies in Literary Movements (3 cr) Lec 3.

Intensive study of a literary movement (national or transnational), the development of a genre, or the intellectual and historical origins of an idea, as reflected in literature. May include the literature of abolition, alternative Romanticisms, literary modernism, the literature of Civil Rights, postmodernism, and/or the avant garde movement.

811B. Plains Literature (3 cr)

813. Film (3 cr)

814. Women's Literature (3 cr) Lec 3.

Particular historical or other groups of literature by and about women, seen in their aesthetic and intellectual context.

814B. Modern and Contemporary Women Writers (WMNS 814B) (3 cr) Lec 3.

Selected women writers from the 20th and 21st centuries.

820. Introduction to Linguistics (3 cr)

Introduction for advanced students to the history and methods of linguistics, to the theory of language, and to applications of linguistics in a variety of fields and disciplines.

826. History of the English Language (3 cr)

Survey of historical development of contemporary English with attention to its Old and Middle English background.

827. Applications of Linguistics (3 cr)

Application of the principles of linguistics. Examples: TESOL Theory and Practice, Second Language Composition Theory and Practice; Introduction to First and Second Language Acquisition; Teaching of Grammar.

828. Old English (3 cr)

aimed at enabling students to read and understand literary texts of the period in their historical context.

828B. Middle English (3 cr)

830. British Authors to 1800 (3 cr) Lec 3.

The works of a particular major author, such as Chaucer, Shakespeare, or Milton situated within literary, historical, biographical, and critical context.

830A. Shakespeare I (3 cr) Lec 3.

How performance-based strategies can help in understanding and in teaching Shakespeare's plays. The historical and contemporary stage practices, the performance history of these plays, and recent criticism that engages with the insights of both Performance Theory and Semiotics.

*830J. Music and Text in the English Renaissance (MUSC *830J) (3 cr)

Prereq: MUSC 366

Interconnections between musical and literary composition at a time when practitioners in both areas were profoundly influenced by developments in each others' fields.

832. American Authors to 1900 (3 cr)

Works of a particular major author seen in a wide critical context. Example: Mark Twain.

833. American Authors since 1900 (3 cr)

Works of a particular major author seen in a wide critical context. Example: William Faulkner.

839. Film Directors (3 cr)

Films of one director or a small group of directors, with emphasis on an auteur approach. Weekly film screenings.

840. Classical Drama (CLAS 883) (3 cr)

Greek and Roman tragedy and comedy in translation.

845. Ethnic Literature (ETHN 445) (3 cr) Lec 3.

Works of writers with connections to one or more American ethnic communities, seen in their historical, intellectual, and cultural

context. Survey of ethnic literature.

845B. African-American Literature (ETHN 445B) (3 cr) Lec 3.

Selected works of African-American poetry, fiction and/or nonfiction prose.

845E. Native American Literature (ETHN 445E) (3 cr) Lec 3.

Works of Native American poetry, fiction, and/or nonfiction prose. Critical theory and cultural criticism.

845K. African/African-American Literature (ETHN 445K) (3 cr) Lec 3.

Selected works of African and African-American poetry, fiction and/or nonfiction prose.

852. Advanced Fiction Writing (3 cr)

Prereq: ENGL 252 or 253 or permission

For advanced students with previous experience in fiction writing. Longer projects in fiction writing emphasized.

853. Advanced Poetry Writing (3 cr)

Prereq: ENGL 253 or permission

For advanced students with previous experience in poetry writing.

854. Advanced Writing Projects (3 cr)

Prereq: 3 hrs English composition above the ENGL 200 level or permission

Advanced writing workshop in which experienced writers develop extended projects in writing, analyze their own and others' writing processes, and read widely in genres related to their projects.

857. Composition Theory and Practice (3 cr)

Recent research on language development and the process of writing. Applications of theory to composition instruction, especially in K-12 grades.

857A. Composition and Rhetorical Theory (3-4 cr)

Theoretical approaches to writing instruction and to the field of composition and rhetoric.

859. Writing for Film (3 cr) Lec 3.

ENGL 859 is for the advanced student with previous experience in script writing.

Development of longer forms of screenplays.

862. Survey of Medieval Literature (3 cr)

Readings in the various genres and movements of Medieval English literature and their cultural context.

862A. Ideas of Ethnicity in Medieval Literature (3 cr)

Medieval literary texts involving encounters between different religions and cultures. Reading: chronicles, romances, debates, and epics.

863. Survey of Renaissance Literature (3 cr)

Major authors and works of the sixteenth and early seventeenth centuries with attention to the development of poetic and prose literary forms and their cultural context.

864. British Literature 1660-1800 (3 cr)

Major writers and critical issues of the period. Emphasis on poetry and nonfiction prose.

865. Nineteenth-Century British Literature (3 cr)

Poetry and prose of the Romantic and Victorian periods with emphasis on their intellectual and cultural context.

867. Literary History (3 cr)

Theory of literary periods and movements and the causes for change among them. Periods, movements, and readings are usually taken from British literature from about 1475 to about 1950.

871. Literary Criticism and Theory (3 cr)

History, analysis and application of a variety of trends in literary criticism and critical theory.

875. Rhetoric (3 cr) Lec 3.

ENGL 475/875 may not be offered every year.

Rhetoric and rhetorical theory in relation to literature, composition, and language.

875A. Rhetorical Theory: Rhetoric of Women Writers (WMNS 875A) (3 cr) Lec 3.

Rhetoric and rhetorical theory of women writers and speakers and its implications for literature, composition, literacy, feminist theory, and women's and gender studies.

878. Electronic Texts: Theory and Practice (3 cr) Lec 3.

The shift from printed to digital texts and its implications for the nature of meaning and research in the humanities. Practice in digitally encoding texts and analysis of representative electronic projects dedicated to a variety of authors and genres.

880. Writing Theory and Practice for Consultants (3 cr) Lec 3.

Successful completion of ENGL 480/880 is required to intern or work as a consultant in UNL's Writing Assistance Center. Introduction to issues and scholarship in teaching writing and working as a writing consultant.

*881. GESL/Academic Research (3 cr)

*882. Literacy Issues and Community (3-6 cr)

Literacy theory and its application in school, community, and workplace environments. May include a literacy and/or writing internship in a community or workplace setting.

*884. GESL/Advanced Academic Writing (1-3 cr)

Prereq: Permission

Individualized tutorial instruction focused on the student's particular grammar and writing problems.

*886. GESL and/or Academic Language Skills (3 cr)

Prereq: Permission

For international graduate students designed to develop academic language skills.

*887. GESL and/or Academic Research Skills (3 cr)

Prereq: Permission

Advanced tutorial in academic writing for international graduate students.

*888. Spoken English for International Students (3 cr)

Prereq: Permission

Speech improvement course for international graduate students.

889. Medieval Literature and Theology (RELG 889) (3 cr)

Exploration of the relationship between significant medieval theologies and primary medieval poets and prose masters.

*895. Internship in Teaching English (1-3 cr)

Prereq: Permission

*895A. Nebraska Writing Project Internship (1-3 cr)

Prereq: Permission

*897. Independent Directed Reading (1-6 cr)

Prereq: Permission

898. Special Topics in English (1-6 cr, max 6)

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Seminar in Drama (1-24 cr)

902. Seminar in Poetry (1-24 cr)

905. Seminar in Prose Fiction (1-24 cr)

911. Seminar in Plains Literature (1-24 cr)

913. Studies in Film (3-4 cr)

914. Seminar in Women Writers (1-24 cr)

915. Popular Literature (1-24 cr)

918. Interdisciplinary Seminar in Nineteenth-Century Studies (HIST 918; MODL 918) (3 cr, max 6)
Invention of the nineteenth century, gender, colonialism, class, realism science and technology.

919. Interdisciplinary Approaches to the Nineteenth Century (HIST 919; MODL 919) (3 cr)
Introduction to the nineteenth century in North America (focusing on the US), Great Britain, and Europe (focusing on France, Germany, Russia, and Spain), organized through themes such as constructions of gender and sexuality, democracy in the nation-state, and challenges to religion.

920. Seminar in Linguistics (1-24 cr)

927. Stylistics (1-24 cr)

930. Seminar in British Authors to 1800 (1-24 cr)

931. Seminar in British Authors since 1800 (1-24 cr)

932. Seminar in American Authors to 1900 (1-24 cr)

933. Seminar in American Authors since 1900 (1-24 cr)

940. Seminar in African-American Literature (1-24 cr)

953. Seminar in Creative Writing (1-24 cr)

957. Composition Theory and Practice (1-24 cr)

961. Seminar in American Literature (1-24 cr)

962. Seminar in Medieval Literature (1-24 cr)

963. Seminar in Renaissance Literature (1-24 cr)

964. Seminar in Restoration and Eighteenth-Century Literature (1-24 cr)

965. Seminar in Nineteenth-Century Literature (1-24 cr)

967. Seminar in Modern Literature (1-24 cr)

970. Literary Theory (3-4 cr)

971. Seminar in Literary Theory (1-24 cr)

973. Seminar in Literacy Studies (1-24 cr)

976. Seminar in Rhetorical Theory (1-24 cr)

986. Approaches to English Studies (3 cr)
Emerging models of English studies that cross traditional boundaries. Traces disciplinary concerns across three registers: scholarship, curriculum, and pedagogy.

987. Seminar in Humanities and Public Policy (3-4 cr)
Strategies for using the humanities to change or develop policy, the public policy roles of humanities and education scholars, and strategies for obtaining funding, permanence, and effectiveness.

988. Introduction to the Interdisciplinary Study of the Middle Ages (AHIS 988; HIST 988; MODL 988; MUSC 988) (3 cr)
Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Middle Ages. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

989. Introduction to the Interdisciplinary Study of the Renaissance (AHIS 989; HIST 989; MODL 989; MUSC 989) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Renaissance. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

990. Introduction to Research and Scholarship in English (1-3 cr, max 3)

Introduction to a variety of approaches to research and scholarship current in the discipline.

991. Nebraska Literature Project (1-24 cr)

992. Nebraska Humanities Project (1-24 cr)

992B. Place Conscious Teaching (1-6 cr, max 6) Lec.

Theory and practice of teaching writing, literature, and rhetoric in connection with local place, region, and community.

994. Application of Learning and Teaching English (3-4 cr)

995. Teaching of College English (1-24 cr)

996. Bibliography and Methods (3-4 cr)

997. Independent Directed Reading (1-24 cr)

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Joy Ritchie, Ph.D.

Graduate Committee: Professors Reynolds (chair), Brooke, Dreher, Nisse, Stenberg

The Department of English offers MA and PhD work in ten major fields of study: Medieval, Renaissance, Restoration and Eighteenth-Century, Nineteenth-Century British, American Literature to 1900, Modern British and American, Composition and Rhetoric, Creative Writing, Women's Literature, Plains Literature, Ethnic Literature, and Critical Theory.

Master of Arts Degree.

The prerequisite for admission to work leading to the degree of master of arts with specialization in English is normally an undergraduate major in English. The application for admission must include transcripts, three letters of recommendation, vita, evidence of teaching potential, a statement of educational goals, and a sample of the student's scholarly writing. The GRE general test score may be submitted but is not required. If the student is applying to the Creative Writing Program, a creative writing sample must be submitted, in addition to the critical writing sample. Foreign students whose native language is not English must submit a score of 100 or higher on the Internet-based TOEFL or 600 or higher on the paper-based TOEFL. Masters students must satisfy course distribution requirements and take a comprehensive examination or write a thesis. Further information about the program is available upon request from the chairperson of the Graduate Committee.

Doctor of Philosophy Degree.

Students can apply for the PhD program directly from the BA, or with an MA or MFA. The application for admission must include transcripts (graduate and undergraduate), three letters of recommendation, a sample of the student's scholarly writing, a personal statement of the applicant's interests and goals in obtaining a PhD, a vita, and evidence of teaching experience or potential. The GRE general test score may be submitted but is not required. Creative writing applicants should submit a portfolio of their work. Foreign students whose native language is not English must submit a score of 100 or higher on the Internet-based TOEFL or 600 or higher on the paper-based TOEFL. Doctoral students shape their own program of study with the guidance of a Supervisory Committee and take a three-part comprehensive examination. Fluency in one foreign language, reading knowledge of two foreign languages, or reading knowledge of a foreign language plus a collateral field, are also required. Students will ordinarily be expected to complete at least 60 hours of course work beyond the bachelors degree and 24-30 hours in dissertation credit. Further information about the program is available upon request from the chairperson of the Graduate Committee.

Specializations available for both the MA and PhD degrees:

Great Plains Studies; International Human Rights and Diversity; Nineteenth-Century Studies; Women's and Gender Studies.

Course Offerings--Important Note.

The course offerings in English are described in this bulletin for the most part in general terms only. For the precise courses offered or to be offered in the next semester, see the Schedule of Classes and Course Description Booklet. The Booklet is available in the Department of English.

Course Requirements.

Beginning MA students must take ENGL 990 (Introduction to Literary Scholarship). Teaching assistants must take ENGL 957 (Composition Theory and Practice). Students may not take more than 6 hours of independent directed reading (ENGL 897 or 997) as part of their MA or PhD program.

NOTE: For specific topics of each course for any particular semester, consult the Schedule of Classes for that semester.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Abel, Marco -2004; Assistant Professor; BA 1995 Georgia State; MA 1997, PhD 2003 Penn State
- Agee, Jonis -2000; Professor; BA 1966 Iowa; MA 1969, PhD 1976 SUNY (Binghamton)
- Bauer, Grace -1995; Associate Professor; BA 1974 Temple; MFA 1987 Massachusetts
- Behrendt, Stephen C. -1980; George Holmes Distinguished Professor; BA 1969 Wisconsin; MA 1970 Eastern Kentucky; PhD 1974 Wisconsin
- Belasco, Susan -2000; Professor; BA 1972, MA 1974 Baylor; MA 1982 Leicester (England); PhD 1987 Texas A&M
- Blaha, Franz G. -1969; Associate Professor; AB 1960 Bundeserzienung (Austria); PhD 1968 Graz
- Brooke, Robert E. -1985; Professor; BA 1979 Gonzaga; MA 1982, PhD 1984 Minnesota
- Buhler, Stephen -1989; Professor; BA 1976 California State; MA 1983, PhD 1987 California
- Castro, Joy -2007; Associate Professor; BA 1990 Trinity; MA 1992, PhD 1997 Texas A&M
- Condon, Frankie -2007; Associate Professor; BFA 1984 York; MA 1993 Clarion; PhD 2000 SUNY (Albany)
- Couture, Barbara A. -2004; Professor, English and Senior Vice Chancellor for Academic Affairs; BA 1970, MA 1973, PhD 1980 Michigan
- DiBernard, Barbara J. -1978; Professor; BA 1970 Wilson; MA 1975, PhD 1976 SUNY (Binghamton)
- Dixon, Wheeler W. -1984; J. Ryan Professor of English and Chair of Film Studies Program; BA 1972, MA 1978, MPh 1978, PhD 1982 Rutgers
- Dreher, Kwakiutl L. -2001; Assistant Professor English and Ethnic Studies; BA 1980 South Carolina; MA 1996 Clark (Atlanta); PhD 2001 California (Riverside)
- Ford, James E. -1981; Associate Professor; BA 1968 Brigham Young; MA 1971 California State; PhD 1981 Chicago
- Foster, Gwendolyn A. -1997; Associate Professor; BA 1983 Rutgers; MA 1992, PhD 1995 Nebraska (Lincoln)
- Gallagher, Christopher -1998; Associate Professor; BA 1991 Merrimack; MA 1993 New Hampshire; PhD 1998 SUNY (Albany)
- Gannon, Thomas -2003; Assistant Professor, English and Ethnic Studies; BA 1979, MA 1989 South Dakota; PhD 2003 Iowa
- Goodburn, Amy M. -1994; Associate Professor; BA 1987, MA 1990, PhD 1994 Ohio State
- Gregory, Donald L. -1967; Associate Professor; AB 1960 Bucknell; MA 1962, PhD 1967 Ohio State
- Harpending, Michael -1999; Associate Professor and Coordinator PIESL Programs; BA 1972 Arkansas (Little Rock); MA 1976 San Francisco; PhD 1996 Texas A&M
- Hawley, Anthony Elliott -2005; Lecturer; BA 1999, MFA 2002 Columbia
- Homestead, Melissa -2005; Associate Professor, AB Smith College; AM, PhD 1998 Pennsylvania
- Honey, Maureen A. -1979; Professor; BA 1967, MA 1970, PhD 1979 Michigan State
- Kaye, Frances W. -1977; Professor; BA 1970, MA 1972, PhD 1973 Cornell
- Kaye-Skinner, T. Lew -2000; Lecturer; BA 1978 Nebraska (Lincoln); MDiv 1981 Iliff School of Theology; MA 1991 Iowa; MA 1994, PhD 2000 Nebraska (Lincoln)
- Kooser, Ted -1993; Visiting Professor; BS 1962 Iowa State; MA 1968 Nebraska (Lincoln)
- Kuzma, Greg S. -1969; Professor; AB 1966, MA 1967 Syracuse
- Lynch, Thomas P. -2004; Assistant Professor; BA 1977 Pennsylvania; MA 1981, PhD 1989 Oregon
- Minter, Deborah W. -1996; Associate Professor; BA 1985 Kalamazoo; MA 1989 Georgetown; PhD 1996 Michigan
- Montes, Amelia -2000; Assistant Professor English and Ethnic Studies; BA 1980 Loyola; MEd 1989 Azusa Pacific; MA 1994, PhD 1999 Denver
- Nisse, Ruth -1995; Associate Professor; BA 1987 Columbia; PhD 1995 California (Berkeley)
- Oakley, Seanna Sumalee -2005; Assistant Professor; PhD Wisconsin (Madison)
- Pratt, Linda R. -1968; Professor and Executive Vice President and Provost, Graduate College Dean (University of Nebraska); AB 1965 Florida Southern; MA 1966, PhD 1971 Emory
- Price, Kenneth M. -2000; Professor and Hillegass Chair in 19th Century American Literature; BA 1976 Whitman; MA 1977, PhD 1981 Chicago
- Ramsay, Stephen -2006; Assistant Professor; BA 1992 Rutgers; MA 2000, PhD 2003 Virginia
- Raz, Hilda -1993; Professor and Glenna Luschei Editor of Prairie Schooner; BA 1960 Boston
- Reynolds, Guy -2003; Professor; BA 1985, MA 1989, PhD 1992 Cambridge
- Ritchie, Joy -1988; Professor; BA 1967 Columbia; MA 1969 Indiana; PhD 1983 Nebraska (Lincoln)
- Rutledge, Gregory E. -2005; Assistant Professor; BA 1989 Emory; JD/MA 1992 Florida; MA 1999, PhD 2005 Wisconsin (Madison)
- Schleck, Julia -2006; Assistant Professor; BA 1999 Drew; PhD 2006 New York
- Shapiro, Gerald D. -1987; Professor; BA 1972, MA 1973 Kansas; MFA 1987 Massachusetts
- Slater, Judith -1987; Professor; BA 1973 Oregon; MA 1987 San Francisco State; MFA 1987 Massachusetts
- Stenberg, Shari J. -2007; Associate Professor; BA 1996 Drake; PhD 2000 SUNY (Albany)
- Stillwell, Mary K. -2004; Lecturer; BA 1966 St. Mary (Leavenworth); MA 1998 Nebraska (Omaha); PhD 2004 Nebraska

(Lincoln)
- Stock, Robert D. -1967; Professor; AB 1963 Kent; MA 1965, PhD 1967 Princeton
- Vespa, Jack -2004; Lecturer; BS 1985 Illinois State; MA 1991 Southern Illinois (Carbondale); PhD 2001 Utah
- White, Laura Mooneyham -2000; Associate Professor; BA 1980 Yale; MA 1984, PhD 1986 Vanderbilt

Courses for Forensic Science (FORS)

Courses for Entomology (ENTO)

Entomology

Subject Areas

- Entomology (ENTO)
- Forensic Science (FORS)

800. Biology and Classification of Insects (4 cr I) Lec 3, lab 3.

Offered fall semester even-numbered calendar years. Biology and ecology of common families of insects. Sight recognition of 22 Orders and 105 Families, identification of other families with keys. Student project at species level.

801. Insect Physiology (4 cr I) Lec 2, lab arr.

Prereq: CHEM 251, 12 hrs entomology or biological sciences (zoology)

Offered fall semester odd-numbered calendar years. Functions and other phenomena associated with the major organ systems of insects; the cuticle, nervous, circulatory, digestive, metabolism, nutrition, locomotion, reproduction, respiration, and growth and development.

802. Aquatic Insects (BIOS 885; NRES 802) (2 cr II) Lec 2.

Prereq: 12 hrs biological sciences or permission

Biology and ecology of aquatic insects.

802L. Identification of Aquatic Insects (BIOS 885L; NRES 802L) (1 cr II) Lab 1.

Prereq: Must be taken parallel with ENTO/NRES 802/BIOS 885

Identification of aquatic insects to the family level.

803. Management of Horticultural Crop Insects (3 cr)

Prereq: Introductory course in biology

Credit toward the degree cannot be earned in both ENTO 303 and ENTO 403/803. Biology, ecology and management of insect pests of horticultural crops such as vegetables, fruit trees, trees and shrubs, greenhouse crops, turf and ornamentals. Employs IPM strategies to maintain pests below damaging levels while minimizing the use of traditional insecticides.

804. Comparative Insect Anatomy and Histology (4 cr II) Lec 2, lab 4.

Prereq: 12 hrs entomology and/or biological sciences or permission

Offered spring semester odd-numbered calendar years. Analysis and comparison of macro- and microanatomical features of major insect groups presented as the basis for understanding insect development, variation, homologies of structures, and synthesis of theories of evolution.

806. Insect Ecology (BIOS 806) (3 cr II) Lec.

Prereq: BIOS 220 and 222

Interrelationships of the biotic and abiotic factors as they influence insect development, behavior, distribution, and abundance.

807. Urban and Industrial Entomology (3 cr) Lec 3.

Prereq: BIOS 101 and 101L or permission; ENTO 115 recommended

Offered fall semester of odd-numbered years. Insects and selected vertebrate pests that infest homes, hospitals and health facilities, museums, restaurants, grain mills, food processing plants and warehouses and their management.

809. Insect Control by Host Plant Resistance (2 cr II) Lec 2.

Prereq: 12 hrs agricultural sciences and/or biological sciences including one course in entomology and one course in genetics

AGRO *815 desirable but not required. Offered spring semester odd-numbered calendar years. Nature and mechanisms of plant resistance to insect attack and the utilization of resistance for insect control.

810. Insects as Educational Tools for the Classroom (3 cr)

Prereq: Introductory entomology course or permission

Class taught via Blackboard. Offered fall semester. Insect diversity, insect structure and function, insect ecology and behavior, and the beneficial and detrimental roles of insects. Integrates the study of insects into the classroom to enhance science education.

811. Field Entomology (BIOS 882) (4 cr)

Prereq: 12 hrs entomology or biological sciences and permission

Offered summers only at Cedar Point Biological Station. Field course in insect taxonomy and biology emphasizing field collection, specimen preparation, classification, and insect natural history.

812. Entomology and Pest Management (3 cr II)

Prereq: Introductory course in entomology

Principles and practices of managing insect pests. Pest management theory, use of sampling, evaluation, tactics, types of insect pests, and current issues.

*813. Biological Control of Pests (PLPT *813) (3 cr II) Lec 3.

Prereq: 12 hrs BIOS and/or agricultural sciences

*ENTO/PLPT *813 is offered spring semester of even-numbered calendar years.*

Principles and practices of using natural enemies and antagonists to manage the abundance of pests and reduce economic losses.

814. Forensic Entomology (3 cr II)

Prereq: Introductory course in entomology

Application of entomology to legal issues. Criminal investigations, insects of forensic importance, insect succession on carrion, and case studies.

815. Medical Entomology (3 cr I)

Prereq: Introductory course in entomology

Direct and indirect importance of insects in human medicine. Principles of arthropod-borne disease, medically important arthropod groups, and arthropod-transmitted diseases.

*815A. Self-pollinated Crop Breeding (AGRO *815A) (1 cr)

Prereq: AGRO 315

Self-pollinated plant breeding theory and methods. Pedigree, bulk, single seed descent, back-crossing methods and inbreeding theory.

*815B. Germplasm and Genes (AGRO *815B) (1 cr)

Prereq: AGRO 315

Obtaining germplasm and genes from cultivated plants, wild relatives of cultivated plants, and the biosphere. Origination of crops, mutation genetics, biotechnology as a source of genes, chromosomal engineering and plant reproduction.

*815D. Cross-pollinated Crop Breeding (AGRO *815D) (1 cr)

Prereq: AGRO 315

Cross-pollinated breeding theory and methods. Genes in populations, recurrent selection methods, creating populations, hybrid production practices, and population improvement theory.

816. Veterinary Entomology/Ectoparasitology (ASCI 816; NRES 816; VBMS 816) (2 cr II) Lec 2.

Prereq: 10 hrs entomology or biological science or related fields or permission

Arthropods that cause or vector diseases in animals. Arthropod recognition and biology, and disease epidemiology.

816L. Veterinary Entomology/Ectoparasitology Lab (ASCI 816L; NRES 816L; VBMS 816L) (1 cr II)

Prereq: ASCI, NRES, VBMS 816; or parallel

*817. Pest Management Systems (3 cr I)

Prereq: 10 hrs entomology and crop production courses or permission

Offered fall semester odd-numbered calendar years. Different philosophies and theories of insect pest management, theory vs. reality of management, interactions of public and private sectors, development and implementation of pest management programs.

*818. Insect Identification and Natural History (4 cr III)

Prereq: Introductory course in entomology

Credit toward the degree may not be earned in both ENTO 800 and ENTO *818. Application of entomology to legal issues. Criminal investigations, insects of forensic importance, insect succession on carrion, and case studies.

*819. Insect Behavior (3 cr III)

Prereq: An introductory course in entomology

Offered in the summer of even-numbered calendar years. Principles of animal behavior as applied to insects and terrestrial arthropods. Techniques in studying insect behavior.

*820. Insect Toxicology (3 cr II) Lec 2, lab.

Prereq: 12 hrs BIOS or 4 hrs organic chemistry

Offered spring semester odd-numbered calendar years. Principles of toxicology, insecticide classification, mode of action, metabolism and consequences of insecticide use.

*865. Insect Transmission of Plant Diseases (BIOS *865) (2 cr II) Lec 2.

Prereq: 8 hrs biological sciences including BIOS 864 preceding or parallel and 6 hrs entomology or biological sciences (zoology)

Offered even-numbered calendar years. Relationships between plant diseases and their vectors with emphasis on virus diseases and transmission by aphids.

*888. MS Degree Project (4 cr I, II, III)

Prereq: Completion of 24 hrs toward the MS degree

Application of graduate course work for the non-thesis MS degree program.

896. Independent Study in Entomology (1-6 cr, max 12 I, II, III)

Prereq: 12 hrs biological sciences or agricultural sciences

Individual or group projects in research, literature review, or extension of course work under supervision and evaluation of a departmental faculty member. Independent study contracts for ENTO 896 must be filed with department.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

902. Advanced Insect Physiology: Designing Biorational Insect Control Strategies (3 cr II) Lec/student presentations/discussions.

Prereq: ENTO 801 or permission

Offered fall semester even-numbered calendar years. Selected topics in insect biochemistry and physiology are treated in advanced detail. Emphasis placed on specific areas that have potential as focal points in the design of novel insect control strategies. Includes endocrinology, immunology, the invertebrate eicosanoid system, pheromones, digestive proteins, and trehalose metabolism. Major thrust placed on transplanting basic research into research aimed at understanding the potentials and problems of designing novel and practical insect control strategies.

905. Seminar in Entomology (1 cr per sem, max 8 I, II)

920. Xenobiotics in the Environment (AGRO 920; HORT 920; NRES 920; TOXI 920) (3 cr II) Lec 3.

Prereq: Recommend one course each in organic chemistry, soil science, biochemistry, plant physiology, microbiology and ecology

Offered odd-numbered calendar years. Fate and ecotoxicological impacts of biologically foreign compounds in soil-water-plant environments; uptake, mechanisms of toxicity and metabolism in plants and other biota. Herbicides and other pesticides.

960. Biosystematics and Nomenclature (BIOS 960) (2-3 cr) Lec 3, assigned readings.

Methods and principles of systematics and nomenclature.

988. Becoming a Professional Scientist (AGRI 988) (2 cr I) Lec 2.

Designed to make a difference between thriving or merely surviving scientific careers. Students gain insights in developing their own scientific careers and in forming philosophical groundings in the process of science. Includes nuts-and-bolts issues, such as applying for jobs, developing research and teaching programs, writing and other communication skills, and the scientific publication process. Philosophical issues include frameworks and innovation in science, student-professor relationships, building interdisciplinary teams, human diversity, and ethics. Format features short lectures and active discussion. Assignments aimed to improve writing skills and personal presentation of ideas and opinions. Beyond the specific issues presented, course is intended to create a forum for personal exploration of the meaning of a scientific career.

991. Advanced Topics in Entomology (1-5 cr, max 5 I, II)

Prereq: Permission

Course offered as the need arises. The amount of credit is determined by the instructor at the time the course is offered. May be repeated for credit. Advanced study of selected topics not presented in established courses.

996. Research in Entomology (1-12 cr)

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

898. Special Topics in Forensic Science (1-6 cr, max 12) Lec, lab.

Prereq: 3 hrs FORS or equivalent

Description

For a brief description of the program, application requirements and contact information, view the graduate program

summary.

Department Head: Gary Brewer, Ph.D.

Graduate Committee Chair: Professor Foster

Work is offered in the following divisions of the department: biological control, ecology and behavior, economic entomology, insect biodiversity, insect molecular biology and biochemistry, pest management, plant-insect-interaction, plant resistance to insects, physiology, systematics, toxicology, turf and landscape entomology, and veterinary entomology.

International students must have a minimum score of 550 on the Test of English as a Foreign Language (TOEFL).

Master of Science Degree.

To qualify for acceptance as a candidate for the degree of master of science, a student must hold a bachelor of science or bachelor of arts degree from an accredited college, including course work in chemistry, mathematics, biology, and introductory entomology. A limited number of deficiencies may be made up during the graduate program. Curriculum must include biology and classification of insects plus a minimum of one of the following courses: insect physiology or insect ecology.

Distance Master of Science Degree (Option III - non-thesis).

Students must hold a BS or BA degree from an accredited college or university. Baccalaureate course work must include chemistry, mathematics, biology and introductory entomology. A limited number of deficiencies in course work can be made up during the graduate program. An undergraduate GPA of 2.5 or better is required for Full Graduate Standing. A GPA of less than 2.5 will be considered on an individual basis for provisional admission (students accepted on provisional admission must establish acceptable academic performance in their first semester to continue in the graduate program). Students in the distance masters degree program must earn a minimum of 36 hours of credit, at least 18 of which must be earned in courses open exclusively to graduate students (900 or 800 level without 400 or lower counterparts). The program must include not fewer than 18 hours in the major. Students must take or have taken insect identification and natural history, insect ecology, and insect physiology. Additionally, students must take ENTO 888, Masters Degree Project, for 4 credit hours, in which students will develop an independent project applying their graduate training to a practical question of interest. At the end of the graduate program, students must pass the Board Certified Entomology (BCE) general exam through the Entomological Society of America or the Department of Entomology's general exam. A specialized written comprehensive exam, prepared by the distance education committee must also be passed at the end of the degree program.

Doctor of Philosophy Degree.

Prospective candidates for this degree must meet the minimum undergraduate preparation noted for the masters degree. Curriculum must include biology and classification of insects plus a minimum of two of the following courses: insect physiology, insect morphology, or insect ecology.

The Supervisory Committee of the PhD student will decide which of the following requirements is to be met seven months prior to the final oral examination: 1) foreign language; or 2) research technique (approved technique); or 3) collateral field (15 semester hours); or 4) minor.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Baird, Lisa A. -2005; Adjunct Professor; AB 1976 Smith; MS 1978, PhD 1980 California (Davis)
- Baxendale, Frederick P. -1984; Professor; BS 1977 Cornell; MS 1980, PhD 1983 Texas A&M
- Berkebile, Dennis R. -1996; Adjunct Assistant Professor; BS 1978, MS 1981 Missouri (Columbia); PhD 1995 Nebraska (Lincoln)
- Brewer, Gary J. -2006; Head and Professor; BS 1974, MS 1978 Nebraska (Lincoln); PhD 1984 Kansas State
- Burd, John D. -2000; Adjunct Professor; BS 1977 Arizona State; MS 1986 Texas Tech; PhD 1990 Oklahoma State
- Campbell, John B. -1966; Professor Emeritus; BS 1961, MS 1963 Wyoming; PhD 1966 Kansas State
- Carter, David O. -2007; Assistant Professor; BS 1999 Idaho; MS 2001 Bournemouth (United Kingdom); PhD 2005 James Cook (Australia)
- Cortinas, M. Roberto -2008; Assistant Professor
- Culy, Michael D. -2006; Adjunct Associate Professor; BS 1979, MS 1982, PhD 1987 Purdue
- Danielson, Stephen D. -1987; Associate Professor; BS 1974 Nebraska (Lincoln); MS 1976 Oregon State; PhD 1987 Nebraska (Lincoln)
- Ellis, Marion D. -1995; Professor; BS 1972, MS 1975 Tennessee; PhD 1994 Nebraska (Lincoln)
- Fernandes, Odair A. -2005; Adjunct Associate Professor; BA 1983 FCAV/UNESP (Brazil); MS 1987 FFCL/USP (Brazil); PhD 1995 Nebraska (Lincoln)
- Foster, John E. -1990; Professor; BA 1964 Central Methodist; MS 1966 Missouri; PhD 1971 Purdue
- Harrell, Mark O. -1980; Professor; BS 1975 William and Mary; MS 1978, PhD 1980 Wisconsin
- Haskell, Neal H. -2005; Adjunct Professor; BS 1969, MS 1989, PhD 1993 Purdue
- Hein, Gary -1988; Professor; BA 1976 Concordia College; MA 1981, PhD 1984 Iowa State
- Heinrichs, E.A. -1995; Adjunct Professor; BS 1962, MS 1964 Nebraska (Lincoln); PhD 1967 Kansas State
- Heng-Moss, Tiffany M. -2001; Associate Professor; BS 1995, MS 1997, PhD 2000 Nebraska (Lincoln)
- Higley, Leon G. -1989; Professor; BA 1980 Cornell; MS 1984, PhD 1988 Iowa State
- Hoback, W. Wyatt -1999; Professor UNK (courtesy); BA 1990 Randolph-Macon; MS 1995 Southwest Missouri State; PhD 1999

Nebraska (Lincoln)
- Hunt, Thomas E. -1999; Associate Professor; BS 1990, MS 1993, PhD 1999 Nebraska (Lincoln)
- Hutchins, Scott H. -1997; Adjunct Professor; BS 1981 Auburn; MS 1983 Mississippi; PhD 1987 Iowa State
- Isenhour, David J. -2003; Adjunct Professor; BS 1975 Eastern Kentucky; MS 1977 Missouri; PhD 1980 Kentucky
- Jameson, Mary Liz -1998; Research Associate Professor; BS 1986, MS 1988 Nebraska (Lincoln); PhD 1997 Kansas
- Kamble, Shripat T. -1978; Professor; BS 1964, MS 1966 Nagpur (India); PhD 1974 North Dakota State
- Keith, David L. -1967; Professor Emeritus; BS 1962 Gustavus Adolphus; MS 1965 Minnesota; PhD 1971 Nebraska (Lincoln)
- Mayo, Z B -1972; Professor; BS 1967 Texas Tech; MS 1969, PhD 1971 Oklahoma State
- Meinke, Lance J. -1984; Professor; BS 1975 North Dakota State; MS 1977 Arizona; PhD 1984 North Carolina State
- Moellenbeck, Daniel -1997; Adjunct Assistant Professor; BA 1986 Iowa State; PhD 1992 Louisiana State
- Molina-Ochoa, Jaime -2006; Adjunct Professor; BS 1981, MS 1988 Autonoma Agraia (Mexico); PhD 1997 Universidad de Colima (Mexico)
- Owens, John C. -2001; Professor; BA 1966 West Texas State; MS 1969 Texas Tech; PhD 1971 Iowa State
- Peairs, Frank B. -1996; Adjunct Professor; BS 1971 Allegheny; MS 1974 Massachusetts; PhD 1977 Cornell
- Peterson, Robert K.D. -1996; Adjunct Associate Professor; BS 1987 Iowa State; MS 1991, PhD 1995 Nebraska (Lincoln)
- Powers, Thomas O. -1985; Professor; BS 1976 Purdue; MS 1979 Florida; PhD 1983 California (Riverside)
- Pruess, Kenneth P. -1957; Professor Emeritus; BS 1954 Purdue; MS 1955, PhD 1957 Ohio State
- Ratcliffe, Brett C. -1980; Professor and Curator Entomology, Museum; BS 1968, MS 1970, PhD 1975 Nebraska (Lincoln)
- Sarath, Gautam -1988; Adjunct Professor; PhD 1984 California (Davis)
- Siegfried, Blair D. -1990; Professor; BS 1981 Lock Haven; MS 1984 Florida; PhD 1988 Penn State
- Skoda, Steven R. -1992; Adjunct Professor; BS 1982 Kearney State; MS 1985, PhD 1992 Nebraska (Lincoln)
- Stanley, David -1989; Professor Emeritus; BA 1975 California State; PhD 1983 California
- Taylor, David B. -1992; Adjunct Associate Professor; BS 1977, PhD 1982 Notre Dame
- Weissling, Thomas J. -2006; Lecturer; BS 1984, MS 1986 Colorado State; PhD 1990 Nebraska (Lincoln)
- Witkowski, John F. -1975; Professor Emeritus; BS 1965, MS 1970 Nebraska (Lincoln); PhD 1975 Iowa State
- Wright, Robert J. -1988; Professor; BA 1975 California (Santa Barbara); MS 1977 Arizona (Tucson); PhD 1981 North Carolina State

Courses for Entrepreneurship (ENTR)

Entrepreneurship

821. Entrepreneurship and Venture Management (MNGT 821) (3 cr)

Prereq: ACCT 201 and 202, or 306; FINA 361; MNGT 331 and 360; MRKT 341

Aspects of starting and managing a new enterprise. Characteristics of entrepreneurs; the identification and evaluation of new venture opportunities-resource utilization; development of appropriate strategies and the successful planning, implementation and launching of a new business venture.

822. Small Business Management (MNGT 822) (3 cr)

Prereq: ACCT 201 and 202, or 306; FINA 361; MNGT 331 and 360; MRKT 341

Small businesses and owner management. Process of creating and managing one's own business, whether new or acquired. Actual involvement in small business organizations (e.g., internships, on-site visits and discussions, and consulting assignments). Cases relevant to small business are used.

823. Small Business Growth and Development (MNGT 823) (3 cr)

Prereq: ACCT 201 and 202, or 306; FINA 361; MNGT 331 and 360; MRKT 341

Financial human resource, operations and marketing issues that face entrepreneurs whose businesses are confronted with significant growth potential or that have matured. Franchising, initial public offerings, succession and estate planning. For course description, see MNGT 823.

Description

Courses for Toxicology (TOXI)

Environmental Health, Occupational Health and Toxicology

*875. Chemical Carcinogenesis (2 cr II, even years) (UNL, UNMC)

Prereq: Biochemistry or permission

Basic concepts of chemical carcinogenesis. Major carcinogens, their biochemistry of activation and mode of action.

*888. Principles of Toxicology (3 cr) (UNL)

(UNL, UNMC) Introduction to the principles of toxicology, mechanisms of toxicity, measures used in the treatment of poisoning and specific information pertaining to the categories of toxic agents responsible for the majority of toxicological emergencies.

*896. Research Other Than Thesis (1-9 cr, max 9)

*899. Masters Thesis (1-10 cr, max 10)

Prereq: Admission to masters degree program and permission of major adviser

920. Xenobiotics in the Environment (AGRO 920; ENTO 920; HORT 920; NRES 920) (3 cr II) Lec 3.

Prereq: Recommend one course each in organic chemistry, soil science, biochemistry, plant physiology, microbiology and ecology
Offered odd-numbered calendar years. Fate and ecotoxicological impacts of biologically foreign compounds in soil-water-plant environments; uptake, mechanisms of toxicity and metabolism in plants and other biota. Herbicides and other pesticides.

950. Advanced Toxicology (3 cr II, odd years) (UNL, UNMC)

Prereq: TOXI 888 and permission
The adverse effects of chemicals on biological systems. Physiological and biochemical mechanisms of toxicity at the cellular and sub-cellular levels.

990. Seminar (1 cr, max 24) (UNL)

(UNL, UNMC) Pass/No Pass only.

992. Special Topics (1-3 cr, max 24)

TOXI 992 is presented at intervals depending upon the interest of the faculty or the request of students. A description of each course with its prerequisites are announced at the time the course is offered. Topic varies.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Center Director: Dr. Ercole Cavalieri

Graduate Committee: Professor Stergiou (UNO) (Chair); Professors Kolok (UNO); Lockridge (UNMC); Siegfried (UNL); Associate Professors Stentz (UNL); Wyatt (UNMC).

The Center for Environmental Toxicology provides masters and doctoral degree programs in various multidisciplinary aspects of environmental toxicology. Research opportunities within the program include mechanisms of carcinogenesis, mechanisms of alcohol toxicity and metal toxicity, mechanisms of DNA damage, human molecular genetics, environment-gene interactions, bioinformatics, immunotoxicology, ecological toxicology, argochemicals in soil and water, food toxins, ultratrace determination of biological compounds, and synthetic and mechanistic bio-organic chemistry.

Masters Degree

There are two options:

Track 1 involves research for those who choose to continue their study and pursue their PhD. Students committed to Track 1 do not have the option of changing to Track 2. This option requires a minimum of 30 credit hours: 20-24 hours of course work and 6-10 hours of thesis. Half of the total credit hours, including thesis, must be in the major.

Track 2 is for non-research (non-PhD) students. It must be declared upon entry into the program. Students may move up from this track to the PhD track. Track 2 requires a minimum of 36 credit hours with a minimum of 18 hours in the major, or two minors of 9 hours with 15 hours in the major. At least 12 credit hours must be in exclusive upper level (800/900) courses. No thesis is required. Students should complete this program option in three years.

MS students must identify an adviser and have an Advisory Committee in place by the end of their first year. The Advisory Committee is composed of the adviser and faculty, with at least one person from an outside discipline. The Graduate Committee has final approval over the composition of all Advisory Committees.

Doctoral Degree

In addition to the required course, at least two elective 800/900-level courses must be taken. Each doctoral student must identify an adviser and have a Supervisory Committee in place by the end of their first year. The Supervisory Committee is composed of the adviser and four other faculty members; three of the five must be Center faculty with four holding graduate faculty appointments and at least one person must be from an outside discipline. There will not be a written comprehensive exam due to the variability of each participants' training. During their second or third year in the program, students are expected to complete a grant proposal on a subject related to toxicology, yet outside of their immediate area of dissertation research. The proposal must conform to the guidelines of an appropriate federal agency (NIH, EPA, USDA, etc.). After review by the Supervisory Committee and selected outside reviewers, an oral defense of the grant proposal and related subject material will be held. All students are also required to submit at least one scientific article for publication. Finally, a dissertation with an oral defense must be presented.

All students (MS and PhD) are required to successfully complete two semesters of biochemistry, a semester of statistics, and two semesters of toxicology. Biochemistry I and II are available at UNMC (BIOC 820/822) and UNL (BIOC 831/832). Students may take Biostatistics I at UNMC (PSM 806) or Statistical Methods in Research at UNL (STAT 801). Basic Toxicology (TOXI 888) and Advanced

Toxicology (TOXI 950) will be provided to students at both campuses. All students must participate in the Center seminar series. The detailed document A Guideline for the Graduate Program Leading to the MS and PhD Degrees in Environmental Toxicology containing detailed information, including a list of the elective courses appropriate for toxicology graduate students, is available from the Center.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Angeletti, Peter -2003; Assistant Professor, Biological Sciences; PhD 1997 Alabama (Birmingham)
- Berkowitz, David G. -1991; Associate Professor, Chemistry; BS 1982 Chicago; PhD 1990 Harvard
- Bevins, Rick A. -1996; Professor, Psychology; BS 1989 Jacksonville State; Associate in Arts 1986 Macon; PhD 1993 Massachusetts
- Bullerman, Lloyd B. -1970; Professor, Food Science and Technology; BS 1961, MS 1965 South Dakota State; PhD 1968 Iowa State
- Chen, Xun-Hong -1994; Professor, Natural Resource Sciences; MS 1988 California State; PhD 1994 Wyoming
- Dussault, Patrick -1988; Professor, Chemistry; BS 1982 California; PhD 1986 California Technical
- Gladyshev, Vadim N. -1998; Charles Bessey Professor, Biochemistry; PhD 1992 Moscow State
- Griep, Mark A. -1990; Associate Professor, Chemistry; BS 1981, PhD 1986 Minnesota
- Hage, David -1989; Professor, Chemistry; BS 1983 Wisconsin (LaCrosse); PhD 1987 Iowa State
- Harvey, F. Edwin - 1996; Associate Professor, Natural Resource Sciences; BS 1986 Olivet Nazarene; MS 1990 Purdue; PhD 1996 Waterloo (Ontario)
- Hoagland, Kyle D. -1990; Professor and Director, Water Center; BS 1973 Michigan State; MS 1975 Eastern Michigan; PhD 1981 Nebraska (Lincoln)
- Kamble, Shripat T. -1978; Professor, Entomology; BS 1964, MS 1966 Nagpur (India); PhD 1974 North Dakota State
- Moriyama, Hideaki -2003; Research Associate Professor, Chemistry; BEng 1982, MEng 1984 Kumamoto Institute of Technology (Japan); PhD 1987 Osaka
- Nickerson, Kenneth -1975; Professor, Biological Sciences; BS 1963 Rutgers; PhD 1969 Cincinnati
- Shea, Patrick -1981; Professor, Agronomy; BS 1975 Fordham; MS 1979 Connecticut; PhD 1981 North Carolina State
- Siegfried, Blair D. -1990; Professor, Entomology; BS 1981 Lock Haven; MS 1984 Florida; PhD 1988 Penn State
- Smith, David L. -1995; Professor, Chemistry; BS 1966, PhD 1969 Kansas
- Spalding, Roy F. -1989; Professor, Agronomy; BA 1966 Kenyon; MS 1968 North Carolina; PhD 1972 Texas A&M
- Takacs, James -1988; Professor, Chemistry; BS 1976 Rutgers; PhD 1981 California Institute of Technology
- Taylor, Stephen L. -1987; Professor and Head, Food Science and Technology; BS 1968, MS 1969 Oregon State; PhD 1973 California (Davis)

Environmental Studies

Description

Advisory Committee: Associate Professor Kuzelka (chair); Professors Amedeo, Borner, Carr, Dahab, Hage, Hayden, Louda, Riordan, Supalla, Williams; Associate Professors Blum, Harvey, Humes, Ledder, Skopp, Wandsnider, Yuen, Zellmer

Departments Participating (Masters): Agricultural Economics; Agronomy and Horticulture; Anthropology and Geography; Architecture; Chemistry; Civil Engineering; Community and Regional Planning; Economics; Entomology; Geosciences; Law (MLS Program); Agricultural Leadership, Education and Communication; Mathematics; Physics and Astronomy; Plant Pathology; Political Science; School of Biological Sciences; School of Natural Resources; and Sociology

Departments Participating (Doctoral): Agricultural Economics, Agronomy and Horticulture, Chemistry, Civil Engineering, Economics, Entomology, Geography, Geosciences, Mathematics, Physics and Astronomy, Plant Pathology, Political Science, School of Biological Sciences, School of Natural Resources, and Sociology

For information, contact:

An Environmental Studies Advisory Committee has been established to coordinate the interdisciplinary aspects of this specialization. One member of the student's examining committee or supervisory committee, who will represent a discipline participating in the environmental studies program other than the student's, must be approved by the Environmental Studies Advisory Committee. Approval of the thesis or dissertation topic must have the concurrence of the student's major department or program and the Environmental Studies Advisory Committee.

Masters-level Specialization Requirements.

An intra-University of Nebraska-Lincoln masters-level specialization in environmental studies is available to any student pursuing a masters degree within any of the participating departments and programs. Successful completion of the requirements will be indicated on the student's final transcript in parentheses following the name of the student's academic discipline, for example, Biological Sciences (Environmental Studies).

Each student will be required to complete:

1. a masters degree in one of the participating departments or programs;

2. 9 credit hours of environmentally-related courses from departments or programs outside the student's major department. Courses must be taken from at least three of the five categories listed below; and

3. when Option I (thesis) is available in the student's program, a thesis oriented toward some aspect of the environment.

The masters degree will be granted in one to the basic disciplines and students must be formally admitted to a degree objective in one of the participating departments.

Doctoral-level Specialization Requirements.

An intra-University of Nebraska-Lincoln doctoral-level specialization in environmental studies is available to any student pursuing a PhD degree within any of the participating departments and programs. Successful completion of the requirements will be indicated on the student's final transcript in parentheses following the name of the student's academic discipline, for example, Biological Sciences (Environmental Studies).

Each student will be required to complete:

1. a doctoral degree in one of the participating departments or programs;

2. a program of study that includes a 15-hour interdisciplinary component of environmentally-related courses from departments of programs outside the student's major department. At least one course must be selected from four of the five categories listed below; and

3. a dissertation dealing with an environmentally-relevant issue.

Environmentally-related courses completed by a student for an Environmental Studies Specialization at the masters level may be counted toward meeting the requirements for an Environmental Studies Specialization at the PhD level.

The PhD degree will be granted in one of the basic disciplines and students must be formally registered in one of the participating departments.

Environmental Studies Courses.

Courses in environmental studies to comprise the interdisciplinary component of the student's program of study are listed below by category and department. Course descriptions and prerequisites are contained in the appropriate departmental listings. With approval by the Supervisory Committee, a student may take courses cross-listed with an outside department to meet program requirements, if the faculty member teaching the course is not in the student's home department.

Course Lists

Physical Sciences

Offered in the Department of Agronomy and Horticulture
Agronomy (AGRO) Courses
861. Soil Physics
877. Great Plains Field Pedology
881. Water Resources Seminar
920. Pesticide Dissipation in Soils & Plants
955. Solute Movement in Soils

Offered in the Department of Chemistry (CHEM)
821. Analytical Chemistry
823. Analytical Chemistry Labratory
824. Survey of Analytical Chemistry
825A. Ionic Equilibria
825B. Electrochemical Methods
825D. Mass Spectrometry
825E. Data Handling
825G. Chromatographic Separations
825J. Optical Methods of Analysis
831. Biochemistry I
832. Biochemistry II
871. Physical Chemistry

Offered in the Department of Civil Engineering (CIVE)
821. Hazardous Waste Management
822. Hazardous Waste Treatment
823. Physical/Chemical Treatment Processes
824. Solid Waste Management Engineering
826. Design of Water Treatment Facilities
827. Design of Wastewater Treatment & Disposal Facilities
828. Quantitative Methods in Environmental Engineering
829. Biological Waste Treatment
830. Fundamentals of Water Quality Modeling 852.Water Resources Development
853. Hydrology
854. Hydraulic Engineering
855. Nonpoint Source Pollution Control Engineering (BSEN 855)

856. Surface Water Hydrology
858. Groundwater Engineering
875. Water Quality Strategy (AGRO/CRPL/GEOL/MSYM/POLS 875)
915. Water Resources Engineering 921.Advanced Topics in Hazardous Waste Treatment & Remediation
926. Advanced Topics in Water Treatment
927.Advanced Topics in Wastewater Treatment
929. Industrial Waste Lab
930.Advanced & Industrial Wastewater Treatment
952. Water Resources Planning
954. Advanced Hydraulics
955. Solute Movement in Soils (AGEN/AGRO 955)
958. Groundwater Mechanics
959. Groundwater Modeling

Offered in the Department of Geosciences

- **Geology Courses (GEOL)**

816. Isotope Geochemistry
817. Organic Geochemistry
819. Applications of Remote Sensing in Agriculture & Natural Resources
850. Surficial Processes & Landscape Evolution
881. Environmental & Urban Geology
888. Groundwater Geology
889. Hydrogeology
898. Special Problems in Geology
986. Containment Hydrogeology
988. Introduction to Groundwater Modeling

- **Meteorology-Climatology Courses (METR)**

851. Severe Storms Meteorology-Climatology
852. Synoptic Meteorology
853. Physical Climatology
854. Regional Climatology
856. Dynamic Meteorology
857. Advanced Synoptic Meteorology/Climatology
858. Dynamic Meteorology II
866. Physical Meteorology
867. Soil Morphology, Classification & Survey
868. Satellite Meteorology
881. Water Resources Seminar
895. Internship in Meteorology-Climatology
898.Advanced Special Problems
953. Seminar in Meteorology & Climatology
954. Seminar in Climatic Change

Offered in the Department of Physics (PHYA)
831. Thermal Physics

Offered in the School of Natural Resources (NRES)
819. Chemistry of Natural Waters
851. Soil Environmental Chemistry
853. Hydrology
868. Wetlands
917. Environmental Isotope Hydrology

Biological Sciences

Offered in the Department of Agronomy and Horticulture

- **Agronomy Courses (AGRO)**

840. Great Plains Ecosystems
842. Wildland Plants
860. Soil Microbiology
875.Water Quality Strategy

- **Horticulture Courses (HORT)**

824. Plant Nutrition and Nutrient Management
825. Turf Grass Science and Culture

849. Woody Plant Growth and Development
898.Topics in Landscape Architecture
907. Agricultural Climatology

Offered in the Department of Animal Science (ASCI)
851. Livestock Management on Range & Pasture

Offered in the School of Biological Sciences (BIOS)
806. Insect Ecology
836. Quaternary Ecology & Climate
838. Biogeochemical Cycles
847. Soil Microbiology
850. Biology of Wildlife Population
854. Population & Community Ecology
855. Great Plains Flora
857. Ecosystem Ecology
859. Limnology
862. Animal Behavior
863. Experimental Methods in Animal Behavior
864A. Plant Pathology Epidemiology
864B. Plant Pathology Physiology
867. Plant Pathogenic Bacteria
869. Phytopathogenic Fungi
870. Prairie Ecology
871. Plant Taxonomy
873. Freshwater Algae
876. Mammalogy
882. Field Entomology
887. Field Parasitology
888. Natural History of Invertebrates
891. Ichthyology
892. Fisheries Biology
893. Herpetology
894. Ornithology
901. Ecological Principles
953. Advanced Population Ecology
955. Behavioral Ecology
956. Biochemical Adaptations
957. Zoogeography
958. Genetic Ecology
959. Advanced Community Ecology
960. Biosystematics & Nomenclature

Offered in the Department of Entomology (ENTO)
800. Biology & Classification of Insects
802. Aquatic Insects
806. Insect Ecology
809. Insect Control by Host Plant Resistance
817. Pest Management Systems
820. Insect Toxicology

Offered in the School of Natural Resources (NRES)
810. Landscape Ecology
823. Integrated Resources Management
850. Biology of Wildlife Populations
859. Limnology
862. Conservation Biology
863. Fisheries Science
864. Fisheries Biology
866. Advanced Limnology

Social Sciences

Offered in the Department of Agricultural Economics (AECN)
865. Resource & Environmental Economics II

Offered in the Department of Anthropology and Geography

- **Anthropology Courses**

835. Introduction to Conservation Archaeology

846. Palynology
851. Contemporary Issues of Indigenous Peoples in North America
873. Ecological Anthropology 874.Applied & Developmental Anthropology
877. Hunters-Gatherers 883.Advanced Field Methods
994. Seminar in Anthropology & Geography Courses

- **Geography Courses**

806. Spatial & Environmental Influences in Social Systems
847. Political Geography
848. Pro-seminar in International Relations
850. Climate & Society
877. Great Plains Field Pedology
878. Pro-seminar in Latin American Studies
883. Cognitive Processes in Map Comprehension & Use
897. Internship in Geography 898.Advanced Special Problems
903. History & Philosophy of Geography
935. Seminar in Historical Geography
940. Seminar in Human Geography
983. Seminar on Behavioral Processes in Person/Environment Relations
994. Seminar in Anthropology & Geography

Offered in the Department of Architecture (ARCH)
856. Behavior & Social Factors in Environmental Design
866. Community Design Center

Offered in the Department of Community and Regional Planning (CRPL)
800. Introduction to Planning
870. Environmental Planning & Policy
877. Recreation & Park Planning

Offered in the Department of Economics (ECON)
872. Efficiency in Government

Offered in the Department of Political Science (POLS)
826. Topics in American Public Policy
836. Introduction to Public Policy Analysis

Offered in the Department of Sociology (SOCI)
844. Social Demography
845. Sociology of Urban Areas
846. Environmental Sociology
998. Special Topics Seminar (approved topics are Environmental Sociology, Social Demography, & Social Movements)

Environmental Analysis

Offered in the Department of Agronomy and Horticulture
Agronomy Courses (AGRO)
844. Vegetation Analysis
875.Water Quality Strategy

Offered in the Department of Anthropology and Geography
Geography Courses (GEOG)
811. Field Geography
812. Introduction to Geographic Information Systems
814. Quantitative Methods in Geography
815. Introduction to Computer Mapping
817. Cartography II: Electronic Atlas Design & Production
818. Introduction to Remote Sensing I
819. Remote Sensing II-Non-photographic Systems
820. Remote Sensing III-Digital Image Analysis
822. Advanced Techniques in Geographic Information Systems
898. Advanced Special Problems
915. Seminar in Cartography
922. Seminar in Geographic Information Systems

Offered in the Department of Architecture (ARCH)
830. Architectural Systems Analysis
836. Building Equipment Integration
860. Environmental Survey & Analysis
861. Studies in Environmental Design
864. Urban Design I

Offered in the Department of Civil Engineering (CIVE)
916. Interdisciplinary Seminar in Engineering: Economic & Legal Aspects of Water Resources Systems

Offered in the Department of Community and Regional Planning (CRPL)
860. Planning & Design in the Built Environment
872. Environmental Survey & Analysis

Offered in the Department of Mathematics (MATH)
824. Intro to Partial Differential Equations
842.Applied Mathematics I

Offered in the Department of Political Science (POLS)
984. Seminar in Research Methods

Offered in the Department of Sociology (SOCI)
862. Advanced Methods of Social Research I 863. Advanced Methods of Social Research II

Environmental Regulation and Law

Offered in the Department of Agricultural Economics (AECN)
841. Environmental Law
857. Water & Natural Resources Law

Offered in the Department of Community and Regional Planning (CRPL)
804. Legal Aspects of Planning

Offered in the Department of Legal Studies (LAW)
609G. Constitutional Law I
633G. Administrative Law
666G. International Environmental Law
677G. Environmental Law
693G. Law & Economics
698G. Public Lands & Natural Resources Law
699G. Land Use Planning
774G. Interdisciplinary Seminar in Engineering: Economic & Legal Aspects of Water Resources Systems
776G. Water Law, Planning & Policy
796G. Native American Law

Offered in the Department of Political Science (POLS)
869. International Law

Courses for Food Science and Technology (FDST)

Food Science and Technology

801. Teaching Applications of Food Science (3 cr I)

Prereq: BIOS 101 and CHEM 109

FDST 801 will not count toward a food science and technology major or minor. The science of food and how food can be used in the classroom to enhance science education.

803. Food Quality Assurance (3 cr II) Lec 3.

Prereq: FDST 205; STAT 218

Quality related issues as they pertain to manufacturing, processing and/or testing of foods; food regulations, statistical process control and Hazard Analysis of Critical Control Points (HACCP).

805. Food Microbiology (BIOS 845) (3 cr I) Lec 3.

Prereq: BIOS 312, CHEM 251 and BIOC 321; or permission

Nature, physiology, and interactions of microorganisms in foods. Introduction to food-borne diseases, the effect of food processing systems on the microflora of foods, principles of food preservation, food spoilage, and foods produced by microorganisms. Food plant sanitation and criteria for establishing microbial standards for food products.

806. Food Microbiology Laboratory (BIOS 846) (2 cr I) Lab 6.

Prereq: Parallel registration in FDST 805 or permission

Laboratory study of the microorganisms in foods and the methods used to study them as discussed in FDST 805.

812. Cereal Technology (3 cr II) Lec 2, lab 3.

Prereq: FDST 205

Offered spring semester of even-numbered calendar years. Chemistry and technology of the cereal grains. Post-harvest processing and utilization for food and feed. Current industrial processes and practices, with an explanation of the theoretical

basis for these operations.

818. Eggs and Egg Products (ASCI 818) (3 cr I) Lec 2, lab 3.

Prereq: FDST 205

Offered fall semester of odd-numbered calendar years. Chemistry of egg proteins as they relate to physical and functional properties. Freezing, dehydration, thermal processing, and new processing technologies.

819. Meat Investigations (ASCI 819) (1-3 cr, max 3 I, II, III)

Prereq: ASCI 210 or permission

Conduct independent research and study meat industry problems in processing, production, storage, and preparation of meat and meat products.

820. Fruit and Vegetable Technology (3 cr I) Lec 2, lab 3.

Prereq: FDST 205

Offered fall semester of even-numbered calendar years. Harvesting and postharvest handling of fruits and vegetables, processing and safety issues, processes of ripening and/or maturation in fresh fruits and vegetables.

825. Food Toxicology (2 cr II) Lec 2.

Prereq: FDST 805 and BIOC 321 or equivalent, or permission

Offered spring semester of odd-numbered calendar years. Toxic substances that may be found in foods with emphasis on bacterial toxins, mycotoxins and naturally occurring toxicants of plants, animals, and seafoods. Basic toxicological methodology and the effects of food processing and handling on food-borne toxicants.

829. Dairy Products Technology (3 cr II) Lec 2, lab 3.

Prereq: FDST 205

Offered spring semester of odd-numbered calendar years. Physical, chemical and microbiological properties of milk. Principles of milk processing and manufacture of cultured dairy products, cheeses, ice cream and concentrated dairy products.

830. Sensory Evaluation (STAT 830) (3 cr I) Lec 2, lab 3.

Prereq: Introductory course in statistics

Offered fall semester of odd-numbered calendar years. Food evaluation using sensory techniques and statistical analysis.

841. Functional Properties of Food (NUTR 841) (3 cr) Lec 2, lab 3.

Prereq: NUTR 340 and BIOC 321 or FDST 848 or permission

Relationship of structure and functionality of ingredients in food systems.

845. Experimental Foods (NUTR 845) (3 cr) Lec 1, lab 6.

Prereq: NUTR 340, BIOC 321 or permission

Introduction to food research; application of research techniques to selected problems.

848. Food Chemistry (3 cr I) Lec 3.

Prereq: FDST 205; CHEM 251; BIOC 321

Molecular components of various foods and the reactions of these components during the processing of foods.

849. Food Chemistry Laboratory (1 cr I) Lab 3.

Prereq: FDST 205; FDST 848 or parallel; BIOC 321

Experiments involving the isolation, purification and characterization of the molecular components of foods.

855. Microbiology of Fermented Foods (2 cr I, II) Lec 2.

Prereq: FDST 405/805

On-campus students must also register for FDST 855L. Physiology, biochemistry and genetics of microorganisms important in food fermentation. How microorganisms are used in fermentation and the effects of processing and manufacturing conditions on production of fermented foods.

855L. Microbiology of Fermented Foods Laboratory (1 cr II) Lab 3.

Prereq: FDST 405/805 and parallel FDST 855

Offered spring semester of even-numbered years.

858. Advanced Food Analysis (3 cr II) Lec 2, lab 3.

Prereq: FDST 205, 848, and 849

Theory and application of molecular and atomic spectroscopy, immunochemistry and thermal methods to the analysis of foods. Chemical separation techniques to the isolation of food constituents.

860. Food Product Development Concepts (3 cr II) Lec 2, lab 3.

Prereq: FDST 805 and 848

Develop a commercially viable food product using chemical, microbiological and sensory analysis principles, and marketing and packaging sciences.

865. Food Engineering Unit Operations (MSYM 865) (3 cr II) Lec 2, lab 3.

Prereq: FDST 363

Unit operations and their applications to food engineering.

870. Nutraceuticals and Functional Foods (3 cr II) Lec 3.

Prereq: BIOC 321 or BIOC/CHEM/BIOS 431/831.

FDST 870 is offered in odd-numbered calendar years.

Impact of natural compounds on human health. Inflammation, cancer, heart disease, and the impact of gut micro-flora on health.

*871. A Multidisciplinary Overview of Food Safety and Security (2 cr) Lec 2.

Prereq: 3 hrs BIOS or CHEM

Instruction in FDST *871 is provided by numerous subject matter experts. Multidisciplinary food safety and security perspectives. Food safety policy, ag bioterrorism, border security, animal ID, food defense, and site security, risk analysis, crisis communication, epidemiology, Hazard Analysis and Critical Control Point System, and more.

*872. Principles of Hazard Analysis and Critical Control Point System (2 cr) Lec 2.

Prereq: 3 hrs BIOS or CHEM

The Hazard Analysis and Critical Control Point (HACCP) System and its application in the food industry.

*873. Food-borne Toxicants (2 cr) Lec 2.

Prereq: 3 hrs BIOS or CHEM

Mechanisms of action, metabolism, sources, remediation and/or detoxification, and risk assessment of major food-borne toxicants of current interest. Design of Hazard Analysis and Critical Control Point plans for use in food industries to target food-borne toxicants.

*874. Food Laws, Regulations, and the Regulatory Process (2 cr) Lec 2.

Prereq: 3 hrs FDST at 200 level or above

FDST 874 has presentations by state and federal food regulators. History of the development of the current federal state food regulations. Guidelines that govern the practice of regulating the wholesomeness of red meats, poultry, and eggs.

*875. Rapid Methods in Food Microbiology (2 cr) Lec 2.

Prereq: FDST 405/805/BIOS 445/845

The different types of rapid microbial detection approaches available for use in foods. Commercial reagents and detection platforms, and the “next generation” approaches currently under development in academia or industry. Challenges to detection posed by the complexity of most food matrices and the sample preparation methods for separating microorganisms from such matrices.

*876. Risk Assessment for Food, Agriculture, and Veterinary Medicine (3 cr) Lec 3.

Prereq: 3 hrs STAT

Risk assessment principles as applied to biological systems. Exposure and effects characterization in human and animal health and ecological risk assessment. Risk analysis frameworks and regulatory decision-making. Introduction to quantitative methods for risk assessment using epidemiological and distributional analyses. Uncertainty analysis.

*877. Advanced Food Microbiology and Biotechnology (3 cr) Lec 3.

Prereq: FDST 405/805/BIOS 445/845

Basic principles in biotechnology and applied food microbiology. Current topics of interest in food biotechnology. Introduction to recombinant DNA techniques and how they are applied to genetically modify microorganisms. The use of nucleic acids as tools of rapid detection of microorganisms in foods, basic enzyme immobilization and down-stream processing techniques, and regulatory aspects of food biotechnology.

*880. Advanced Food Science: Selected Topics (2-6 cr, max 6) Lec 2.

Offered on a rotating basis in alternate years.
A. Food Carbohydrates (2 cr II) Prereq: FDST 848, CHEM 831 or permission. Offered spring semester of odd-numbered calendar years.
E. Food Flavors (2 cr I) Prereq: FDST 848 or equivalent. Offered fall semester of even-numbered calendar years. Food flavors and their sources and the instrumental, chemical, and sensory methods used to identify and evaluate them.
L. Food Lipids (2 cr I) Prereq: FDST 848 or equivalent. Offered fall semester of odd-numbered calendar years. In-depth discussion of: composition, quality, and chemical and physical properties and reactions of fats and oils in food systems; processing and refining of food fats and oils; manufacture of various fat and oil products; current research related to fats and oils.
P. Food Proteins (2 cr II) Prereq: FDST 848, or CHEM 831 or permission. Offered spring semester of even-numbered calendar years.

*880A. Food Carbohydrates (2 cr II)

Prereq: FDST 848, CHEM 831 or permission

Offered spring semester of odd-numbered calendar years.

*880E. Food Flavors (2 cr I)

Prereq: FDST 848 or equivalent

Offered fall semester of even-numbered calendar years. Food flavors and their sources and the instrumental, chemical, and sensory methods used to identify and evaluate them.

*880L. Food Lipids (2 cr I)

Prereq: FDST 848 or equivalent

Offered fall semester of odd-numbered calendar years. In-depth discussion of: composition, quality, and chemical and physical properties and reactions of fats and oils in food systems; processing and refining of food fats and oils; manufacture of various fat and oil products; current research related to fats and oils.

*880P. Food Proteins (2 cr II)

Prereq: FDST 848, or CHEM 831 or permission

Offered spring semester of even-numbered calendar years.

*896. Independent Study in Food Science and Technology (1-5 cr)

Prereq: 12 hrs FDST or closely related areas or permission

Individual or group projects in research, literature review, or extension of course work under supervision and evaluation of a departmental faculty member.

*899. Masters Thesis (1-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

908. Topics in Advanced Food Microbiology (2-8 cr, max 8) Lec 2.

Offered on a rotating basis in alternate years. Current topics in food microbiology.

A. Food Biotechnology (2 cr I) Prereq: FDST 805 (BIOS 845), BIOC 832, or permission. Offered fall semester of even-numbered calendar years.

Microbial genetics and recombinant DNA technology as applied to food science. Includes modification and improvement of microorganisms important in food fermentations; effects of bacteriophages in food fermentations; enzyme engineering; principles of plant and animal tissue culture; bioprocess engineering and down stream processing; DNA probe and monoclonal antibody technology; and regulatory and ethical aspects of biotechnology.

B. Food Borne Pathogens (2 cr II) Prereq: FDST 805 (BIOS 845). BIOS 820, or permission. BIOC 831 and 832 recommended. Offered spring semester of odd-numbered calendar years.

Survey of current research topics in the molecular biology of agents of food borne disease. Includes structure-function analyses of toxin molecules and other virulence determinants; genetic mechanisms of phenotypic variation, coordinate regulation of virulence gene expression; mobile genetic elements that contribute to pathogenesis; invasion of host tissues; and stress-response systems and survival.

D. Food Mycology (2 cr I) Lec 1, lab 1. Prereq: FDST 805 (BIOS 845), FDST 806 (BIOS 846), or permission. Offered fall semester of odd-numbered calendar years.

Foodborne filamentous micro-fungi or molds. Includes culture media and methods, and techniques for enumerating and identifying molds belonging to the genera Aspergillus, Penicillium, Fusarium, Alternaria, Cladosporium, Rhizopus, Mucor and others. Food spoilage by molds, mycotoxin production and pathological effects.

E. Readings in Food Microbiology (2 cr II) Prereq: FDST 805 (BIOS 845) or permission. Offered spring semester of even-numbered calendar years.

Primarily a literature course that focuses on current topics in food microbiology. Articles from food microbiology, as well as other applied and basic microbiology journals reviewed and discussed. Recent advances in methodology and microbiological techniques emphasized.

908A. Food Biotechnology (2 cr I) Lec 2.

Prereq: FDST 805 , BIOC 832, or permission

Offered fall semester of even-numbered calendar years.

908B. Food Borne Pathogens (2 cr II) Lec 2.

Prereq: FDST 805

BIOS 820, or permission. BIOC 831 and 832 recommended. Offered spring semester of odd-numbered calendar years.

908D. Food Mycology (2 cr I) Lec 1, lab 1.

Prereq: FDST 805 , FDST 806 (BIOS 846), or permission

Offered fall semester of odd-numbered calendar years.

908E. Readings in Food Microbiology (2 cr II) Lec 2.

Prereq: FDST 805 or permission

Offered spring semester of even-numbered calendar years.

908J. Gastrointestinal Microbiology (2 cr I) Lec 2.

Prereq: BIOS 312

FDST 908J is offered fall semester of even-numbered calendar years.

Introduction to the complex microbial populations that inhabit the gastrointestinal tracts of human and non-ruminant animals, and how they impact their hosts. Aspects of gut microbiota having medical or agricultural applications.

951. Advanced Food Science Seminar (1 cr per sem, max 2, I, II)

Prereq: Permission

Advanced study and discussion of the scientific literature and research pertaining to food science.

996. Research in Food Science and Technology (1-8 cr, max 8)

Prereq: 6 hrs microbiology, 12 hrs chemistry, or permission

Studies and investigational work relating to chemistry, microbiology, and processing of food products.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: Rolando A. Flores, Ph.D.

Graduate Committee Chair: Robert W. Hutkins, Ph.D.

The Department of Food Science and Technology offers graduate work leading to the master of science and doctor of philosophy degrees with a major in food science.

The Department of Food Science and Technology is located in the modern, well equipped Food Industry Complex on East Campus. The faculty are world-recognized for their research on food microbiology, food chemistry, food engineering, microbial genomics, and gut ecology. The research environment is challenging, interactive, and exciting. Graduate students have access to a wide variety of state-of-the-art instruments for conducting cutting edge research on molecular biology and genomics of foodborne and intestinal bacteria, detection and analysis of allergens and toxins, nutraceuticals and their properties, metabolomics and proteomics, predictive microbiology and fuzzy logic modeling, and structure/function of novel food ingredients.

Applicants to the graduate program in Food Science and Technology must have a degree in food science, microbiology, biochemistry, engineering, nutrition, biology, chemistry, or other related field. Undergraduate work should include organic chemistry, calculus, and physics. Deficiencies in these requirements can be made up during the first year of graduate study. In addition to the general requirements of the Graduate College, the verbal and quantitative parts of the Graduate Record Examination are also required and for students whose native language is not English, a TOEFL score of at least 577 paper (90 Internet, 233 computer) is required. All applicants should also provide three letters of recommendation, a 1-2 page Statement of Academic and Professional Goals, and a current resume.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Benson, Andrew K. -1996; Professor; BS 1987 Iowa State; PhD 1992 Texas (San Antonio)
- Bullerman, Lloyd B. -1970; Professor; BS 1961, MS 1965 South Dakota State; PhD 1968 Iowa State
- Cuppett, Susan L. -1985; Professor; BS 1968, MS 1970 West Virginia; PhD 1985 Michigan State
- Flores, Rolando A. -2006; Professor and Head; BS 1974 Costa Rica; MS 1981 Iowa State; PhD 1989 Kansas State
- Goodman, Richard E. -2004; Research Professor; BS 1977 Eastern Washington; PhD 1990 Ohio State
- Hanna, Milford -1975; Director, Industrial Agricultural Products Center and Kenneth E. Morrison Professor, Biological Systems Engineering and Food Science and Technology; BS 1969, MS 1971, PhD 1973 Penn State
- Hutkins, Robert W. -1987; Professor; BS 1979, MS 1980 Missouri; PhD 1984 Minnesota
- Jackson, David S. -1989; Professor; BS 1984 Cornell; MS, 1986, PhD, 1988 Texas A&M
- Peterson, Daniel A. -2008; Assistant Professor, BS 1993 Nebraska; PhD, MD 2001 Washington University (St. Louis)
- Rupnow, John H. -1979; Professor; BS 1967 Wisconsin; MS 1973 Eastern Illinois; PhD 1976 Purdue
- Schlegel, Vicki L. -1998; Associate Professor; BA 1984 Union (Lincoln); MS 1987 Nebraska (Lincoln); PhD 1990 Iowa State
- Smith, Durward A. -1989; Associate Professor; BA 1970 Washington; BS 1972 Idaho; MS 1973, PhD 1976 Louisiana State
- Subbiah, Jeyamkondan -2004; Assistant Professor; BS 1997 Tamil Nadu Agricultural (India); MS 1999 Manitoba (Canada); PhD 2004 Oklahoma State
- Taylor, Steve L. -1987; Professor; BS 1968, MS 1969 Oregon State; PhD 1973 California (Davis)
- Thippareddi, Harshavardhan -2002; Associate Professor; BS 1987 Andhra Pradesh Agricultural; MS 1992, PhD 1998 Kansas State
- Walter, Jens -2006; Assistant Professor, BS Hohenheim University (Germany) 1999, PhD Hohenheim University (Germany)

2003
- Wehling, Randy L. -1984; Professor; BS 1976, MS 1980, PhD 1983 Kansas State
- Weller, Curtis L. -1992; Professor; BS 1977, MS 1983, PhD 1989 Illinois
- Zeece, Michael G. -1984; Professor; BS 1968 St Louis; MS 1972 Illinois; PhD 1984 Iowa State

Courses for Geography (GEOG)

Geography

800. Seminar in Great Plains Studies (GPSP 800; HIST 800) (3 cr) Lec 3.

Prereq: A course in GPSP

Topic varies.

806. Spatial and Environmental Influences in Social Systems (3 cr)

How space, spatial structure, and spatially oriented behavior operate in social systems, emphasizing their influence on interpersonal communication and/or social exchange.

808. Microclimate: The Biological Environment (AGRO 808; HORT 808; METR 808; NRES 808; WATS 408) (3 cr I)

Prereq: MATH 106 or equivalent; 5 hrs physics; or permission

Physical factors that create the biological environment. Radiation and energy balances of earth's surfaces, terrestrial and marine. Temperature, humidity and wind regimes near the surface. Control of the physical environment through irrigation, windbreaks, frost protection, manipulation of light and radiation. Applications to air pollution research. Instruments for measuring environmental conditions and remote sensing of the environment.

811. Field Geography (2-3 cr)

Techniques and practices used in making geographical observations in the field.

812. Introduction to Geographic Information Systems (NRES 812) (4 cr) Lec 3, lab 2.

Introduction to the conceptual foundations and applications of computer-based geographic information systems (GIS). GIS database development, spatial data analysis, spatial modeling, GIS implementation and administration. Lab exercises provide practical experience with GIS software.

814. Quantitative Methods in Geography (3 cr)

Prereq: STAT 180 or 380 and 6 hrs geography

Introduction to quantitative techniques utilized in geographic research. Fundamental statistical and mathematical techniques used in analyzing spatial relationships.

815. Introduction to Computer Mapping (3 cr) Lec 2, lab 2.

Prereq: GEOG 317

Introduction to the tools, techniques, and analytical uses of computer mapping. Programming necessary for producing their own computer mapping programs.

817. Cartography II: Electronic Atlas Design and Production (3 cr) Lec 2, lab 2.

Prereq: GEOG 317 or permission

Computer-map design and production for the purpose of assembling and environmental electronic atlas, using advanced computer hardware and software. Extensive discussions and demonstrations on content, design, and methods used in computer mapping.

818. Introduction to Remote Sensing (NRES 818) (4 cr) Lec 3, lab 2.

Prereq: 9 hrs earth science or natural resource sciences including GEOG 150 and 152 or GEOG 155

Introduction to remote sensing of the earth from aerial and satellite platforms. Aerial photography, multispectral scanning, thermal imaging and microwave remote sensing techniques. Physical foundations of remote sensing using electromagnetic energy, energy-matter interactions, techniques employed in data acquisition and methods of image analysis. Weekly laboratory provides practical experience in visual and digital interpretation of aerial photography, satellite imagery, thermal and radar imagery. Emphasis on applications in geographic, agricultural, environmental and natural resources analyses.

819. Applications of Remote Sensing in Agriculture and Natural Resources (AGRO 819; GEOL 819; NRES 820) (4 cr) Lec 3, lab 2.

Prereq: GEOG/NRES 818; or permission

Introduction to the practical uses of remote electromagnetic sensing in dealing with agricultural and water-resources issues.

820. Remote Sensing III: Digital Image Analysis (4 cr) Lec 3, lab 2.

Prereq: GEOG 818 and 819; or equivalent or permission

Introduction to the fundamental principles and methods of digital image processing of remotely sensed data. Biophysical basis of

remote sensing and the various sensor systems typically used for terrestrial monitoring. Algorithms discussed for the preprocessing, enhancement, classification and mapping of digital data for agricultural, urban, geological, environmental, and natural resource management problems.

821. Field Techniques in Remote Sensing (NRES 821) (3 cr II) Lec 2, lab.

Prereq: NRES 818

Field techniques as they relate to remote-sensing campaigns. Research methods, systematic approaches to data collection, field spectroscopy, collecting ancillary information linked with spectroscopic data sets as well as aircraft or satellite missions, and subsequent analyses of acquired data.

822. Advanced Techniques in Geographic Information Systems (4 cr) Lec 3, lab 2.

Prereq: GEOG 812 or equivalent or permission

Vector and quadtree data structures, use of relational database management systems, topologically structured databases, query languages, digital terrain modeling, advanced data analysis methods and research issues in GIS. Extensive practical experience with the ARC/INFO GIS software.

825. Scientific Visualization in Cartography (4 cr) Lec 2, lab 3.

Prereq: GEOG 317, 415 or 417; or permission

Explores cartographic applications of computer animation and multimedia for the dual purposes of assisting visual thinking in map-oriented research and data exploration, and in communicating geographic ideas to others.

831. Cultural Geography (3 cr)

The history of cultural geography from von Humboldt through Carl Sauer to the "new" cultural geographies of Don Mitchell, Gillian Rose and Noel Castree. The current theoretical debates of feminism, post-structuralism, post-colonialism and environmentalism, and the influences of literary and cultural studies in the development of cultural geography and the various methodologies involved.

835. Cultural Survival: Indigenous Peoples' Rights (3 cr) Lec 3.

Threats against Indigenous peoples' lands, resources and cultural patrimony, languages and knowledge systems more than 500 years after Columbus instigated European colonialism, creating the first global world order. The responses of Indigenous peoples to the imposition of Western dominated economic and political systems. Land rights, economic development, and women's rights from the perspective of the different Indigenous communities around the world.

843. Industrial Location (2-3 cr)

Factors influencing US industrial firms' selection of regions and specific communities, how communities endeavor to attract new industry, and industrial development as a social environmental issue. Includes visits to development agencies and industrial plants.

844. Geodemographics: Theoretical Concepts and Practical Applications (3 cr)

Geodemographic analysis and interpretation of geographical patterns of population size, population composition and population change. Emphasis on applications of geodemographic techniques in fields such as retail site selection, marketing research, environmental impact analysis, public facilities planning, electoral redistricting and the operation and maintenance of socioeconomically oriented geographic information systems (GIS).

847. Political Geography (3 cr)

Importance of factors of a physical, economic, and human character in political development at local to global scales; international geopolitical aspects of environment, territoriality, core areas, capitals, and boundaries; national geographical patterns of voting, representation, public administration and public policy.

848. Pro-seminar in International Relations I (AECN 467; ANTH 879; ECON 866; HIST 879; POLS 866; SOCI 866) (3 cr)

Prereq: Permission

Open to students with an interest in international relations. Topic varies.

850. Climate and Society (AGRO 850; METR 850; NRES 852) (3 cr)

Prereq: METR 200 or 351 or equivalent, or permission

Offered spring semester of even-numbered calendar years. Identify the impact of climate and extreme climatic events on society and societal responses to those events. Global in scope and interdisciplinary.

855. Physiography (3 cr)

Prereq: One introductory course in geography, geology, or agronomy

Quaternary environment focusing on the theme of "man and nature." Climatic changes of the Quaternary; theories of climatic change; Pleistocene environments of the Old and New World; man/land relationships in prehistory.

867/877. Great Plains Field Pedology (AGRO 877; NRES 877; SOIL 477) (4 cr II)

Prereq: AGRO/SOIL 153 or permission

Spacial relationship of soil properties on various parts of landscape typical of the Plains, causal factors, and predictions of such relationships on other landscapes. Also grouping these properties into classes, naming the classes, and the taxonomy that results from this grouping. Finally, requires the application of a taxonomy to a real situation through making a field soil survey in region representative of the Plains border, predicting land use response of various mapped units as it affects the ecosystem, and evaluating the effectiveness of the taxonomic system used in the region surveyed.

869. Bio-Atmospheric Instrumentation (AGRO 869; HORT 807; METR 869; MSYM 869; NRES 869) (3 cr I)

Prereq: MATH 106 and 4 hrs physics

Offered fall semester of odd-numbered calendar years. Discussion and practical application of principles and practices of measuring meteorological and related variables near the earth's surface including temperature, humidity, precipitation, pressure, radiation and wind. Performance characteristics of sensors and modern data collection methods discussed and evaluated.

878. Pro-seminar in Latin American Studies (ANTH 878; EDPS 878; HIST 878; LAMS 478; MODL 878; POLS 878; SOCI 878; SPAN *878) (3 cr, max 6) Lec 3.

Prereq: Permission

Interdisciplinary analysis of the mechanics and consequences of cultural continuity and social change in Latin America.

881. Water Resources Seminar (AGRO 881; GEOL 815; NRES 815) (1 cr II)

Seminar on current water resources research and issues in Nebraska and the region.

883. Cognitive Processes in Map Comprehension and Use (3 cr) Lec 3.

Prereq: GEOG 317 and 817

How cognitive processes help individuals to comprehend the spatial circumstances or arenas they confront when carrying out their daily activities. Includes awareness of space, spatial knowing, formation of cognitive maps, importance of spatial images in negotiation of surroundings, and the relationship of cognitive maps to orientation and wayfinding.

897. Internship in Geography (1-6 cr)

Prereq: Permission

Applying geographic training with on-the-job learning.

898. Advanced Special Problems (1-24 cr)

Prereq: Varies, see course description or registration guide

Reading course or special projects.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

902. General Seminar (1-2 cr, max 3)

903. History and Philosophy of Geography (3 cr)

History of geographical thought concentrating on the period since 1800. Emphasis on both the traditional and modern ways of viewing the nature of geography and to the linkages between them.

904. Explanation in Geography (2-3 cr)

Course directly complements GEOG 903. Methodology or methods of explanation employed in geographic research and their relationship to the goals of the discipline. Problems, hypotheses, laws, theories, and models of a spatial nature.

915. Seminar in Cartography (3-6 cr per sem, max 6)

Prereq: GEOG 815, 817, or permission

Review and examination of cartographic research on map design. Primary emphasis on efficiency and accuracy of maps as devices for spatial understanding and analytical cartography.

922. Seminar in Geographic Information Systems (NRES 922) (3 cr)

Prereq: GEOG 812 and 822; or equivalent

Third in a sequence of courses on Geographic Information Systems (GIS). Advanced topics in computer oriented geographical data analyses. Current problems facing the designers and users of GIS. Demonstrations of modern computer hardware and/or software used in GIS done.

931. Comparative Studies of the Dispossession of Indigenous Peoples (3 cr)

Dispossession of the indigenous peoples of Australia, Canada, New Zealand, and the United States from a historical, spatial and interdisciplinary approach. Emphasis on human rights, including topics such as the legal assumptions of colonization, reduction of land holdings, population loss, resistance, and land claims.

935. Seminar in Historical Geography (1-3 cr, max 6)

Discussion of current literature and research on selected aspects of historical geography. Specific theme of course varies according to instructor.

940. Seminar in Human Geography (1-9 cr, max 9)

Structure of settlement patterns and the factors influencing their development.

967. Soil Genesis and Classification (AGRO 977; NRES 977) (3 cr II) Lec 2, rct 1.

Prereq: AGRO 153, AGRO 877/GEOG 867, and permission

Procedures used to classify soils, concepts behind the systems in use, and the genesis of the soils in the major categories of each system.

983. Seminar on Behavioral Processes in Person/Environment Relations (3 cr)

Prereq: Senior-level masters degree candidate or PhD-level in human geography or design or planning or any of the social and behavioral disciplines or permission

GEOG 983 consists of a four, participant-led, research/discussion sessions. Environments as potentially significant components of behavioral episodes based on the premise that places, settings, or environments provide the contexts for and arenas within which people act, interact, and transact. Significance of the physical/sociocultural surrounds derived not solely from their physical presence, but from them, meaning attached to them, and their importance. Topics: common importance of person/environment relations to diverse interests concerned with individual and group behavior in everyday, natural settings; how people experience their environments or “environmental knowing” through perceptual/cognitive processes; environmental representations, images, schemas, and/or cognitive “maps”; and attributions of meaning and significance to environments.

994. Seminar in Anthropology and Geography (ANTH 994) (1-3 cr, max 6)

996. Non-thesis Research (1-4 cr, max 24)

Prereq: 24 hrs geography and permission

999. Doctoral Dissertation

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

(1-24, max 55)

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department of Anthropology and Geography Chair: Raymond Hames, Ph.D.

Geography Graduate Committee Chair: Stephen Lavin, Ph.D.

Graduate Committee: Professors Amedeo, Archer, Bleed, Draper, Hames, Lavin, Lawson, Lonsdale, Merchant, McIntosh, Mutunayagam, Rundquist, Sholtz, Stoddard, Wishart; Associate Professors Cantarero, McCollough, Narumalani, Wandsnider; Assistant Professors Athanassopoulos, Awakuni-Swetland, Demers, Johnson, Wardlow

Geography MA and PhD degrees are offered within the Department of Anthropology and Geography. GRE exam scores (verbal and quantitative) are required for graduate admission. Applicants either should have earned a prior degree in geography, or be prepared to take a prescribed set of essential geography prerequisite courses at NU if accepted into a graduate degree program.

Geography graduate degree programs within the Department of Anthropology and Geography emphasize human-cultural geography, regional geography, geographic information analysis (GIS, remote sensing, cartography, spatial analysis) person-environment behavior and relations, climatology, anthropology, and community and regional planning. There are currently nine Graduate College approved specializations in geography: Anthropology: Indigenous Peoples (doctoral-level only); Climatology; Community and Regional Planning (doctoral-level only); Environmental Geography; Environmental Studies; Great Plains Studies; GIS/Cartography/Remote Sensing; International Human Rights and Diversity; Water Resources Planning and Management (masters-level only). When completed successfully, Graduate College specializations are explicitly indicated on the student transcript. Students may have concentrations of work in areas other than Graduate College approved specializations.

Geography graduate faculty represent a wide spectrum of expertise across the social and physical sciences, and humanities. Faculty are primarily from the Department of Anthropology and Geography, The Center for Advanced Land Management Technologies (CALMIT)/School of Natural Resource Sciences, Community and Regional Planning, and Geosciences.

Geography stresses individuality and flexibility in designing graduate degree programs. Special interest is paid to the way that student interests mesh with faculty expertise. Thoughtful advising is provided to guide students toward their geographic goals, in choosing courses and research projects, and to the completion of their degrees.

Internships are strongly supported, and teaching and research assistantships are available on a competitive basis.

A certificate in geographic information science is also available. This is a specialized graduate certificate program designed to educate students in geographic information science and provide them with GIS experience. Specifically, the overall objective is to

establish a comprehensive foundation that will meet the needs of student scientists, analysts, planners, managers, and technicians.

A total of 22 semester hours are required for the completion of the certificate.

Required Courses
GEOG 812 (NRES 812)
GEOG 812. Intro to Geographic Information Systems (NRES 812)
GEOG 818. Intro to Remote Sensing (NRES 818)
GEOG 822. Advanced Techniques in Geographic Information Systems

Elective Courses
CRPL 895. Selected Topics in Community & Regional Planning (when taught as GIS Applications in Planning)
GEOG 819. Applications of Remote Sensing in Agriculture & Natural Resources (AGRO/ GEOL 810, NRES 820)
GEOG 820. Remote Sensing III: Digital Image Analysis
GEOG 898. Advanced Special Problems

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Amedeo, Douglas M. -1972; Professor, Geography; BS 1962 Wisconsin State (Eau Claire); MA 1965, PhD 1967 Iowa
- Archer, J. Clark -1985; Professor, Geography; BA 1964, MA 1968 Indiana; PhD 1974 Iowa
- Athanassopoulos, Effie -1994; Assistant Professor, Anthropology and Classics; BA 1980 Athens (Greece); PhD 1993 Pennsylvania
- Awakuni-Swetland, Mark -1999; Assistant Professor, Anthropology and Ethnic Studies; BA 1994, MA 1996 Nebraska (Lincoln); PhD 2003 Oklahoma
- Bleed, Peter A. -1972; Professor, Anthropology; BA 1965, MA 1968 Minnesota; PhD 1973 Wisconsin
- Cantarero, Rodrigo -1989; Associate Professor, Community and Regional Planning; BS 1975 Iowa State; MA 1979 & 1980 Iowa; PhD 1988 Southern California
- Demers, Paul A. -2004; Assistant Professor, Anthropology and Geography; BS 1986 Trent; MS 1988 Rensselaer Polytechnic; MA 1994, PhD 2001 Michigan State
- Draper, Patricia -1998; Professor, Anthropology and Geography; BA 1964 Vassar; MA 1965, PhD 1972 Harvard
- Hames, Raymond B. -1980; Professor and Chair, Anthropology; BA 1971, PhD 1978 California (Santa Barbara)
- Lavin, Stephen -1982; Professor, Geography; BS 1969 SUNY (Buffalo); MS 1971 Montana State; PhD 1979 Kansas
- Lawson, Merlin P. -1968; Professor, Geosciences; BA 1963 SUNY (Buffalo); MA 1966, PhD 1973 Clark
- Lonsdale, Richard E. -1971; Professor Emeritus, Geography; AB 1949, MA 1952 California (Los Angeles); PhD 1960 Syracuse
- McCollough, Martha -1997; Associate Professor, Anthropology; MA 1988 Alaska; PhD 1996 Oklahoma
- McIntosh, Charles B. -1958; Professor Emeritus, Geography; BA 1938 Huron; BS 1939, MA 1951, PhD 1955 Nebraska (Lincoln)
- Merchant, James W. -1988; Professor and Associate Director, CALMIT (Conservation and Survey Division); BS 1969 Towson State; MA 1973, PhD 1984 Kansas
- Mutunayagam, N. Brito -1981; Professor, Community and Regional Planning; DTCP 1967 School of Planning and Architecture (New Delhi); MEngr 1974 Asian Institute of Technology (Thailand), DEPD 1981 Virginia Polytechnic Institute
- Narumalani, Sunil -1994; Associate Professor, Conservation and Survey Division; MA 1989 Georgia; PhD 1993 South Carolina
- Rundquist, Donald -1982; Professor and Director, CALMIT (Conservation and Survey Division); BS 1967 Wisconsin (Whitewater); MA 1971 Nebraska (Omaha); PhD 1977 Nebraska (Lincoln)
- Stoddard, Robert -1967; Professor Emeritus, Geography; BA 1950 Nebraska Wesleyan; MA 1960 Nebraska (Lincoln); PhD 1966 Iowa
- Wandsnider, LuAnn -1991; Associate Professor, Anthropology; BS 1979 Wisconsin; MS 1981 New Mexico; PhD 1989 New Mexico
- Wardlow, Brian -2006; Assistant Professor, National Drought Mitigation Center; PhD 2005 Kansas
- Wishart, David J. -1974; Professor, Geography; BA 1967 Sheffield; MA 1968, PhD 1971 Nebraska (Lincoln)

Courses for Applied Geology (GEOL)

Courses for Meteorology-Clima tology (METR)

Courses for Colloquium and Research (GEOS)

Geosciences

Subject Areas

- Colloquium and Research (GEOS)
- Meteorology-Clima tology (METR)
- Applied Geology (GEOL)

898. Special Problems in Geosciences (1-6 cr, max 24)

Prereq: 12 hours geosciences

899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900. Professional Development in Geosciences (1 cr) Lec 1.

Professional skills. Time management, laboratory and field safety, abstract writing, proposal writing, grantsmanship, and presentations. The philosophy and ethical conduct of science.

996. Research Other than Thesis (1-24 cr)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

808. Microclimate: The Biological Environment (AGRO 808; GEOG 808; HORT 808; NRES 808; WATS 408) (3 cr I)

Prereq: MATH 106 or equivalent; 5 hrs physics; or permission

Physical factors that create the biological environment. Radiation and energy balances of earth's surfaces, terrestrial and marine. Temperature, humidity and wind regimes near the surface. Control of the physical environment through irrigation, windbreaks, frost protection, manipulation of light and radiation. Applications to air pollution research. Instruments for measuring environmental conditions and remote sensing of the environment.

811. Dynamic Meteorology I (3 cr) Lec 3.

Prereq: CSCE 150E; MATH 208/208H; METR 205; PHYS 212/212H

Equations of thermodynamics, momentum, and continuity are derived and applied to atmospheric motion. Energy conservation, flows, and conversions.

812. Dynamic Meteorology II (3 cr) Lec 3.

Prereq: METR 411/811

Applications of the principles of dynamic meteorology to the problems of forecasting and meteorological problems.

823. Physical Meteorology (4 cr) Lec 3, lab 2.

Prereq: CSCE 150E; METR 205; PHYS 212/212H

Physical principles that provide the foundation for meteorology. Absorption, scattering, and transmission of radiation in the atmosphere, cloud physics, precipitation process, atmospheric optics, and lightning.

828. Atmospheric Chemistry (3 cr) Lec 3.

Prereq: 6 hrs METR; CHEM 109; and permission

Basic processes (e.g., emission, transport, chemical reaction, and deposition) associated with atmospheric chemistry and combining meteorology and atmospheric chemistry for air quality forecasting. Environmental topics: acid rain; smog; air pollution; and ozone holes in the context of climate change,

841. Synoptic Meteorology (4 cr) Lec 3, lab 2.

Prereq: METR 205

Dynamic and thermodynamic concepts and principles applied to synoptic-scale weather forecasting. Dynamics, energetics, structure, evolution, and motion of extra-tropical cyclones. Meteorological communications, interpretation and analysis of weather maps, and thermodynamic diagrams.

842. Advanced Synoptic Meteorology-Climatology (4 cr) Lec 3, lab 1.

Prereq: METR 441/841

Analysis and forecasting of subsynoptic-scale weather systems. Convection, thunderstorm models, severe local storm forecasting techniques, mesoscale convective complexes, vertical cross-sections, isentropic analysis, and weather radar.

843. Severe Storms Meteorology-Climatology (3 cr) Lec 3.

Prereq: METR 205

Dynamics of various types of severe weather (blizzards, flash floods, lightning, thunderstorms, and winter and summer tornado outbreaks). Interpretation of the numerical and statistical models utilized to forecast these phenomena. Synoptic case studies of severe weather occurrences. Recent research on severe weather.

850. Climate and Society (AGRO 850; GEOG 850; NRES 852) (3 cr)

Prereq: METR 200 or 351 or equivalent, or permission

Offered spring semester of even-numbered calendar years. Identify the impact of climate and extreme climatic events on society and societal responses to those events. Global in scope and interdisciplinary.

854. Statistical Analysis of Atmosphere Data (3 cr) Lec 3.

Prereq: 6 hrs METR; MATH 107/107H; and permission

Application of univariate statistics, hypothesis testing, statistical forecasting, forecast verification, time-series analysis, principal component analysis, and cluster and/or multivariate analysis to atmospheric data for different applications in the atmospheric sciences (from short-term weather forecast to long-term climate prediction).

864. Satellite Meteorology (3 cr) Lec 3.

Prereq: METR 441/841 or parallel METR 841

Concepts and principles related to meteorological observations from satellites. Applications for weather analysis and forecasting.

865. Satellite Remote Sensing of Atmosphere (3 cr) Lec 3.

Prereq: METR 423/823 and permission

Principles of atmospheric radiation and techniques for satellite image processing. Application of data calibration, image registration and enhancement, noise filtering and multi-spectral classification of satellite imageries. Survey of various sensors used for monitoring different atmospheric processes and constituents.

869. Bio-Atmospheric Instrumentation (AGRO 869; GEOG 869; HORT 807; MSYM 869; NRES 869) (3 cr I)

Prereq: MATH 106 and 4 hrs physics

Offered fall semester of odd-numbered calendar years. Discussion and practical application of principles and practices of measuring meteorological and related variables near the earth's surface including temperature, humidity, precipitation, pressure, radiation and wind. Performance characteristics of sensors and modern data collection methods discussed and evaluated.

870. The Climate System (3 cr) Lec 3.

Maintenance of the climate system and climate change over time. Global budgets of energy, water, and momentum and their balance. Development of simple, physically-based models of climate and of climate change.

875. Physical Climatology (3 cr) Lec 3.

Prereq: METR 205

Global energy and water balance regimes of the earth and its atmosphere. Utilization of physical laws to reveal causes and effects of interrelationships in the climatic system.

878. Regional Climatology (NRES 878) (3 cr) Lec 3.

Prereq: METR 370

Regional differentiation of the climates of the earth on both a descriptive and dynamic basis. The chief systems of climatic classification.

*880. Theory of Climate (3 cr) Lec 3.

Prereq: MATH 221/821 or MATH 221H; PHYS 142 or equivalent

Foundation and maintenance of earth's climate system and its variation over time. Climate modeling.

883. Global Climate Change (NRES 867) (3 cr) Lec 3.

Prereq: MATH 106/106B/108H; 5 hrs PHYS; METR 475/875

METR 883 is offered fall semester of even-numbered calendar years.

Elements of the climate systems, El Niño and/or La Niña cycle and monsoons, and natural variability of climate on inter-annual and inter-decadal scales. Paleo-climate and future climate. Develop climate change scenarios and climate change impacts on natural resources and the environment.

887. Earth's Climate: Past, Present, Future (3 cr) Lec 3.

Prereq: 6 hrs METR or 6 hrs GEOL

How the Earth's climate has varied and the forcing mechanisms related to those changes. Themes that reappear through Earth's climate history and into the future; causes of climate change; the natural response times of the multiple components; and the role of green house gases within the climate system at differing time scales.

895. Internship in Meteorology-Climatology (1-6 cr, max 6) Fld.

Prereq: Permission

Pass/No Pass only. Application of meteorology-climatology learning with on-the-job training.

898. Special Topics in Meteorology-Climatology (1-24 cr, max 24)

Prereq: Permission

907. Agricultural Climatology (AGRO 907; HORT 907; NRES 907) (3 cr II) Lec 2, lab 2.

Prereq: NRES 808; STAT 801 or equivalent

Offered spring semester of odd-numbered calendar years. Analysis and use of climatological data as applied to agricultural activities and the use of climatological information to assist in decision making.

908. Solar Radiation Interactions at the Earth's Surface (AGRO 908; HORT 908; NRES 908) (3 cr II)

Prereq: MATH 208; NRES 808 or equivalent or permission

Offered spring semester of even-numbered calendar years. Quantitative study of radiative transfer to the earth's surface and subsequent interactions of radiation with vegetative components and underlying surfaces. Applications of canopy radiative modeling and remote sensing techniques, particularly in understanding land-surface processes, are discussed.

924. Atmospheric Radiative Transfer (3 cr, max) Lec 3.

Prereq: METR 423/823; MATH 221/221H/821; and permission

Theory of scattering by atmospheric particles (e.g., clouds, aerosols, and molecules), atmospheric radiative transfer equations, and techniques for solving these equations. Atmospheric transfer of both solar and terrestrial radiation. Numerical experiments with radiative transfer models and comparison with observations.

943. Dynamics of Severe Convective Storms (3 cr) Lec 3.

Prereq: METR 411/811 and 412/812, or equivalent

Advanced concepts related to severe convective storms. Tornado-genesis, super-cell formation, rotation, movement, morphology, quasi-linear convective systems, deep convective initiation, hail, mesoscale convective systems, and RKW (Rotunno-Klemp-Weisman) theory.

993. Seminar in Meteorology and Climatology (3 cr, max 6) Lec 3.

Topic varies.

994. Seminar in Climatic Change (3 cr per sem, max 6) Lec 3.

Climates of the past emphasizing the Quaternary period. Paleogeographic changes in response to climatic fluctuations. Techniques for recording and reconstructing past climatic variations. Modeling the changing climate. Climatic changes and human affairs.

811. Petrography (1-2 cr) Lab 6.

Prereq: GEOL 310

Principles and methods of identification and description of igneous and metamorphic rocks in thin-sections.

812. Advanced Mineralogy (3-6 cr)

Prereq: 12 hrs geology including GEOL 210; CHEM 113

814. Clay Mineralogy (4 cr) Lec 3, lab 3.

Prereq: GEOL 210; CHEM 113 or equivalent

Structures and properties of common clay minerals; their formation and geologic/pedologic distribution. Generation and use of x-rays for diffraction analysis. Analysis of clays and related minerals by x-ray diffraction and electron microscopy.

815. Water Resources Seminar (AGRO 881; GEOG 881; NRES 815) (1 cr II)

Seminar on current water resources research and issues in Nebraska and the region.

*816. Isotope Geochemistry (3 cr) Lec 3.

Prereq: GEOL 410

Behavior of stable and radiogenic isotopes in geological and cosmochemical systems. Application of isotope geochemistry to determining the age of rocks, as well as the sources of the chemical components in the rocks.

817. Organic Geochemistry (3 cr) Lec 3.

Prereq: GEOL 410 and CHEM 251

Origin, preservation, and transport of the organic compounds found in the rock record. Applications of organic geochemistry to paleoclimatic and paleoenvironmental interpretations as well as to discerning the origins of coal, oil and natural gas.

818. Chemistry of Natural Waters (NRES 819) (3 cr II) Lec 3.

Prereq: Two semesters college chemistry or equivalent, or permission

Offered even-numbered years. Principles of water chemistry and their use in precipitation, surface water, and groundwater studies. Groundwater applications used to: determine the time and course of groundwater recharge, estimate groundwater residence time, identity aquifer mineralogy, examine the degree of mixing between waters of various sources, and evaluate what types of biological and chemical processes that occurred during the water's journey through the aquifer system.

818L. Chemistry of Natural Waters Lab (NRES 819L) (1 cr II, offered even numbered calendar years or

Prereq: Two semesters college chemistry or permission

Parallel: GEOL 818/NRES 819/WATS 418. Basic laboratory techniques used to perform water analysis including various wet chemical techniques, instrument use (AA, IC, UV-Visable) and computer modeling. Techniques for sample collection and preservation, parameter estimation, and chemical analysis.

819. Applications of Remote Sensing in Agriculture and Natural Resources (AGRO 819; GEOG 819; NRES 820) (4 cr) Lec 3, lab 2.

Prereq: GEOG/NRES 818; or permission

Introduction to the practical uses of remote electromagnetic sensing in dealing with agricultural and water-resources issues.

820. Siliciclastic Sedimentology (3 cr) Lec 2, lab 3.

Prereq: GEOL 310

Depositional processes, environments of deposition, and facies models. Description, classification, and analysis of modern and ancient siliciclastic sediment and sedimentary rocks.

821. Carbonate Petrology (3 cr) Lec 2, lab 3.

Lab focuses on field, petrographic and geochemical methods. Depositional settings and processes, petrography, geochemistry, diagenesis and geological significance of modern and ancient carbonate rocks and sediments.

823. Quaternary Paleoclimatology and Paleoecology (BIOS 836) (3 cr) Lec 3.

Prereq: 12 hours in GEOL or BIOS

Analysis and interpretation of the Quaternary period's paleoecological data. Patterns of long-term climate variation. Distribution patterns and responses of organisms and ecosystems to Quaternary environmental change.

824. Biogeochemical Cycles (BIOS 838) (3 cr) Lec 3.

Prereq: CHEM 109 or 113; 12 hrs geology or biological sciences

Chemical cycling at or near the earth's surface. Interactions among the atmosphere, biosphere, geosphere, and hydrosphere. Modern processes, the geological record, and human impacts on elemental cycles.

*825. Geostatistics (NRES *825) (3 cr I)

Prereq: MATH 106 and STAT 218

Offered fall semester of odd-numbered calendar years. Practical methods for solving spatial interpolation and related estimation problems with emphasis on geostatistical methods. Introduction to applied statistical simulation and prediction in geology, hydrogeology and environmental studies.

828. Stratigraphic Architecture and Sequence Stratigraphy (3 cr) Lec 2, lab 3.

Prereq: GEOL 310

Analysis of stratigraphic stacking patterns in sedimentary basins and sequence stratigraphic methods.

830. Quantitative Methods in Paleontology (3 cr) Lec 3.

Prereq: GEOL 310

Numerical and statistical analysis of paleontological data including biometry, synecology and quantitative biostratigraphy.

831. Micropaleontology (3 cr) Lec 2, lab 3.

Prereq: GEOL 310

Morphology, classification, ecology, and geological application of common fossil and extant marine, brackish, and freshwater microfossils.

835. Vertebrate Paleontology (3 cr) Lec 2, lab 3.

Survey of the evolution of the vertebrates, including examination of the geological and biological factors that influence the pattern of evolution, and laboratory study of fossil materials of the major vertebrate groups.

836. Mammalian Paleontology (2 cr) Lec 2.

Prereq: Permission

Survey of Mesozoic and Cenozoic mammalian history, with emphasis on integration of geological and biological data on pattern and process in mammalian evolution.

839. Marine Ecology and Paleoecology (BIOS 861) (2 cr) Lec 2.

Prereq: BIOS/NRES 220

Includes several field trips. Introduction to the fundamentals of marine ecology and application to paleoecology.

839L. Marine Ecology and Paleoecology Laboratory (BIOS 861L) (1 cr) Lab 3.

Prereq: Parallel GEOL 439/839

Lab includes several field trips.

840. Tectonics (3 cr) Lec 3.

Prereq: GEOL 340 or permission

Theory of plate tectonics; tectonic controls on rock assemblages; interpretation of regional structure and tectonic history; origin and tectonic evolution of terrestrial planets.

842. Environmental Geophysics I (NRES 842) (4 cr) Lec 3, lab 3.

Prereq: MATH 107; PHYS 211; GEOL 101 or 106; or equivalent or permission

Introduction to the principles of seismic, ground-penetrating radar, and bore-hole geophysical methods and their application to groundwater, engineering, environmental, and archaeological investigations.

843. Environmental Geophysics II (NRES 843) (4 cr) Lec 3, lab 3.

Prereq: MATH 107; PHYS 211; GEOL 101 or 106; or equivalent or permission

Introduction to principles of magnetic, electromagnetic, resistivity, and gravity methods and their application to ground water, engineering, environmental, and archaeological investigations.

846. Palynology (3 cr) Lec, lab.

Prereq: 12 hours GEOS

GEOL 846 lab focuses on techniques for pollen recovery from modern and ancient materials.

Pollen and spore morphology, taxonomy, and pollination ecology as a basic tool for geologists, biologists, and archaeologists interested in environmental reconstruction. Techniques of environmental reconstruction through pollen analysis. Aspects of medical and forensic palynology.

850. Surficial Processes and Landscape Evolution (3 cr) Lec 2, lab 3.

Prereq: GEOL 310 or permission

Field trip(s). Fluvial, glacial, eolian, and coastal processes and landforms. Roles of tectonics, climate, and climate change in landscape evolution. Lab stresses description and interpretation of landforms from remotely-sensed, cartographic, and field data.

857. Ecosystem Ecology (BIOS 857) (4 cr) Lec 3, rct 1.

Prereq: BIOS 207 or 220

Processes controlling the cycling of energy and elements in ecosystems and how both plant and animal species influence this. Human influenced global and local change that alter these cycles and ecosystem functioning.

861. Soil Physics (AGRO 861; NRES 861; SOIL 461; WATS 461) (3 cr I) Lec 3.

Prereq: AGRO/SOIL 153, PHYS 141 or equivalent, one semester of calculus

Recommended: Parallel enrollment in AGRO/NRES 858. Principles of soil physics. Movement of water, air, heat and solutes in soils. Water retention and movement, including infiltration and field water regime. Movement of chemicals in soils.

865. Soil Geomorphology and Paleopedology (NRES 865) (3 cr) Lec, lab.

Prereq: GEOL 850 and NRES 877, or permission

Two field trips required. Soils and paleosols as evidence in reconstructing landscape evolution and paleoenvironments. Role of paleosols in stratigraphy.

*869. Regional Field Geology (1 cr) Fld.

Prereq: 12 hrs GEOL including GEOL 103

Weekend field trips. Field investigation of classic areas of Midcontinent Geology, emphasizing principles of stratigraphy, geomorphology, sedimentology, and paleontology.

870. Field Techniques in Hydrogeology (3 cr) Lec 3.

Prereq: GEOL 888 or permission

Combined lectures, laboratory, assigned problems, full day field trips, and seminars. Basic techniques, including field procedures, instruments, and software for data interpretation and characterization of groundwater flow and contaminant transport.

872. Water in Geosciences (3 cr II)

Prereq: MATH 106 and 107; PHYS 141; and one of the following: GEOL 101 or 106 or METR 200

Quantitative approach to water in geological media, earth surface and atmosphere. Analysis of physical processes involved in groundwater-surface-atmosphere interactions.

875. Water Quality Strategy (AGRO 875; CIVE 875; CRPL 875; MSYM 875; NRES 875; POLS 875; SOCI 875; SOIL 475; WATS 475) (3 cr II) Lec 3.

Prereq: Permission

Holistic approach to the selection and analysis of planning strategies for protecting water quality from nonpoint sources of contamination. Introduction to the use of methods of analyzing the impact of strategies on whole systems and subsystem for selecting strategies; and for evaluating present strategies.

880. Economic Geology of the Metals (2 cr) Lec 2, lab 2.

Prereq: 12 hrs geology including GEOL 210, 340; CHEM 114, 116

Occurrence and utilization of the metallic ores. Elementary theory of ore genesis.

881. Environmental and Urban Geology (3 cr) Lec 3, lab 2.

Prereq: 12 hours geology, or CRPL 800, or permission

Significance of regional and local geologic materials and processes that affect land-use potential as areas undergo urbanization.

885. Fossil Fuel Geology and Exploration (3 cr) Lec 2, lab 3.

Prereq: 12 hours geology

Geology of coal, oil and gas, and methods of exploration for those resources.

888. Groundwater Geology (NRES 888) (3 cr)

Prereq: GEOL 100-level course; MATH 106 or equivalent

Occurrence, movement and development of water in the geologic environment.

*889. Hydrogeology (NRES *887) (3 cr)

Prereq: GEOL 888/NRES 488 and MATH 208

Principles of flow through porous media with emphasis on basic classical solutions, flow-net analysis, and elementary modern numerical solutions that aid in the analysis and development of groundwater supplies.

895. Economic and Exploration Geography (2 cr, max 6) Lec 2.

Prereq: GEOL 310 and 320; or equivalent

Recommended parallel: a GEOL course as indicated by the instructor and to vary with course content. Content will vary on a 3-year rotation. Combined lectures, seminars, weekend short courses, and field trips. Field trips are required and supported by alumni endowment. Field trips may be scheduled during semester breaks. E.F. Schramm Course in Economic Geology. Fossil fuel geology and exploration.

*898. Special Problems in Geology (1-6 cr)

Prereq: 12 hrs geology

917. Environmental Isotope Hydrology (NRES 917) (3 cr)

Prereq: NRES 819 or equivalent or permission

Theory and use of stable, radiogenic and radioactive isotopes in hydrologic studies. Abundance and variation of the stable isotopes of oxygen, hydrogen, carbon, sulphur, chlorine, nitrogen, and strontium. Application of the isotopes to determine water origin, movement, geochemical history, recharge age and residence time, and to delineate contaminant sources and solute migration.

918. Seminar in Geochemistry (1-2 cr)

919. Seminar in Mineralogy (1-6 cr, max 6)

920. Seminar in Stratigraphy (1-2 cr)

See also GEOL 953.

922. Seminar in Sedimentary Environments (1-2 cr)

925. Seminar in Sedimentology (1-2 cr)

926. Marine Geology and Paleoceanography (3 cr) Lec 3.

Geology of the oceanic realm, formation of oceanic crust, circulation, geochemistry, pelagic sediments and their diagensis, correlation, and oceanic history.

929. Mesozoic and Cenozoic Stratigraphy (3 cr) Lec 3.

Application of stratigraphic principles and methods to the solution of Mesozoic and Cenozoic problems.

931. Taphonomy (2 cr) Lec 1, lab 3.

Processes in fossil preservation and how they affect information in the fossil record of vertebrates.

934. Site Analysis in Vertebrate Paleontology (2 cr) Lec 2.

Integrated approach to the excavation and collection of fossil vertebrate sites in a global framework, with consideration of tectonic, depositional, and taphonomic factors in interpretation of fossil vertebrate concentrations.

935. Cenozoic Vertebrate Paleoecology (2 cr) Lec 1, lab 1.

Prereq: GEOL 836

Terrestrial vertebrate history during the Cenozoic Era with emphasis on the fossil record of Great Plains mammalian communities within the last fifteen million years.

936. Siliceous Phytoplankton Paleontology (4 cr) Lec 3, lab 3.

Biostratigraphy, paleoecology, and paleobiogeography of fossil diatoms, silicoflagellates and ebridians.

937. Mesozoic Calcareous Nannofossil Paleontology (4 cr) Lec 3, lab 3.

Biostratigraphy, paleoecology, and paleobiogeography of Mesozoic calcareous nannofossils.

938. Cenozoic Calcareous Microfossil Paleontology (4 cr) Lec 3, lab 3.

Biostratigraphy, paleoecology, and paleobiogeography of Cenozoic calcareous nannofossils.

939. Seminar in Paleontology (1-2 cr)

940. Advanced Structural Geology (1-24 cr)

941. Advanced Tectonics (3 cr)

Prereq: GEOL 840 or permission

Tectonics and regional structure of selected mountain belts; Precambrian Tectonics; tectonics and resources.

945. Seminar in Structural Geology and Tectonics (1-2 cr)

953. Glacial Geology (3 cr) Lec 3.

Prereq: GEOL 850 or permission

Deposits made by the continental ice sheets of the Pleistocene and of the environments that existed around them. Lab includes interpretation of topographic maps, air photos, soil maps, and field studies.

955. Seminar in Geomorphology (2-3 cr)

956. Seminar in Quaternary Geology (1-2 cr)

See also GEOL 881, 827.

980. Minerals and Ores (1-24 cr)

982. Field Technology: Hydrogeology (3 cr)

984. Seminar in Economic Geology (1-2 cr)

985. Solute Movement in Soils (AGEN 955; AGRO 955; CIVE 955) (3 cr II) Lec 3.

Prereq: MATH 208; AGRO 861 or GEOL 888 or MSYM 852 or CIVE 858

Knowledge of a programming language. MATH 821 recommended. Offered even-numbered calendar years. Examination of the theory and experimental evidence available to characterize the movement of chemicals in soil. Both saturated and unsaturated flow conditions examined. Initial presentation of basic theoretical concepts. Remainder of class a discussion of the literature.

986. Contaminant Hydrogeology (3 cr)

Prereq: GEOL 888, MATH 208 or equivalent, or permission

Occurrence, behavior and remediation of contamination in geological media. Fundamentals of physical, mathematical, chemical, and engineering processes affecting movement of contaminants in the hydrogeological environment and their applications. Teamwork, projects, seminar presentations, field trips and invited lectures.

987. Seminar in Hydrogeology (1-2 cr)

988. Introduction to Groundwater Modeling (3 cr)

Prereq: GEOL *889, MATH 208 or equivalent, programming language, or permission

Application of fundamentals of modeling techniques (analytical, semi-analytical, finite-difference and finite elements) to the solution of hydrogeological problems. Emphasis on development of model concepts for specific groundwater flow and transport conditions, selection of solution methods, including computer software and hardware, performance of computer modeling, and interpretation of results.

996. Research Other Than Thesis (1-24 cr)

Prereq: Permission

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chairperson: David K. Watkins, Ph.D.

Graduate Committee: Associate Professor Kettler (chair); Professors Fritz, Zlotnik; Associate Professor Rowe

The department offers both the master of science and doctor or philosophy degrees in geosciences. Students may develop programs of study which emphasize specific areas within the atmospheric and geological sciences.

The department has established program requirements in addition to those stipulated by the Office of Graduate Studies. These requirements are outlined in the department's Graduate Student Handbook. Other requirements (including language and research tools) are at the discretion of the supervisory committee and should be consistent with the educational objectives of the student.

Students are encouraged to complete the masters degree before beginning doctoral work. Those lacking certain required undergraduate courses may be admitted with the provision that the deficiencies be removed after enrollment.

Specializations available at the masters level:

Environmental Studies; Geology; Great Plains Studies; Hydrogeology; Meteorology-Climatology; Water Resources Planning and Management

Specializations available at the doctoral level:

Environmental Studies; Geology; Great Plains Studies; Hydrogeology; Meteorology-Climatology

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Anderson, Mark R. -1987; Associate Professor; BS 1977, MS 1980 Northern Illinois; PhD 1985 Colorado
- Fielding, Christopher R. -2002; Professor; BSc 1979 Edinburgh; PhD 1982 Durham
- Frank, Tracy D. -2004; Assistant Professor; BS 1990 Iowa State; MS 1992, PhD 1996 Michigan
- Fritz, Sherilyn C. -1999; Professor; BA 1974 Macalester; MS 1979 Kent State; PhD 1985 Minnesota
- Goble, Ronald J. -1979; Associate Professor; BSc 1968, MSc 1970 Alberta; PhD 1977 Queens
- Grew, Priscilla C. -1993; Professor; BS 1962 Bryn Mawr; PhD 1967 California (Berkeley)
- Harwood, David M. -1989; Professor; BS 1980 Akron; MS 1982 Florida State; PhD 1986 Ohio State
- Holmes, Mary Anne -1996; Research Associate Professor; BS 1976, MS 1978 Virginia Polytechnic Institute; PhD 1989 Florida State
- Hu, Qi (Steve) -1999; Associate Professor; BS 1982 Lanzhou (China); MS 1986, PhD 1992 Colorado State
- Hunt, R.M. -1973; Professor; BA 1963 Wooster; MS 1965 New Mexico; PhD 1971 Columbia
- Joeckel, Robert M. -2000; Associate Professor; BS 1985, MS 1988 Nebraska (Lincoln); PhD 1993 Iowa
- Istanbulluoglu, Erkan -2005; Assistant Professor; BS 1996, MS 1998 Uludag; PhD 2003 Utah State
- Kettler, Richard M. -1989; Associate Professor; BS 1978 Wisconsin; MS 1982 California (Los Angeles); PhD 1990 Michigan
- Lawson, Merlin P. -1968; Professor; BA 1963 SUNY (Buffalo); MA 1966, PhD 1973 Clark
- Lenters, John D. -2006; Associate Professor; BS 1991 Hope; MS 1995; PhD 1997 Cornell
- Lindsley-Griffin, Nancy -1983; Professor; BS 1964 Colorado; MS 1969, PhD 1982 California
- Loope, David B. -1981; Professor; AB 1971 Duke; BS 1977 Utah State; PhD 1981 Wyoming
- Oglesby, Robert J. -2006; Professor; BS 1985 California (Davis); MPhil 1987, PhD 1990 Yale
- Pederson, Darryll T. -1975; Professor; BS 1961 Valley City State; MST 1966, PhD 1971 North Dakota
- Rack, Frank -2006; Associate Professor; BS 1979 Rhode Island; PhD 1992 Texas A&M
- Rowe, Clinton M. -1987; Associate Professor; BA 1978, MS 1982, PhD 1988 Delaware
- Scott, Durelle -2005; Assistant Professor; BS 1996, MS 1997, PhD 2001 Colorado (Boulder)
- Smith, Norman D. -1998; Professor; BS 1962 St Lawrence; MS 1964, PhD, 1967 Brown
- Swinehart, James B. -1970; Professor; BS 1965 California (Riverside); MS 1979 Nebraska (Lincoln)
- Wang, Jun -2007; Assistant Professor; BS 1996 Nanjing; MS 2002; PhD 2005 Alabama (Huntsville)
- Watkins, David K. -1984; Professor and Chair; BS 1976, MS 1979 Virginia Polytech; PhD 1984 Florida State
- Zlotnik, Vitaly A. -1990; Professor; MS 1971 Byelorussian State (Minsk); PhD 1979 National Institute for Hydrogeology and Engineering Geology (Moscow)

Courses for Omaha Program (GERO)

Gerontology

810. Educational Gerontology (EDPS *810) (3 cr)

Introduction to the field of education for and about the aging. Institutions and processes of education will be analyzed to determine their relationships and value to persons who are now old and those who are aging.

835. Issues in Aging (3 cr)

For students in gerontology and in other fields who are interested in a humanistic approach to understanding significant issues which affect the lives of older people.

842. Therapeutic Recreation (3 cr)

Introduces the student to the field of recreation for the aging in nursing homes and community-based recreation programs. A portion of the course involves students visiting recreation sites

846. Psychology of Adult Development and Aging (PSYC 446) (3 cr)

Prereq: PSYC 181 or GERO 200

Major social and psychological changes that occur as a function of aging. Both normal and abnormal patterns of developmental change including their implications for behavior.

847. Mental Health and Aging (3 cr)

Mental health needs of older adults. Identifying both positive mental health and pathological conditions. Treatment interventions effective with older adults and their families.

850. Legal Aspects of Aging (3 cr)

Consideration of the legal concerns which are likely to arise as people age. Includes introduction to the American legal system and emphasis on underlying legal concepts and issues of special importance to older persons.

851. Long-term Care Administration (3 cr)

Investigation of the broad range of policy issues, theoretical concerns, and practical management strategies influencing the design, organization, and delivery of long-term care services.

855. Health Aspects of Aging (3 cr)

Psychological, sociological, and physiological factors that influence the health of the aging, with particular emphasis given to biological changes that have implications for disease and health disorders.

867. Programs and Services for the Elderly (3 cr)

Historical overview of programs for the elderly, to examine the national policy process as it relates to the older American, and to review the principles and practices relative to the existing national programs for the aged

869. Working with Minority Elderly (3 cr)

Interdisciplinary course designed to provide the student with knowledge of the differing status, attitudes, and experiences of the elderly within four major minority groups and to examine various service systems and practice models in terms of their relevance and effectiveness in meeting needs of the minority elderly.

885. Hospice and Other Services for the Dying Patient/Family (3 cr)

Involves students in the recognition of fears, concerns, and needs of dying patients and their families by examining the hospice concept and other services available in our community. Factual information, readings, professional presentations, films, and experiential exercises are offered to aid the student in understanding that hospice is an alternative to the traditional medical model so that when the “cure” system is no longer functional, then the “care” system, hospice, can be offered.

892. Special Studies in Gerontology (1-3 cr)

Prereq: 6 hrs GERO or permission

Special studies designed around the interests and needs of the individual student in such areas as the psychology, sociology, economics, or politics of aging, as well as operation of various service systems. May be either a literature review project or a field project in which experience is gained in the community identifying and analyzing needs and services related to older people.

894. Practicum (3-6 cr)

Prereq: 9 hrs GERO and permission

Opportunity for students to share field experiences; to obtain guidance concerning various relationships with agency, staff, and clients; and to develop a broadly based perspective of the field of aging.

898. Counseling Skills in Gerontology (3 cr)

Develops basic counseling skills for application in gerontology.

899. Master’s Thesis (1-6 cr)

Prereq: Permission

The thesis is written under the supervision of the thesis adviser and the thesis committee. Independent research project required of all students working toward the master of arts degree.

911. Applied Social Gerontology (3 cr)

Restricted to graduate students only; required of gerontology students. Social gerontology with an emphasis on the interplay between social, psychological and physical elements in later life.

946. Aging and Human Behavior (3 cr)

Intended primarily for graduate students in psychology and gerontology. Age-related changes in psychological processes and the implications of these changes for behavior.

Description

Departmental Chair: Karl Kosloski, Ph.D.

A degree program in social gerontology is administered through the University of Nebraska at Omaha with courses available on both the Lincoln and Omaha campuses.

The master of arts in social gerontology is designed to help meet the educational needs of two principal groups. First, the degree program is designed for those who are mid-career professionals who wish to gain additional knowledge and insight from the research in the field of gerontology, who wish to interpret the research critically, and who may wish to be prepared to conduct research on their own. A second smaller group that may benefit from the program consists of those who have gerontology as a primary academic interest and who intend to continue on in pursuit of a doctoral degree.

The master of arts in social gerontology is not intended to be a practitioner's degree. Those who seek graduate preparation for entering the field of aging in a service capacity might wish to earn the graduate certificate in gerontology in conjunction with a masters degree in social work, counseling, public administration, health education, sociology, or human development and the family.

Doctoral Specialization in Gerontology

The departments of Child, Youth and Family studies and Gerontology, in conjunction with the Graduate College, offer a PhD (doctor of philosophy) in human sciences with a specialization in gerontology. The specialization draws on theory, research and practice in the field of education, gerontology and human development.

Due to the unique nature of this interdepartmental specialization, students are able to benefit from the broader range of expertise and perspectives. Students pursuing the specialization in gerontology will have the opportunity to create a program of study with advice and support of their doctoral advisory committee. Courses include those offered through Family and Consumer Sciences and Gerontology and are available on the Lincoln and Omaha campuses.

Additional information can be obtained from:

Department of Gerontology
University of Nebraska at Omaha
Annex 24
Omaha, NE 68182
(402) 554-2272

or

Child, Youth and Family Studies
University of Nebraska-Lincoln
135 Mabel Lee Hall
PO Box 880236
Lincoln, NE 68588-0236
(402) 472-9343

Faculty

- Holley, Lyn M. -2004; Assistant Professor; BA 1964 American; MPA 1995, PhD 1999 Nebraska (Omaha)
- Kelly, Christopher M. -2006; Assistant Professor; BA 1994 Notre Dame; PhD 2004 Southern California
- Kercher, Kyle -2005; Professor; BA 1972 California State (Fresno); MA 1975 California (Santa Barbara); PhD 1984 Washington
- Kosloski, Karl D. -1994; Professor and Acting Chair; BA 1973 Minnesota; MA 1975 Middle Tennessee State; PhD 1984 Nevada (Reno)
- Masters, Julie -2001; Associate Professor; BA 1984 Nebraska (Omaha); MA 1985 Northern Colorado; PhD 1997 Nebraska (Lincoln)
- Thorson, James A. -1977; Professor; BS 1967 Northern Illinois; MEd 1971 North Carolina (Chapel Hill); EdD 1975 Georgia

Courses for Graduate Studies (GRDC)

Graduate Studies

900A. Future Faculty I (1 cr)

P/N. First course in a two-semester Preparing Future Faculty Program introducing advanced graduate students to various faculty roles. Seminar participants interact with faculty from surrounding campuses, prepare teaching portfolios, present job talks, and engage in mock interviews. They discuss teaching and research expectations, tenure and promotion standards, campus life, and faculty governance at different types of colleges and universities.

900B. Future Faculty II (1 cr)

Prereq: GRDC 900A

P/N. Second course in a two-semester Preparing Future Faculty Program introducing advanced graduate students to various faculty roles. Seminar participants interact with faculty from surrounding campuses, prepare teaching portfolios, present job talks, and engage in mock interviews. They discuss teaching and research expectations, tenure and promotion standards, campus life, and faculty governance at different types of colleges and universities.

900D. Future Faculty III (1 cr)

Prereq: GRDC 900A and 900B

P/N only. Third course in a three-semester sequence, Preparing Future Faculty program that introduces advanced graduate students to various faculty roles and to the use of technology in college instruction. Participants develop instructional technology applications and are mentored in the delivery of distance education.

901. Professional Ethics (1 cr)

Prereq: Permission

Major ethical issues in the conduct of research and teaching, Topics identified by the National Academy of Science as critical to responsible research: the acquisition and maintenance of research data, including issues of informed consent and rules about safety and animal use; responsible reporting of research, including authorship issues, duplicate and fragmented publication, and reporting in the public media; peer review, including issues of confidentiality and conflict of interest; and the ethical training and supervision of students, including the assignment of mentors, appropriate supervision and fair performance evaluation, and the avoidance of exploitation.

902. Grant Writing and Grant Management (1 cr)

Prereq: Permission

P/N only. Tips for writing successful grants, for identifying funding sources, and for making effective use of program officers. Core issues in grant management, including issues related to IRB review and approval, development of a budget and matching fund requests, and reporting responsibilities. Students develop and refine a submissable dissertation research proposal.

903. Professional Development Seminar (1 cr)

Prereq: Permission

P/N only. Insights in developing professional careers through invited lectures and colloquia. Finding a mentor and negotiating a graduate program, the scholarly publication process, developing professional networks, building and working in interdisciplinary teams, applying for jobs, university and industry collaborations, and developing a research and teaching program. Career concerns of students from groups under-represented in their field of study and to students interested in pursuing careers outside of the academy.

Description

The Office of Graduate Studies offers a series of seminars designed to provide interdisciplinary professional development opportunities to graduate students enrolled in UNL graduate degree programs. The courses are designed to foster discussion about and develop skills necessary for the broad range of academic and non-academic careers.

Courses for Great Plains Studies (GPSP)

Great Plains Studies

800. Seminar in Great Plains Studies (GEOG 800; HIST 800) (3 cr) Lec 3.

Prereq: A course in GPSP

Topic varies.

895. Internship (1-6 cr, max 6) Fld.

Prereq: Permission

P/N only.

Description

(Interdepartmental Area of Specialization)

Director: James Stubbendieck

Advisory Committee: Professors Archer, Brandle, Crews, Edwards, Hayden, Horst, Kaye, R. Lee, Scholz, Supalla, Swinehart, Winkle; Associate Professors Ertl, Parsons, S. Wunder; Assistant Professors Demers, Garza, Heng-Moss

Majors Participating (Masters): Agricultural Economics; Agricultural Leadership, Education and Communication; Agronomy; Anthropology; Architecture; Communication Studies; Community and Regional Planning; Economics; English; Geography; Geosciences; History; Natural Resource Sciences; Teaching, Learning and Teacher Education; and Textiles, Clothing and Design

Majors Participating (Doctoral): Agricultural Economics; Agronomy; Communication Studies; Economics; English; Geography; Geosciences; History; Natural Resource Sciences; and Human Sciences (Textiles, Clothing and Design)

The objective of the Great Plains Studies Interdepartmental Area of Specialization is to provide an understanding of the complex and unique features of the Great Plains. Regional inquiry invites an analysis of the relationships between the natural and managed environment and the cultures brought to it by various indigenous and immigrant populations, as well as the implications of these relationships for the future. The specialization is facilitated by the Center for Great Plains Studies, which is the oldest and largest interdisciplinary, intercollegiate, regional research and teaching center in the United States. See our Web site: **www.unl.edu/plains/academics/graduate.html.**

Masters-level Specialization Requirements:

The specialization is available to any student accepted to pursue a masters degree within a participating department. One member of the student's examining committee must be a Fellow of the Center for Great Plains Studies.

Each student will be required to complete:

1. A masters degree in one of the participating departments.

2. GPSP 800 Seminar in Great Plains Studies (3 cr)

3. Six (6) additional credit hours of Great Plains Studies courses from departments outside the student's major department.

4. Under any option (I, II, or III) there should be a Great Plains component. For example, when a student completes Option I (thesis), that thesis should present some issues(s) relevant to the Great Plains.

Doctoral-level Specialization Requirements:

The specialization is available to any student accepted into a doctoral program within any of the participating departments or interdepartmental areas. One member of the student's examining committee must be a Fellow of the Center for Great Plains Studies.

Each student will be required to complete:

1. A doctoral degree in one of the participating departments or interdepartmental areas.

2. GPSP 800 Seminar in Great Plains Studies (3 cr)

3. Twelve (12) additional credit hours of Great Plains Studies courses from departments outside the student's major department. No more than six (6) hours should be in one department.

4. The dissertation should present some issues(s) relevant to the Great Plains.

Interdepartmental Courses

Agricultural Economics (AECN)
AECN 832. Economics of Agricultural Production
AECN 856. Environmental Law
AECN 857.Water Law
AECN 865. Resource & Environmental Economics II
AECN 868.Advanced Resource & Environmental Economics

Agricultural Leadership, Education and Communication (ALEC)
ALEC 801. Theoretical Foundations of Leadership
ALEC 810. Environmental Leadership:A Historical & Ethical Perspective
ALEC 833. Planning & Implementation of Cooperative Extension Programs for Domestic & Foreign Audiences
ALEC 901. Leading Change in Rural America & Beyond

Agronomy & Horticulture

- **Agronomy (AGRO)**

AGRO 808. Microclimate:The Biological Environment (GEOG/NRES 808)
AGRO 835.Agroecology (NRES 835)
AGRO 840. Great Plains Ecosystems (RNGE 440)
AGRO 842.Wildland Plants
AGRO 844.Vegetation Analysis
AGRO 845. Livestock Management on Range & Pasture
AGRO 850. Climate & Society (GEOG/ METR 850, NRES 852)
AGRO 875.Water Quality Strategy (CRPL/ GEOL/NRES 875)
AGRO 877. Great Plains Field Pedology (GEOG 867/NRES 877)
AGRO 881.Water Resources Seminar (GEOG 881, NRES 815)

- **Horticulture (HORT)**

HORT 909. Responses to Environment (AGRO/NRES 909)

Anthropology & Geography

- **Anthropology (ANTH)**

ANTH 816. Topics in Cultural Anthropology
ANTH 819. Art & Anthropology of Native North America
ANTH 833. North American Archaeology
ANTH 834. An Intro to Plains Archaeology

ANTH 851. Contemporary Issues of Indigenous Peoples in North America
ANTH 854. Traveling Ethnographic Field School
ANTH 876. Human Rights, Environment & Development
ANTH 880. Advanced Fieldwork
ANTH 883. Advanced Field Methods
ANTH 896. Special Readings in Anthropology
ANTH 898. Advanced Current Topics in Anthropology
ANTH 953. Seminar in Anthropology & Geography (GEOG 933)

- **Geography (GEOG)**

GEOG 850. Climate & Society (AGRO/ METR 850, NRES 852)
GEOG 877. Great Plains Field Pedology (AGRO/NRES 877)
GEOG 881. Water Resources Seminar (AGRO 881, GEOL/NRES 815)
GEOG 933. Seminar in Anthropology & Geography (ANTH 953)
GEOG 935. Seminar in Historical Geography: Great Plains

Architecture
IDES 860. Preservation & Conservation of Historic Interiors
ARCH 848. Architecture of the Great Plains
ARCH 860. Environmental Survey & Analysis (CRPL 872)
ARCH 863. Architectural Preservation

Art and Art History (AHIS)
AHIS 898. Special Topics: American Art & Regionalism; Great Plains

Biological Sciences (BIOS)
BIOS 855. Great Plains Flora
BIOS 859. Limnology (NRES 859)
BIOS 864. Fisheries Biology (NRES 864)
BIOS 870. Prairie Ecology
BIOS 882. Field Entomology
BIOS 887. Field Parasitology
BIOS 888. Natural History of the Invertebrates
BIOS 891. Ichthyology (NRES 889)
BIOS 894. Ornithology

Communication Studies (COMM)
COMM 830. Political Communication
COMM 950B. Seminar in Intercultural Communication
COMM 985. Cultural Criticism

Community and Regional Planning (CRPL)
CRPL 800. Intro to Planning
CRPL 804. Legal Aspects of Planning
CRPL 860. Planning & Design in the Built Environment
CRPL 870. Environmental Planning & Policy
CRPL 872. Environmental Survey & Analysis (ARCH 860)
CRPL 875. Water Quality Strategy (AGRO/GEOL/NRES 875)
CRPL 877. Recreation & Park Planning
CRPL 880. Economic Development Planning
CRPL 895H. Selected Topics: Housing: Issue & Innovations
CRPL 895Q. Selected Topics: Historic Preservation Planning
CRPL 895T. Selected Topics: Issues in Community Transit Planning
CRPL 896. Special Problems: Rural & Small Town Planning

Economics (ECON)
ECON 840. Regional Development
ECON 842. Regional Analysis
ECON 857. US Economic History: 19th Century
ECON 858. US Economic History: 20th Century
ECON 871. Public Finance
ECON 872. Efficiency in Government

English (ENGL)
ENGL 805K. Canadian Fiction
ENGL 811B. Plains Literature
ENGL 845K. Ethnic Literature: Native American Literature
ENGL 911. Seminars in Great Plains Literature
ENGL 933B. Seminar in American Authors since 1900: Willa Cather

Geosciences

- **Geology (GEOL)**

GEOL 815.Water Resources Seminar (AGRO/ GEOG 881, NRES 815)
GEOL 823. Quaternary Ecology & Climate (BIOS 823)
GEOL 850. Surficial Processes & Landscape Evolution
GEOL 875.Water Quality Strategy (AGRO/CRPL/NRES 875)
GEOL 881. Environmental & Urban Geology
GEOL 888. Groundwater Geology (NRES 888)
GEOL 889. Hydrogeology (NRES 887)
GEOL 929. Mesozoic & Cenozoic Stratigraphy
GEOL 934. Site Analysis in Vertebrate Paleontology
GEOL 935. Cenozoic Vertebrate Paleoecology
GEOL 953. Glacial Geology

- **Meteorology (METR)**

METR 850. Climate & Society (AGRO/GEOG 850, NRES 852)

History (HIST)
HIST 852. American Frontier in the Nineteenth Century
HIST 864. Native American History: Selected Topics
HIST 865. History of Plains Indians
HIST 889L. Directed Readings: History of the Great Plains
HIST 889J. Directed Readings: The History & Culture of the American Indian

Natural Resource Sciences (NRES)
NRES 808. Microclimate: The Biological Environment (AGRO/GEOG 808)
NRES 815. Water Resources Seminar (AGRO/GEOG 881, GEOL 815)
NRES 823. Integrated Resource Management
NRES 835. Agroecology (AGRO 835)
NRES 850. Biology of Wildlife Populations
NRES 852. Climate & Society (AGRO/GEOG/METR 850)
NRES 859. Limnology (BIOS 859)
NRES 864. Fisheries Biology (BIOS 892)
NRES 868. Wetlands NRES 875.Water Quality Strategy (AGRO/CRPL/GEOL 875)
NRES 877. Great Plains Field Pedology (AGRO/GEOG 877)
NRES 887. Hydrogeology (GEOL 889)
NRES 888. Groundwater Geology (GEOL 888)
NRES 889. Ichthyology

Teaching, Learning & Teacher Education (TLTE)
TEAC 925E. Seminar in the Curriculum & Teaching of Social Studies: Great Plains

Textiles, Clothing and Design (TXCD)
TXCD 978. Seminar in Textile History

Courses for History (HIST)

History

800. Seminar in Great Plains Studies (GEOG 800; GPSP 800) (3 cr) Lec 3.

Prereq: A course in GPSP
Topic varies.

801. Documentary Editing (3 cr)

Historical editing with attention to literary editing as well. Topics: idea development, proposal writing, preparation (collection, organization, control, and selection of manuscripts), transcription of manuscripts, annotation and editorial apparatus, and preparation for publication. Other topics: interpretation in editing, types of publication, proofreading, indexing, and variety in editing.

802. Sexuality in Nineteenth and Twentieth Century America (WMNS 802) (3 cr) Lec 3.

Explores sexual practices and ideologies in American history from the 1800s to the present.

803. United States Military History, 1607-1917 (3 cr)

Significance of military affairs in the context of American political, economic, and social history from the formation of the earliest colonial militias to the pre-WWI preparedness movement. Major wars of this period, emphasizing such themes as the professionalization of the officer corps, the relationship between war and technology, and civil-military relations.

804. United States Military History since 1917 (3 cr)

Significance of military affairs in the context of American political, economic, and social history from America's entry into WWI to the present. Discusses major wars of this period, but also emphasizes such themes as the professionalization of the officer corps, the relationship between war and technology (especially nuclear weapons), and civil-military relations.

807. Early Christianity (CLAS 807; RELG 307) (3 cr)

Life, literature, thought, and institutions of the Christian movement from Jesus to Constantine. A critical, historical approach to the sources in English translation and how they reflect the interaction of Christian, Jew, and pagan in late antiquity. The historical Jesus vis-a-vis the Christ of Faith, the impact of Paul's thought, the formation of Christian dogma, methods of interpreting canonical and extracanonical Christian literature, the problem of heresy and orthodoxy.

809. The Religion of Late Western Antiquity (CLAS 809; RELG 409) (3 cr)

Religious institutions, philosophies, and lifeways of the Hellenistic Age from Alexander to Constantine. Includes civic religion of Greece and Rome, popular religion, mystery cults, Judaism, Christianity, popular and school philosophies (Platonism, Aristotelianism, Epicureanism, Cynicism, Stoicism), Gnosticism. History, interrelationships, and emerging world view of these movements.

810. The Ancient Near East (3 cr)

Primary civilizations of the Nile, the Tigris and Euphrates, and the Indus river valleys, as well as secondary civilizations in these general areas to ca.1200 B.C.

811. Indians in American Popular Culture (ETHN 411) (3 cr)

Image of Native Americans in American popular culture. Dominant society's creation of images of Indians to serve societal needs. Reasons behind these creations, what purposes they served, and the enormous effect on white-Native relations. Covers art, literature, fiction, film, television, and sports "mascots.".

812. City States in Classical Greece (3 cr)

Development and influence of the Greek city-states focusing on Athens and Sparta in the 6th, 5th, and 4th centuries BC: Social and constitutional foundations for the Athenian democracy and Spartan oligarchy, sources of conflict between these two major powers, and reasons for the decline of city-states in general.

814. Medieval Culture (3 cr)

Historical context of changes in religion, literature, philosophy, and the arts, 400-1450.

815. The Origins of the European State (3 cr)

Foundations of dominance in primitive Germanic society; monarchy and local government in the early Middle Ages; land and money as power in the central Middle Ages; early public administration; social ethics reflected in political concepts and theories; central government in theory and practice; the European "state system" at the end of the Middle Ages.

817. The Roman Revolution, 133 BC-68 AD (3 cr)

Critical period in Roman history when the republic was transformed into the rule by one man: Political and social functioning of the republic, causes for change, and factors influencing its final shape. Careers of the Gracchi, Marius, Sulla, Pompey, Caesar, Anthony, and Augustus.

818. Augustan Rome (3 cr) Lec 3.

Prereq: HIST 100 or 210, and permission

Augustus' constitutional transformation of Rome. Enforcement of a national identity and values through religion, social legislation, and provincial governance policies. Patronage of public works, display, and literature.

820. The Italian Renaissance (3 cr)

Intellectual and artistic achievements of the Italian Renaissance, relating them to the political developments and social changes which occurred throughout the Italian peninsula between ca. 1300-1550 and highlighting those elements which would influence the evolution of European culture. Emphasis placed on the development of humanism and its role in the transition from medieval to modern values.

821. The German Reformation (3 cr) Lec 3.

Cultural and intellectual developments of the German Reformation against its social background. Religious and political events of the first half of the sixteenth century. Transition from medieval to modern Christianity, considering the transmission and revolutionary nature of evangelical doctrines, and the gradual institutionalism of the new churches.

822. The Scientific Revolution (3 cr)

Emergence of modern science in the sixteenth and seventeenth centuries and the impact of this new intellectual force on the social, political, and scientific thought of the Enlightenment. The philosophical, religious, and social background to the Scientific Revolution examined, and the institutional bases of the new science considered. Role of mysticism and alchemy in the rise of modern science and to the relationship between science and religion which developed during the period of the Scientific Revolution. Personalities and careers of some of the great scientists of the age--Copernicus, Galileo, Newton--used to illuminate these and other issues.

823. European Enlightenment (3 cr)

Survey of European intellectual history from Locke and Bayle to Kant and Condorcet. Definition of the Enlightenment through examination both of the writings of the philosophers and through secondary literature. Treats the Enlightenment in its social and political as well as its intellectual context.

824. European Social and Cultural History since 1815 (3 cr)

European society and culture from the Enlightenment to the present with emphasis upon institutions, ideas, and artistic expression.

828. History of Germany 1914 to Present (3 cr)

Conflict and consensus in the history of Germany from World War I to the present. Institutional, social and political factors that have helped shape Germany and the historical personalities--such as William II, Hitler, Adenauer, and Brandt--who have led the Germans.

829. History of Fascism in Europe (3 cr)

Comparative conditions in Italy and Germany of the twenties leading to the rise of totalitarianism; the growth pattern of the two movements in and out of power; evolution of domestic and foreign policy to 1945.

830. Early European History through Biography (3 cr)

Specific individuals from late medieval/early modern Europe, such as Joan of Arc, Henry V, and Eleanor of Aquitaine. How history can be used to serve social, cultural, and political needs, and the difficulties of determining historic truth about a person or event.

831. Medieval England (3 cr)

Political, social, economic, institutional, and intellectual history of England from the Roman invasions through the accession of the Tudor dynasty in 1485.

832. England: Reformation to Revolution, 1530-1660 (3 cr)

History of English society, politics, and culture from the time of Henry VIII through that of Elizabeth I, Shakespeare, Donne, Charles I, Cromwell, and Milton.

833. England: Restoration to 1789 (3 cr)

History of English society, politics, and culture from the time of Charles II through the Glorious Revolution to the reign of George III.

834. England in the Victorian Age (3 cr)

Major social and cultural forces which shaped Victorian life.

835. Twentieth-Century England (3 cr)

Major social and cultural forces which have molded English life in the present century.

836. Saints, Witches, and Madwomen (WMNS 836) (3 cr)

Image of the madwoman throughout European and American history. How women on the margins have been labelled in different periods as saintly, as witches, or as insane.

837. African Americans and Racial Politics, 1932-Present (ETHN 437) (3 cr)

The struggle of African Americans and their allies to topple white supremacy and gain access to the political process. The role that race played in American politics from the New Deal through the emergence of the New Right.

838. War and Peace in Europe: 1914 to the Present (3 cr)

Survey of the diplomatic and military history of Europe from World War I to the present. Strategy, tactics, and diplomacy of the two world wars; international relations in the years between the wars; the emergence of a new postwar Europe; and Europe's involvement in the rivalry between the superpowers since 1945.

839. The Holocaust (3 cr)

Europe-wide programs of persecution and genocide carried out under the auspices of the Nazi-German regime between 1933 and 1945. Primarily the Jewish dimension of the Holocaust, but examines Nazi policies targeted against Poles, Gypsies, homosexuals, disabled Germans, and other groups. Events analyzed from the perspectives of victims, perpetrators, and bystanders.

840. American Legal History (3 cr)

Evolution of a distinct American legal culture from colonial times to the present, emphasizing the history of the components of the legal system: the judiciary, the bar, litigants, law enforcement and corrections, and legal doctrine.

841. Women and Gender in the United States (WMNS 841) (3 cr)

Women's historical experiences and gender ideologies in American history from 1500 to the present. The impact of Europeans on

Native American gender roles; race, gender, and slavery; women, science, and medicine; and women's activism.

842. Antebellum America 1800-1850 (3 cr)

American life during the first half of the nineteenth century, with special stress upon the nature of political processes, the many movements for the reform of society, the development of a national economy, and the rise of sectional conflict.

843. American Urban and Social History I (3 cr)

Survey and analysis of the impact of economic development and urbanization on the organization and character of American society from colonial times through the Civil War. Rise and transformation of the southern planter class and the slavery system which supported it; the development and change in character of both farmers and the urban working class; and the evolution of the northern, urban, middle class, and its impact on all aspects of American life before the Civil War.

844. American Urban and Social History II (3 cr)

Survey and analysis of the impact of metropolitan development, industrialization, and the modernization of values, ideas, and mores on American society between the Civil War and the recent past. Breakdown of the old criteria of class and group definitions and their replacement by newer, more impersonal, economic categories; the declining role of the farmer in American life; the rise and fall of elite "society"; and the further development of the middle and working classes after World War II.

845. The American Civil War and Reconstruction (3 cr)

Development of the sectional crisis, war and its impact on American institutions, reconstruction and reunion, from 1850 to 1877.

846. America in the "Gilded Age" (3 cr)

Sectional adjustment, national politics, the "Gilded Age," economic growth, and the revival of imperialism in the period 1877-1901.

847. Family History of the U.S. (3 cr)

Broad trends that underlay American family history. Introduces students to the theory, sources, and methods of family history by exploring the impact of such demographic phenomena as population growth, immigration, racial and ethnic heritage, slavery and emancipation, marriage, gender, migration, fertility, and life expectancy.

848. History of Women and Gender in the American West (WMNS 848) (3 cr)

The effect of colonialism on women and gender in the American West. The impact of Spanish, French, British, and American colonization on American Indian and Spanish/Mexican gender systems. Migration and immigration of Anglo, African-American, and Asian women to the West; women's work and community life; and women's reform movements and activism.

849. Ideas in America to the Civil War (3 cr)

Also see information on courses with undergraduate tie-ins regarding additional requirements. Survey of the history of ideas in America from the colonial era to the Civil War, emphasizing Puritanism, the Enlightenment, and Romanticism.

850. Ideas in America Since the Civil War (3 cr)

Also see information on courses with undergraduate tie-ins regarding additional requirements. Survey of the history of ideas in America from 1865 to the present, emphasizing the impact of Darwinism, the "Second Enlightenment," and the diverse currents of modern thought.

851. American West to 1900 (3 cr)

History of indigenous peoples of the West. Euro-American, African American, Asian, Latina and/or Latino settlements; the changing environment; gender; and economic activities such as fur trading, mining, ranching, farming, and lumbering.

852. American West since 1900 (3 cr)

History of race, class, and gender; urbanization and industrialization/political movements; population growth, new immigration, and urban expansion; modern economic trends and environmental change; and the role of the federal government in the American West.

853. From Progressivism to the Great Crash (3 cr)

Also see information on courses with undergraduate tie-ins regarding additional requirements. The Progressive Movement, Theodore Roosevelt and the New Nationalism, Wilson and the New Freedom, World War I, the Return to Normalcy, the Jazz Age, and the Great Crash.

854. The Era of Franklin D. Roosevelt (3 cr)

Also see information on courses with undergraduate tie-ins regarding additional requirements. The Great Depression, Franklin D. Roosevelt and the New Deal, the road to Pearl Harbor, and World War II.

855. Post-World War II America (3 cr)

Also see information on courses with undergraduate tie-ins regarding additional requirements. Survey of the major developments in domestic politics, in foreign affairs, and the economic, social, and cultural spheres from the end of World War II to the present.

856. Black and/or African American Women's History (ETHN 456; WMNS 856) (3 cr)

From African origins in the 15th century to the late 20th century. The transatlantic slave trade, "New World" experiences, slavery and resistance, sexuality, cultural persistence and evolution, racial strife, the struggle for civil rights, and black womanist and feminist theories.

857. U.S. Economic History I (ECON 857) (3 cr)

Prereq: ECON 211 and 212 or ECON 210

Transformation of the US economy from an agrarian to an industrial society and the impact of that transformation on peoples lives and livelihoods. Focus on the late eighteenth and nineteenth centuries. Economics of slavery, the impact of the railroads, immigration, and the collective response of business and labor to industrialization.

858. U.S. Economic History II (ECON 858) (3 cr)

Prereq: ECON 211 and 212 or ECON 210

Transformation of the US economy in the twentieth century. Continued consolidation of the business enterprise, business cycle episodes including the Great Depression of the 1930s, organized labor, and the role of government in managing and coping with this transformation in economic life.

859. The Black West (ETHN 459) (3 cr)

History of African Americans in the American West, from Spanish settlement to the late 20th century. Slavery and freedom in the West, western migration and settlement, "Black Cowboys," "Black Indians," "Buffalo Soldiers," black women's experiences, all-black towns, cultural persistence and evolution, racial strife, and the struggle for civil rights.

860. The Civil Rights Movement (ETHN 460) (3 cr)

The origins, contours, ideas, movement centers, personalities and legacies of the U.S. Civil Rights and Black Power movements, 1950s-1970s. The roles of African-American masses, college and high school students, and women. Points of conflict and cooperation between African-America and mainstream America.

861. The Russian Revolution (3 cr)

Political, economic, social, and intellectual roots of the Russian Revolution of 1917, the transformation from liberal to Bolshevik leadership, and the establishment of the USSR.

862. History of Soviet Russia (3 cr)

Fifty years of effort at implementing the mandate of the so-called "October Revolution" both domestically and in foreign affairs. The Soviet Union today.

863. History of the Canadian West (3 cr)

Cultural encounters among Euro-Canadians, First Nations, Metis, and Asians; political, social, and economic developments from the 18th century to the present; relationships of peoples and environments, particularly in logging, hunting, mining, and city building; and western cultural symbolisms both to the Canadian nation and as a point of difference from its neighbors.

864. Native American History: Selected Topics (ETHN 464) (3 cr)

Issues in Native American history. Topics may include: Native Americans and the environment; Native Americans in the 19th or 20th century; Native Americans and federal Indian policy; Native Americans and gender; and Native Americans of regions other than the Great Plains.

865. History of Plains Indians (ETHN 465) (3 cr)

History and culture of Native Americans of the Great Plains from earliest times through the twentieth century, stressing the history of migration, religion, diplomacy, politics, and society. All of the Indian nations of the Great Plains considered.

866. Early Modern China (3 cr)

China during the last dynasty: the Qing, 1644-1911. Conquest and unification of China by the Manchus, role of Confucianism in Chinese society, population growth during the 18th century, rise of the opium trade, the Opium War, the Taiping Rebellion, and reform efforts.

867. History of China in the Twentieth Century (3 cr)

Collapse of the old Confucian Imperial system, the Boxer Rebellion, the 1911 Revolution, warlordism, the rise of Communism, the Sino-Japanese war (1937-1945), the Communist Revolution and Chairman Mao, the Cultural Revolution, Deng Xiaopeng's reforms.

868/886. History of South Africa (ETHN 486) (3 cr)

Survey of the region from the Stone Age to the evolution of the political, economic, legal and social framework of apartheid in South Africa and the recent efforts to achieve political accommodation.

869. Global Environmental History (3 cr)

Past interactions among societies and nature in a comparative world perspective. Indigenous peoples' resource management;

ecological impacts of colonization; how political economies shape resource use; changing ideas about nature; and the historic roots of current environmental problems and possible solutions.

870. Digital History (4 cr) Lec 4.

Analysis of the theory, methods, and readings in humanities computing and digital history.

871. Latin America and the Outside World (3 cr)

Analysis of the role of the Latin American nations in world affairs, emphasizing intellectual, economic, and diplomatic relations with the United States and Europe. An understanding of the position and problems of Latin America in the present world.

872. Revolutions in Twentieth-Century Latin America (3 cr)

Revolutionary movements from the Revolution of 1910 in Mexico to the more recent upheavals in Central America. Aside from case studies of selected countries, topical subjects covered, such as militarism, communism, nationalism, anti-Americanism, religion and the role of the Church, land, and unequal distribution of wealth.

873. Spanish American Colonial Institutions (3 cr)

Selected political, economic, and social institutions during the three centuries of Spanish rule in America.

875. History of Brazil (3 cr)

from 1500 to the present, emphasizing political institutions, economic cycles, social structure, and religious and cultural patterns.

877. Indigenous Peoples of the World (ETHN 477) (3 cr) Lec 3.

Indigenous peoples worldwide and current issues concerning them. Tribal sovereignty, territorial conflicts, globalization, ecosystem destruction, human rights, and the World Indigenous Movement.

878. Pro-seminar in Latin American Studies (ANTH 878; EDPS 878; GEOG 878; LAMS 478; MODL 878; POLS 878; SOCI 878; SPAN *878) (3 cr, max 6) Lec 3.

Prereq: Permission

Interdisciplinary analysis of the mechanics and consequences of cultural continuity and social change in Latin America.

879. Pro-seminar in International Relations I (AECN 467; ANTH 879; ECON 866; GEOG 848; POLS 866; SOCI 866) (3 cr)

Prereq: Permission

Open to students with an interest in international relations. Topic varies.

880. The Social and Economic History of China since the Late Ming Era (3 cr)

Prereq: One of the following: HIST 181, 281, 282, 883, 884 or permission

Analysis of the major social and economic changes in China during the previous six centuries. Includes the rapid growth of China's population, changes in family structure and peasant life, the development of China's commerce, China's relationship with the world economy, popular religion in China, and the social and economic transformation of China during the communist era.

881. History of Premodern Japan (3 cr)

Also see information on courses with undergraduate tie-ins regarding additional requirements. An analysis of premodern Japanese society, with an emphasis on institutional and cultural developments.

882. History of Modern Japan (3 cr)

Also see information on courses with undergraduate tie-ins regarding additional requirements. Establishment of a modern state; foundations of economic power; liberalism and oligarchical rule; militarism; post-World War II developments.

883. History of Premodern China (3 cr)

Also see information on courses with undergraduate tie-ins regarding additional requirements. History of China to 1800 with emphasis on intellectual history (Confucianism, Taoism, Buddhism, NeoConfucianism) and the political, economic, and social development of the Chinese empire (221 B.C. to 1800 A.D.).

885. Africa Since 1800 (ETHN 485) (3 cr)

Beginning with a description of African societies in the nineteenth century, focus is on African responses to European contact and control, the nature of the colonial systems, and the emergence of new independent states in the twentieth century. Using historical and literary sources, stresses Africa's cultural and social history as well as its political and economic. Special study units given on the Portuguese territories, Rhodesia, and South Africa.

890. Topics in World History (3 cr, max 15) Lec 3.

Prereq: Permission

Topic varies.

*894. Directed Readings (1-24 cr, max 24)

Prereq: Permission

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

900. Introduction to Historical Study (1-24 cr)

901. Readings and Problems in Ancient History (1-24 cr)

911. Readings and Problems in Medieval History (1-24 cr)

912. Seminar in Medieval History (1-24 cr)

918. Interdisciplinary Seminar in Nineteenth-Century Studies (ENGL 918; MODL 918) (3 cr, max 6)

Invention of the nineteenth century, gender, colonialism, class, realism science and technology.

919. Interdisciplinary Approaches to the Nineteenth Century (ENGL 919; MODL 919) (3 cr)

Introduction to the nineteenth century in North America (focusing on the US), Great Britain, and Europe (focusing on France, Germany, Russia, and Spain), organized through themes such as constructions of gender and sexuality, democracy in the nation-state, and challenges to religion.

921. Readings and Problems in English History (1-24 cr)

922. Seminar in English History (1-24 cr)

928. Readings and Problems in Military History (1-24 cr)

929. Research Seminar in Military History (1-24 cr)

931. Readings and Problems in Early Modern European History (1-24 cr)

932. Seminar in Early Modern European History (1-24 cr)

933. Readings and Problems in Recent European History (1-24 cr)

934. Seminar in Recent European History (1-24 cr)

941. Readings and Problems in American History (1-24 cr)

942. Seminar in American History (1-24 cr)

951. History of Women and Gender (WMNS 951) (3 cr)

A comparative approach, offering readings on a central theme from a variety of periods and/or areas. Themes vary.

961. Readings and Problems in 20th Century International History (3 cr)

20th century global history from the perspectives of both international relations and world history, with particular attention to politics, revolutions, economics, ideology, and culture.

970. Seminar in Digital History (3 cr) Lec 3.

HIST 970 is part of a suite of courses in the area of digital history.

971. Readings and Problems in Latin American History (1-24 cr)

981. Readings and Problems in East Asian History (1-24 cr)

982. Seminar in East Asian History (3 cr)

988. Introduction to the Interdisciplinary Study of the Middle Ages (AHIS 988; ENGL 988; MODL 988; MUSC 988) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Middle Ages. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly

by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

989. Introduction to the Interdisciplinary Study of the Renaissance (AHIS 989; ENGL 989; MODL 989; MUSC 989) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Renaissance. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

990. Seminar in Special Problems of Teaching History (1-24 cr)

991. Readings and Problems in the History of the North American West (3 cr, max 9)

History of the North American West. Past and present historiography; modern themes and methodologies; and topical and comparative historical treatments.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Kenneth Winkle, Ph.D.

Graduate Committee Chair: Professor Thomas Borstelmann

Admission to full graduate standing leading to the MA degree requires 26 hours of history at the undergraduate level and two college years or the equivalent of a foreign language. Applicants who do not meet these requirements may be admitted but must make good the deficiency before the MA degree is awarded.

All applicants for admission to graduate study in history and for financial assistance, fellowships, and assistantships must submit their scores on the verbal and quantitative portions of the Graduate Record Examination. The Graduate Committee also requires a written statement from candidates indicating their area of interest and why they wish to pursue graduate study in history, as well as a sample of their written work.

For those desiring a minor in history, courses will be arranged between the student and a member of the department.

Master of Arts Degree.

The candidate for the masters degree must show competency by a written comprehensive examination or oral examination covering the student's approved program of study.

Doctor of Philosophy Degree.

Research leading to the PhD degree is offered in the following general areas: North American history, European history, and comparative/ world history. Within these areas students may concentrate in the following fields: North America West, American Society and Culture, Indigenous Peoples, Military/Diplomatic/International History, Pre-Modern Europe, Modern Europe, German Studies, Comparative World History, and Women's History. The candidate for the doctoral degree also must show competence by passing written comprehensive examinations in their general area and in comparative world history. Facility in one foreign language is required. The supervisory committee may require (an) additional foreign language(s) and/or alternate research tool when it is particularly relevant to a student's chosen area of specialization.

Students should consult the Guide to Graduate Study in History for a complete statement of academic policies and student responsibilities in the history department's graduate program.

Specializations available for the MA and PhD degrees:

Great Plains Studies; International Human Rights and Diversity; Nineteenth Century Studies; and Women's and Gender Studies

NOTE:

Students who enroll for graduate credit in courses cross listed with undergraduate courses must complete significant additional course requirements beyond those expected of students enrolling for undergraduate credit. These will be established by the instructor and will include more demanding criteria for evaluation, as well as, for example, additional research projects, readings, papers, etc.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Akers, Donna L. -2004; Assistant Professor; BA 1977 Houston; MA 1994 Oklahoma; PhD 1997 California (Riverside)
- Ambrosius, Lloyd E. -1967; Professor; BA 1963, MA 1964, PhD 1967 Illinois
- Berger, Patrice -1970; Professor; AB 1965 Columbia; MA 1967, PhD 1972 Chicago

- Borstelmann, Thomas (Tim) -2003; Professor; BA 1980 Stanford; PhD 1990 Duke
- Burnett, Amy N. -1989; Associate Professor; BA 1979, MA 1984, PhD 1989 Wisconsin
- Burnett, Stephen G. -1989; Associate Professor; BA 1978, MLS 1989, PhD 1990 Wisconsin (Madison)
- Cahan, David L. -1982; Professor; AB 1969 California (Berkeley); MA 1977, PhD 1980 John Hopkins
- Coble, Parks M. -1976; Professor; BA 1968 South Carolina; MA 1971, PhD 1975 Illinois
- Coope, Jessica -1994; Associate Professor; BA 1980 Stanford; MA 1983, PhD 1988 California (Berkeley)
- Curry, Dawne -2007; Assistant Professor; BA 1990 Mary Washington; MA 1996 Ohio; PhD 2006 Michigan State
- Garza, James -2001; Assistant Professor; BA 1990, MA 1996 Texas A&M; PhD 2001 Texas Christian
- Gorman, Vanessa B. -1994; Associate Professor; BA 1985 Brigham Young; MA 1988, PhD 1993 Pennsylvania
- Graybill, Andrew R. -2005; Assistant Professor; BA 1994 Yale; MA 2000, PhD 2003 Princeton
- Homze, Edward L. -1965; Professor Emeritus; BA 1952, MA 1953 Bowling Green; PhD 1963 Penn State
- Jacobs, Margaret D. -2004; Associate Professor; BA 1986, MA 1992 California (Davis); PhD 1996 Stanford
- Jones, Jeannette E. -2004; Assistant Professor; BA 1993 Hofstra; MA 1997, PhD 2003 SUNY (Buffalo)
- Jones, Patrick D. -2004; Assistant Professor; BA 1993 Kenyan; MA 1996, PhD 2002 Wisconsin (Madison)
- Kleimola, Ann -1972; Professor; BA 1965 Olivet; MA 1966, PhD 1970 Michigan
- Lawrence, Susan -2007; Associate Professor; BA Pomona; MA, PhD Toronto
- LeSueur, James D. -2001; Associate Professor; BA 1986, Montana; MA 1990, PhD 1996 Chicago
- Levin, Carole -1998; Willa Cather Professor; BA 1970 Southern Illinois; PhD 1976 Tufts
- Luebke, Frederick -1962; Professor Emeritus; BS 1950 Concordia (Illinois); MA 1958 Claremont; PhD 1966 Nebraska (Lincoln)
- Mahoney, Timothy R. -1986; Professor; BA 1975 Holy Cross; MA 1976, PhD 1982 Chicago
- Maslowski, Peter -1973; Professor; BA 1966 Miami (Ohio); MA 1968, PhD 1972 Ohio State
- McClelland, James C. -1979; Professor Emeritus; BA 1960 Amherst; MA 1963 Yale; PhD 1970 Princeton
- Moulton, Gary E. -1979; Professor Emeritus; BA 1968 Northeastern Oklahoma State; MA 1970, PhD 1973 Oklahoma State
- Rader, Benjamin G. -1967; Professor; BA 1958 Southwest Missouri State; MA 1959 Oklahoma State; PhD 1964 Maryland
- Rawley, James A. -1964; Professor Emeritus; AB 1938, MA 1939 Michigan; PhD 1949 Columbia
- Schrafstetter, Susanna -2005; Associate Professor; MA 1994, PhD 1998 Munich
- Seefeldt, W. Douglas -2004; Assistant Professor; BA 1991 Hampshire; MA 1996 Oregon; PhD 2001 Arizona State
- Smith Victoria A.O. -2002; Assistant Professor; BA 1992, MA 1995 Arizona; PhD 2002 Arizona State
- Steinweis, Alan E. -1994; Associate Professor; BA 1979 SUNY (Binghamton); MA 1982, PhD 1988 North Carolina (Chapel Hill)
- Thomas, William -2005; Professor; BA 1986 Trinity; MA 1991, PhD 1995 Virginia
- Winkle, Kenneth J. -1987; Professor and Chair; AB 1976 Miami; MA 1977, PhD 1984 Wisconsin
- Wunder, John -1988; Professor; BA 1967, MA 1970, JD 1970 Iowa; PhD 1974 Washington

Courses for Turfgrass & Landscape Management (TLMT)

Courses for Horticulture (HORT)

Horticulture

Subject Areas

- Horticulture (HORT)
- Turfgrass & Landscape Management (TLMT)

806. Plant Ecophysiology: Theory and Practice (AGRO 806; NRES 806) (4 cr I) Lec 3, lab 1.

Prereq: 4 hours of ecology; 4 hours of botany or plant physiology

Offered fall semester of even-numbered calendar years. A field/greenhouse experiment is assigned to students registered for 806. Principles of plant physiology which underlie the relationship between plants and their physical, chemical and biotic environments. Introduction to the ecological niche, limiting factors and adaptation. Seed germination and ecology, plant and soil water relations, nutrients, plant energy budgets, photosynthesis, carbon balance and plant-animal interactions. Introduction to various field equipment used in ecophysiological studies.

807. Bio-Atmospheric Instrumentation (AGRO 869; GEOG 869; METR 869; MSYM 869; NRES 869) (3 cr I)

Prereq: MATH 106 and 4 hrs physics

Offered fall semester of odd-numbered calendar years. Discussion and practical application of principles and practices of measuring meteorological and related variables near the earth's surface including temperature, humidity, precipitation, pressure, radiation and wind. Performance characteristics of sensors and modern data collection methods discussed and evaluated.

808. Microclimate: The Biological Environment (AGRO 808; GEOG 808; METR 808; NRES 808; WATS 408) (3 cr I)

Prereq: MATH 106 or equivalent; 5 hrs physics; or permission

Physical factors that create the biological environment. Radiation and energy balances of earth's surfaces, terrestrial and marine. Temperature, humidity and wind regimes near the surface. Control of the physical environment through irrigation, windbreaks, frost protection, manipulation of light and radiation. Applications to air pollution research. Instruments for measuring environmental conditions and remote sensing of the environment.

*810. Plant Molecular Biology (AGRO *810; BIOC *810; BIOS *810) (3 cr II) Lec 3.

Prereq: AGRO 315 or BIOS 206; BIOC 831 or permission

Molecular genetic basis of biological function in higher plants. Genome organization, gene structure and function, regulation of gene expression, recombinant DNA, and genetic engineering principles. Material taken primarily from current literature.

*811. Plant Tissue Culture (BIOS *811; NRES *811) (4 cr II) Lec 2, lab 4.

Prereq: BIOS 109; AGRO 325 which includes CHEM 109, 110; or equivalent

Survey of techniques used in plant cell, tissue and organ culture, including current research. Laboratory emphasizes practical manipulation of plant cells, tissues, and organs, including examples from woody and herbaceous plant species.

*812. Landscape Ecology (NRES *810) (3 cr II)

Prereq: 12 hrs biological sciences or related fields including BIOS 320 or permission

Spatial arrangements of ecosystems, the interaction among component ecosystems through the flow of energy, materials and organisms, and alteration of this structure through natural or anthropogenic forces.

813. Turfgrass and Landscape Weed Management (AGRO 813; TLMT 813) (1 cr II) Lec 1, lab 2.

Fundamental terminology associated with turfgrass and landscape weed management. Weed identification and the cultural practices and herbicide strategies to limit weed invasion and persistence.

818. Agroforestry Systems in Sustainable Agriculture (NRES 817) (3 cr) Lec 3.

Prereq: 12 hrs biological or agricultural sciences

At least one course in production agriculture and one course in natural resources is strongly suggested. Offered odd-numbered calendar years. Roles of woody plants in sustainable agricultural systems of temperate regions. Ecological and economic benefits of trees and shrubs in the agricultural landscape. Includes: habitat diversity and biological control; shelterbelts, structure, function, benefits and design; intercropping systems; silvopastoral systems; riparian systems; and production of timber and speciality crops. Comparison of temperate agroforestry systems to those of topical areas.

*822. Integrated Weed Management (AGRO *822) (1 cr) Lec 1.

Prereq: 12 hrs AGRO and/or closely related HORT and/or BIOS

Principles and application of (IWM). Noxious and invasive weed species. Crops and weed control. Plant population shifts. Use of herbicides and the biologically effective dose. Critical period of weed control and weed threshold. Herbicide tolerant crops.

824. Plant Nutrition and Nutrient Management (AGRO 824) (3 cr II) Lec 3.

Prereq: AGRO 325 or a basic course in plant physiology

A course in organic chemistry or biochemistry recommended. Offered spring semesters. Macro- and micronutrient elements and their function in the growth and development of plants; the role of single elements; interaction/balances between elements and nutrient deficiency/toxicity symptoms as they affect the physiology of the whole plant; and the relationship between crop nutrition and production/environmental considerations (e.g. yield, drought, temperature, pests).

825. Turfgrass Science and Culture (AGRO 825) (3 cr I) Lec 2, lab 2.

Prereq: 9 hrs agricultural plant science and 3 hrs soil science

Offered fall semester of odd-numbered calendar years. Methods and principles of establishment and maintenance of turfgrasses. Climate adaptation; methods of identification and propagation; equipment; fertility and watering practices; insects; diseases; and weed control.

836. Agroecosystems Analysis (AGRO 836) (3 cr III) Fld.

Cost of travel required. Summer travel course with multi-state faculty. Farm visits in Iowa, Minnesota, and Nebraska. Analyze different farming systems for productivity, economic performance and stability, environmental impact, and social viability. Qualitative and quantitative analyses of whole-farm systems and their relationship to local landscape the communities, to family resource base, and to food security.

840. Turfgrass and Landscape Integrated Pest Management (TLMT 840) (1 cr I) Lec 1, rct 2.

TLMT/HORT 440/840 is offered as a five-week course.

Principles of turfgrass and landscape plant pest management and tools to implement Integrated Pest Management (IPM) approaches. Creating healthy landscapes and effectiveness of IPM alternatives.

841. Perennial Plant Function, Growth and Development (AGRO 841; RNGE 441) (3 cr) Lec 3.

Prereq: AGRO 325 or equivalent

Principles of crop physiology and developmental morphology in relation to function, growth, development and survival of perennial forage, range and turf plants. Relationship of physiology and morphological development on plant use and management.

*849. Woody Plant Growth and Development (BIOS *849; NRES *849) (3 cr I) Lec 2.

Prereq: CHEM 251 and AGRO 325

Offered fall semester of odd-numbered calendar years. Plant growth and development specifically of woody plants as viewed from an applied whole-plant physiological level. Plant growth regulators, structure and secondary growth characteristics of woody

plants, juvenility, senescence, abscission and dormancy.

852. Irrigation Systems Management (MSYM 852; WATS 452) (3 cr I) Lec 2, lab 2.

Prereq: MSYM 109 or general physics

AGRO or SOIL 153 recommended. Irrigation management and the selection, evaluation, and improvement of irrigation systems. Includes soil-water measurement, crop water use, irrigation scheduling, irrigation efficiency, measurement of water flow, irrigation systems, groundwater and wells, pumping systems, applying chemicals with irrigation systems, and environmental and water resource considerations. Two laboratory sections are available; one emphasizes agricultural applications and one emphasizes horticultural applications.

871. Vines, Wines and You (NUTR 871) (3 cr II) Lec, lab.

Prereq: 6 hrs science or equivalent experience; 21 years or older

Proof of age required. Origin, botany, historical and cultural significance of the grapevine and related species. Principles and practices of vineyard establishment, management and processing of grape products, importance and/or scope of grape and wine industry; global and local significance. Culinary applications, health, environmental and safety-related issues, business and industry relations and experience.

880. Modified Rootzones (AGRO 880; TLMT 880) (1 cr) Lec 1, rct 2.

Prereq: AGRO/HORT/SOIL 153 and permission

TLMT/AGRO/HORT 480/880 is offered as a five-week course.

Modified rootzones and their applications in the turfgrass and landscape management industry. Current applications and construction techniques, advantages and disadvantages of modified growing media, recommended materials and amendments, management requirements and related costs.

888. Business Management for Horticultural Enterprises (3 cr)

Prereq: HORT 325 or 327 or 362 or *470

HORT 888 requires the completion of a shadowing assignment and the analyses of case studies. Research a specific horticultural enterprise. Develop and present a business plan using materials from the primary area of interest.

889. Urbanization of Rural Landscapes (AGRO 889; CRPL 889) (3 cr)

Prereq: Permission

Multidisciplinary course dealing with the urbanization process; the impacts on landscapes, people and the community; and the choices that are available to informed citizens.

*896. Independent Study (1-5 cr I, II)

Prereq: 12 hrs plant sciences, permission and advance approval of plan of work

Individual or group projects in research and literature review under supervision and evaluation of a departmental faculty member.

*897. Master of Agriculture Project (AGRI *897; AGRO *897) (1-6 cr, max 6)

Prereq: Admission to Master of Agriculture degree program

Project activity for the Master of Agriculture degree. Design, develop and complete a project that requires synthesis of the course topics covered in the primary area of emphasis.

898. Topics in Landscape Architecture (1 cr I) Sem 2.

Prereq: Permission

Topical readings and discussions on current theory, research and practice in landscape architecture. Topics, set for each offering, might include but are not limited to sustainable landscapes, visual and aesthetic assessment, restoration and reclamation, landscape management, recreational landscapes, art in the landscape, landscape ecology applied to design and planning, historical landscape preservation, and plant materials for the Great Plains landscape.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

907. Agricultural Climatology (AGRO 907; METR 907; NRES 907) (3 cr II) Lec 2, lab 2.

Prereq: NRES 808; STAT 801 or equivalent

Offered spring semester of odd-numbered calendar years. Analysis and use of climatological data as applied to agricultural activities and the use of climatological information to assist in decision making.

908. Solar Radiation Interactions at the Earth's Surface (AGRO 908; METR 908; NRES 908) (3 cr II)

Prereq: MATH 208; NRES 808 or equivalent or permission

Offered spring semester of even-numbered calendar years. Quantitative study of radiative transfer to the earth's surface and subsequent interactions of radiation with vegetative components and underlying surfaces. Applications of canopy radiative modeling and remote sensing techniques, particularly in understanding land-surface processes, are discussed.

909. Crop Responses to Environment (AGRO 909; NRES 909) (3 cr II)

Prereq: MATH 208, NRES 808, or equivalent or permission

Offered odd-numbered calendar years. Physiological and developmental aspects of hardiness and growth of crop plants as affected by light, temperature, wind, and water. Design, function, and limitations of controlled environment facilities in plant research.

915. Horticultural Crop Improvement and Breeding (AGRO 915; NRES 915) (3 cr II)

Prereq: 18 hrs plant sciences including AGRO 315 and *815

Offered even-numbered calendar years. Application of the principles of genetics and plant breeding to the improvement of vegetables, fruits, and ornamental plants.

918. Plant Cytogenetics (AGRO 918) (3 cr II) Lec 3, lab.

Prereq: AGRO 315 or equivalent

BIOS 876 and AGRO 815 or 919 recommended. Offered odd-numbered calendar years. Relationships between chromosomes and genes in plants. Discussions of structural and numerical chromosome abnormalities, and their uses in locating genes on specific chromosomes or studying various types of genetic behavior.

918L. Plant Cytogenetics (AGRO 918L) (1 cr) Lab.

Prereq: AGRO/HORT 918 or parallel

919. Plant Genetics (AGRO 919) (2 cr II) Lec 2.

Prereq: AGRO 315

Discussions of genetic mechanisms and behavior, with emphasis on plants. Topics include allelism, nonallelic gene interactions, linkage and recombination, inheritance involving the cytoplasm, incompatibility, and mutation.

920. Xenobiotics in the Environment (AGRO 920; ENTO 920; NRES 920; TOXI 920) (3 cr II) Lec 3.

Prereq: Recommend one course each in organic chemistry, soil science, biochemistry, plant physiology, microbiology and ecology

Offered odd-numbered calendar years. Fate and ecotoxicological impacts of biologically foreign compounds in soil-water-plant environments; uptake, mechanisms of toxicity and metabolism in plants and other biota. Herbicides and other pesticides.

931. Population Genetics (AGRO 931; ASCI 931) (3 cr II) Lec 3.

Prereq: AGRO 315 and STAT 801

Structure of populations, forces affecting gene frequency and frequency of genotypes, continuous variation, population values and means, genotypic and environmental variances and covariances.

950. General Seminar (AGRO 992; NRES 950) (1 cr, max 5 cr)

Prereq: Permission

Expected of all horticulture graduate students and all agronomy PhD students; optional for agronomy MS students. Presentation of thesis or non-thesis topics in agronomy, horticulture or related subjects. For course description, see AGRO 992.

963. Genetics of Host-Parasite Interaction (AGRO 963; BIOS 963) (3 cr I) Lec 2 (90 min each per wk).

Prereq: BIOS 206 or 820

Recommended BIOS 312; BIOS *864A or *864B; and BIOC 837. Offered even-numbered calendar years.

991. Seminar Presentation and Evaluation (AGRO 991) (1 cr, max 2 cr)

AGRO 991 is required for all MS students. Various topics in horticulture, agronomy or related subjects. Emphasis on techniques.

996. Research Other Than Thesis (1-6 cr)

Prereq: Permission

Investigations, without reference to thesis work, on genetic, physiological, ecological, meteorological, and morphological aspects of horticultural crops.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

813. Turfgrass and Landscape Weed Management (AGRO 813; HORT 813) (1 cr II) Lec 1, lab 2.

Fundamental terminology associated with turfgrass and landscape weed management. Weed identification and the cultural practices and herbicide strategies to limit weed invasion and persistence.

840. Turfgrass and Landscape Integrated Pest Management (HORT 840) (1 cr I) Lec 1, rct 2.

TLMT/HORT 440/840 is offered as a five-week course.

Principles of turfgrass and landscape plant pest management and tools to implement Integrated Pest Management (IPM) approaches. Creating healthy landscapes and effectiveness of IPM alternatives.

880. Modified Rootzones (AGRO 880; HORT 880) (1 cr) Lec 1, rct 2.

Prereq: AGRO/HORT/SOIL 153 and permission

TLMT/AGRO/HORT 480/880 is offered as a five-week course.

Modified rootzones and their applications in the turfgrass and landscape management industry. Current applications and construction techniques, advantages and disadvantages of modified growing media, recommended materials and amendments, management requirements and related costs.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: Mark Lagrimini, Ph.D.

Graduate Committee: Professors Specht (chair), Cassman, Gaussoin, Lindgren, Lyon, Walters, Associate Professor Todd

Graduate programs are available in the physiological, genetic, morphological, and environmental aspects of the production and utilization of horticultural crops.

A Graduate Record Examination (aptitude) is required before admission. A qualifying examination, which must be completed by the second semester in residence, will be required for all graduate students. For detailed information, see hort.unl.edu/.

Master of Science Degree.

Students intending to prepare for professional careers in horticulture may select a course of study under Option I, which includes the requirement of a thesis that contains results of original research. Students wishing to pursue an Option II masters degree must receive separate Horticulture Graduate Committee approval. For approval, the student must work with a major adviser and submit to the Graduate Committee the following items: list of the student's committee, list of major and minor courses and the student's project and plan. The requirements for admission to Candidacy and for the thesis are those of the Graduate College.

Horticulture also offers a specialization in Public Horticulture Administration. Most students will be expected to pursue an Option II masters degree although an Option I is possible. The program of studies includes required courses in business or communications, a project or thesis and an internship.

Horticulture also participates in the following interdepartmental areas of specialization for the master of science degree: environmental studies and water resources planning and management. Interested students should look under those areas for details of the program requirements.

A doctor of philosophy degree in horticulture is available.

The following may be used as a part of course work in constituting a major in horticulture: STAT 801, 802, 901, 902; AGRO 815, 914, 932, 966.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Gaussoin, Roch E. -1991; Professor; BS 1980, MS 1983 New Mexico State; PhD 1988 Michigan State
- Hodges, Laurie -1989; Associate Professor; BS 1972 New Hampshire; MS 1978 Arkansas; PhD 1984 Auburn
- Horst, Garald L -1990; Professor; BS 1967 Nebraska (Lincoln); MS 1969, PhD 1973 Missouri
- Lindgren, Dale T. -1976; Professor; BS 1969 Nebraska (Lincoln); MS 1974, PhD 1975 Wisconsin
- Paparozzi, Ellen T. -1981; Professor; BS 1976 Rutgers; MS 1978, PhD 1980 Cornell
- Pavlista, Alexander D. -1988; Professor; BS 1968 Manhattan College; PhD 1977 City (New York)
- Read, Paul E. -1987; Professor; BS 1959, MS 1964 Cornell; PhD 1967 Delaware
- Riordan, Terrance P. -1978; Professor; BS 1965, MS 1968, PhD 1970 Purdue
- Rodie, Steven N. -1994; Associate Professor; Registered Landscape Architect; BS 1977 Colorado State; MLA 1985 Kansas State
- Shearman, Robert C. -1989; Professor; BS 1967 Oregon; MS 1971, PhD 1973 Michigan
- Sutton, R. K. -1975; Associate Professor and Landscape Architect; BS 1970 Colorado State; MLA 1974 Utah State; PhD 1997 Wisconsin
- Todd, K.A. -2002; Assistant Professor and Landscape Architect; BSLA 1975 Iowa State; MA 1985 Nebraska (Lincoln)

Courses for Human Sciences (HUMS)

Human Sciences

865. International Perspectives of Human Sciences (3 cr) (UNL, UNO) Lec 3.

Prereq: 9 hours of human sciences classes or permission

Cross-cultural interdisciplinary perspectives of human sciences.

*875. Research Methods (TXCD *875) (3 cr) (UNL) Lec 3.

Research methods that addresses practical and theoretical issues involved in designing, conducting, and evaluating research.

*891. Special Topics in Human Sciences (CYAF *891; NUTR *891; SLPA *891; TEAC *891; TXCD *891) (1-3 cr, max 12)

Aspects of human sciences not covered elsewhere in the curriculum.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

The Human Sciences major includes six specializations. Communications disorders is housed in the Department of Special Education and Communication Disorders; Child, Youth and Family Studies and Gerontology are sponsored by the Department of Child, Youth and Family Studies; Nutrition and Health Sciences is hosted by the Department of Nutrition and Health Sciences; Textiles, Clothing and Design is based in the Department of Textiles, Clothing and Design; and Leadership Studies is housed in the Department of Agricultural Leadership, Education and Communication.

Specific program and application information is available under each department's listing in this bulletin. Up-to-date information is also available on-line at **cehs.unl.edu.** Inquiries may be directed to **cehsgrad@unl.edu** or to (402) 472-5333.

Courses for Veterinary and Biomedical Sciences (VBMS)

Courses for Integrative Biomedical Sciences (IBMS)

Veterinary and Biomedical Sciences

Subject Areas

- Integrative Biomedical Sciences (IBMS)
- Veterinary and Biomedical Sciences (VBMS)

*999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to IBMS doctoral degree program and supervisory committee chair

*805. Introduction to Mechanisms of Disease (3 cr I) Lec 3.

Prereq: ASCI 240 or equivalent, BIOC/BIOS/CHEM 831, VBMS/BIOS 841, or permission

Offered odd-numbered calendar years. Designed for students of biological, animal, and veterinary sciences. Introduction to general pathology emphasizing etiology, pathogenesis, morphologic features, and fundamental alterations associated with the fundamental changes of disease.

808. Functional Histology (BIOS 808) (4 cr II) Lec 3, lab 2.

Prereq: BIOS 101 and 101L, or 102 or 112; BIOS 213 or ASCI 240

Recommended BIOS 315. Microscopic anatomy of the tissues and organs of major vertebrate species, including humans. Normal cellular arrangements of tissues and organs as related to their macroscopic anatomy and function, with reference to sub-cellular characteristics and biochemical processes. Functional relationships among cells, tissues, organs and organ systems, contributory to organismal well being. General introduction to pathological processes and principles underlying some diseases.

*811. Introduction to Veterinary Epidemiology (2 cr)

Prereq: Permission

Offered summer semester of odd-numbered years. Introduction to concepts of epidemiology including definition and uses of epidemiology. Casual web theory of causation discussed and compared to the Henle-Koch postulates. Students use sampling methods to define population characteristics, detect disease and test hypotheses. Practical application of confidence, power, and sample size. Use of descriptive epidemiology to discuss population characteristics.

816. Veterinary Entomology/Ectoparasitology (ASCI 816; ENTO 816; NRES 816) (2 cr II) Lec 2.

Prereq: 10 hrs entomology or biological science or related fields or permission

Arthropods that cause or vector diseases in animals. Arthropod recognition and biology, and disease epidemiology.

816L. Veterinary Entomology/Ectoparasitology Lab (ASCI 816L; ENTO 816L; NRES 816L) (1 cr II)

Prereq: ASCI, NRES, VBMS 816; or parallel

*818. Computer-Aided Sequence Analysis Primer (BIOS *816) (2 cr I)

Prereq: BIOC 831 or BIOS 801 or 820

Introductory course in biological sequence display, analysis and manipulation with computers. Applied rather than theoretical aspects of different programs are emphasized providing skills to satisfy the analysis demands of molecular biology research. Students completing this course will be able to search, display and analyze the biological information content of macromolecules.

820. Molecular Genetics (BIOS 820) (3 cr)

Prereq: 12 hrs biological sciences including BIOS 206 or equivalent

Molecular basis of genetics. Gene structure and regulation; transposable elements; chromosome structure; DNA replication, repair mechanisms and recombination.

824. Basic Molecular Infectious Diseases (3 cr I) Lec 3.

Prereq: BIOS 312; AGRO 360 or equivalent; or permission

Offered spring semester of odd-numbered calendar years. Introduction to the molecular, genetic and cellular aspects of microbial pathogenesis in humans and animals.

*835. Animal Biochemistry (BIOS *835) (3 cr II, even-numbered years) Lec/disc.

Prereq: BIOC 831 or permission

Biochemistry of animal cells and tissues, with integration of major metabolic pathways and aspects of their control mechanism.

*838. Molecular Biology Laboratory (BIOC *838) (5 cr III) Lec 6, lab 27.

Prereq: BIOC 832, BIOS 312 and 313, an advanced course in genetics and permission

Students may use a gene of their own interest if they have a suitable probe. Basic techniques for bacteriophage and plasmid molecular cloning; dideoxy DNA sequencing.

840. Microbial Physiology (BIOS 840) (3 cr) Lec 3.

Prereq: BIOS 312 and either 313 or 314; or permission

Molecular approaches to the study of prokaryotic cell structure and physiology, including growth, cell division, metabolism, and alternative microbial life styles.

841. Pathogenic Microbiology (BIOS 841) (3 cr II) Lec 3.

Prereq: BIOS 312 and either 313 or 314, or permission

Fundamental principles involved in host-microorganism interrelationships. Identification of pathogens, isolation, propagation, mode of transmission, pathogenicity, symptoms, treatment, prevention of disease, epidemiology, and methods of control.

841L. Pathogenic Microbiology Laboratory (1 cr II)

Prereq: BIOS 312 and 313 (314) or permission

Application of diagnostic microbiological techniques to the isolation, propagation and identification of common pathogens of human beings and animals. Case studies used, in the laboratory setting, to explore and test fundamentals of transmission, epidemiology and to disease pathogenesis of selected infectious agents and to relate these to disease signs, treatments and methods of control.

842. Endocrinology (ASCI 842; BIOS 842) (3 cr I) Lec 3.

Prereq: A course in vertebrate physiology and/or biochemistry

Mammalian endocrine glands from the standpoint of their structure, their physiological function in relation to the organism, the chemical nature and mechanisms of action of their secretory products, and the nature of anomalies manifested with their dysfunction.

843. Immunology (BIOS 843) (3 cr) Lec.

Prereq: BIOS 206 and one semester organic chemistry

BIOS 201 recommended. A fundamental consideration of cellular and humoral mechanisms of immunity, the structure and function of immunoglobulins, antigen-antibody interactions; hypersensitivity; transplantation and tumor immunity; immune and autoimmune disorders.

*845. Animal Physiology I (ASCI *845; BIOS *813; VMED 645) (6 cr I) Lec 5, lab 3.

Prereq: For ASCI/VBMS *845/BIOS *813: CHEM 251; BIOS 112 or ASCI 240

Prereq for VMED 645: First year standing in VMED. Primarily for students in animal or biological sciences or veterinary medicine. Mammalian physiology and cellular mechanisms. Microscopic anatomy and physiology of cells, tissues, cardiovascular system, respiratory system, and urinary system.

*846. Animal Physiology II (ASCI *846; BIOS *814; VMED 646) (6 cr II) Lec 5, lab 3.

Prereq: ASCI/VBMS *845/BIOS *813/VMED 645

Primarily for students in animal or biological sciences or veterinary medicine. Mammalian physiology and cellular mechanisms. Microscopic anatomy and physiology of the digestive system, endocrine system, and reproductive system.

*847. Interdisciplinary Concepts in Beef Production (ASCI *847) (3 cr, max 6)

Prereq: Degree in veterinary medicine or animal science, or allied agricultural degree, or permission

Classroom attendance is required during each of the modules. Between modules distance education technologies (laptop computer, Internet access, a computer operating system with a word processor, spreadsheet, and presentation software, email, etc.) are used and required for discussion and assignments. The contributions and interactions of the major academic disciplines upon the production, performance, health, profitability, and sustainability of beef cow and cattle feeding operations.

A. I (3 cr)
B. II (3 cr) Prereq: VBMS *847A.

847A. Interdisciplinary Concepts in Beef Production I (3 cr)

847B. Interdisciplinary Concepts in Beef Production II (3 cr)

Prereq: VBMS *847A

*848. Introduction to Veterinary Biotechnology (1-2 cr)

Prereq: 12 hours of veterinary and biomedical sciences or DVM degree, or equivalent and permission
Information and assignments for VBMS 848 exchanged in the classroom and via Internet. Theoretical basis for emerging cellular, molecular and reproductive technologies, and their potential applications and impacts in the practice of food animal veterinary medicine.

*852. Molecular Virology and Viral Pathogenesis (3 cr I) Lec 3.

Prereq: BIOS 843
Offered even-numbered calendar years. Introduction to virology with emphasis on molecular biology and pathogenesis. Concepts of virus replication strategies, virus-host interactions and virus pathogenesis.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Diagnostic Techniques (1-10 cr)

Application of the principles of pathology to current problems in the diagnostic laboratory.

908. T Cell Biology: Repertoire and Effector Functions (3 cr I)

Prereq: BIOS 843 or permission
Offered even-numbered calendar years. Analysis of the literature of the cellular and molecular biology of T cell recognition and effector functions. Subject areas: Scientific Methodologies; Antigen Presentation; T Cell Receptor and Coreceptor; Thymic Structure and Self/Nonself Discrimination; T Cell Regulation; Allergy and Autoimmune Diseases; and T-Cell-Mediated Inflammation and Cytokine Network.

909. Seminar (1-4 cr I, II)

P/N only.

919. Regulation of Eukaryotic Gene Expression (3 cr II) Lec 3.

Prereq: 1) BIOC 818 or 820; 2) BIOC 832; and 3) BIOC 838 or BIOS 837 or related laboratory experience
Offered even-numbered calendar years. Basic mechanisms regulating gene expression in eukaryotes during various physiological states. Emphasis on understanding specific and unique mechanisms in mammalian systems. Techniques used to study gene regulation.

920. Measurement of Animal Disease and Production (2 cr I) Lec/disc and lab.

Prereq: VBMS *811 or permission
Offered odd-numbered calendar years. Measurements of disease and production, the basic tenants of epidemiology, taught in detail including incidence density, risk rates, morbidity, mortality, cause specific rates, and life tables. Methods and implications of measuring disease at the farm, regional, and national levels. Sampling strategies and the impact of these on the standard error of the estimate. Implications and biases of using retrospective production data versus prospective data. Clinical epidemiology which includes definition of tests in veterinary medicine, individual and herd level sensitivity and specificity, receiver operating characteristics curves, positive and negative predictive values, serial and parallel interpretation of tests, Kappa statistics, and issues of precision, validity, and accuracy.

921. Analytic Observational Studies in Veterinary Epidemiology (2 cr I) Lec/disc & lab.

Prereq: VBMS *811 and 920; or permission
Offered odd-numbered calendar years. Design, implementation, and analysis of cross-sectional, cohort, and case-control studies and field trials. Limitations, biases, implications of the results, and current uses of each. Evaluation of these methods as used in the scientific literature. Analyses includes chi-square tests, Cochrane Chi-square tests, and epidemiologic measures of strength of association, effect, and total effect. Design, implementation, analysis and interpretation of field trials taught specifically as they relate to the practitioner.

925. Critical Reading of the Epidemiology Literature (1 cr, max 4)

Prereq: VBMS *811 or 920; or permission
May be repeated for credit. Analysis of current epidemiology and animal health literature. Critical evaluation of study design, methods of analysis, biases, field applicability, and basis for conclusions.

930. Advanced Food Animal Production Medicine (2 cr) Lec/disc & lab.

Prereq: Permission

Offered spring semester of even-numbered calendar years. Inter-relationships between animal health, disease, and well-being as they relate to the productivity and profitability of food animal production units. Integrates aspects of veterinary medicine, animal science, and agricultural economics. General concepts related to cattle, swine and sheep production systems, followed by specific issues that relate to different species.

942. Genetics, Genomics, and Bioinformatics of Prokaryotes (BIOS 942) (3 cr)

Prereq: BIOS 241 and 312, or permission

Prokaryotic gene regulation, DNA exchange, DNA recombination and repair, comparative prokaryotic genomics and computer-based methods of analysis.

944. Immunovirology (3 cr) Lec 3.

Prereq: Permission; organic chemistry; biochemistry; immunology and/or concepts in virology and virolopathogenesis

Pathogenic microbiology recommended. Description of virus and immune system interactions, with emphasis on mouse and human models. Mechanism of antigen presentation of viral proteins and relationship to health and disease. Analysis of the hosts immune response to selected viral infections of the major systems: neural, respiratory, gastrointestinal and immune.

948. Concepts in Experimental Immunology (3 cr II) Lec 3.

Prereq: BIOS 843 or permission

Recent advances in immunological techniques and review of conventional methods.

949. Vaccinology (2 cr) Lec/disc.

Prereq: VBMS/BIOS 841; BIOS 843, VBMS 843; VBMS/BIOS 852; or permission

Analysis of the theory and mechanisms involved in the development of efficacious vaccines. Microbiological and immunological aspects as well as the manufacturing and regulatory aspects of vaccine development.

950. Medical Molecular Virology (BIOS 950) (3 cr I) Lec.

Prereq: BIOS/CHEM/BIOC 431/831 and 432/832; VBMS *852

Offered odd-numbered calendar years. Current topics in molecular virology relevant to the natural history and pathogenesis of viral diseases of humans and animals.

951. Advanced Molecular Infectious Diseases (3 cr II) Lec 3.

Prereq: BIOC 832 or equivalent; 18 hours of biological, biomedical and/or veterinary sciences, including fundamental microbiology and genetics; or permission

VBMS 824 and 843 or equivalent recommended. Offered spring semester of even-numbered years. Molecular and cellular aspects of microbial pathogenesis. Key literature, synthesis of scientific problems into research proposals.

964. Signal Transduction (BIOS 964) (3 cr)

Prereq: BIOS 832, BIOS 820 or equivalent, or permission

Molecular basis of genetics in eukaryotes. Gene structure and regulation, transposable elements, chromosome structure, DNA replication and repair mechanisms and recombination.

966. Advanced Viral Pathogenesis (BIOS 966) (3 cr)

Prereq: BIOS 843; VBMS 852 or equivalent introductory course in virology or experience

Advanced analysis on the mechanisms of cell and tissue damage by viruses, the spread of viruses through the body, and the host response.

975. Seminar in Veterinary Histopathology (1 cr I, II) Lec 1.

Prereq: VBMS 805, or equivalent and permission

May be repeated for credit. Descriptive veterinary histopathology covering diseases of all body systems in animal species including domestic, laboratory, wildlife, birds, fishes, reptiles, and amphibians. Source material is worldwide in scope.

996. Research on Selected Problems in Veterinary Science (2-10 cr)

998. Special Topics in Veterinary Science (1-10 cr)

Prereq: Permission

The subject will be dependent on student demand and availability of staff. Reviews of specialized subject areas.

(Redirected from Integrative Biomedical Sciences)

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: David Hardin, D.V.M.

Graduate Committee: Assistant Professor Somerville (chair); Professors Jones, McVey, Osorio, Smith

The Department offers master of science and doctor of philosophy degrees with courses of study offered in virology, bacteriology, immunology, molecular biology, pathology, epidemiology, and biomedical sciences/biochemistry. The master of science in veterinary science program is offered through Option I, Option II and Option III. The Department administers the interdepartmental doctoral program in Integrative Biomedical Sciences through which it offers the PhD degree. Biochemistry and/or biostatistics courses are required for the MS and PhD degree depending on the student's field of study with the rest of the program of study tailored to the student's research interests and career goals, upon approval by the student's Graduate Supervisory Committee.

There is no generally specified language or research skill required for the PhD, but each student must meet the requirements set by the Graduate College, and approved by the Supervisory Committee, the Department and the Integrative Biomedical Sciences graduate committee.

In addition to the general requirements of the Graduate College, applicants for the MS and PhD degrees must submit scores from the Graduate Record Examination. All candidates for advanced degrees must engage in disciplinary training and research as a part of their program.

Applicants are encouraged to send a letter to the chair of the Graduate Committee describing their background, experience, and personal and academic goals in pursuing graduate study.

In addition to the courses listed below, STAT 801 and 802 or BIOC 831 and 832, or one of each, may be used as part of the course work constituting a major in veterinary science (MS) or Integrative Biomedical Sciences (PhD).

Cooperative Program in Veterinary Science

The University of Nebraska-Lincoln (UNL), College of Agricultural Sciences and Natural Resources is home to Nebraska's component of the Cooperative Program in Veterinary Medicine with Iowa State University (ISU). Students in this program begin their professional education on the UNL campus and will earn the 4-year doctor of veterinary medicine degree after continued study at ISU, College of Veterinary Medicine. The arrangement maintains tuition at the rate of ISU's in-state professional tuition rate all four years.

This innovative program, whose inaugural class of 25 Nebraska residents entered the fall semester of 2007, is the first of its kind in the United States. Program planning and development was jointly undertaken by the University of Nebraska as well as Iowa State University and has been reviewed and approved by the American Veterinary Medical Association's Council on Education. This approval insures that successful students in this program will meet requirements to take the North American Veterinary Licensure Exam (NAVLE) and subsequently attain licensure to practice veterinary medicine.

Though every professional veterinary program must provide a core curriculum, the unique opportunities provided by this program allow students to have more hands-on experience and a broader range of opportunities than some of their counterparts. Faculty at UNL are devoted to student learning and provide a strong basic science curriculum as the foundation for their veterinary students. While UNL's departments of Veterinary and Biomedical Sciences, Animal Science and Entomology form the core of this program, individuals and resources throughout UNL contribute to student success. Located on the University's East Campus, the Cooperative Program in Veterinary Medicine offers updated facilities, state-of-the-art teaching resources and convenient access to the C.Y. Thompson Library. Other UNL facilities, such as Great Plains Veterinary Educational Center (GPVEC) at Clay Center, NE and the Agricultural Research and Development Center (ARDC) at Mead, NE, provide opportunities for enhanced learning through participation in animal health activities during the first two years of their professional education.

For more information about this program and admission requirements, please refer to http://vetmed.unl.edu or call 402-472-7211.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Barletta, Raul G. -1991; Professor; BS 1976, MS 1976 Universidad Nacional de LaPlata (Argentina); PhD 1987 Alabama (Birmingham)
- Brodersen, Bruce -2004; Assistant Professor; BS 1976 Nebraska (Lincoln); DVM 1983 Iowa State; MS 1989 Nebraska (Lincoln); PhD 1996 Nebraska (Medical Center)
- Carlson, Michael -2003; Lecturer; BS 1974 Nebraska (Lincoln); MS 1976 Purdue; PhD 1996 Nebraska (Medical Center)
- Delhon, Gustavo -2007; Biosafety Level-3 Core Faculty Director; DVM 1980 Buenos Aires; MSc 1990 Nebraska (Lincoln); PhD 1996 Nebraska (Medical Center)
- Doster, Alan R. -1979; Professor; DVM 1975 Iowa State; MS 1977, PhD 1979 Georgia (Athens)
- Griffin, D. Dee -1991; Professor; BS 1973, DVM 1975 Oklahoma State; MS 1978 Purdue
- Hardin, David -2006; Professor and Head, Associate Dean; BS 1974, DVM 1977 Missouri (Columbia)
- Hardin, Laura -2006; Coordinator/Senior Lecturer, BS 1982 Eastern Kentucky; DVM 1987 Mississippi State; MS 1994, PhD 2001 University of Missouri-Columbia
- Hostetler, Douglas -2007; Associate Professor; BS 1989, DVM 1993 Ohio State; MS 1998 Michigan State
- Jones, Clinton -1989; Charles Bessey Professor; BA 1976 Bethany; PhD 1985 Kansas
- Kammermann, John -2007; Assistant Professor; BS 1984 Northern Illinois; MS 1994, PhD 2004 Auburn
- Keen, James -2008; Associate Professor; BS 1980 Eastern Kentucky; BS 1986, DVM 1988, PhD 1994 Illinois
- Kelling, Clayton L. -1976; Professor; BS 1968, MS 1971, PhD 1975 North Dakota State; DVM 1978 Iowa State
- Lou, Marjorie -1994; Willa Cather Professor; BS 1960 National (Taiwan); MS 1962 Virginia Tech; PhD 1966 Boston (Medical

Center)
- McVey, D. Scott -2006; Professor; DVM 1980 Tennessee; PhD 1986 Texas A&M
- Moxley, Rodney A. -1983; Professor; DVM 1978, PhD 1983 Missouri
- Ondrak, Jeffrey -2006; Lecturer; BS 1988 Nebraska (Lincoln); DVM 1992 Kansas State
- Osorio, Fernando A. -1984; Professor; MV 1972 Buenos Aires; MS 1982, PhD 1984 Iowa State
- Pattnaik, Asit -2002; Professor; BS 1976 Ravenshaw; MS 1978 Jawaharlal Nehru; PhD 1984 Griffith
- Pickard, Gary -2008; Professor; BS 1972, MS 1975 Purdue; PhD 1978 Wisconsin
- Randle, Richard -2007; Associate Professor, DVM 1982 Mississippi State; MS 1987 University of Illinois
- Reddy, Jay -2007; Associate Professor; DVM 1985, MVSc 1990 Agricultural Sciences (India); PhD 1998 Guelph
- Rogers, Douglas G. -1988; Professor; BS 1973, DVM 1979, MS 1983, PhD 1987 Iowa State
- Rupp, Gary P. -1988; Professor; DVM 1964, MS 1975 Colorado State
- Smith, David -1997; Professor; DVM 1983, PhD 1997 Ohio State
- Sollars, Patricia -2008; Associate Professor; BA 1980 St. Johns; PhD 1991 Oregon
- Somerville, Greg -2004; Assistant Professor; BS 1988, MS 1993, PhD 1999 Texas
- Steffen, David -1996; Professor; DVM 1987 Iowa State; PhD 1991 Kansas State
- Zhou, Joe -2002; Research Associate Professor; BSc 1982 Nanchang (China); PhD 1991 Western Ontario

International Human Rights and Diversity

Description

Advisory Committee: Professors Forsythe (chair), Cahan, Coble, Draper, Gonzales, Lepard, Ritchie, Spinner-Halev, van Roojen

Departments Participating (Masters): Anthropology, English, Geography, History, Modern Languages and Literatures, Philosophy, Political Science

Departments Participating (Doctoral): English, Geography, History, Modern Languages and Literatures, Philosophy, Political Science

The goal of the International Human Rights and Diversity Interdepartmental Area of Specialization is to examine issues related to human rights in an international perspective, with particular interest in examining the relationship between cultural diversity and human rights. An advisory committee has been established to coordinate the interdisciplinary aspects of this specialization. One member of the student's examining committee or supervisory committee must represent a participating discipline other than the student's major area. Approval of the thesis or dissertation topic must have the concurrence of the student's faculty adviser and the International Human Rights and Diversity Advisory Committee.

Masters-level Specialization Requirements:

The specialization is available to any student pursuing a masters degree in any of the participating departments.

Each student will be required to complete:

1. A masters degree in one of the participating departments.
2. Twelve (12) credit hours of International Human Rights and Diversity courses from the student's discipline, and at least one department outside the student's discipline, including
   - 3 credit hours of core courses;
   - 6 credit hours from Course List A; and
   - when Option I (thesis) is available in the student's program, a thesis relating to International Human Rights and Diversity

Doctoral-level Specialization Requirements:

The specialization is available to any student pursuing a doctoral degree in any of the participating departments. International Human Rights and diversity courses completed by a student for the specialization at the masters level may be counted toward meeting the requirements for the specialization at the doctoral level.

Each student will be required to complete:

3. A doctoral degree in one of the participating departments.
4. Eighteen (18) credit hours of International Human Rights and Diversity courses from the student's discipline, and at least two departments outside the student's discipline, including - 3 credit hours of core courses;
   - a minimum of 6 credit hours from Course List A;
   - the remaining credit hours (between 3 and 9) from Course List B; and
   - a dissertation relating to International Human Rights and Diversity

Core Courses

POLS 965. Seminar in International Human Rights (3 cr)
LAW 616/G. International Human Rights Law (3 cr)

Course List A

ANTH 876. Human Rights, Environment, & Development (3 cr)
LAW 714/G. Comparative Law: International Gender Issues (1-4 cr)
POLS 885. Contemporary Political Theory (3 cr)

POLS 960. Seminar in International Relations (3 cr, max 12)

Course List B

ANTH 820. Ethnic Identity & Ethnic Conflict (3 cr)
ANTH 851. Indians of North America (3 cr)
ANTH 874. Applied & Development Anthropology (3 cr)
ENGL 845. Ethnic Literature (when taught as Studies in the African Diaspora) (3 cr)
GEOG 931. Dispossession of Indigenous Peoples (3 cr)
GEOG 933. Seminar in Geography & Anthropology (1-3 cr, max 6)
HIST 829. History of Fascism in Europe (3 cr)
HIST 839. The Holocaust (3 cr)
HIST 878. Pro-seminar in Latin American Studies (3 cr, max 6)
HIST 932. Seminar (when taught as Otherness in British Culture) (3 cr)
MODL 854. Russian Intellectual Tradition (3 cr)
PHIL 823. Advanced Ethics (3 cr) OR PHIL 920. Ethical Theory (1-24 cr)
PHIL 825. Political & Social Philosophy (3 cr) OR PHIL 925. Social & Political Philosophy (1-4 cr)
POLS 860. Seminar in International Politics (3 cr)
POLS 872. State Terror (3 cr)
POLS 873. Problems in International Law & Organization (3 cr)
POLS 877. Israel & the Middle East (3 cr)

Courses for News Editorial (NEWS)

Courses for Broadcasting (BRDC)

Courses for Advertising (ADVT)

Courses for Journalism Core Courses (JOUR)

Courses for Journalism Graduate Courses (JGRD)

Journalism and Mass Communications

Subject Areas

- Journalism Graduate Courses (JGRD)
- Journalism Core Courses (JOUR)
- Advertising (ADVT)
- Broadcasting (BRDC)
- News Editorial (NEWS)

801. Depth Reporting (NEWS 801) (3 cr)

Prereq: NEWS 371 and permission

Gathering and presenting of stories that require extensive interviewing, backgrounding and research. Individual assignments and conferences.

*809. Media Law Seminar (3 cr) Lec, rct.

Reading, discussion, and research on current issues in mass media law or theoretical bases for freedom of expression.

*811. Seminar in Media History (3 cr) Lec, rct.

Readings and discussion of major issues, events, and people in the history of mass media in the United States.

*820. Mass Media: Introduction (3 cr)

Prereq: Permission

Mass media structure, development, systems, responsibilities and ethics, and criticisms.

*830. Strategic Communications: Advertising Issues and Strategies (3 cr)

Seminar for graduate students who do not have the equivalent of an undergraduate degree in advertising. Business of advertising and promotion, and the processes and planning involved in strategic promotional communication. Current issues and strategies faced by advertising practitioners, the importance of branding, integrated marketing communications and promotion. Creation of a strategic marketing plan.

*831. Strategic Communications: Writing and Design (3 cr)

Seminar for graduate students who do not have an undergraduate degree in advertising. Strategic and creative components of advertising, both from the visual and textual perspectives. Specific strategies for writing and designing advertising, promotional and public relations materials; creative aspects related to strategic planning.

*835. International Communications (3 cr)

Prereq: Permission

Systems of mass communications in foreign countries and across international boundaries.

*896. Independent Study (1-3 cr, max 3)

Prereq: Permission of major adviser

898. Special Topics (JGEN 498) (1-4 cr, max 12)

Course may be repeated up to three times so long as the topics are different. Topic varies each semester.

*899. Masters Thesis (6 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Ethics and Issues in Mass Communication (3 cr) Lec 3.

Ethical framework for exploring current issues in mass communications.

902. Multi-platform Journalism (3 cr) Lec 3.

Skills and technologies involved with multi-platform journalism and management.

903. Media Management (3 cr) Lec 3.

Current issues in business management related to the media environment.

915. Mass Communication Theory (3 cr)

Process and effects of mass communication.

919. Methods of Mass Communication Research (3 cr)

Research concepts and procedures with emphasis on methodology and research techniques in mass communication. Development of competency in consumption and interpretation of research combined with an introduction to research design, analysis, and decision making.

954. Mass Media and Government (3 cr)

Process and effects of regulatory information control procedures of federal, state, and local government.

992. Professional Project (1-6 cr, max 6) Ind.

Development of thesis topic may come from JGRD 992. JGRD 992 is designed for increasing competency in professional practice and depending on goals, may be concentrated in ADVT, BRDC, or NEWS. Translation of social, political, and economic affairs to mass audiences in both print and electronic media.

995. Issues in Mass Communication (1-3 cr, max 3) Lec.

Current problems in mass communication and interrelated social, economic, and political factors. Topic varies.

*807. Investigative and Computer-assisted Reporting (3 cr) Lec 3.

Conduct investigative and in-depth reporting by using documents and computer databases, interviewing, and field research to write compelling stories.

*808. Politics and the Media (3 cr) Lec 3.

Current issues in media and politics, domestically and internationally.

812. Literature of Journalism (3 cr) Lec 3.

The roles and effects of mass media and major works exemplifying the practice of journalism.

*813. Media Economics (3 cr) Lec 3.

Economic theory applied to analysis of mass media industries. Structure, performance, and competitions across print media, advertising, broadcasting, and new digital media. Preparation for conducting economic analyses of mass media behavior and performance.

814. Government Controls of Information (3 cr) Lec 3.

Laws, regulations and practices by which federal, state, and local government enhance or retard access to information about the executive, legislative, and judicial branches.

822. Race, Gender, and Media (3 cr)

Prereq: 2.75 GPA.

Open to non-College of Journalism and Mass Communications majors. Multicultural and gender diversity issues within the mass media. Broadcast news, print, and advertising media messages of racial, ethnic, and gender-based minorities, including African Americans, Hispanic Americans, Asian Americans, Native Americans, and women.

844. Science Writing (3 cr)

Prereq: 2.75 GPA and permisson.

Open to non-College of Journalism and Mass Communications majors. Articles will be submitted for publication. Advanced writing about science for the non-expert and/or general audience. Issues in science communication explored through reading the best writers in science and journalism. Research and write short articles and longer profiles about science and scientists at the University of Nebraska-Lincoln and elsewhere.

864. Sports Media Relations (3 cr)

Prereq: ADVT 357; 2.75 GPA.

Sports media relations and integrated marketing communications. Unpredictable nature of the sports industry and the relationships with its various publics and the media.

885. Mass Media History (3 cr)

Prereq: Permission; 2.75 GPA.

Required of all students seeking a degree through the College of Journalism and Mass Communications. History of American mass media in cultural and philosophical contexts. The evolution of mass media as a social institution.

886. Mass Media Law (3 cr)

Prereq: Permission; 2.75 GPA.

Required of all students seeking a degree through the College of Journalism and Mass Communications. Legal principles and their application to mass media content and conduct regulation.

887. Mass Media and Society (3 cr)

Prereq: Permission; 2.75 GPA.

Required of all students seeking a degree through the College of Journalism and Mass Communications. Interrelationships between American mass media and society, integrating ethics, theories and contemporary issues.

898. Special Topics (1-4 cr, max 12)

Course may be repeated up to three times so long as the topics are different. Topic varies each semester.

833. Advanced Communications Graphics and Electronic Design (3 cr)

Prereq: ADVT 333; JOUR 217; and 2.75 cum GPA.

Intermediate/advanced portfolio course in visual and graphic design as applied to the corporate environments of advertising and public relations. Print and electronic design principles, strategies and elements incorporated into individual and team projects using traditional and new digital technologies. Development of creative materials for actual clients, corporate identities, electronic presentations, professional creative portfolios, non-traditional resumes, and World Wide Web student and faculty home pages and other WWW sites.

838. Global Advertising (3 cr)

Prereq: ADVT 337; 2.75 cum GPA.

Global advertising and communication. Cultural, economic, political and social differences that affect advertising strategy and execution in foreign markets. Advertising a USA product or service in the global market.

847. Strategic/Creative Concepting (3 cr)

Prereq: ADVT 333 or NEWS 217; 2.75 cum GPA.

The alternative and advanced methods of communicating a message, a need, a perception or attitude. Creative storytelling and problem solving, critique and analysis and how to creatively communicate with strategic thinking and design.

850. Public Relations Theory, Strategy and Management (3 cr)

Prereq: ADVT 332 or BRDC 227 or NEWS 202; 2.75 cum GPA.

Philosophies and theories that underlie the discipline and profession of public relations. Both critical and supportive perspectives used to gain insight into the history and direction of public relations.

851. Advertising and Public Relations Techniques (3 cr)

Prereq: ADVT 832 or BRDC 227, or NEWS 202; 2.75 GPA.

Multimedia tools in advertising, public relations, direct marketing, and sales promotion. Promotional writing, publications development, and media relations.

858. New Media Design (3 cr) Lec, lab.

Prereq: ADVT 333; 2.75 GPA.

The new media and interactive technologies that can be used in a variety of print, broadcast, and electronic media, and digital communications. Writing, designing and producing communications messages using traditional and new multimedia technologies.

859. Advertising and Public Relations in the Electronic Media (3 cr)

Prereq: BRDC 228 or ADVT 357; 2.75 GPA.

Analysis and preparation of radio and television commercials and announcements in terms of content and production techniques. Development of structure and functions of the broadcast advertising media with emphasis on regulation, responsibilities, audience analysis, and promotion.

860. Media Planning and Strategy (3 cr)

Prereq: 2.75 GPA; ADVT 832.

Principles and practices of evaluating and selecting media for advertising in both the local and national advertising situations. Explanation of the media, their differences, how they are used in advertising, information resources and strategies for using media.

881. Advertising and Public Relations Research (3 cr) Lec.

Prereq: ADVT 332 and 832; 2.75 cum GPA.

Experience the actual research process and produce a report. Research in the planning, development and evaluation of advertising. The research process, the use of secondary sources of information, and how to analyze data from these sources. The planning and execution of primary research. Survey techniques.

882. Direct Advertising (3 cr)

Prereq: ADVT 832; 2.75 cum GPA.

Laboratory assignments provide practical experience. Fundamentals of direct advertising. Database building and management, the economics of the industry, development and testing of effective creative materials, product selection and pricing, telemarketing, business to business direct advertising, lead-generating programs, the use of electronic and print media in the direct advertising mix and fund-raising for worthy causes.

884. Advertising Management (3 cr)

Prereq: ADVT 832 and 860; 2.75 GPA.

The managerial philosophy, techniques, and processes in advertising. Includes organizational structures, integrated marketing communications, strategic planning, marketing planning, advertising planning, advertising research, budgeting, and decision paradigms.

888. Media Sales and Promotion (3 cr) Lec 3.

Techniques for print and electronic media sales and promotion. Rate structures, legal requirements, and social and economic effects.

889. Advertising and Public Relations Campaigns (3 cr)

Prereq: 2.75 GPA; ADVT 432 and 860.

Problems and procedures in planning multimedia advertising campaigns. Students work in teams to develop the integrated marketing communications strategy and creative materials needed by an actual client. Students required to make sound advertising decisions based on research, applied theory and specific skills learned in earlier advertising course work.

898. Special Topics in Advertising (1-4 cr, max 12)

Course may be repeated up to three times so long as the topics are different. Topic varies each semester.

828. Advanced Television Production (3 cr)

Prereq: BRDC 228 or permission

Theory of visualization for television. Practical application of directing techniques. Programs analyzed in relation to translation of facts, ideas, emotions, and attitudes through television. Program production experience in the studios of the University station, KUON-TV.

854. Broadcast Management (3 cr)

Prereq: Permission

Organizational and management procedures as they relate to the telecommunications media.

855. Broadcast Programming (3 cr)

Prereq: Permission

Radio and television program philosophies and formats with emphasis on regulations, responsibilities, economics, and audience measurement procedures.

856. Cable Telecommunications (3 cr)

Prereq: BRDC 228 or permission

Development of cable telecommunications systems and relevant regulatory aspects of cable development. Current and future projections of cable systems management systems--satellites, teletext, interactive, access channels, importation, origination, pay cable.

861. Instructional Television (3 cr)

Prereq: Permission

Preparation of instructional television programs. Historical development of television as an instructional medium, learning and communication theory relevant to proper applications of televised instruction.

865. International Broadcasting (3 cr)

Prereq: Permission

Development of programming patterns and controls as well as cultural consideration of national and international systems of broadcasting.

866. Telecommunication and Information Systems (3 cr)

Prereq: Permission of College Dean's office

Open to non-journalism students. The telephone industry, voice and data communication and networking systems. Development and structure of telecommunication, issues, services, applications, technology, and management.

869. Advanced Cinematography/Videography (3 cr)

Prereq: BRDC 369 or permission

Continuation of BRDC 369 with additional emphasis on production of single and double system sound films as well as production of videotapes for television.

873. Broadcast Documentary (3 cr)

Prereq: BRDC 372 or permission

Depth reporting and advanced production techniques necessary for the preparation of a broadcast documentary program.

874. Advanced Broadcast Writing (3 cr)

Prereq: Permission

Techniques of planning, preparing and writing radio, television and motion picture scripts, including announcements, interviews, talk programs, features, editorials, investigative reports and dramatic adaptations.

898. Special Topics in Broadcasting (1-4 cr, max 12)

Course may be repeated up to three times so long as the topics are different. Topic varies each term.

801. Depth Reporting (JGRD 801) (3 cr)

Prereq: NEWS 371 and permission

Gathering and presenting of stories that require extensive interviewing, backgrounding and research. Individual assignments and conferences.

*803. Public Journalism (3 cr)

Prereq: BRDC 372 or NEWS 371 or permission

Survey of public/civic journalism, its goals and practices and how it differs from and is similar to traditional ideas of journalism.

*804. Digital News Photography (3 cr)

News, feature, sports, and picture story journalism.

*806. Advanced Digital News Photography (3 cr) Lec 2, lab 2.

Prereq: NEWS 404/804

Production of professional-level photographs in a news journalism framework.

810. Creative Editing (3 cr)

Prereq: NEWS 303 and permission

Broad, theoretical problems of newspaper editing. Selection of news and illustration and the display of those elements. Newspaper ethics, reader research, and the changing industry.

867. School Publications (3 cr)

Prereq: Open only to students seeking a 7-12 journalism teaching endorsement

Problems and procedures involved in producing school newspapers, yearbooks, literary magazines and radio/video projects.

879. Advanced Graphics (3 cr)

Prereq: NEWS 303 and permission

Intensive lecture-laboratory experience. Journalism writing and editing with computer graphics techniques.

898. Special Topics in News-Editorial (1-4 cr, max 12)

Course may be repeated up to three times so long as the topics are different. Topic varies each term.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Dean and Director: H. Will Norton, PhD

Graduate Chair: Frauke Hachtmann, MBA, MA

The graduate program in journalism is designed to prepare students to enter a variety of media professions. Students hone their abilities to communicate effectively to audiences in the midst of a changing media environment by focusing their studies in advertising, broadcasting, news-editorial or a combination of areas. Students may choose a thesis or a professional track for each of the areas.

Students interested in news-editorial and broadcasting can select the professional journalism track, designed to combine principles and practices to prepare them to be leaders in the field, or a thesis track, created to help them build a foundation for a successful future in the academic world. Students interested in an academic career in advertising, publication and strategic communication can also choose the thesis track. Advertising students can also select an interdisciplinary program that permits them to combine course work in strategic communications in advertising and public relations with minors in marketing and communication studies (MCA specialization).

Students entering the graduate program, with the exception of those in the advertising, marketing and communication studies specialization, must have the equivalent of a journalism major from an accredited program in journalism. Applicants with an undergraduate major in an area of study other than journalism, or students with deficiencies in their journalism background, may be admitted with a provisional status and will be required to complete undergraduate journalism courses. For students admitted to an advertising graduate option, an undergraduate or graduate level statistics course is a prerequisite. An applicant's professional experience will be considered by the graduate committee of the College of Journalism and Mass Communications in determining the specific courses required to provide a background necessary to qualify for study in the master of arts program in journalism.

Master of Arts in Journalism and Mass Communications.

All candidates must complete a program that conforms to the general requirements of the Graduate College. Refer to "Requirements for Graduate Degrees" in this bulletin. Completion of a minimum of 30 semester hours credit in approved courses is required for those choosing the thesis track, Option I (refer to "Requirements for the Masters Degree"). At least 9 hours in graduate-level courses must be included from academic course work to be taken outside the College or outside the student's area of specialization within the college. Journalism course numbers that are required in Option I are: 915 Mass Communication Theory (3 cr); 919 Methods of Mass Communication Research (3 cr); 954 Mass Media and Government (3 cr); 992 Professional Project or advanced level course work (6 cr); 899 Masters Thesis (6-10 cr).

The advertising, marketing and communication studies (MCA) specialization is an Option II program. The program consists of a major-a minimum of 18 hours in advertising and two minors of 9 hours-one in communication studies and one in marketing. Eighteen hours of the program are specified courses that include 6 hours from each of the following three departments: Advertising, Communication Studies and Marketing. Required courses for MCA students include: ADVT 881 Advertising and PR Research (3 cr); ADVT 884 Advertising Management (3 cr); GRBA 813 Managerial Marketing (3 cr); MRKT 830 Strategic Issues in Marketing Communication; COMM 852 Communication and Culture; and COMM 886 Organizational Communication. There is also a written comprehensive exam, which can be waived if the student has a 3.25 GPA or higher in all courses taken in the specialization. All students in this specialization must pass an oral comprehensive exam.

News-editorial and broadcasting students in the professional journalism specialization follow the guidelines for Option III. This requires students to complete 36 hours of course work, including a capstone project and intensive course work in place of a minor. Fifteen hours of course work are required, including JGRD 901 Mass Media Issues and Ethics (3 cr); JGRD 902 Multi-Platform Journalism (3 cr); JGRD 903 Media Management (3 cr); and JGRD 992 Professional Project (6 cr). Students select 21 hours of electives. Eighteen credit hours must be earned in courses open exclusively to graduate students. A minimum of 18 credit hours must be taken in the college.

All applicants to the graduate program must provide Graduate Record Examination scores. In addition, applicants who speak English as a second language must present documentation of a TOEFL score of 600 or higher and a minimum of 25 on the speak portion of the TOEFL exam, if they do not have a bachelors degree from a U.S. post-secondary institution.

Specializations available for the MA in Journalism and Mass Communications:

Advertising; Broadcasting; Marketing, Communication and Advertising (MCA); News-Editorial; and Professional Journalism.

Please note that Journalism and Mass Communications offers a media specialization in cooperation with Political Science

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Alloway, Richard -1986; Assistant Professor; BA 1977, MA 2002 Nebraska (Lincoln)
- Anderson, Timothy -2005; Associate Professor; BA 1974, MA 2007 Nebraska (Lincoln)
- Bender, John R. -1990; Associate Professor; BA 1970 Westminster (Missouri); MS 1977 Kansas; PhD 1991 Missouri
- Berens, Charlyne R. -1996; Professor; BSEd 1967 Concordia; MA 1995, PhD 2000 Nebraska (Lincoln)

- Goff, Michael J. -2000; Senior Lecturer; BSEd 1971, MEd 1978, EdS 1990 Nebraska (Lincoln)
- Hachtman, Frauke -2002; Associate Professor; BJ 1994, MA 1997, MBA 2000 Nebraska (Lincoln)
- James, Stacy -1988; Senior Lecturer; BA 1970, MA 1992 Nebraska (Lincoln)
- Larsen, Phyllis V. -2000; Senior Lecturer; BS 1978, MA 1980 Nebraska (Lincoln)
- Lee, Laurie Thomas -1994; Professor; BS 1982 Nebraska (Kearney); MA 1983 Iowa; PhD 1993 Michigan State
- McCoy, Barney -2006; Associate Professor; BS 1979 Kansas; MA 1996 Michigan State
- Mitchell, Nancy -1990; Professor; BSJ 1973 Northwestern; MA 1989 West Texas State; PhD 1998 Nebraska (Lincoln)
- Norton, H. Will -1990; Dean and Professor; BA 1963 Wheaton; MA 1971 Indiana; PhD 1974 Iowa
- Quinlan, Mary Kay -2005; Associate Professor; BA 1972 Nebraska (Lincoln) MA 1973, PhD 1992 Maryland
- Renaud, Jerry R. -1989; Professor; BS 1975, MA 1990 Nebraska (Lincoln)
- Shipley, Linda -1984; Associate Dean and Professor; BA 1967 Nebraska (Lincoln); MA 1969 Missouri; PhD 1974 Pennsylvania
- Starita, Joseph -2000; Professor; BA 1978, MA 1995 Nebraska (Lincoln)
- Struthers, Amy -2004; Assistant Professor; BA 1976, MA 1979 Nebraska (Lincoln)
- Thorson, Bruce -2005; Associate Professor; BS 1983 Oregon; MA 1990 Ohio
- Walklin, Larry -1967; Professor; BA 1961 Kansas State; MA 1962 Michigan State; PhD 1968 Iowa
- Winter, C. Scott -2005; Assistant Professor; BA 1992 North Dakota; MA 2007 Nebraska (Lincoln)
- Wunder, John -1988; Professor; BA 1967, MA 1970, JD 1970 Iowa; PhD 1974 Washington

Courses for Law/Legal Studies (LAW)

Law/Legal Studies

501G. Contracts I (3-6 cr, max 6)

When taken for 6 credits, includes both LAW 501G and 502G. Basic principles governing the creation, interpretation and enforcement of private agreements. Offer and acceptance, consideration, the effect of changed or unforeseen circumstances, conditions and remedies.

502G. Contracts II (3-6 cr, max 6)

For course description, see LAW 501G.

503G. Torts I (EDAD *874) (1-6 cr, max 6)

Legal protection afforded in civil proceedings against interference with the security of one's person, property, relations, and other intangible interests. Substantive principles that govern tort claims (ranging from claims for intentional wrongdoing, to negligence claims, to claims that the defendant is strictly liable for harms caused to the plaintiff), and the theoretical bases and practical implications of such claims.

504G. Torts II (EDAD *875) (1-6 cr, max 6)

For course description, see LAW 503G.

505G. Property I (3-6 cr, max 6)

Problems in possession, gifts of personal property, bona fide purchasers of personal property, estates in land, landlord and tenant, the modern land transaction, controlling the use of land, easements, licenses and equitable servitudes and constitutional limitations on the power of government to restrict individual economic liberties.

506G. Property II (3-6 cr, max 6)

For course description, see LAW 505G.

508G. Criminal Law (EDAD 970) (3 cr)

Substantive criminal law, focusing on the theoretical foundations, general principles, and doctrines that govern the rules of liability and defenses, both in the common law tradition and under the Model Penal Code.

511G. Introduction to Law, Legal Process, and Legislation (EDAD *872) (3 cr I)

How law is made and changed, the role of the individual, the business corporation, the private association, the administrative agency, the voting public, the legislature, and the courts in making and changing law.

513G. Legal Research and Writing I (3 cr)

Introduction to the sources and the literature of the law. Emphasizes the function and content of basic legal materials, their use in the analysis and solution of legal problems, and the preparation of legal memoranda and appellate briefs.

514G. Legal Research and Writing II (3 cr)

For course description, see LAW 513G.

516G. Civil Procedure I (3 cr)

Introduction to federal and state court organization, jurisdiction, and procedure. Emphasis on pre-trial, trial, and post-trial procedures, including pleading, enforcement of judgements, motion practice, appellate review, and the effects of res judicata and collateral estoppel.

517G. Civil Procedure II (3 cr)

For course description, see LAW 516G.

601G. Criminal Responsibility in Anglo-American History (2 cr)

Narrative account of ideas and practices surrounding the attribution of criminal responsibility in America from colonial to modern times. Tensions between formal rules of law and social attitudes, manner in which tensions relate to criminal trial history, relationship between evolution of punishment ideas/practices and evolution of criminal justice. Broad-based social, political and intellectual history of American criminal justice.

603/603G. Law Office Management (2 cr) Lec 2.

Issues confronted by the small firm and/or sole practitioner. Firm organization, e.g., partnerships, professional corporations, limited liability companies, limited liability partnerships and partnership and shareholder agreements. The role of partners, shareholders, associates and non-lawyer staff, e.g., law clerks paralegals and legal secretaries. Ethical issues involved in the marketing of legal services, firm financial matters and dealing with clients within the organizational structure. Managing the legal product as well as physical resource needs such as traditional libraries through electronic information resources.

609G. Constitutional Law I (EDAD *870) (1-4 cr)

Structure of the federal government, including the history and judicial interpretation of the Constitution, federalism, interstate commerce, due process, equal protection, and separation of powers.

610G. Appellate Advocacy (3 cr)

Appellate practice and procedure; exploring the federal and Nebraska appellate practice, including the mechanics and timing of appeals, with emphasis on written and oral advocacy. Students draft appellate briefs, prepare other appeal-related documents, and participate in an oral argument.

611G. International Litigation and Arbitration (3 cr)

Issues that United States courts face when international disputes arise. Jurisdiction, international service, international evidence gathering, extraterritorial application of United States domestic law, the act of state doctrine, foreign sovereign immunity, and enforcement of international judgements. Resolving conflicts through arbitration and comparative perspectives about methods of resolving international commercial disputes.

613G. Electronic Commerce (3 cr)

Participation on Blackboard required. There are no prerequisites, although students who have taken a Uniform Commercial Code course will find that helpful. Issues arising in electronic commerce, including setting up a business in cyberspace, the privacy issues associated with online data collection, and the laws governing the sale of goods, licensing, secured transactions and payments in an electronic environment. A variety of state, federal and international legislation and directives will be considered, including the Communications Decency Act, the Digital Millennium Copyright Act, the Fair Credit Reporting Act, the Electronic Communications Privacy Act, the USA Patriot Act of 2001, the financial privacy provisions of the Gramm-Leach-Bliley Act, digital signature statutes and the Children's Online Privacy Protection Act.

614G. Election Law (3 cr)

Legal doctrine and policy as it relates to the democratic political process. Text of the Constitution and federal legislation that governs voting and the political process, the decisions of the United States Supreme Court interpreting the Constitution and federal statutes, and the federal regulations that impact our democracy. Campaign finance, the Voting Rights Act, "one person, one vote," racial and partisan gerrymandering, direct democracy, the regulation of political parties, and the Help America Vote Act. Where the law of our democracy has been, where it is today, and where it might be headed.

616G. International Human Rights Law (3 cr)

Students previously enrolled in Seminar (707G) may not enroll in this course. Historical, political, religious and philosophical roots of international human rights law, its development over the course of the last century and its contemporary role in international affairs. May include: current attempts to strengthen U.N. fact-finding and implementation mechanisms; the relationship between U.N. peacekeeping and peacemaking and international humanitarian law; the activities of regional human rights systems; the effect of the United State's recent signature and ratification of U.N. human rights conventions and the role of such conventions and international human rights law through the criminal process; and military intervention to protect human rights victims, including NATO's intervention in Kosovo.

617G. Construction Practice (3 cr)

Major facets of the construction process. Project concept stage, terms and provisions of the construction contract, contract execution stage, performance stage, disputes and relationships among the contracting parties, and architect-engineer.

618G. Taxation-Farm and Ranch (ACCT *818; AECN *818; POLS *818) (1-4 cr)

Prereq: ACCT 812 or LAW 637/G

Selection of substantial income tax problems affecting farms and ranches.

619G. American Legal History: Clarence Darrow (EDAD 977/980; EDPS 977) (1-4 cr)

Through the use of biography, history, autobiography, fiction, theatre, film, and the Internet, exploration of the life and times of

Clarence Darrow.

620G. Corporations Seminar (1-4 cr)

Prereq: LAW 632/G or permission; LAW 789/G is not a requirement

Selected issues in corporate and securities law.

621G. Education Law Seminar (EDAD 968) (1-4 cr)

Selected current national and state legal issues pertaining to education.

624G. Immigration Law (1-4 cr)

History of immigration to the United States, federal authority to regulate immigration, immigrant visas, nonimmigrant visas, deportation, political asylum, citizenship, rights of aliens in the United States, and ethical issues for immigration lawyers.

625G. Copyright Seminar (1-4 cr)

The protection of literary, artistic, musical, and audiovisual works under the laws of copyright and unfair competition. Rights in computer programs, characters, titles, and useful articles. Home recording, photocopying, computer uses/Internet, and public performance.

626G. Antitrust Enforcement Seminar (1-4 cr)

Prereq: ECON *828

Private antitrust practice and procedure, with emphasis on standing, proof of damages, attorney's fees, class actions, injunctive relief, and price discrimination.

627G. Payment Systems (1-4 cr)

Negotiable instruments, bank collections, negotiable documents, selected aspects of sales, and products liability.

628G. Antitrust and Trade Regulation (ECON *828) (1-4 cr)

Control of business activities through the federal antitrust laws. Emphasis on monopolies, joint ventures, pricefixing, boycotts, resale price maintenance, exclusive dealing and tying arrangements, territorial restrictions, and mergers.

629G. Accounting for Lawyers (1-4 cr)

Those who had accounting as undergraduates may enter only with the permission of the instructor. Basic accounting principles and the interaction of law and accounting. Understanding of accounting statements and terminology likely encountered in legal practice.

630G. Family Law (CYAF 950) (1-4 cr)

The family examined as a socio-legal entity with respect to its creation, dissolution, and the problems incident to its continuation, including interspousal rights and duties and the relationship between parents and children.

631G. Criminal Procedure (1-4 cr)

Basic problems of criminal procedure with emphasis on the fourth, fifth, and sixth amendments to the United States Constitution and their impact on the criminal justice system.

632G. Corporations (1-4 cr)

Interrelationship between various business organization constituents, as well as the general theory and law governing these relationships. Focuses on both small and large corporations, and other forms of business organizations, such as agency and partnership. Provides a basic survey of business organization law, especially corporate organizations.

633G. Administrative Law (ECON *886) (1-4 cr)

Origin and growth of the administrative process, the development of administrative law and its impact upon traditional legal institutions, analysis of the types of federal and state administrative tribunals, their powers and functions, and problems of administrative procedure, judicial and other controls upon the administrative process.

634G. Oil and Gas Law (1-4 cr)

Legal issues encountered in the development of oil and gas reserves.

635G. Family Law Practice (1-5 cr)

Prereq: LAW 630G

A limited enrollment class. Students required to write a paper on selected family law topics with emphasis on interdisciplinary research. Family law practice skills such as interviewing, counseling, negotiations, mediation, drafting, evaluating property, tax problems, litigation, working with other professionals, and interacting with juveniles.

636G. Corporate Mergers and Acquisitions (3 cr)

Prereq: LAW 632/G

Corporate mergers and acquisitions, including tender offers. The history of corporate acquisitions, their rationales, the legal duties

of the officers and directors involved, different ways to structure a corporate acquisition, issues in negotiation and contracting, and securities law issues.

637G. Taxation-Individual Income (ACCT *837) (3-4 cr, max 4)

The structure and content of the federal income tax system, focusing on taxation of individuals. Income, deductions, income splitting, capital gains, and tax accounting. Technical proficiency in solving tax problems and an understanding of the tax policy decisions implicit in the technical rules.

638G. Taxation-Corporate (ACCT *838) (1-4 cr)

Prereq: LAW 637/G

Pre- or coreq: LAW 632/G. Advanced federal income tax focusing on income taxation of corporations and shareholders.

639G. Wills and Trusts (1-4 cr)

Intestate succession and related matters, execution of wills, revocation of wills, problems created by the time gap in wills, limitations on the power to devise, construction of wills (mistake and ambiguity), the elements of trust, formalities in the creation of a trust, the interest of the beneficiary, charitable trusts, and problems of trust administration.

640G. International Law (POLS 869) (1-4 cr)

Nature and sources of international law, its effect on the diplomatic, military, economic, and cultural activities of states, international organizations, private associations, and individuals.

641G. Environmental Law (AECN *841) (1-4 cr)

Legal problems encountered as a result of the impairment of the quality of the environment. Control of air, water, land, noise, and radiation pollution, and the roles of federal, interstate, state, and local agencies in affording protection. Includes private actions, class actions, and regulatory actions to protect both private and public interests.

642G. Conflict of Laws (1-4 cr)

Legal and constitutional concepts involved in choosing the applicable law when the essential facts of a case are not confined to one state or national sovereignty.

643G. Advanced Torts (1-4 cr)

Selected topics in tort law. Advanced class in tort law, considering the general legal theory of tort, as well as specific topics not studied in detail during the required first-year torts class. May include tort claims other than the intentional torts, negligence, and products liability--i.e., defamation, nuisance, privacy, abuse of legal process, interference with advantageous relationships, tort claims implied from statutes, the prima facie tort, and others. May also include topics relating to the functioning of tort law in social context--e.g., the efficiency with which tort litigation accomplishes its apparent purpose, alternative legal mechanisms to reduce risk or promote safety, alternative systems of compensating for harms, legislative tort reform initiatives, and others.

644G. Creditors Rights (1-4 cr)

Creditors' remedies outside of bankruptcy, secured financing of personal property, and the impact of federal bankruptcy law on secured creditors.

645G. Unfair Competition (ECON *829) (1-4 cr)

Federal and state statutory provisions and common law doctrines restricting unfair methods of competition. Includes the law of trademarks, trade secrets, misappropriation, false advertising, disparagement, and the role of the FTC in regulating deceptive practices, together with brief introductions to copyright and patent law.

646G. Evidence (EDAD 971) (1-4 cr)

Relevancy and admission of evidence, including hearsay, opinions, privileges, other exclusionary rules, examination of witnesses, judicial notice, and physical evidence.

647G. Employment Law (1-4 cr)

Analysis of the employment relationship as it has developed outside of the collective bargaining context. History and current status of the employment relationship, including discharge-of-will, occupational safety and health, minimum wage/maximum hour legislation, unemployment compensation and noncompetition agreements.

648G. Business Planning (ACCT *848) (1-4 cr)

Prereq: LAW 632/G, 638/G

Series of separate, rather detailed planning problems. Each problem calls for the selection and planning of a transaction to meet the needs of the parties involved, in light of applicable corporate, partnership, tax, and securities considerations.

649G. Mass Communications Law (EDAD 978) (1-4 cr)

In-depth focus on the first amendment. Includes legal distinctions between the print and broadcast media, free press and fair trial, access to media, and licit and illicit ideas.

650G. Taxation-International (1-4 cr)

Prereq: LAW 637/G

Introduction to the US federal income tax rules that apply to US persons (including corporations, partnerships and individuals) living or doing business abroad or receiving income from foreign sources, and to foreign persons living or doing business in the US or receiving income from US sources. Effect of US tax treaties on these rules.

652G. Comparative Law Seminar (1-4 cr)

Introduction to major families of legal systems outside the common law orbit. Emphasis is on Western European and Socialist (Marxist) legal systems; others treated less intensively.

653G. Refugee and Asylum Law and Practice (1-4 cr)

Prereq: Completion of the survey course in immigration law is helpful, but not required

Each student will be required to write a 15 page paper for the course. This paper requirement will not fulfill the Law College seminar requirement for graduation. Introduces students to US refugee and asylum law. Refugee issues in the context of domestic and international political environments. Asylum reform, gender-based persecution, persecution of lesbians and gays, deficiencies in international and domestic refugee law, and firm resettlement of displaced persons. With an interdisciplinary focus, interplay among political, social, economic, cultural and psychological phenomena as refugees, governments of host countries, and international and nongovernmental organizations interact in the context of ongoing crises around the world. Contrasting viewpoints discussed. Along with relevant substantive law and procedure, participation in simulations designed to teach practical skills necessary to an asylum and refugee law practice, including working with translators, interviewing and case advocacy. Asylum cases serve as the foundation for role play exercises.

654G. Comparative Law (1-4 cr)

Major foreign legal systems and their impact on US law, lawyers and clients. Compares the Anglo-American common law system with the civil law systems of continental Europe; surveys other major foreign legal systems (e.g. Muslim, Hindu, Japanese, Chinese, African and Socialist legal systems); and addresses proof and pleading problems that arise when foreign law is at issue in US courts.

655G. Commercial Law: Sales (1-4 cr)

Law governing the sale of goods with emphasis on Article 2 of the Uniform Commercial Code. Includes: contract formation; acceptance and rejection of goods; warranties; risk of loss; remedies, including non-Uniform Commercial Code remedies in consumer transactions; documentary sales and leases.

656G. Banking Law (1-4 cr)

Law of commercial banking. History and structure of the American banking system; the formation of a new bank; the regulation of traditional banking activity, including lending limitations; reserve requirements; capital adequacy; equal credit laws; failed banks; branch banking; and future trends in banking.

657G. Law and Economics Seminar (1-4 cr)

Selected problems in law and economics.

658G. Labor Relations Seminar (1-4 cr)

Selected current national and state legal issues pertaining to private and public employment.

659G. State Constitutional Law (1-4 cr)

Constitutions of the individual states, including: state expansion of individual rights, state-federal constitutional relationships, state innovations, “interpretation” theories in the state context, constitutions in contrast with statutes, balance of powers, processes of revision, and procedures relevant to the practitioner.

660G. Civil Procedure Seminar (1-4 cr)

Advanced civil procedure topics including the problems of complex litigation in federal court and litigation in Nebraska state courts.

661G. Toxic Torts (1-4 cr)

Toxic tort litigation focusing on the legal system’s response to injuries and diseases caused by exposure to hazardous products and substances such as IUDs, asbestos, HIV-contaminated blood, polluted drinking water, and cigarettes.

662G. Taxation-Business Entities (3 cr)

Prereq: LAW 637/G

Pre- or coreq: LAW 632/G. Introduction to the fundamentals of federal income taxation of corporations and their shareholders, partnerships and their partners and limited liability companies and their members, focusing on information, operation and liquidation of such business entities. Examines subchapters C (regular business corporations), S (certain electing small business corporations), and K (business partnerships and qualifying limited liability companies) of the Internal Revenue Code.

663G. Taxation-Individual Income II (ACCT 863) (3 cr)

Most important tax principles affecting business and investments, as well as an introduction to basic tax procedure (both administrative and judicial), civil and criminal fraud, tax research, and certain ethical issues common in tax practice.

664/664G. Gender, Race, and Class Issues in the Law (3 cr) Lec 3.

Credit toward the degree may be earned in only one of: Gender Issues in the Law (LAW 771/771G) and (LAW 664/664G), but not both. The role of gender, race, and class in shaping socio-legal relationships and policies. Selected procedural substantive areas of the law that affect and are affected by gender, race, and class. Employment, property, torts, constitutional law and contractual relationships, and the complex relationship between gender, race, class, and the law.

665G. International Trade Law and Policy Seminar (3 cr)

Prereq: LAW 671/G preferred; or LAW 640/G

Selected issues of international trade law and policy. Several prominent issues of international trade law and policy, including trade in agricultural goods, new issues facing the international trading system, and other topics selected by students for research papers. Visiting scholars, government officials, or faculty from other departments at the university may make presentations to the seminar.

666G. International Environmental Law (1-4 cr)

Analysis of the legal rules and institutions used to address international environmental issues. Includes the sources and nature of international environmental law, extraterritorial application of domestic environmental law, transboundary pollution, sustainable development, protection of the global environment, and the impacts of international trade policy and international development policy on the environment.

667G. Construction Law (3 cr) Lec 3.

Legal principles in the construction area. Legal and equitable issues which result from the construction relationship and disputes relating to that relationship.

668G. International Trade and Transactions (1-4 cr)

Regulation of international trade and investment by individuals, governments (particularly the United States) and international agreements.

669G. Research in a Selected Field I (1-3 cr)

Before registering for this course, a student must (1) obtain the approval of the faculty member involved and (2) submit the Research in a Selected Field form to the College of Law registrar. Absent the prior approval of the dean, no student may take more than 6 hours of Research in a Selected Field and/or Psycholegal Research. Individual study under the supervision of a faculty member.

670G. Research in a Selected Field II (1-3 cr)

Before registering for this course, a student must (1) obtain the approval of the faculty member involved and (2) submit the Research in a Selected Field form to the College of Law registrar. Absent the prior approval of the dean, no student may take more than 6 hours of Research in a Selected Field and/or Psycholegal Research. For course description, see LAW 669G.

671G. International Trade Law (1-4 cr)

Students who have taken LAW 668G may not enroll in this course. This class may be taught in alternate years with International Trade and Transactions. Central theme of this field of law is the tension between generally accepted economic theories which support free trade as a means of increasing economic efficiency and raising standards of living for all trading partners, and the non-economic objectives that must be balanced against those principles. Includes: international monetary, development and trade policy; customs law, legal restraints on fair and unfair international trade practices; international transfers of intellectual property rights; and the regulation of foreign investment.

672G. Jurisprudence (EDAD 973) (3 cr)

What is good and what is bad about law; the judicial process; principal schools of jurists; theories of the nature of law and the legal order; the American social system and the law; obligations to obey or to disobey the law; and ideas of justice.

673G. International Business Transactions (1-4 cr)

Students who have taken LAW 668G may not enroll in this course. Regulation of international trade by private parties through contractual arrangements. Contract formation and interpretation; dispute resolution; letters of credit and other transfers of payment; insurance; transportation; and countertrade arrangements. Contract negotiating and drafting exercise.

674G. Juvenile Law (1-4 cr)

Investigation of the relationship between children, the family, and the state. Both public and private law considerations with emphasis on the juvenile justice system and general considerations of children's constitutional rights.

675G. Advanced Legal Writing (1-4 cr)

Legal writing and analysis and experience with a variety of forms of legal writing. Topics selected from appellate brief writing and oral advocacy, interpreting and drafting statutes and rules, drafting jury instructions, drafting contracts, drafting pleadings, motion practice, drafting interrogatories, general correspondence, opinion letters, drafting wills and trusts, and advanced legal

research.

677G. Toxic Substances and Hazardous Waste Law (1-4 cr)

LAW 697G is not a prerequisite for this course. Students who have taken LAW 641G may not enroll in this course. Legal problems associated with the control of hazardous and toxic substances. Toxic torts and regulatory actions to protect private and public interests.

678G. Law and a Global Economy (3 cr)

The multiple issues of law, business, and economics that shape international business transactions. International finance and banking and the problems associated with development of specific markets such as the Commonwealth of Independent States, Asia, and Eastern Europe.

679G. The Making of Environmental Law: An Institutional Analysis Seminar (1-4 cr)

Institutions that shape environmental law at the local, national, and international levels. US Congress, federal and state environmental agencies, the office of the President, and multinational legal and banking institutions. To gain a realistic understanding of how these institutions work (or fail to work), how they affect one another, and how they contribute to the overall development of environmental law.

680G. Legal Control of Discrimination (EDAD 976) (1-4 cr)

Selected legal issues pertaining to the legal control of discrimination.

681G. Cyberlaw (1-4 cr)

Areas in which the law interacts with the Internet and the increasing digitization of information. Possible topics: commercial law issues arising out of e-commerce including the proposed Article 2B of the Uniform Commercial code on information licensing and various electronic signature statues; intellectual property issues including the regulation of the Internet, the domain name as a trademark controversy, database protection schemes, and issues relating to online liability for copyright and trademark infringement; privacy issues such as encryption of data and access to personal identification data; criminal law issues involving cybercrimes (e-mail theft, cyberrape, etc.); and Y2K problems.

682G. Legal Control of Discrimination Seminar (1-4 cr)

Legal issues pertaining to the legal control of discrimination.

683G. Patents and International Intellectual Property (1-4 cr)

Two separate components; one involving patent law and one involving international intellectual property. The patent law component looks at some of the central issues of the protection and enforcement of patents with emphasis on the policy issues that arise from patent protection. Focus of the international intellectual property component is on private law. Materials emphasize issues that an American lawyer representing an American company should understand. Relative emphasis between patents and international intellectual property determined each term.

684G. Bioethics and Law (1-4 cr)

Role of law in controlling, shaping, and responding to scientific and technological developments in the field of medicine and the biological sciences. May include contraception, abortion, sterilization, artificial conception, genetic engineering, the right to refuse treatment, euthanasia, the right to treatment of defective newborns, organ transplantation, and experimentation with human subjects.

685G. Capital Punishment (1-4 cr)

Legal doctrine and policy regarding capital punishment in the United States. Draws heavily but not exclusively on decisions by the US Supreme Court. Includes: various Constitutional challenges and limitations according to Supreme Court decisions; aggravating and mitigating circumstances; jury selection and qualification; discriminatory application; the use of clinical testimony; and the role of counsel. Differs significantly from the Jurisprudence course that addresses capital punishment and directs primary attention to jurisprudential arguments regarding the justification of capital punishment in principle and in practice, with only secondary attention to a few of the central court cases. Court cases and legal doctrine and policy issues arising out of those court cases. Thus, the two courses are complimentary with relatively little overlap, and neither presupposes the other.

686G. Gender Issues in the Law (1-4 cr)

Critical review of the role of gender in shaping socio-legal relationships and policies. Examines selected procedural and substantive areas of the law that affect and are affected by gender. Includes, but are not limited to, employment, property, torts, the Constitution and contractual relationships. Emphasis on the complex relationship between gender, race and class.

687G. Investment Companies and Investment Advisers (2 cr)

Pre- or coreq: LAW 632/G. Survey of the regulation of mutual funds and investment advisers under the federal Investment Company and Investment Advisers Acts.

688G. Images of Lawyers in Film (2 cr)

Grade based on presentations and papers/final exam. How Lawyers are portrayed in film and how those images reflect real lawyering issues. Focus on professional responsibility issues raised by films, but other aspects of lawyering also addressed.

690G. Real Estate Transactions (1-4 cr)

Contracts for the sale of land; real estate financing including mortgages and installment land contracts, and more advanced devices such as sale leasebacks, ground leases, leasehold mortgages, equity participations, variable rate mortgages, and others; title examination and protection; shared facilities such as cooperatives, condominiums, and home owners associations.

691G. Health Care Finance (3 cr)

Institutional, economic, and legal dimensions of "health insurance". Although the course considers the interface between private and public insurance mechanism, the focus is on private sector developments in "managed care".

692G. Modern Real Estate Seminar (1-4 cr)

Legal aspects of commercial real estate practice including acquisition, disposition, financing, and management of commercial real estate entities such as apartment complexes, housing subdivisions, condominiums, and shopping centers. Land use controls.

693G. Law and Economics (AECN *893) (1-4 cr)

Economic principles to problems of legal interpretation and policy. Gives economic background for substantive courses in such areas as antitrust, regulated industries, and environmental law and also demonstrates the power of economic analysis when applied to problems in such diverse areas as contracts, property, torts, criminal law, family law, corporations, taxation, securities, procedure, and constitutional law.

694G. Sports Law (1-4 cr)

Selected legal issues affecting amateur and professional sports. May include applicability of antitrust, communications, contract, labor, and tax laws to professional sports; the ethical and professional aspects of player representation; the extra-governmental regulation of amateur athletics; and the internal organization of the professional sports leagues.

695G. Law and Educational Administration (EDAD 959) (1-4 cr)

Current legal issues of national significance relating to educational institutions; analysis of constitutional provisions, statutes, and court decisions affecting education; separation of church and state; rights of equality; student rights, responsibilities, and discipline; application of criminal and juvenile provisions; use of school property; control of the curriculum and extracurricular activities; contractual and tort liability; hiring, collective actions, tenure, outside activities, discharge, and retirement of teachers; confidentiality; accrediting agencies; and similar current legal matters.

696G. Client Interviewing and Counseling (1-4 cr)

Introduction to the basics of legal interviewing (lawyer interaction with a client for the purpose of identifying the client's problem and gathering information on which the solution to that problem can be based) and counseling (a process in which lawyers help clients reach decisions). Class discussion of reading materials and videotaped demonstrations, and role play exercises.

697/697G. Environmental Planning and Pollution Control (1-4 cr)

Students who have taken LAW 641G may not enroll in this class. Legal problems associated with the regulation of the quality of the environment with emphasis on the Clean Water Act, the Clean Air Act, and the National Environmental Protection Act.

698G. Lands and Natural Resources (1-4 cr)

Acquisition and disposition of the public domain; jurisdiction over public lands; withdrawals and reservations; mining and mineral leasing on public lands; range, forest, and wildlife management, recreation, and preservation.

699G. Land Use Planning (ECON *827) (1-4 cr)

Legal and administrative aspects of the regulation of land use and development, the problems and techniques of urban planning at the various levels of government, and the relationship of private owners and builders to the government policies involved in shaping the physical environment.

701G. Health Care Finance Seminar (1-4 cr)

Analysis of specific issues in the design and control of market and governmental mechanisms for the diversification of risk.

702G. International Trade Law and Policy (1-4 cr)

Prereq: LAW 671/G, 673/G, or 640/G

Students previously enrolled in Seminar (665/G) may not enroll in this course. Two night sessions of three hours each for a negotiation exercise that will take the place of six class sessions. Selected issues of international trade law and policy. Several prominent issues: trade in agricultural goods, new issues facing the international trading system, and other topics selected by students for research papers. Visiting scholars or government officials or faculty from other departments at the university may also make presentations to the seminar.

703G. Law and Medicine (1-4 cr)

Major topics at the intersection of law and medicine in America today. Most relate to the legal implications of health care quality and cost, to the legal implications of access to health care, or to issues in the area of bioethics. In particular, time devoted to the organization and legal credentialling of health care providers, individual and institutional; to medical malpractice law and its reform; to legal mechanisms of cost-control in health care delivery; to publicly-subsidized health care for the needy; and to the

medicolegal issues surrounding morally controversial topics in modern medicine, such as issues relating to facilitating or avoiding reproduction, to the right to treatment, to the right to refuse treatment, to yet other issues.

704G. Agricultural Law (AECN *804) (1-4 cr)

Legal problems and issues of unique importance to lawyers serving the agricultural sector. The Farm Credit System, the Farmers' Home Administration, and farm financing problems under the Uniform Commercial Code; commodity futures markets; agricultural cooperatives; farmland preservation and rural land use controls; foreign investment in American agriculture; farm labor legislation; farm programs and the economic regulation of agriculture; pesticides; and food additives.

705G. Agricultural Law Seminar (1-4 cr)

Selected problems in agricultural law.

707G. International Human Rights Law Seminar (1-4 cr)

Students required to write a substantial research paper on a topic of their choice. Interested students have the opportunity to research subjects of relevance to the work of the International Criminal Tribunal for the Former Yugoslavia. Historical, political and philosophical roots of international human rights law, its development over the course of the last century and its contemporary role in international affairs. May include current attempts to strengthen UN fact-finding and implementation mechanisms; the relationship between UN peacekeeping and peacemaking, on the one hand, and international humanitarian law, on the other; the activities of regional human rights systems; the effect of the United States' recent signature and ratification of UN human rights conventions and the role of such conventions, and international human rights law generally, in US courts; and contemporary efforts to enforce international human rights law through the criminal process.

708G. Alternative Dispute Resolution (1-4 cr)

Theoretical, practical, ethical and legal issues confronted by mediators, arbitrators, neutral evaluators, and other dispute resolution specialists and the parties they serve. Legal context within which alternative forms of dispute resolution take place. Procedures examined: agreements arising from negotiations, mediations, arbitrations, summary jury trials, mini-trials, private judges, early neutral evaluations, neutral experts and masters, negotiated rulemaking, and claims facilities. Status of these procedures examined in light of existing case and statutory law and from a public policy point of view. Issues: confidentiality and privilege, conflicts of interest, finality/enforceability of resolutions, liability and ethical standards applicable to third parties, the extent of judicial review of decisions, arbitrability of disputes, international law, and public interest concerns. Disputes in a variety of settings considered: family, employment, medical, commercial, criminal, and international.

709G. Arbitration (1-4 cr)

law, process, and skills; federal and state laws; commercial, labor, employment, securities, construction, international, and court-annexed arbitration; and other topics related to arbitration.

710G. Mediation (4 cr)

Process in which a trained neutral third party assists others in resolving a dispute or planning a transaction. Training in basic mediation skills through readings, demonstrations, simulations, and the keeping of a mediation notebook. The nature of mediation and its relationship to other forms of dispute resolution, the nature of conflict, models and styles of mediation, negotiation theory, communication skills, the interest-based mediation process, the representation of clients in mediation, special issues relating to attorney mediators, and mediators standards and ethics.

711G. Copyright Law (1-4 cr)

Protection of literary, artistic, musical, and audiovisual works under the laws of copyright and unfair competition. Rights in characters, computer programs, nonfiction works, titles, and useful articles, in addition to more traditional subject matter such as art, literature, and music; issues of infringement including home recording, photocopying, computer transmission and public performance; procedural aspects of the 1976 Copyright Act, including notice, registration, transfer and duration.

712G. Law and Literature (1-4 cr)

Interdisciplinary study of the relations between law and literature, exploring the law in literature and the law as literature. The law in literature: Novelists, poets, and playwrights have seen the human interest in the law and in legal events; the law and lawyers have therefore been central to some major works of literature. Examines ways the law and lawyers have appeared in literature, and attempts to draw some lessons from them. The law as literature: Primary and secondary writing in the law employs most of the literary devices found in the imaginative literatures, and the tools of literary interpretation and analysis can therefore be brought to bear on legal texts. Exploring the literary aspects of the law, and deriving practical and theoretical insights from this exploration.

713G. Style and Composition in Legal Writing (1-4 cr arr)

Skills course. Requires as much practical writing as reading and study. Discusses various causes of poor legal writing-legal writing that is unnecessarily difficult to read-and attempts to understand what constitutes good legal writing, and what makes it work. Focuses on developing clarity, coherence, and concision in legal writing. Students should develop a better understanding of the linguistic causes of good and bad legal writing, and a set of concrete writing tools for the improvement of their own writing.

714G. Comparative Law: International Gender Issues (1-4 cr)

Selected problems of international and comparative gender issues in foreign legal systems and their impact on US law. Specific documents that may be discussed include the United States Constitution; US Refugee Law; Violence Against Women Act;

International Covenant on Civil and Political Rights; Universal Declaration of Human Rights; United Nations Charter; International Covenant on Economic, Social, and Cultural Rights; International Covenant on Civil and Political Rights; Convention on the Rights of the Child; Convention on the Elimination of All Forms of Discrimination Against Women; and the Declaration of the Elimination of Violence Against Women.

716G. Comparative Law: International Gender Issues Seminar (1-4 cr)

Selected problems of international and comparative gender issues in foreign legal systems and their impact on U.S. law. Documents for discussion include the U.S. Constitution; U.S. Refugee Law; Violence Against Women Act; International Covenant on Civil and Political Rights; Universal Declaration of Human Rights; United National Charter; International Covenant on Economic, Social, and Cultural Rights; International Covenant on Civil and Political Rights; Convention of the Rights of the Child; Convention on the Elimination of All Forms of Discrimination Against Women; and the Declaration on the Elimination of Violence Against Women.

717G. Education Law (3 cr)

The role that law plays in education in the United States. The rights of students and teachers, special education and disability, school finance, school searches, student discipline, privacy of records, liability of school officials and discrimination based on gender and race. The emerging case law on state constitutional claims of education equity and adequacy.

718G. Refugee and Asylum Law Seminar (3 cr)

Refugee issues in the context of domestic and international political environments. Asylum reform, gender-based persecution, persecution of gays and lesbians, deficiencies in international and domestic refugee law, and firm resettlement of displaced persons. Interdisciplinary focus: considers the interplay among political, social, economic, cultural and psychological phenomena as refugees, governments of host countries, and international and non-governmental organizations interact in the context of ongoing crises around the world.

719G. Federalism and State Sovereignty (3 cr)

Relationship between state and national governments and its place in American constitutional thought. The Supreme Court's recent "new federalism" jurisprudence from the historical legal and public policy perspectives. Overview of the shifting and vital role of states in our nation's constitutional history and jurisprudence with the aim of preparing students to assume creative and thoughtful roles of governance at the state and local levels.

722/722G. Agricultural Environmental Law (3 cr) Lec 3.

Environmental law in agriculture, the Clean Water Act as it applies to agriculture, the environmental and conservative provisions of the farm program, pesticide regulation and liability, and other areas where environmental concerns and the agriculture industry intersect.

725/725G. Economic Justice Seminar (3 cr) Lec 3.

A social justice critique of free markets. The relationship of legal rules to the distribution of wealth. Introduction of a range of materials and critique the economic theory underlying various approaches to law and economics. Readings will include an interdisciplinary perspective Current topics in economic inequality, e.g., access to credit, housing and others.

726/726G. Domestic Telecommunications Law (1-2 cr, max 3) Lec.

Legal framework applied in the U.S. to most wireline and wireless communications (not including the Internet). Cable television, landline telephone, broadcast and satellite radio and television, and mobile technologies. Economic, technological, national security, and statutory and constitutional issues, current policies, and academic debates.

729G. Civil Rights Litigation (1-4 cr)

Major substantive and procedural issues in litigation to protect civil rights. Established theories of liability and defenses, possible new developments in legal doctrine, and pending statutory changes.

731G. Investment Treaty Arbitration (3 cr) Lec 3.

The substantive rights provided in international investment agreements, the North American Free Trade Agreement (NAFTA) and the procedural rights granted to resolve disputes. Investor-state arbitration and other dispute resolution options.

732G. Constitutional Law II (EDAD *871) (1-4 cr)

Emphasizes protected individual civil liberties. The origin and modern applicability of the state action concept in constitutional litigation; the scope of congressional power to enforce the post Civil War amendments; freedom of speech, association, and press; and constitutional principles enforcing the first amendment's command that "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof."

733G. Advanced Legal Research (3 cr)

Advanced exposure to the tools of legal research: the nature of and philosophies surrounding organization and production of the materials themselves.

734G. Professionalism in Law and Medicine (1-4 cr)

Jointly offered by the College of Law and the College of Medicine and jointly taught by faculty members from both colleges.

Comparative study of legal and ethical aspects of the physician-patient and the lawyer-client relationship, including professional norms and their enforcement; availability of professional services; incidents of the professional relationship, such as the relative authorities of professional and client, confidentiality, competence, and conflicting interests; and social implications of the professional-client relationship.

735G. Criminal Trial and Post Conviction Procedure (1-4 cr)

Criminal procedure issues arising after a suspect's arrest. "Trial" issues include pre-trial preliminary hearings and grand jury proceedings as well as trial questions relating to joinder and severance, representation of multiple defendants, treatment of incarcerated defendants (including bail), right to jury trial, the fair trial-free press conflict, right to speedy trial, and discovery. "Post-trial" issues include sentencing, appeal, post conviction remedies, and corrections. Professional responsibility of attorneys in criminal cases.

736G. Bankruptcy (1-4 cr)

After surveying the rights of creditors and debtors under state law, considers the impact of bankruptcy upon secured and unsecured creditors and upon stockholders. The bankruptcy trustee's avoiding powers are studied. Code Chapter 12: Adjustments of Debt for Family Farmers considered in some detail. Chapters 7, 11, and 13 liquidations and reorganizations surveyed with selected topics considered in depth. The negotiated settlements and "workout agreements" which characterize this area of practice emphasized.

737G. Law of Provider and Patient (1-4 cr)

Students may also enroll in LAW 713G Style and Composition in Legal Writing for an additional hour of Law College credit. A limited but central topic in the larger field of health-care law-the law bearing on the relationship between a health-care provider and a patient. Surveys the legal rights and obligations of patients and their health care providers, individual and institutional. Covering qualification as a health care provider (institutional and individual licensure); the legal doctrines relating to the formation of provider-patient relationship; the locus of decisional authority in the relationship; the provider's fiduciary duties to the patient (to deliver care of professionally acceptable quality [including traditional malpractice law], to avoid conflicts of interest, to respect the patient's privacy, and to protect the confidentiality of medical information about the patient); the reciprocal obligation of the patient to take reasonable steps to assure payment and to comply with medical directives; and the legal doctrines relating to the termination of provider-patient relationships.

738G. Advanced Bankruptcy (1-4 cr)

Selected legal issues under the bankruptcy code with an emphasis upon corporate and farm reorganizations. Includes the treatment of executory contracts and leases; avoidance of pre-bankruptcy transfers; business reorganizations under Chapter 11; farm reorganizations under Chapter 12; use, sale, and lease of property; obtaining credit during the pendency of bankruptcy proceedings; negotiation and drafting of post-petition credit arrangements; relief from the automatic stay; adequate protection of lienholders; and plan confirmation standards under Chapter 11 and Chapter 12.

739G. Criminal Law II: Federal Criminal Law (1-4 cr)

Scope and content of federal crimes. Fraud and political corruption, drug trafficking, money laundering, organized crime, false statement, obstruction of justice and federal sentencing guidelines.

740G. Negotiations (1-4 cr)

Students expected to complete a journal which relates class discussions, lectures, readings, and personal experiences into a guide book for future negotiation practice. Variety of negotiation styles and an opportunity to apply these styles in a series of increasingly complex negotiation problems. Negotiation problems include plea bargains, personal injury cases, commercial negotiations, and labor management disputes. Strategic and psychological factors present in negotiation styles. To improve negotiation performance and broaden the repertoire of strategic and stylistic choices available to the student negotiator.

741G. Pretrial Litigation (1-4 cr)

Application of procedural rules to the bringing and defending of civil law suits and on considering the tactical and strategic aspects of litigation. Weekly exercises on pleading, motion practice and discovery.

742G. Securities Fraud (1 cr)

Civil actions for damages caused to investors by misrepresentations in securities markets. Specific topics vary.

743G. Remedies and Damages (1-4 cr)

The interplay and choice of possible recoveries in property, personal, and business interest situations. Damages: object of an award in contract and tort, limitations on recovery, and elements of damage. Equity: specific performance and injunctions. Examines the place and scope of restitution in the remedial structure, theories of recovery in basic contract and tort situations including vendor and vendee relationships, conversion, personal injury, defamation, privacy, unfair competition and employer-employee relationships, and the use of legal and equitable remedies in modern codes.

745G. Partnership Taxation (ACCT 945) (1-4 cr)

Prereq: ACCT 812 or LAW 637G

Survey of important principles of partnership taxation.

746G. Corporate Finance Governance (3 cr) Lec 3.

Prereq: LAW 632/632G

The financial structure and governance of the modern corporation and other similar entities. Issues of valuation relating to the corporation enterprise, alternatives for managing corporate risk, sources of corporate funding, and right of competing corporate stakeholders. Legal duties imposed on corporate management, factors influencing management's decisions, and how management can act to satisfy its duties and maximize corporate value.

748G. Space Law (3 cr) Lec 3.

Space law and policy for intelligence gathering and weaponization, telecommunications, satellite launch, space tourism, and remote sensing. Application of five major international space treaties to regulation of modern space activities and arms control agreements. New and growing problems of orbital debris, protection of in-space assets and terrorism.

749G. Commercial Law Seminar (1-4 cr)

Students write and present a paper addressing an area of interest in commercial or banking law. Increasingly, attorneys are facing new legal dilemmas posed by several developments in commercial practices. Explores several current issues in commercial and banking law. Includes "Technology and the Uniform Commercial Code," "Consumer Protection and the UCC," "Banks and Community Needs" and various issues arising from proposed revisions to the Uniform Commercial Code (UCC).

750G. American Foreign Affairs Law and Policy Seminar (3 cr)

Prereq: Previous enrollment in an international law course recommended

Structural and organizational issues related to United States foreign policymaking such as separation of powers and federalism. United States foreign policy in substantive areas such as the war on terror, non-proliferation, trade, foreign aid, global warming, relations with the European Union, and relations with Latin America.

751G. Pension and Employee Benefit Law (1-4 cr)

Law relating to pensions and employee benefits. The role of pensions and employee benefits in the compensation package, taxation of pensions, regulation of pension and benefit plans, ERISA fiduciary law, and issues relating to the termination of pension plans.

752G. Labor and Employment Law: Theory and Practice (1-4 cr)

The class will have a limited enrollment. Preference given to students who have earned at least 6 credits from the following courses: Civil Rights Litigation, Civil Rights Litigation Seminar, Employment Law, Employment Law Seminar, Labor Law, Labor Law Seminar, Legal Control of Discrimination, Legal Control of Discrimination Seminar, Pension and Employee Benefit Law, Public Employment Law. A modest bridge between classroom instruction in labor and employment law and real world practice in the area. Local practitioners collaborate with faculty member to formulate problems for the class and participate in several class sessions. Students engage in intensive analysis of issues arising out of the problems; they may be asked to prepare and discuss work products that fall anywhere on a continuum between the scholarly (such as law review-type analyses of complex issues) and the intensely practical (such as drafting interrogatories).

753G. Labor Law (ECON *880) (1-4 cr)

Legislative and judicial patterns of the modern labor movement; the objectives of labor combinations; the forms of pressure employed for their realization and prevention; strikes, boycotts, picketing, and lockouts; the legal devices utilized in carving out the permissible bounds of damage suits involving labor activity; the labor injunction; the National Labor Relations Board; the nature of collective bargaining agreements; extra legal procedure for settling labor disputes-the techniques of mediation, conciliation, and arbitration.

754G. Federal Jurisdiction (1-4 cr)

Advanced study of United States constitutional law in the litigational context and focused on the power, history, and development of the federal judicial system and the distribution of power between the federal and state systems.

755G. Products Liability (IMSE 801) (3 cr II) Lec 3.

Liability issues arising out of manufacturing defects, design defects and warning defects in various product categories. Specific issues related to product liability, such as identifying proper defendants, establishing causation and the issue of post-sale warnings. Broader policy questions about the role of litigation versus regulation in a democracy and a market economy.

757G. Psycholegal Research Other than Thesis I (PSYC 995) (3-6 cr)

Research is supervised and approved by a faculty member in the Law/Psychology program. Absent the prior approval of the Dean, only those students enrolled in the Law/Psychology Joint Degree Program may register for this course. Absent the prior approval of the Dean, no student may take more than 6 hours of research in a selected and/or psycholegal research. A substantial research and writing project on a psychological topic.

758G. Psycholegal Research Other than Thesis II (PSYC 995A) (3-6 cr)

Research is supervised and approved by a faculty member in the Law/Psychology program. Absent the prior approval of the Dean, only those students enrolled in the Law/Psychology Joint Degree Program may register for this course. Absent the prior approval of the Dean, no student may take more than 6 hours of research in a selected and/or psycholegal research. For course description, see LAW 757G.

759G. Employment Law Seminar (EDAD 956) (1-4 cr)

Selected current national and state legal issues pertaining to private and public employment.

760G. Public Employment Law (EDAD 960) (1-4 cr)

Legal issues relating to public employment with particular emphasis on public schools and colleges; collective bargaining by public employees, impasse, and resolution of public employee disputes; grievances, arbitration, and enforcement of agreements; civil rights of public employees; and laws applicable to public employment apart from collective bargaining, such as discrimination acts, wage and hour laws, retirement plans, and public records.

761G. Trial Advocacy (EDAD 961) (1-4 cr)

Prereq: LAW 646/G

Students perform weekly exercises which are videotaped and critiqued and will try a case. Fundamentals of trial practice. Emphasis on questioning witnesses, selecting and addressing the jury, and admitting items into evidence.

762G. Law and Behavioral Science (PSYC 985) (1-4 cr)

General issues in the interaction between law and the behavioral sciences; discussion of the use/misuse/nonuse of the behavioral sciences in the law, with attention to ways of making behavioral science input most useful; analysis of the law as a behavioral instrument.

763G. Mental Health Law (PSYC 988) (1-4 cr)

Critical review of the mental health laws throughout the nation and their psychological foundations. Emphasis on the research that illuminates the problems facing mental health law, system, and processes and the available solutions. Includes the insanity defense, competency to stand trial, guardianship, conservatorship, and civil commitment.

764G. Topics in Law and Psychology I (PSYC 989) (1-4 cr)

May be repeated once. Analysis of specific psycholegal topics. Previous course titles include Privacy, Mental Health Policy, Legal Decision Making, Institutional Reform and Deinstitutionalization, Legal Policy and Child Development, and Domestic Violence.

765G. Topics in Law and Psychology II (PSYC 989A) (1-4 cr)

May be repeated once. For course description, see LAW 764G.

767G. Estate Planning (ACCT 967) (1-4 cr)

Prereq: LAW 637/G

Pre- or coreq: LAW 639/G. Federal estate and gift taxation, related income tax rules, estate planning concepts, and state inheritance taxation.

768G. Estate Planning Problems (ACCT 968) (1-4 cr)

Prereq: LAW 767/G

Problems of planning and implementing estate plans for clients of substantial wealth with emphasis on skills of drafting the various legal instruments usually required for comprehensive estate planning.

769G. Tax Policy Seminar (ACCT 969) (1-4 cr)

Policies of federal income taxation with emphasis on current legislative proposals and alternatives.

771G. Gender Issues in the Law Seminar (3 cr)

Critical review of gender role in shaping socio-legal relationships and policies. Procedural and substantive areas of the law that affect and are affected by gender. Employment, property, torts, Constitutional law, and contractual relationships. Complex relationship between gender, race and class.

772G. Mental Health Law Seminar (1-4 cr)

Students who have previously taken LAW 763G may not take this course. Critical review of the mental health laws throughout the nation and their psychological foundations. Emphasis on the research that illuminates the problems facing mental health law, system, and processes and the available solutions. Includes the insanity defense, competency to stand trial, guardianship/conservatorship, and civil commitment.

773G. Criminal Sanction Seminar (3 cr)

Criminal sanction with attention to conceptual and justificatory problems. Issues relating to the just administration of punishment, including the death penalty, as well as legal doctrines and defenses negating or mitigating criminal responsibility. Sentencing process considered with attention to the legal rights of offenders from conviction to final release.

774G. Environmental Law and Water Resource Management Seminar (CIVE 916; NRES 916) (1-4 cr, max 4)

Prereq: Permission

An interdisciplinary seminar with the Department of Civil Engineering. Contemporary environmental issues and water resource management.

775G. Jurisprudence Seminar (1-4 cr)

Judicial process, the principal schools of jurists, theories of the nature of law and the legal order, the problems of the science of law today, and their application to the American social system.

776G. Water Law, Planning and Policy (AECN *876) (1-4 cr)

Judicial, legislative, and administrative problems in water resource development, allocation, and control.

777G. Legislation Seminar (EDAD 963) (1-4 cr)

Development of further skills in drafting and interpreting statutes, understanding legislative processes and decision making, and evaluating the role of legislation in governmental regulation. Opportunity for in-depth study of subjects pertaining to or involving legislation, centering on subjects considered by the Nebraska Legislature and the Nebraska legislative process.

779G. Deregulation Seminar (3 cr)

Each student will be required to write a paper examining a Nebraska regulatory provision and considering whether that particular regulation should be eliminated or modified. A review of the policy arguments for and against government regulation and their application to particular regulatory provisions.

781G. Constitutional Problems Seminar (1-4 cr)

Selected constitutional issues of current importance.

782G. Advanced Trial Advocacy (3 cr)

Prereq: LAW 761/G

Enrollment limited to 16 students per semester. Simulation exercises concerning advanced trial advocacy topics including jury selection, expert witnesses, problem witnesses, development of a trial theme and multi-party litigation. Students perform simulated jury trial.

783G. Insurance Law (ECON *814) (1-4 cr)

Principles of insurance law. Focuses on features of common insurance contracts and the legislative, judicial and administrative supervision of both insurance contracts and the insurance industry.

784G. Judicial Seminar (1-4 cr)

Current issues focusing on the roles and operation of federal and state courts as part of the legal system of the United States.

788G. Local Government Law (EDAD 964) (1-4 cr)

Law of local government units with emphasis on current problems in the operation and administration of local government, models and theories of local government.

789G. Securities Regulation (1-4 cr)

Prereq: LAW 632/G or permission

A comprehensive but intensive survey of the statutes and regulations governing the distribution of securities, trading of securities on the stock exchanges and the over-the-counter markets, and the growing role of federal law in corporate governance. Primary focus on the Securities Act of 1933 and the Securities Exchange Act of 1934, with limited attention to state “blue sky” securities legislation.

790G. Legal Profession (1-4 cr)

This course meets the faculty’s requirement for a course in professional responsibility. A systematic study of the principles of professional responsibility governing the practice of law in the United States.

791G. Legal Profession Seminar (1-4 cr)

When so designated by the instructor, this seminar meets the faculty’s requirement for a course in professional responsibility. Problems related to the American legal profession.

793G. Products Liability Seminar (ECON *830) (1-4 cr)

Selected problems in products liability, with emphasis on research and writing projects analyzing the problems.

796G. Native American Law (1-4 cr)

Concepts used historically to fit Native Americans into the legal structure of the United States. The power of the federal government, the power of the states, and the historical and contemporary power of the tribes explained.

797G. Native American Law Seminar (1-4 cr)

Concepts used historically to fit Native Americans into the legal structure of the United States. The power of the federal government, the power of the states, and the historical and contemporary power of the tribes explained.

798G. Clinical Practice-Civil (2-6 cr)

Open only to students with senior standing. Students are also required to attend a seminar on lawyering skills and the representation of clients. Students, under close faculty supervision, advise and represent clients in a variety of civil cases, including landlord-tenant, consumer, collection, bankruptcy, immigration, tax, and domestic relations cases.

799G. Clinical Practice-Criminal (3-6 cr)

Open only to students with senior standing. Participation in a seminar concentrating on the development of skills necessary to the prosecution and defense of criminal cases is required. Students prosecute a variety of misdemeanor offenses under the close supervision of a member of the faculty. Cases are prosecuted through the Lancaster County Attorney's Office and the practice component of the course is conducted out of that office.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Graduate Committee: Professors Lawson (chair), Berger, Duncan, Gardner, Gradwohl, Kalish, Kirst, Lyons, Potuto, Snowden, Willborn; Associate Professors Bradford, Schopp

The master of legal studies (MLS) degree program is designed for individuals who are not interested in practicing law, but who are interested in developing a better understanding of the law as it affects their nonlegal careers or areas of interest.

Students who are admitted to the program can begin their course work only during a fall semester and must complete with satisfactory grades 33 credit hours of law in order to receive an MLS degree. Of those 33 hours, 9 hours are required courses and 24 hours are elective. The required courses are a full-year common law course (6 credit hours) and the first semester course LAW 513G, Legal Research and Writing, (3 credit hours). The full-year common law course--which can be Contracts, Property, or Torts--must be taken during the student's first year in the program. The Legal Research and Writing course must be taken during the student's first semester in the program. A student may begin taking elective courses during the first year of the program. Most but not all of the law courses may be taken as electives and all degree requirements must be completed within three years.

It should be emphasized that a master of legal studies degree is not a substitute for the juris doctorate (JD). Individuals who are interested in practicing law or in applying for admission to the bar should seek a JD degree not an MLS degree.

Students who need further information about admission to the MLS degree program, the program's course and academic requirements, and the differences between a JD and an MLS degree, should contact the College of Law Admissions Office.

Listed below are the courses offered by the College of Law which are cross listed with the Graduate College. For information on the professional degree programs of the College of Law and additional courses, see the College of Law Bulletin.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Berger, Lawrence -1960; Professor; BS 1949 Pennsylvania; JD 1952 Rutgers
- Bradford, C. Steven -1987; Professor; BS 1978 Utah State; JD 1982, MPP 1982 Harvard
- Duncan, Richard F. -1979; Professor; BA 1973 Massachusetts; JD 1976 Cornell
- Gardner, Martin R. -1977; Professor; BS 1969, JD 1972 Utah
- Gradwohl, John M. -1960; Professor; BS 1951, JD 1953 Nebraska (Lincoln); LLM 1957 Harvard
- Kalish, Stephen E. -1971; Professor; BA 1964, JD 1967, LLM 1974 Harvard
- Kirst, Roger W. -1974; Professor; BS 1967 MIT; JD 1970 Stanford
- Lawson, Craig M. -1978; Professor; AB 1970 Yale; JD 1974 California
- Lenich, John D. -1984; Associate Professor; BA 1977 Illinois; JD 1980 Northwestern
- Lyons, William H. -1981; Professor; BA 1969 Colby College; JD 1973 Boston College
- Perlman, Harvey S. -1982; Professor and UNL Chancellor; BA 1963, JD 1966 Nebraska (Lincoln)
- Potuto, Josephine R. -1974; Professor; BA 1967 Douglass; MA 1971 Seton Hall; JD 1974 Rutgers
- Schaefer, Matthew P. -1995; Assistant Professor; BA 1987 Chicago; JD 1991, LLM 1993 Michigan
- Schopp, Robert F. -1989; Associate Professor; BS 1977 North Carolina State; JD 1988, PhD 1989 Arizona
- Shavers, Anna W. -1993; Assistant Professor; BS 1967 Central State; MS 1973 Wisconsin; JD 1979 Minnesota
- Snowden, John R. -1972; Professor; BA 1966, JD 1971 Nebraska (Lincoln)
- Tomkins, Alan J. -1986; Professor; BA 1975 Boston; JD, PhD 1984 Washington (St. Louis)
- Willborn, Steve L. -1979; Professor and Dean of the Law College; BA 1974, MS 1976 Northland; JD 1976 Wisconsin
- Wilson, Catherine L. -1995; Assistant Professor; BA 1984 Creighton; JD 1987 Alabama

Courses for Agricultural Leadership, Education, and Communication (ALEC)

Leadership Education & Leadership Studies

800. Overview to Program Planning (3 cr II) Lec 3.

Prereq: ALEC 305 or ALEC/TEAC 805/NUTR 806

Designed for individuals interested in developing and/or improving program planning skills.

Theoretical and applied considerations for identifying content design, implementation, and evaluation of educational programs that vary in length from several hours to several months.

*801. Theoretical Foundations of Leadership (3 cr) Lec.

Major research thrusts in leadership field. Historical and contemporary research studies, surveying the literature, developing theory, and conceptualizing original research questions and problems.

*802. Developing Leadership Capacity in Organizations and Communities (3 cr)

Prereq: ALEC *801 or equivalent

Leadership capacity in individuals and organizations. Impact of leadership on organizational outcomes and means for diagnosing leadership developmental needs. Assessing, creating and implementing a comprehensive leadership development program for an organization or community.

*804. Problems of Beginning Agriscience Teachers (2-5 cr I, II, III) Lec/act.

Problems in instructional planning and methodology and in organizing secondary and continuing education, FFA, and agriculture experience programs.

*805. Advanced Teaching Strategies (NUTR *806; TEAC *805) (3 cr) Lec.

Contemporary and innovative teaching strategies, emphasizing learner-centered instruction, suitable to teaching in college and postsecondary institutions, outreach programs public schools, and other settings. Students participate in active learning as they apply learning theory in practice, prepare and demonstrate teaching methods, and plan for instruction in discipline areas of their choice.

*806. Introduction to Distance Education (3 cr I) Lec.

Introduction to the field of distance education through readings, discussions, field trips, and research. Basic principles and key concepts of distance education in a variety of educational settings.

*807. Supervisory Leadership (CYAF *807) (3 cr) Lec 3.

Prereq: ALEC 302 or 801

Knowledge and theoretical basis for practicing supervisors in a changing workplace where supervisors have increasing responsibilities due to the flattening of organizational structures. Solving supervisory challenges in organizing and planning, problem solving and decision making, performance appraisal, and leading a diverse workforce.

810. Environmental Leadership (NRES 813) (3 cr) Lec 3.

Major leaders in conservation and ecology who emphasize agricultural and cultural issues and relationships with the environment.

812. Multimedia Applications for Education and Training (NUTR *812) (3 cr) Lec/lab.

Practical applications in developing and evaluating multimedia resources for students. New applications, creation and development of various instructional materials, and review of current practice against relevant theory. Projects use current software packages to develop materials for various audiences.

814. Classic Figures in Leadership (3 cr) Lec/rct.

Requires extensive writing and oral presentations. Leadership theory in an applied context. Leadership analyzed through a variety of genres: autobiography, drama, fiction, tracts and treatises, speeches.

*815. Development and Organization of Vocational Education (TEAC *815) (1-3 cr) Lec.

For teachers, administrators, and guidance personnel. Vocational and practical education, their place in the community school; planning comprehensive programs in agriculture, business, homemaking, and industrial education.

*816. Management Strategies in Distance Education Environments (3 cr II, III) Lec.

Management strategies for a variety of distance education situations. Planning, organization, motivation, and control provide a framework for analyzing distance education in formal and non-formal, large and small, private and public, and established and emerging organizations.

820. Improvement of Instructional Programs for Post-High School Occupational Education (1-3 cr) Lec.

Prereq: Baccalaureate degree; 12 hrs agricultural education or equivalent; and/or permission

Determining new instructional programs, expanding the impact of student behavioral objectives, and evaluating the total instructional program.

826. Program Evaluation (3 cr)

Prereq: ALEC *833 recommended

Builds upon program development in extension programming and provides a basic overview of program evaluation principles and methods. Applies program evaluation principles in extension education.

*832. Leading Agricultural Agencies and Organizations (3 cr III) Lec/act.

Prereq: Permission

Administrative-management theory and practice, research and techniques applied to agricultural agencies organizations. Exposure to philosophies and experiences of outstanding administrators. Applicable to domestic and international students.

833. Planning and Implementation of Cooperative Extension Programs for Domestic and Foreign Audiences (3 cr II) Lec 3.

Prereq: Permission

Unique features of the cooperative extension service as an educational institution and its involvement of local people in the program development and identification of problems and design of long-range plans, annual plans, community development, and plans for single events; applicable to domestic and foreign extension programs.

*845. Research in Leadership Education (CYAF *845) (3 cr) Lec.

Steps in preparing a research proposal, including statement of the research question, review of relevant literature, and determination of an appropriate research design and methodology. Research methodology, including both quantitative and qualitative procedures.

866. Leadership and Diversity in Organizations and Communities (3 cr) Lec 3.

Leadership theories and their applications to human diversity in organizations and communities, with special emphasis on rural environments.

877. Leadership and Motivation (3 cr) Lec 3.

Classic and contemporary motivation theories applied to leadership in organizations and communities.

888. Leadership, Power and Influence (3 cr) Lec 3.

Organizational influence processes, power, and politics in organizations and communities.

*890. Workshop Seminars (1-12 cr I, II, III)

Prereq: Permission

Work, singly or in groups, on practical educational problems, done under the supervision of staff with assistance of selected educational consultants.

*893. Technical Agricultural Workshops (1-12 cr I, II, III)

Prereq: Permission

Group study of technology in agricultural occupations. Workshops, special meetings, and assignments.

896. Independent Study in Leadership Education (1-9 cr, max 9)

Prereq: Permission

Projects in research, literature review, or extension of course work.

*897. Special Topics (1-3 cr I, II) Lec. Fld.

Readings, in-depth discussions and analysis of current theory, issues and problems, research and practice in leadership education and/or communication. Offered to address emerging topics not covered in other courses.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Leading Change in Rural America and Beyond (3 cr) Lec, fld.

Prereq: ALEC 801, 18 hours graduate credit, or permission

Skills in leading change in the 21st Century in rural communities and organizations. Strategies for planning, organizing, and institutionalizing change. Develop a change plan for a community or organization.

903. Teacher Education in Agriscience (1-3 cr) Lec/act.

Preparation of agriscience teachers to supervise and mentor student teachers, evaluate/coach performance, and instructional delivery.

904. Seminar in Leadership Studies (1 cr, max 4)

Ideas, theories, and practices on recent and emerging leadership research themes.

905. Practicum in Postsecondary Teaching (TEAC 905) (1-3 cr) Lab.

Prereq: ALEC *805 or permission

Work with a faculty mentor in a discipline of choice and an instructional supervisor to prepare instruction and teach students in a postsecondary setting. Practicum students are assisted in arranging for the practicum and are provided consultation and feedback during the practicum. Lesson planning and reflective papers are part of the practicum experience.

906. Theoretical Foundations of Distance Education (3 cr II) Lec.

Prereq: ALEC *806 recommended

Major theoretical concepts and research finding of distance education, as broadly conceived. Emphasis on analyzing and deconstruction of major ideas influencing distance education in formal and non-formal settings.

908. Organization of the Agricultural Mechanics Program (2-3 cr) Lec/lab.

Philosophy, objectives, procedures, and techniques used in organizing the program of agricultural mechanics instruction for secondary and post-high school students and adults. Determining units of instruction, evaluating student effort, procedures in shop instruction, selection of equipment, and integration into the vocational agriculture program.

910. Leadership in Cross-cultural Systems (3 cr I)

Prereq: ALEC 801 recommended

Issues of leading people in the global marketplace. Focus on understanding the impact of cultural differences, comparing and contrasting domestic and multinational leadership challenges, and review of current multinational leadership.

913. Program Development in Occupational Education (3 cr) Lec.

Philosophy and objectives of occupational education. Techniques of program development, choosing instructional areas, determining sequences, planning time distributions, integrated course of study and meeting individual needs, youth activities.

914. Leadership and Personality (2 cr) Lec 2.

Personality type and its implications for personal, team, and organizational leadership effectiveness.

995. Doctoral Seminar in Leadership Studies (3 cr, max 18)

Prereq: Permission

Outcome-based scholarly activities with a faculty mentor. Working on either an individualized or small group basis, students develop, execute, and report one or more projects addressing the interaction between research and practice.

996. Research Other Than Thesis (2-6 cr I, II, III)

Prereq: Permission

Research in selected problems in leadership education.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: Mark A. Balschweid, Ph.D.

Graduate Committee Chair: Associate Professor King

Web Site: aglec.unl.edu

Master of Science in Leadership Education

Candidates for the degree must possess a bachelors degree from an accredited institution, The program welcomes applicants from a variety of disciplines and fields. The MS in leadership education may be earned in an area emphasis in Leadership Development or in one of three specializations (Teaching and Extension Education; Distance Education; Nutritional Outreach Education). Leadership Education students may also participate in the interdisciplinary specialization of Environmental Studies or Great Plains Studies. Programs are planned to meet individual student background experiences and desired graduate program goals. The degree may be earned by successfully completing a minimum of 30 credit hours (Option I) or 36 credit hours (Options II and III) beyond the bachelors degree. Option I includes a thesis. Option II is non-thesis and requires a minor from another department. In Agricultural Leadership, Education and Communication, the degree may be pursued in one of four areas described below.

Leadership Development Emphasis. The Leadership Development emphasis immerses students in the increasingly complex area of leadership. The program is designed to enhance prior education and experience to prepare for careers related to leadership, organization or community development. Leadership courses offered range from the foundations of leadership to applications for leadership development, leadering change, community leadership and leadership in cross-cultural settings.

Teaching and Extension Education Specialization. The Teaching and Extension Education specialization prepares students for careers in community college or university teaching, public school teaching, outreach programs and Cooperative Extension. The specialization is valuable to international students planning teaching careers, as well as for individuals providing educational services. Teaching and extension courses range from teaching strategies to program planning and use of technology in education.

Distance Education Specialization. The Distance Education specialization prepares students for careers in formal and nonformal settings to business training or education. Courses range from distance education fundamentals, research foundations, applications and to management of distance technologies.

Nutritional Outreach Education Specialization. The Department offers the Nutritional Outreach Education specialization in cooperation with the Department of Nutrition and Health Sciences. Students design their program to encompass the areas of learning, teaching and outreach in nutritional education.

Leadership Studies Doctoral Specialization, Doctoral Program in Human Sciences

The Department offers a doctoral specialization in Leadership Studies within the Education and Human Sciences doctoral program. The EdD degree is recommended for those whose primary interest is in the application of theory and knowledge to improve leadership practice. Most EdD graduates pursue practitioner-based careers in the leadership field. The PhD is designed for students seeking to conduct research to generate new knowledge or reform leadership theory. Most PhD Graduate pursue faculty or high-level leadership careers. The most current information for the Leadership Studies Specialization is available online at **aglec.unl.edu.**

For additional information see "Requirements for Doctoral Degrees" in the Education and Human Sciences Doctoral Program, under Human Sciences. The graduate Record Exam (GRE), Graduate Management Admission Test (GMAT), or Miller Analogy Test (MAT) is required for admission to the doctoral specialization. International students must also submit a TOEFL iBT minimum of 79.

For additional information regarding the programs listed above, please visit the Department of Agricultural Leadership, Education and Communication's Web site at **aglec.unl.edu** or by contacting:

Department of Agricultural Leadership, Education and Communication
University of Nebraska-Lincoln
300 Agricultural Hall
PO Box 830709
Lincoln, NE 68583-0709
(402) 472-2807
email: ag-webmaster2@unl.edu

Faculty List

For faculty research interests and contact information, view the graduate program summary.

- Balschweid, Mark A. -2008; Professor; BS 1987, MS 1991, PhD 1998 Oregon State
- Barbuto, John E. -1997;Associate Professor; BSBA 1990 Maine; MBA 1992 Bentley; PhD 1997 Rhode Island
- Barrett, Leverne A. -1980; Professor; BS 1962, M Ed 1974, DEd 1978 Penn State
- Bell, Lloyd -1994; Professor; BS 1971, MS 1980, PhD 1984 Nebraska (Lincoln)
- Blezek, Allen G. -1975; Professor Emeritus; BS 1966, MS 1969, PhD 1973 Nebraska (Lincoln)
- Ellis, Jason D. -2006;Assistant Professor; BS 1998 Kansas State; MS 2003, PhD 2006 Iowa State
- Etling Arlen W. -1998; Professor; BS 1967, MS 1969 Kansas State; EdD 1975 Massachusetts
- Fritz, Susan -1994; Professor; BS, 1979, M Ed 1989, PhD 1993 Nebraska (Lincoln)
- Husmann, Dann -2000; Professor; BS 1982 Nebraska (Lincoln); MS 1986 Kansas State; PhD 1991 Nebraska (Lincoln)
- King, James W. -1996;Associate Professor; BS 1967, MS 1974, EdS 1975, EdD 1981 Indiana (Bloomington)
- Lodl, Kathleen A. -1992; Professor; BS 1984, MS 1986, PhD 1991 Nebraska (Lincoln)
- Lunde, Joyce P. -1978; Professor Emeritus; BA 1959 Kent State; MA 1960, PhD 1970 Minnesota
- Matkin, Gina S. -2005;Assistant Professor; BS 1982 Southeast Missouri State; MS 1989 Iowa State; PhD 2005 Nebraska (Lincoln)
- Parsons, Gerald M. -1995;Associate Professor Emeritus; BA 1963 St. Joseph's; MA 1965 Notre Dame; PhD 1975 Nebraska (Lincoln)
- Pennisi, Lisa -2007;Assistant Professor; BS 1986 Central Florida; MS 1991 Miami (Ohio); PhD 2007 Florida
- Rockwell, S. Kay -1980; Professor Emeritus; RN 1960 LGH-School of Nursing; BS 1962, MA 1975, PhD 1984 Nebraska (Lincoln)
- Wheeler, Daniel -1993; Professor Emeritus; BA 1962 Antioch; MS 1964 Cornell; PhD 1971 SUNY (Buffalo)

Courses for Management Information Systems and Technology (MIST)

Management Information Systems and Technology

852. Database Organization and Management (MNGT 852) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

Database technology and related human and managerial considerations. Databases from two perspectives: the logical view, as the manager and applications programmer see and use the organization's data; and the physical view, as the systems software programmers and database manager view the data. Theory on database organization and the practical applications of databases.

*853. Data Mining and Warehousing (MNGT *853) (3 cr) Lec 3.

Prereq: MNGT 950 or equivalent course in statistics

Large scale data storage systems used in business. Statistical and data mining tools used for analyzing large sets of data. Sources of data that are internal and external to the organization. Primary data mining applications in business and demonstrated on representative data sets. Data warehouses, data marts, online analytic mining techniques used to support business operations. Application of actual software where possible.

854. Information Systems Analysis and Design (MNGT 854) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

Methods and methodologies used in systems analysis, design, and implementation. Decision-making process, systems development life cycles, requirement analysis, logical and/or conceptual design, and basic database concepts.

855. Mobile and Ubiquitous Commerce (MNGT 855) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

The impact of wireless and mobile technology on the ways in which business is conducted and the strategic implications of wireless applications in organizations.

856. Object-Oriented Systems Development (MNGT 856) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

Object-orientation as an approach to developing information systems. Analysis, design and implementation of systems development from the object-oriented perspective. Object-orientation and object-oriented methods and methodologies.

857. Business Data Communications (MNGT 857) (3 cr) Lec 3.

Prereq: MIST/MNGT 350

Fundamentals of business data communications, and networking hardware and software. Communication protocols such as TCP/IP, Internet and electronic commerce.

858. Electronic Business (MNGT 858) (3 cr) Lec 3.

Prereq: MNGT/MIST 350

Management related topics in electronic business: conceptualizing and maintaining e-business strategy. Economic impact of 3-business strategies and management practices, models of e-business, electronic payment systems, Internet security, ethics and privacy, and advanced e-business trends and issues.

859. Global Information Systems (MNGT 859) (3 cr) Lec 3.

The worldwide political and economic changes in the last decade that have propelled city, state, country governments, and corporations to expand business globally and enter into new markets. Information technology (IT) has a key role in the globalization of business. The necessary concepts and ideas to understand the issues i the global or international use of information technology. IT environments around the world, national infrastructures and regulatory regimes, global IT application, global information systems (IS) development strategies, global management support systems, and global IT management strategies.

Description

Courses for Mathematics (MATH)

Mathematics

800. Mathematics for Elementary School Teachers (3 cr)

Prereq: Permission

Fundamental mathematical concepts basic to the understanding of arithmetic.

*800T. Mathematics as a Second Language (3 cr)

Prereq: Admission to the MAT or MScT program in mathematics or to a graduate program in the College of Education and Human Sciences

MATH 800T is intended for mid-level mathematics teachers. Numbers and operations. Careful reasoning, problem solving, and communicating mathematics both orally and in writing. Connections with other areas of mathematics. Development of mathematical thinking habits.

801. Geometry for Elementary School Teachers (3 cr)

Prereq: Permission

Properties of congruence and similarity, lines and rays, angles, parallels and perpendiculars, bisectors, notion of area.

*802T. Functions, Algebra, and Geometry for Middle Level Teachers (3 cr)

Prereq: Admission to the MAT or MScT program in mathematics or to a graduate program in the College of Education and Human Sciences

MATH 802T is intended for mid-level mathematics teachers. Variables and functions. Use of functions in problem solving. Theory of measurement, especially length, area, and volume. Geometric modeling in algebra. Graphs, inverse functions, linear and quadratic functions, the fundamental theorem of arithmetic, modular arithmetic, congruence and similarity. Ways these concepts develop across the middle level curriculum.

*804T. Experimentation, Conjecture and Reasoning (3 cr)

Prereq: Admission to the MAT or MScT program in mathematics or to a graduate program in the College of Education and Human Sciences

Intended for middle-level mathematics teachers. Problem solving, reasoning and proof, and communicating mathematics. Development of problem solving skills through the extensive resources of the American Mathematics Competitions. Concepts of logical reasoning in the context of geometry, number patterns, probability and statistics

805. Discrete and Finite Mathematics (3 cr)

Prereq: MATH 814 is desirable but not required

Credit in MATH 805 will not count towards the MA or MS degree in mathematics. Not open to math majors except for dual matriculants in Teachers College. Credit is not allowed for both MATH 105 and 805, or for both CSCE 235 and MATH 805. Graphs and networks. Map coloring. Finite differences. Pascal's triangle. The Pigeonhole Principle. Markov chains. Linear programming Game Theory.

805T. Discrete Mathematics for Middle Level Teachers (3 cr) Lec 3.

Prereq: Admission to the MAT-MScT program in MATH or to a graduate program in the College of Education and Human Sciences

MATH 805T is intended for mid-level mathematics teachers. Concepts of discrete mathematics, as opposed to continuous mathematics, which extend in directions beyond, but related to, topics covered in middle-level curricula. Problems which build upon middle-level mathematics experiences. Logic, mathematical reasoning, induction, recursion, combinatorics, matrices, and graph theory.

*806T. Number Theory and Cryptology for Middle Level Teachers (3 cr)

Prereq: Admission to the MAT or MScT program in mathematics or to a graduate program in the College of Education and Human Sciences

MATH 806T is intended for mid-level mathematics teachers. Basic number theory results and the RSA cryptography algorithm. Primes, properties of congruences, divisibility tests, linear Diophantine equations, linear congruences, the Chinese Remainder Theorem, Wilson's Theorem, Fermat's Little Theorem, Euler's Theorem, and Euler's phi-function. Mathematical reasoning and integers' connections to the middle school curriculum.

807. Mathematics for High School Teachers I (3 cr)

Prereq: MATH 208 and 310

Analysis of the connections between college mathematics and high school algebra and precalculus.

807T. Using Mathematics to Understand Our World (3 cr) Lec 3.

Prereq: Admission to the MAT-MScT program in MATH or to a graduate program in the College of Education and Human Sciences

MATH 807T is intended for middle-level mathematics teachers. The mathematics underlying several socially-relevant questions from a variety of academic disciplines. Construct mathematical models of the problems and study them using concepts developed from algebra, linear and exponential functions, statistics and probability. Original documentation, such as government data, reports and research papers, in order to provide a sense of the role mathematics plays in society, both past and present.

808. Mathematics for High School Teachers II (3 cr)

Prereq: MATH 310 and 350

Analysis of the connections between college mathematics and high school algebra and geometry.

808T. Concepts of Calculus for Middle Level Teachers (3 cr) Lec 3.

Prereq: Admission to the MAT-MScT program in MATH or to a graduate program in the College of Education and Human Sciences

MATH 808T is intended for middle -level mathematics teachers. The processes of differentiation and integration, their applications and the relationship between the two processes. Rates of change, slopes of tangent lines, limits, derivatives, extrema, derivatives of products and quotients, anti-derivatives, areas, integrals, and the Fundamental Theorem of Calculus. Connections to concepts in the middle level curriculum.

814. Applied Linear Algebra (Matrix Theory) (3 cr)

Prereq: MATH 208 or 107H

A term paper and/or special project is required for graduate credit. Not open to MA or MS students in mathematics. Students in the sciences cannot count MATH 814 toward a minor in mathematics. Similarity of matrices, diagonalization of symmetric matrices, canonical forms, eigenvalues, quadratic forms, vectors, and applications to linear systems.

815. Modern Algebra with Applications (3 cr)

Prereq: MATH 310 or CSCE 235 or permission

Credit for both MATH 815 and 817 is not allowed. Boolean algebra, binary functions, groups and semigroups, homomorphisms, congruencies, quotient structures, isomorphism, theorems for groups, Jordan-Holder theorem, finite-state machines, electronic realization, Winograd's theorem, Krohn-Rhodes algebraic decomposition theory.

*817. Introduction to Modern Algebra I (3 cr)

Prereq: MATH 310 is advisable for most students

Topics from elementary group theory and ring theory, including fundamental isomorphism theorems, ideals, quotient rings, domains. Euclidean or principal ideal rings, unique factorization, modules and vector spaces including direct sum decompositions, bases, and dual spaces.

*818. Introduction to Modern Algebra II (3 cr)

Prereq: MATH 817

Topics from field theory including Galois theory and finite fields and from linear transformations including characteristic roots, matrices, canonical forms, trace and transpose, and determinants.

821. Differential Equations (3 cr)

Prereq: A grade of "P" or "C" or better in MATH 208

Not open to MA or MS students in mathematics. Students in the sciences cannot count MATH 821 toward a minor in mathematics. First- and second-order methods for ordinary differential equations including: separable, linear, Laplace transforms, linear systems, and some applications.

822. Advanced Calculus (3 cr)

Prereq: MATH 208 or 107H

A term paper and/or special project is required for graduate credit. Credit in MATH 822 will not count towards the MA or MS degree in mathematics. Students in the sciences cannot count MATH 822 toward a minor in mathematics. Green's theorem, Stokes' theorem, the divergence theorem, and applications from differential and integral vector calculus, line integrals, general coordinate transformations, inverse function theorem, and uniform convergence of sequences and series of functions.

823. Introduction to Complex Variable Theory (3 cr)

Prereq: MATH 208 or 107H

Introductory course for engineering, physical sciences, and mathematics majors. Complex numbers, functions of complex variables, complex integration, calculus of residues, infinite series, conformal mapping, Schwarz-Christoffel transformation, Poisson's integral formula, and applications of the above.

824. Introduction to Partial Differential Equations (3 cr)

Prereq: MATH 821

Credit in MATH 824 will not count towards the MA or MS degree in mathematics. Derivation of the heat, wave, and potential equations; separation of variables method of solution; solutions of boundary value problems by use of Fourier series, Fourier transforms, eigenfunction expansions with emphasis on the Bessel and Legendre functions; interpretations of solutions in various physical settings.

*825. Mathematical Analysis I (3 cr)

Prereq: MATH 208 and evidence of adequate preparation

Real number system, topology of Euclidean space and metric spaces, continuous functions, derivatives and the mean value theorem, the Riemann and Riemann-Stieltjes integral, convergence, the uniformity concept, implicit functions, line and surface integrals.

*826. Mathematical Analysis II (3 cr)

Prereq: MATH 208 and evidence of adequate preparation

Real number system, topology of Euclidean space and metric spaces, continuous functions, derivatives and the mean value theorem, the Riemann and Riemann-Stieltjes integral, convergence, the uniformity concept, implicit functions, line and surface integrals.

827. Mathematical Methods in the Physical Sciences (3 cr)

Prereq: MATH 821

Credit in MATH 827 will not count towards the MA or MS degree in mathematics. Matrix operations, transformations, inverses, orthogonal matrices, rotations in space. Eigenvalues and eigenvectors, diagonalization, applications of diagonalization. Curvilinear coordinate systems, Jacobians, changes of variables in multiple integration. Scalar, vector and tensor fields, tensor operations, applications of tensors. Complex function theory, integration by residues, conformal mappings.

828. Principles of Operations Research (3 cr)

Prereq: MATH 814 or permission and STAT 880 or IMSE 321 or equivalent

Introduction to techniques and applications of operations research. Includes linear programming, queueing theory, decision analysis, network analysis, and simulation.

830. Ordinary Differential Equations I (3 cr)

Prereq: MATH 821

The Picard existence theorem, linear equations and linear systems, Sturm separation theorems, boundary value problems, phase plane analysis, stability theory, limit cycles and periodic solutions.

831. Ordinary Differential Equations II (3 cr)

Prereq: MATH 821 and 822

The Picard existence theorem, linear equations and linear systems, Sturm separation theorems, boundary value problems, phase plane analysis, stability theory, limit cycles and periodic solutions.

832. Linear Optimization (3 cr)

Prereq: MATH 814

Mathematical theory of linear optimization, convex sets, simplex algorithm, duality, multiple objection linear programs, formulation of mathematical models.

833. Nonlinear Optimization (3 cr)

Prereq: MATH 814

Mathematical theory of constrained and unconstrained optimization, conjugate direction and quasi-Newton methods, convex functions, Lagrange multiplier theory, constraint qualifications.

838. Mathematical Methods for Biology and Medicine (5 cr) Lec, rec.

Prereq: Grade of P, C, or better in MATH 106 or 106B

MATH 838 is not open to MA or MS degree students in MATH or STAT. Some computation and visualization will be done with Matlab. Mathematical modeling, discrete and continuous probability, parameter estimation, discrete and continuous dynamical systems, and Markov chains. Application of mathematical models in the life sciences. Regression analysis, cobweb diagrams, the phase line, nullcline analysis, eigenvalue analysis, linearization, and likelihood analysis. Applications to fisheries, stage-structured populations, pharmacokinetics, epidemiology, and medical testing.

839. Mathematical Models in Biology (3 cr)

Prereq: MATH 107

MATH 839 has a small laboratory component. Discrete and continuous models in ecology, including population models, predation and food webs, the spread of infectious disease and life histories. Probability and Random processes in nature, elementary models for molecular events and pharamacokinetics.

840. Numerical Analysis I (CSCE 840) (3 cr) Lec 3.

Prereq: Grade of "Pass" or "C" or better in CSCE 150E or 155/155H; MATH 208/208H

Credit toward the degree may be earned in only one of the following: CSCE/MATH 340/840 and ENGM 480/880. Algorithm formulation for the practical solution of problems, interpolation, roots of equations, differentiation, and integration. Effects of finite precision.

841. Approximation of Functions (CSCE 841) (3 cr) Lec 3.

Prereq: A programming language, MATH 821 and 814

Uniform approximation, orthogonal polynomials, least-first-power and least squares approximation, polynomial interpolation and spline interpolation, approximation interpolation by rational functions, and Fourier series.

*842. Methods of Applied Mathematics I (3 cr)

Prereq: MATH 821 and 814, or their equivalents

Interdependence between mathematics and the physical and applied sciences. Includes the calculus of variations, scaling and dimensional analysis, regular and singular perturbation methods.

*843. Methods of Applied Mathematics II (3 cr)

Prereq: MATH 842 or permission

Application of partial differential equation models to problems in the physical and applied sciences. Includes derivation of partial differential equations, the theory of continuous media, linear and nonlinear wave propagation, diffusion, transform methods, and potential theory.

845. Introduction to the Theory of Numbers I (3 cr)

Prereq: MATH 310

Arithmetic functions, congruencies, reciprocity theorem, primitive roots, diophantine equations, and continued fractions.

846. Introduction to the Theory of Numbers II (3 cr)

Prereq: MATH 845

Diophantine approximations, irrationality and transcendence, applications of the Euler-Maclaurin sum formula, Selberg's proof of the prime number theorem, order of magnitude of some arithmetic functions, the lattice point problem.

847. Numerical Analysis II (CSCE 847) (3 cr) Lec 3.

Prereq: CSCE 340, MATH 814 and 821

Numerical matrix methods and numerical solutions of ordinary differential equations.

850. Combinatorics (3 cr)

Prereq: MATH 310 or 325

Theory of enumeration of arrangements of objects, recursion relations, generating functions, applications to enumeration of combinatorial structures.

852. Graph Theory (3 cr)

Prereq: MATH 850; or permission and either MATH 310 or 325

Theory of networks of points and connecting paths, structure and existence theorems for graphs and subgraphs, graph characteristics, special graphs and applications.

856. Differential Geometry I (3 cr)

Prereq: MATH 814, 821, and 822

Theory of space curves and surfaces, Gaussian curvature, differential parameters, geodesics, etc.

*858. Topics in Geometry (3 cr)

Prereq: MATH 208

Selected topics in some branch of geometry.

865. Introduction to Mathematical Logic I (CSCE 865) (3 cr)

Semantical and syntactical developments of propositional logic, discussion of several propositional calculi, applications to Boolean algebra and related topics, semantics and syntax of first-order predicate logic including Godel's completeness theorem, the compactness theorem.

866. Introduction to Mathematical Logic II (3 cr)

Prereq: MATH 865

Semantics and syntax of first-order predicate logic including Godel's completeness theorem, decision problems, formalization of deductive theories, the structure of applied predicate calculi, the calculus of classes, introduction to higher order predicate logic.

*871. General Topology I (3 cr)

Prereq: 6 hrs MATH beyond MATH 208

Set theory, topological spaces, continuity, connectedness, coverings, separation axioms, product and quotient spaces, and sequences, nets, and filter bases.

*872. General Topology II (3 cr)

Prereq: 6 hrs MATH beyond MATH 208

For course description, see MATH *871.

*874M. Mathematics Integration (CHEM 874M) (2-3 cr)

May be counted towards the MAT and MScT degrees in mathematics and statistics, not the MA, MS, or PhD.

889. Stochastic Processes and Advanced Mathematical Finance (3 cr) Lec 3.

Prereq: MATH 221/821 and/or STAT/MATH 380

Properties of stochastic processes and solutions of stochastic differential equations as a means for understanding modern financial instruments. Derivation and modeling of financial instruments, advanced financial models, advanced stochastic processes, partial differential equations, and numerical methods from probabilistic point of view.

895. Honors Seminar (1-3 cr per sem, max 6)

Prereq: MATH 208 and permission

896. Seminar in Mathematics (1-3 cr per sem, max 6)

Prereq: Permission

897. Reading Course (1-4 cr)

Prereq: Permission

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Algebra I (3 cr)

Prereq: MATH 818 or permission

In-depth treatment of groups, rings, modules, algebraic field extensions, Galois theory, multilinear products, categories.

902. Algebra II (3 cr)

Prereq: MATH 818 or permission

In-depth treatment of groups, rings, modules, algebraic field extensions, Galois theory, multilinear products, categories.

905. Commutative Algebra (3 cr)

Prereq: MATH 818 or permission

Selected topics from classical ideal theory, Dedekind rings, completions, local rings, valvation theory.

907. Theory of Fields (3 cr)

Prereq: MATH 818 or permission

Selected topics from algebraic closure, finite fields, transcendental extensions, transcendence bases, extensions of fields, Galois theory, cyclotomic extensions, Kummer theory, valvation theory.

909. Theory of Semigroups (3 cr)

Prereq: MATH 818 or permission

Selected topics from semigroups of transformations, ideal structure and homomorphisms, free semigroups, inverse semigroups, matrix representation, decompositions and extensions.

911. Theory of Groups (3 cr)

Prereq: MATH 818 or permission

Selected topics from isomorphism theorems, direct sums, abelian and p-groups, solvable, nilpotent and free groups, group extensions, permutation groups, representation and classification theory.

913. Introduction to the Theory of Rings (3 cr)

Prereq: MATH 818

Elementary ring theory and examples of rings, the Jacobson radical and the structure of semi-simple rings, rings with minimum condition, Wedderburn's theorem, structure of modules.

915. Homological Algebra (3 cr)

Prereq: MATH 902 or permission

Basic topics in homological algebra, including homology of complexes, extensions, tensor and torsion products and homological dimension, with application to rings and algebras.

918. Topics in Algebra (3-6 cr per sem, max 12)

919. Seminar in Algebra (1-3 cr per sem, max 6)

921. Real Analysis I (3 cr)

Prereq: MATH 818, 826, and 871 or permission

Semicontinuity, equicontinuity, absolute continuity, metric spaces, compact spaces, Ascoli's theorem, Stone Weierstrass theorem, Borel and Lebesque measures, measurable functions, Lebesque integration, convergence theorems, Lp spaces, general measure and integration theory, Radon-Nikodyn theorem, Fubini theorem, Lebesque-Stieltjes integration.

922. Real Analysis II (3 cr)

Prereq: MATH 818, 826, and 871 or permission

Semicontinuity, equicontinuity, absolute continuity, metric spaces, compact spaces, Ascoli's theorem, Stone Weierstrass theorem, Borel and Lebesque measures, measurable functions, Lebesque integration, convergence theorems, Lp spaces, general measure and integration theory, Radon-Nikodyn theorem, Fubini theorem, Lebesque-Stieltjes integration.

923. Advanced Topics in Analysis (3 cr)

924. Theory of Analytic Functions I (3 cr each)

Prereq: MATH 826 or permission

Complex number field, elementary functions, analytic functions, conformal mapping, integration and calculus of residues, entire and meromorphic functions, higher transcendental functions, Riemann surfaces.

925. Theory of Analytic Functions II (3 cr each)

Prereq: MATH 826 or permission

Complex number field, elementary functions, analytic functions, conformal mapping, integration and calculus of residues, entire and meromorphic functions, higher transcendental functions, Riemann surfaces.

927. Asymptotic Methods in Applied Mathematics (3 cr)

Methods for approximating the solutions of differential equations, including local analysis near singular points, singular perturbation methods, boundary layer theory, WKB Theory, and multiple-scale methods. Asymptotic expansion of Laplace and Fourier integrals. Illustration of the use of asymptotics from journals in mathematics, science, and engineering.

928. Functional Analysis I (3 cr)

Prereq: MATH 818 and 921, or permission

Banach and Hilbert Spaces, linear operators and functionals, completely continuous operators, spectral theory, integral equations.

929. Functional Analysis II (3 cr)

Prereq: MATH 818 and 921, or permission

Banach and Hilbert Spaces, linear operators and functionals, completely continuous operators, spectral theory, integral equations.

930. Advanced Topics in Functional Analysis I (3 cr, max 9)

Prereq: MATH 929 and permission

Selected topics in functional analysis.

932. Advanced Ordinary Differential Equations I (3 cr)

Prereq: MATH 826 or permission

Cauchy-Peano existence theorems, continuity and differentiability of solutions with respect to initial conditions, differential inequalities, uniqueness theorem, oscillation theory, Poincare-Bendixson theory, stability theory, almost periodic solutions.

933. Advanced Ordinary Differential Equations II (3 cr)

Prereq: MATH 826 or permission

Cauchy-Peano existence theorems, continuity and differentiability of solutions with respect to initial conditions, differential inequalities, uniqueness theorem, oscillation theory, Poincare-Bendixson theory, stability theory, almost periodic solutions.

934. Advanced Topics in Differential Equations (3 cr)

Prereq: Permission

Existence theorems in ordinary and partial differential equations.

935. Advanced Methods in Applied Mathematics I (3 cr)

Prereq: MATH 821 and 826

Banach and Hilbert spaces, operator theory with application to differential and integral equations; spectral theory for compact, self-adjoint operators.

936. Advanced Methods in Applied Mathematics II (3 cr)

Prereq: MATH 935 or permission

Distributions, Green's functions and boundary value problems; integral transforms and spectral representations.

937. Nonlinear Partial Differential Equations (3 cr)

Prereq: MATH 843 or 941 or permission

Nonlinear wave propagation and shock structure with applications, dispersive waves, hyperbolic systems, group velocity and the method of stationary phase. WKB approximation and perturbation methods.

938. Mathematical Modeling (3 cr)

Prereq: MATH 842, 843 and permission

Advanced course in mathematical modeling for students who desire experience in formulating and analyzing open-ended, real-world problems in the natural and applied sciences. Participation in a few group projects that require conceptualization and analytical, numerical, and graphical analysis with formal oral and written presentation of the results.

941. Partial Differential Equations (3 cr)

Prereq: MATH 826

Theory of hyperbolic, elliptic, and parabolic equations. Classification, existence and uniqueness result, solution representations.

942. Numerical Analysis III (CSCE 942) (3 cr)

Prereq: CSCE/MATH 840 or 841 or 847 or permission

Advanced topics in numerical analysis.

943. Seminar in Applied Mathematics (1-3 cr per sem, max 6)

944. Seminar in Analysis (1-3 cr, max 3)

949. Seminar in Number Theory (1-3 cr per sem, max 6)

951. Finite Geometries and Designs (3 cr)

Prereq: MATH 818 or equivalent, or permission

Combinatorial properties, construction methods, existence theorems for structures such as finite geometries, Latin squares, block designs, and strongly regular graphs.

953. Algebraic Geometry (3 cr)

Prereq: MATH 901-902

Affine geometry, coordinate rings, the Zariski topology, function fields and birational geometry, the Nullstellensatz, Krull dimension and transcendence degree, smoothness, projective geometry, divisors, curves.

957. Seminar in Numerical Analysis (1-3 cr per sem, max 6)

958. Topics in Combinatorial Mathematics (3 cr)

Prereq: Permission

Selected topics in combinatorics.

970. General Topology (3 cr)

Prereq: MATH 826

Credit toward the degree may not be earned in both MATH 871, 872 and 970. Topological spaces, product and quotient spaces, compactification, metrizability, uniformities, functions spaces.

971. Algebraic Topology (3 cr)

Prereq: MATH 817 or 871 or equivalent

Categories and functors, fundamental groups, free groups and free products, Van Kampen theorem, covering space theory and polyhedra.

979. Seminar in Topology (1-3 cr per sem, max 6)

990. Topics in Topology (3-6 cr, max 6)

Prereq: Permission

Topics from topological groups, rings of continuous functions, fiber spaces, differential topology, etc.

996. Seminar (1-3 cr per sem, max 6)

Advanced topics in one or more branches of mathematics.

997. Reading course (1-24 cr)

999. Doctoral Dissertation (1-24 cr)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: John Meakin, Ph.D.

Graduate Committee Chair: Judy Walker, Ph.D.

Graduate work is offered leading to the degrees of doctor of philosophy (PhD), master of arts (MA), master of science (MS), master of arts for teachers (MAT), and master of science for teachers (MScT).

Master of Arts (MA) or Master of Science (MS) Degree.

The program of study for the masters degree may be under any of the Options I, II, III. Under Option II, a candidate for the MA or MS degree may select a minor consisting of courses taken in another department approved to offer a masters degree.

For admission to full graduate standing a student should have the substantial equivalent of an undergraduate major in mathematics and possess an academic record that would indicate definite potential for graduate-level work.

Master of Arts or Master of Science for Teachers (MAT-MScT).

The MAT/MScT degree is designed for teachers who want to obtain graduate education in mathematics that is especially appropriate to their needs as mathematics teachers. Special courses or sections of courses bearing a “T” designation are offered specifically for persons in the program. The Department admits students to two programs leading to the MAT/MScT degree. One is for high school teachers. For that program, a completed calculus sequence, a course in modern algebra, and two other courses beyond calculus are required for admission. The other program is for middle-level mathematics teachers and leads to a masters degree with a Specialization in the Teaching of Middle-Level Mathematics. For both programs, the possession of a valid teaching certificate is a prerequisite to the award of the degree.

Doctor of Philosophy Degree.

Doctoral candidates may specialize in algebra, analysis, applied mathematics, discrete mathematics, or topology. A student may be admitted to the PhD program either initially, as for the masters program, or after completion of a masters degree. To become a Candidate for the PhD degree the student must pass a written comprehensive examination and pass a language examination in one of the following foreign languages: French, German, or Russian. The degree is awarded as recognition of high attainment in scholarship and for demonstrated power of independent research. An interdisciplinary PhD program in Mathematics and Computer Science is also offered.

Specific details on any of the advanced degree programs can be obtained from the Chair of the Graduate Committee.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Avalos, George -2000; Professor; BA 1990, MS 1991 Houston; PhD 1995 Virginia
- Avramov, Luchezar -2001; Professor; DSc 1986 Moscow State (Russia)
- Brittenham, Mark -2000; Associate Professor; BS 1983 SUNY (Stony Brook); MA 1985, PhD 1990 Cornell
- Chivukula, R. Rao -1963; Professor Emeritus; MA 1955, PhD 1960 Andhra (India); PhD 1962 Illinois
- Chouinard, Leo G. -1976; Associate Professor; BS 1970 Massachusetts Institute of Technology; PhD 1975 Princeton
- Cohn, Steve -1994; Associate Professor; BA 1983 Chicago; MS 1985, PhD 1989 Courant Institute
- Deng, Bo -1987; Professor; BS 1982 Fudan; PhD 1987 Michigan State
- Donsig, Allan P. -1997; Associate Professor; BMath 1988, MMath 1989 Waterloo; PhD 1993 Texas A&M
- Dunbar, Steven R. -1985; Professor; BS 1974 Nebraska (Lincoln); PhD 1981 Minnesota
- Erbe, Lynn -1997; Professor; BA 1963 Concordia College; MA 1966, PhD 1978 Nebraska (Lincoln)
- Foss, Mikil -2005; Assistant Professor; BS 1997, PhD 2001 Carnegie Mellon
- Fowler, David -1991; Associate Professor Mathematics Education; AB 1962 Harvard; MA 1988, PhD 1991 Nebraska (Lincoln)
- Harbourne, Brian -1985; Professor; BA 1977 Virginia; PhD 1982 Massachusetts Institute of Technology
- Hartke, Stephen G. -2007; Assistant Professor; BS 1999 Dayton; PhD 1999 Rutgers
- Hermiller, Susan -1998; Professor; BS 1984 Ohio State; MS 1987, PhD 1992 Cornell
- Hines, Gwendolen -1993; Associate Professor; BA 1986, MS 1988, PhD 1993 Georgia Institute of Technology
- Iyengar, Srikanth -2004; Professor; BTech Computer Science 1991 Indian Institute of Technology; MS 1994, PhD 1998 Purdue
- Jackson, Lloyd K. -1950; Professor Emeritus; BA 1943, MA 1948 Nebraska (Lincoln); PhD 1950 California (Los Angeles)
- Johnson, Gerald W. -1968; Professor Emeritus; BA 1961 St Thomas; MA 1963, PhD 1968 Minnesota
- Kelley, Christine A. -2007; Assistant Professor; BS 1999 Puget Sound; MS 2003, PhD 2006 Notre Dame.
- Kramer, Earl -1970; Professor Emeritus; BS 1962 Wisconsin State; MS 1966, PhD 1969 Michigan
- Leavitt, William G. -1947; Professor Emeritus; AB 1937, MA 1938 Nebraska (Lincoln); PhD 1947 Wisconsin
- Ledder, Glenn W. -1989; Associate Professor; BS 1977 Iowa State; MS 1986, PhD 1990 Rensselaer Polytechnic Institute
- Lewis, W. James -1971; Professor; BS 1966, PhD 1971 Louisiana State
- Logan, J. David -1981; Professor; BS 1966, MS 1968, PhD 1970 Ohio State
- Loladze, Irakli -2003; Assistant Professor; BA 1993 Tbilisi State; MA 1996, PhD 2001 Arizona State
- Manderscheid, David - 2007; Professor and Dean of College of Arts and Sciences; BS 1976 Michigan State; PhD 1981 Yale
- Marley, Thomas -1989; Professor; BS 1984, MS 1986, PhD 1989 Purdue
- Meakin, John C. -1970; Professor and Chair; BS 1967, MS 1968 Queensland (Australia); PhD 1969 Monash (Australia)
- Meisters, Gary -1972; Professor Emeritus; BS 1954, PhD 1958 Iowa State
- Mesner, Dale -1968; Professor Emeritus; BA 1948, MS 1949 Northwestern; PhD 1956 Michigan
- Mientka, Walter E. -1957; Professor Emeritus; BS 1948 Massachusetts; MA 1949 Columbia; PhD 1955 Colorado
- Orr, John L. -1991; Professor; BSc 1985 London; Certificate, Advanced Study in Math 1986 Cambridge; PhD 1989 London
- Peterson, Allan C. -1969; Professor; BS 1963, MS 1965 South Dakota School of Mines; PhD 1968 Tennessee
- Pitts, David R. -1986; Professor; AB 1979, MA 1982, PhD 1986 California (Berkeley)
- Radcliffe, Jamie -1994; Associate Professor and Vice Chair; BA 1984, PhD 1989 Cambridge
- Radu, Petronela -2005; Assistant Professor; BS 1998 Al. I Cuza (Romania); MS 2000, PhD 2004 Carnegie Mellon
- Rammaha, Mohammad A. -1985; Professor; BSc 1976 Jordan; MSc 1979 Dundee (Scotland); PhD 1985 Indiana
- Rebarber, Richard -1984; Professor; BA 1978 Oberlin; PhD 1984 Wisconsin (Madison)
- Saxena, Krishna -1965; Professor Emeritus; BS 1951, MS 1953 Lucknow (India); PhD 1965 Minnesota
- Shores, Thomas S. -1968; Professor; BA 1964, MA 1965, PhD 1968 Kansas
- Skoug, David -1966; Professor; BS 1960 Wisconsin State; PhD 1966 Minnesota
- Tenhumberg, Brigitte -2006; Assistant Professor; Diplom-Agraringenieur 1988 Hannover (Germany); PhD 1992 Guttingen (Germany)
- Thornton, Melvin C. -1969; Professor Emeritus; BS 1957 Nebraska (Lincoln); MS 1961, PhD 1965 Illinois
- Walker, Judy L. -1996; Professor; BS 1990 Michigan; MS 1992, PhD 1996 Illinois
- Walker, Mark E. -1996; Professor; BS 1990 New Mexico; MS 1992, PhD 1996 Illinois
- Wiegand, Roger -1972; Professor; AB 1964 Princeton; MA 1965, PhD 1967 Washington
- Wiegand, Sylvia -1972; Professor; AB 1966 Bryn Mawr; PhD 1972 Wisconsin
- Woodward, Gordon -1971; Professor; BS 1965, PhD 1971 Maryland
- Zechmann, Albert W. -1961; Assistant Professor Emeritus; BS 1956, MS 1959, PhD 1961 Iowa State

Courses for Mechanized Systems Management (MSYM)

Mechanized Systems Management

812. Hydraulic Power Systems (3 cr I) Lec 2, lab 2.

Prereq: MSYM 245 and 312

Theory and application of fluids under controlled pressure to perform work in mobile and industrial applications. Operation of components and functional planning of circuits with emphasis on troubleshooting and analysis.

816. Sensors and Control Systems for Agri-Industries (3 cr II) Lec 2, lab 2.

Prereq: MSYM 245 or permission

Application of sensors for measurement of process control variables and implementation of microcomputer-based measurement and control systems. Basic electrical and electronic instrumentation plus control of electrically, penumatically and/or hydraulically powered systems.

*832. Mechanized Agricultural Systems (3 cr I)

Prereq: Permission

Offered odd-numbered calendar years. Advanced concepts of equipment used in agriculture. Site specific management (precision agriculture). Hardware development and information technologies applied to generic agricultural production.

833. Equipment and Tractor Testing (3 cr) Lec 2, lab 2.

Prereq: MSYM 312 and STAT 218

Offered every third semester. Principles and procedures involved in testing agricultural equipment and tractors. An actual test planned, scheduled, conducted and reported. The test may be based upon procedures used at the Nebraska Tractor Testing Laboratory or involve other equipment being used for research in the department.

852. Irrigation Systems Management (HORT 852; WATS 452) (3 cr I) Lec 2, lab 2.

Prereq: MSYM 109 or general physics

AGRO or SOIL 153 recommended. Irrigation management and the selection, evaluation, and improvement of irrigation systems. Includes soil-water measurement, crop water use, irrigation scheduling, irrigation efficiency, measurement of water flow, irrigation systems, groundwater and wells, pumping systems, applying chemicals with irrigation systems, and environmental and water resource considerations. Two laboratory sections are available; one emphasizes agricultural applications and one emphasizes horticultural applications.

*855. Advanced Irrigation Management (3 cr II) Lec 2, lab 2.

Prereq: MSYM 852 or equivalent; AGRO 861 recommended

Theory and practice in on-farm irrigation management including irrigation response functions and irrigation uniformity concepts; field evaluation of surface and sprinkler irrigation systems; estimation of evapotranspiration and irrigation scheduling; water quality problems and salinity control.

862. Equipment Systems (3 cr I) Lec 2, rct 2.

Prereq: MSYM 162, 312 and 364

Modern principles and procedures for planning, scheduling, operating, and controlling the operational aspects of agricultural production and processing equipment systems. Advanced cost estimation, optimization and computer analysis techniques applied to the operations management of equipment systems.

865. Food Engineering Unit Operations (FDST 865) (3 cr II) Lec 2, lab 3.

Prereq: FDST 363

Unit operations and their applications to food engineering.

869. Bio-Atmospheric Instrumentation (AGRO 869; GEOG 869; HORT 807; METR 869; NRES 869) (3 cr I)

Prereq: MATH 106 and 4 hrs physics

Offered fall semester of odd-numbered calendar years. Discussion and practical application of principles and practices of measuring meteorological and related variables near the earth's surface including temperature, humidity, precipitation, pressure, radiation and wind. Performance characteristics of sensors and modern data collection methods discussed and evaluated.

875. Water Quality Strategy (AGRO 875; CIVE 875; CRPL 875; GEOL 875; NRES 875; POLS 875; SOCI 875; SOIL 475; WATS 475) (3 cr II) Lec 3.

Prereq: Permission

Holistic approach to the selection and analysis of planning strategies for protecting water quality from nonpoint sources of contamination. Introduction to the use of methods of analyzing the impact of strategies on whole systems and subsystem for selecting strategies; and for evaluating present strategies.

896. Principles and Problems in Mechanized Agriculture (1-5 cr, max 12 I, II, III)

Prereq: 15 hours in mechanized systems management or closely related area

Individual or group projects in research, literature review, or extension of course work under the supervision and evaluation of a departmental faculty member.

*898. Special Projects in Management of Mechanized Systems (1-5 cr I, II, III)

Prereq: 15 hours in mechanized systems management or closely related area

Individual project specifically designed for a student to pursue or explore a special topic under the guidance and evaluation of a faculty member.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: Ronald Yoder, Ph.D.

Graduate Committee: Professors Hanna (chair), Eisenhauer, Martin, Schinstock, Weller; Associate Professors Adamchuk, Woldt; Assistant Professor S. Irmak

The Department of Biological Systems Engineering offers the master of science with a major in mechanized systems management.

Students wishing to pursue graduate degrees in mechanized systems management must meet the admission requirements in agricultural sciences and natural resources. Graduate study in this area may be directed to the mechanization, processing, and business field of agriculture power and machinery systems, soil and water conservation, irrigation systems and water management, water quality, plant and animal environment, materials handling and processing systems, computer applications, sensors, controls, and other areas of technical and applied operations as related to agricultural and biological sciences.

Masters Degree.

Graduate programs leading to the degree of master of science with a major in mechanized systems management are governed by the general requirements for graduate degrees and the rules of the Graduate College. With approval of the departmental Graduate Committee and the Graduate Council, course work at the graduate level from other areas of agriculture may be used as part of the course work constituting a major in mechanized systems management.

In addition to the Graduate College requirements for graduate degrees, BSEN 989 (Seminar) is required as a portion of the major. With approval of the departmental Graduate Committee, up to 6 hours of biological systems engineering (in addition to 989) and up to 4 hours of agricultural statistics course work at the graduate level may be used as part of the course work constituting a major in mechanized systems management.

A specialization in Water Resources Planning and Management is available.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Adamchuck, Viacheslav I. -2001; Associate Professor; BS 1996 National Agriculture (Ukraine); MS 1998, PhD 2000 Purdue
- Bashford, Gregory R. -2003; Assistant Professor; BS 1991 Nebraska (Lincoln); PhD 1995 Duke
- Brown-Brandl, Tami M. -1998; Adjunct Associate Professor, Biological Systems Engineering and US Meat Animal Research Center; BS 1993, MS 1995 Nebraska (Lincoln); PhD 1998 Kentucky
- Dickey, Elbert C. -1978; Dean, Cooperative Extension and Professor; BS 1970, MS 1974, PhD 1978 Illinois
- Eigenberg, Roger A. -1995; Adjunct Associate Professor, Biological Systems Engineering and US Meat Animal Research Center; BS 1970 Hastings; MS 1976, PhD 1994 Nebraska (Lincoln)
- Eisenhauer, Dean E. -1975; Professor; BS 1971, MS 1973 Kansas State; PhD 1984 Colorado State
- Franti, Thomas G. -1993; Associate Professor; BS 1983 Wisconsin (Madison); MS 1985 Iowa State; PhD 1987 Purdue
- Gilley, John E. -1982; Adjunct Professor; BS 1972 Southern Colorado; MS 1974 Minnesota; PhD 1982 Colorado State
- Hanna, Milford A. -1975; Director, Industrial Agricultural Products Center and Kenneth E. Morrison Professor, Biological Systems Engineering and Food Science & Technology; BS 1969, MS 1971, PhD 1973 Penn State
- Howell, Terry -1990; Adjunct Professor; BS 1969, MS 1970, PhD 1974 Texas A&M
- Hoy, Roger -2006; Professor; BS 1984 Georgia; MS 1986, PhD 1990 North Carolina State
- Hubbard, Kenneth G. -1981; Professor School of Natural Resource Sciences; BS 1971 Chadron State; MS 1973 South Dakota School of Mines; PhD 1981 Utah State
- Irmak, Ayse -2004; Research Assistant Professor; BS 1992 Cukurova (Adana, Turkey); MS 1998, PhD 2002 Florida
- Irmak, Suat -2003; Assistant Professor; BS 1992 Cukurova (Adana, Turkey); MS 1996 Mediterranean (Antalya, Turkey); PhD 2002 Florida
- Jones, David D. -1989; Professor; BS 1984, MS 1986 Texas A&M; PhD 1988 Oklahoma State
- Kocher, Michael F. -1990; Associate Professor; BS 1979, MS 1983 Nebraska (Lincoln); PhD 1986 Oklahoma State
- Koelsch, Richard K. -1995; Associate Professor, Biological Systems Engineering and Animal Science; BS 1975, MS 1977 Kansas State; PhD 1992 Cornell
- Kranz, William L. -1985; Associate Professor, Biological Systems Engineering and Northeast Research and Extension Center; BS 1976 South Dakota State; MS 1981 Nebraska (Lincoln); PhD 1998 Iowa State
- Martin, Derrel L. -1982; Professor; BS 1975, MS 1979 Nebraska (Lincoln); PhD 1984 Colorado State
- Meyer, George E. -1978; Professor; BS 1967 Cornell; MS 1971, PhD 1972 Massachusetts
- Nienaber, John A. -1971; Adjunct Professor, Biological Systems Engineering and US Meat Animal Research Center; BS 1970, MS 1971 Nebraska (Lincoln); PhD 1981 Missouri
- Schinstock, Jack L. -1977; Professor, Biological Systems Engineering and Associate Dean, College of Agricultural Sciences and Natural Resources; BA 1970 Brockport State; MA 1974 Florida State; EdD 1977 Virginia Tech
- Schulte, Dennis D. -1978; Professor; BS 1968 Nebraska (Lincoln); MS 1970, PhD 1975 Cornell
- Shelton, David P. -1976; Professor, Biological Systems Engineering and Northeast Research and Extension Center; BS 1975, ME 1976 Cornell
- Smith, John A. -1981; Professor, Biological Systems Engineering and Panhandle Research and Extension Center; BSME 1970 Tri-State; MSAE 1978 Wyoming

- Stowell, Richard R. -2001; Associate Professor; BS 1985, MS 1988 Wisconsin; PhD 1997 Michigan State
- Subbiah, Jeyamkondan -2004; Assistant Professor; BS 1997 Tamil Nadu Agricultural (India); MS 1999 Manitoba (Canada); PhD 2004 Oklahoma State
- Verma, Shashi B. -1974; Professor School of Natural Resource Sciences; BS 1965 Ranchi (India); MS 1967 Colorado; PhD 1971 Colorado State
- Wang, Lijun -2004; Research Assistant Professor; BS 1994 Zhengzhou (China); MS 1997 South China University of Technology; PhD 2002 National University of Ireland (Dublin)
- Weller, Curtis L. -1992; Professor, Biological Systems Engineering and Food Science and Technology; BS 1977, MS 1983, PhD 1987 Illinois
- Woldt, Wayne E. -1991; Associate Professor, Biological Systems Engineering and Civil Engineering; BS 1978 Colorado State; MS 1986, PhD 1990 Nebraska (Lincoln)
- Woodbury, Bryan -1999; Adjunct Assistant Professor; BS 1989, MS 1993 Montana State; MS 1996, PhD 1998 Nebraska (Lincoln)
- Yang, Yiqi -2001; Professor; MS 1984 China Textile; PhD 1991 Purdue
- Yoder, Ronald E. -2004; Professor; BS 1976 Drexel; MS 1978 Clemson; PhD 1988 Colorado State
- Yonts, C. Dean -1980; Associate Professor, Biological Systems Engineering and Panhandle Research and Extension Center; BS 1974, MS 1978 Wyoming

Courses for Spanish (SPAN)

Courses for Russian (RUSS)

Courses for German (GERM)

Courses for French (FREN)

Courses for Modern Languages (MODL)

Modern Languages and Literatures

Subject Areas

- Modern Languages (MODL)
- French (FREN)
- German (GERM)
- Russian (RUSS)
- Spanish (SPAN)

842. Survey of Medieval German Literature in Translation (GERM 842) (3 cr)

Prereq: Permission or GERM 302 for German majors

German majors expected to read the works in German translation and to write papers in German. Non-German majors read the works in English translation. Development of German vernacular literature during the Middle Ages. Major works include philosophical/religious literature, the heroic epic, and the romance.

843. Dante and His Times (3 cr)

Divina Commedia extensive readings in the social background of the thirteenth and fourteenth centuries.

854. Russian Intellectual Tradition (RUSS 854) (3 cr)

Major Russian thinkers from 1700 to the present. Focus on the evolution of ideas in the Russian context and the relationship between Russian and European thought.

*870. Introduction to Literary Criticism (3 cr)

Lecture and discussion about important figures and movements in the history of literary criticism. Reading of representative texts to develop a critical lexicon. Bibliographic and methodological component, tailored to needs of modern language students, and required of all graduate students.

878. Pro-seminar in Latin American Studies (ANTH 878; EDPS 878; GEOG 878; HIST 878; LAMS 478; POLS 878; SOCI 878; SPAN *878) (3 cr, max 6) Lec 3.

Prereq: Permission

Interdisciplinary analysis of the mechanics and consequences of cultural continuity and social change in Latin America.

*880. Seminar in Applied Linguistics and Methodology (3 cr)

MODL *880, or its equivalent, is required of all graduate students in modern languages. It does not qualify as a course for Nebraska State Teacher Certification. Theoretical and practical aspects of second language teaching and learning with special emphasis on the application of principles of applied linguistics along with related disciplines of education to structured teaching and learning situations.

898. Special Topics (1-24 cr)

Prereq: Permission

Special topics covered in any given semester and credit to be awarded are determined by instructor. Topics in the area of language, literature, and civilization.

918. Interdisciplinary Seminar in Nineteenth-Century Studies (ENGL 918; HIST 918) (3 cr, max 6)

Invention of the nineteenth century, gender, colonialism, class, realism science and technology.

919. Interdisciplinary Approaches to the Nineteenth Century (ENGL 919; HIST 919) (3 cr)

Introduction to the nineteenth century in North America (focusing on the US), Great Britain, and Europe (focusing on France, Germany, Russia, and Spain), organized through themes such as constructions of gender and sexuality, democracy in the nation-state, and challenges to religion.

988. Introduction to the Interdisciplinary Study of the Middle Ages (AHIS 988; ENGL 988; HIST 988; MUSC 988) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Middle Ages. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

989. Introduction to the Interdisciplinary Study of the Renaissance (AHIS 989; ENGL 989; HIST 989; MUSC 989) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Renaissance. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

803. Advanced Grammar (3 cr)

Detailed analysis of French syntax giving students the means to achieve greater sophistication in self-expression.

804. French Stylistics (3 cr)

Prereq: FREN 304

Principles of explication of texts, translation and composition in French, and review of linguistic principles for advanced students, particularly prospective teachers, who wish to acquire a more sophisticated means of expression in French.

806. Translation (3 cr)

Prereq: FREN 303 and 304

Principles of translation, French-English and English-French. Attention to problems of vocabulary, syntax, semantics, and technical, literary, and commercial translation.

822. Topics in French Civilization (3 cr)

Prereq: 6 hrs 300-level French

Analysis of interrelationships of cultural, social, economic, and political factors contributing to French culture and civilization.

841. French Literary Treasures of the Middle Ages (3 cr)

Prereq: FREN 301 and 302, or permission

French medieval short story, epic, novel, farce, and satire read in modern French. Titles may include Song of Roland, Lais, Tristan, Ecre dt Enide, and Villon's Testament.

845. Seventeenth Century I (3 cr)

Prereq: FREN 301 and 302 or permission

Plays of Corneille, Moliére, and Racine.

846. Seventeenth Century II (3 cr)

Prereq: FREN 301 and 302 or permission

Prose and poetry.

849. Eighteenth Century I (3 cr)

Prereq: FREN 301 and 302, or equivalent

Philosophical writings and the theatre of eighteenth-century France.

850. Eighteenth Century II (3 cr)

Prereq: FREN 301 and 302, or equivalent

Philosophical writings and the theatre of eighteenth-century France.

853. Nineteenth Century I (3 cr)

Prereq: FREN 301 and 302, or equivalent

Readings in the major developments in narrative, drama, poetry and the essay from 1800 to 1860. Authors typically studied include Balzac, Hugo, Stendhal, Nerval and Gauthier.

854. Nineteenth Century II (3 cr)

Prereq: FREN 301 and 302, or permission

Readings in the major developments in prose and verse from 1850 to 1900. Authors typically studied include Baudelaire, Mallarme, Rimbaud and Verlaine.

857. Twentieth Century French Literature I (3 cr)

Prereq: FREN 301 and 302, or equivalent

Main trends in the French novel from 1900 to the present.

858. Twentieth Century French Literature II (3 cr)

Prereq: FREN 301 and 302, or equivalent

Main trends in French poetry and theatre from 1900 to the present.

859. Literature of French Canada (3 cr)

Prereq: FREN 301 and 302

in its cultural context.

860. Francophone Literatures (3 cr) Lec 3.

Prereq: FREN 301 and 302

Survey of literature and film from French speaking African and Caribbean cultures.

861. Studies in Francophone Literatures and Cultures (3 cr) Lec 3.

Prereq: FREN 301 and 302

Emphasis on a topic, genre, author, and geographical area of the African Diaspora.

896. Independent Study in French (1-24 cr)

Prereq: Permission

Special research project or reading program under the direction of a staff member in the department.

898. Special Topics in French (1-24 cr)

Prereq: Permission

Specific topic to be covered in any given semester and credit to be awarded to be determined by the instructor at that time. Topics in the area of language, literature, and civilization.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Old French Language (3 cr)

Prereq: Permission

Phonology and morphology of Old French as derived from Vulgar Latin. Attention to a detailed reading of the “Chanson de Roland” and the “Lais” of Marie de France.

902. Old French Literature (3 cr)

Prereq: Permission

Readings from Medieval epics, saints’ lives, Arthurian romances, prose chronicles, and drama. Introduction to the modern critical principles of editing Medieval manuscript.

919. Sixteenth Century I (3 cr)

Prereq: Permission

Masterpieces of Renaissance literature. Works of Rabelais, the Pleiade, Montaigne, etc.

920. Sixteenth Century II (3 cr)

Prereq: Permission

FREN 919 continued. Seminars in French (3 cr per sem) Under the headings listed below, the works of one author, or groups of works centering in a period, or those illustrating the development of a literary age are studied with respect to content, sources, style, and influence.

925. Drama

927. Novel

928. Poetry

929. Special Topics

996. Research Problems in French (1-8 cr)

Prereq: Permission

Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis.

997. Directed Readings in French (1-24 cr)

Prereq: Permission

Topic varies.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

803. Advanced Syntax and Stylistics in German I (3 cr)

Prereq: GERM 303 and 304, or equivalent

Recommended for all majors. Advanced syntax and style in their application to composition.

804. Advanced Syntax and Stylistics in German II (3 cr)

Prereq: GERM 303 and 304; or equivalent

Recommended for all majors. Advanced syntax and style in their application to composition.

805. Linguistics in German (3 cr)

Prereq: GERM 303, 304 or equivalent

Phonetics, phonemics, morphology, and transformational grammar as applied to standard German.

807. History of the German Language (3 cr)

Prereq: GERM 302 or equivalent

History of German language from the beginnings to present.

809. Morphemics in German (3 cr)

Prereq: Permission

Morphemic theory and its application to modern German.

*810. Applied Linguistics in German (3 cr)

Prereq: GERM 805 or permission

Recommended for graduate students in German. Application of linguistic theory to teaching or learning German as a second language.

842. Survey of Medieval German Literature in Translation (MODL 842) (3 cr)

Prereq: Permission or GERM 302 for German majors

German majors expected to read the works in German translation and to write papers in German. Non-German majors read the works in English translation. Development of German vernacular literature during the Middle Ages. Major works include philosophical/religious literature, the heroic epic, and the romance.

843. Middle High German Language (3 cr)

Prereq: GERM 302 or permission

Grammar to attain reading knowledge of Middle High German/translation of excerpts from a variety of Middle High German texts.

844. Middle High German Literature (3 cr)

Prereq: GERM 843 or reading knowledge of Middle High German

Reading of masterworks of Middle High German literature in the original language.

845. Sixteenth- and Seventeenth-Century German Literature (2-3 cr)

Prereq: GERM 302

Humanism, Reformation, and Baroque.

847. Eighteenth-Century Literature (3 cr)

Prereq: GERM 302 or equivalent

Representative authors of the Enlightenment, Empfindsamkeit, and Storm and Stress.

848. Romanticism (3 cr)

Prereq: GERM 302 or equivalent

Representative authors of the Romantic movement.

849. Survey of Nineteenth-Century German Literature I (3 cr)

Prereq: GERM 301 and 302 or permission

Major literary currents, authors, works, and influences in German-speaking countries in the first half of the nineteenth century, excluding Romanticism, which is treated in GERM 848. Careful examination of many aspects of Bierdermeier and Das Junge Deutschland, the two major movements of the time.

850. Survey of Nineteenth-Century German Literature II (3 cr)

Prereq: GERM 301 and 302 or permission

Major literary currents, authors, works, and influences in German-speaking countries in the second half of the nineteenth century. Careful examination of Poetic Realism and Naturalism, the two major movements in this half of the century.

851. From Naturalism to Expressionism (3 cr)

Prereq: GERM 302 or equivalent

Critical survey of the major literary currents from the turn of the century to the end of World War I.

852. From the Weimer Republic into Exile (3 cr)

Prereq: GERM 302 or equivalent

Critical survey of German literature from 1918 to 1945.

853. History of German Poetry (2-3 cr)

Prereq: GERM 302 or equivalent

Critical survey of the development of epic and lyric poetry from the beginning to the present time.

854. German Literature and Philosophy (2-3 cr)

Prereq: GERM 302 or equivalent

Relationship between literature and contemporary thought from the eighteenth century to the present.

855. Postwar German Literature: The Literature of West Germany, Austria, and Switzerland (3 cr)

Prereq: GERM 302 or equivalent

Critical survey of major literary currents in the West since 1945.

859. Works of Goethe and Schiller (3 cr)

Prereq: GERM 302 or equivalent

Representative works.

860. Goethe's Faust (3 cr)

Prereq: GERM 302 or equivalent

Critical study. Lectures, assigned readings, and reports.

898. Special Topics in German (1-24 cr)

Prereq: Permission

Specific topic to be covered in any given semester and credit to be awarded to be determined by the instructor at that time. Topics in the area of language, literature, and civilization.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

Braun: Althochdeutsche Grammatik and Lesebuch.

929. Problems in Advanced Linguistics (1-3 cr)

Prereq: GERM 807 or permission

Training in descriptive, comparative, and historical linguistics.

930. Seminar in German Linguistics (3 cr)

Prereq: Permission

951. Seminar in German Literature I (1-24 cr)

Prereq: Permission

The classical period, Klopstock, Wieland, Lessing, Herder, Schiller, Goethe. Subject to be selected.

952. Seminar in German Literature II (1-24 cr)

Prereq: Permission

Tendencies of German literature during the last 50 years.

996. Research Problems in German (1-8 cr)

Prereq: Permission

Individual research projects on a literary or philological problem in areas not covered by seminars or thesis.

997. Directed Readings in German (1-24 cr)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

803. Russian Grammar and Stylistics (3 cr)

Prereq: RUSS 302 or equivalent

Detailed analysis of Russian morphology and syntax to achieve greater sophistication in self-expression.

841. Advanced Literary Analysis (3 cr)

Prereq: RUSS 302 or equivalent

All the readings, discussions and assignments will be in Russian. In-depth study of a particular work, period or genre with an emphasis on textual analysis.

842. Russian Poetry (3 cr)

Prereq: RUSS 301 and 302 or equivalent

Russian poetry of the nineteenth and twentieth centuries. Examines how to appreciate poetry and acquaint students with the culture, history and philosophy of the country through poetry.

854. Russian Intellectual Tradition (MODL 854) (3 cr)

Major Russian thinkers from 1700 to the present. Focus on the evolution of ideas in the Russian context and the relationship between Russian and European thought.

898. Special Topics in Russian (1-4 cr)

Prereq: RUSS 301 and 302 or permission

Specific topic to be covered in any given semester and credit to be awarded to be determined by the instructor at that time. Topics in the area of language, literature, and civilization.

803. Spanish Stylistics (3 cr)

Prereq: SPAN 304 or equivalent

For advanced students, particularly prospective teachers, who wish to improve their ability to write idiomatic Spanish. Translations and composition in Spanish.

805. Advanced Grammar (3 cr)

Prereq: SPAN 300 and 317 or 319 or equivalent

Theoretical and practical aspects of Spanish grammar.

821. Medieval Literature (3 cr)

Survey of Spanish Medieval literature of the tenth to the fifteenth centuries. Reading and analysis of such authors as Berceo, Alfonso X, Juan Manuel, Juan Ruiz, Fernando Rojas, Jorge Manrique, and Juan de Mena.

832. Spanish Speaking Proficiency (3 cr)

Prereq: Any 300-level Spanish course or permission

Intensive advanced course in oral communication to gain proficiency in speaking Spanish through practice, creative construction of sentences, vocabulary building, and practical review of grammar and pronunciation.

841. Spanish Golden Age Poetry (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Representative works of the sixteenth and seventeenth centuries: Garcilaso de la Vega, Fray Luis de León, San Juan de la Cruz, Lope de Vega, Góngora, Quevedo.

842. Spanish Golden Age Prose (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Representative works of the sixteenth and seventeenth centuries, exclusive of Cervantes: La Celestina, El Lazarillo de Tormes, El

Buscón; selections from Santa Teres de Jesus, La Diana, Quevedo's Sueños, and Gracian's El criticón.

845. Spanish Golden Age Drama (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Lectures, class discussions, and reports. Reading and study of Lope de Vega, Tirso de Moline, Ruiz de Alarcón, Calderón, and others.

853. Nineteenth-Century Spanish Literature (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Reading and study of nineteenth-century Spanish literature: drama, essay, novel, poetry, and short story. Such authors as Larra, Zorrilla, Duque de Rivas, Espronceda, Tamao y Baus, Echegaray, Bécquer, Pérez Galdos, Clarin, and Valera.

855. Human Rights in Latin American Poetry (3 cr)

Prereq: SPAN 304 and 6 hrs from SPAN 311, 312, 314, 315

Readings and analysis of Latin American poetry dealing with human rights issues, concentrating on poems from 1900 to present. Topics selected from the Universal Declaration of Human Rights.

856. Twentieth-Century Spanish Poetry (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Reading and analysis of twentieth-century Spanish poetry, with emphasis on A. Machado, Unamuno, Salinas, J. Guillen, García Lorca, and M. Hernandez.

857. Twentieth-Century Spanish Narrative (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Reading and analysis of significant Spanish narrative written during the twentieth century.

858. Twentieth-Century Spanish Drama (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Reading and analysis of twentieth-century Spanish dramas written by such playwrights as Benavente, Valle-Inclán, García Lorca, Buero Vallejo, Sastre, and Arrabal.

859. Spanish American Poetry (LAMS 459) (3 cr) Lec 3.

Prereq: 6 hrs from: SPAN/LAMS 311, 312, SPAN 314, 315

Spanish American poetry.

860. Spanish American Novel (LAMS 460) (3 cr) Lec 3.

Prereq: 6 hrs from: SPAN/LAMS 311, 312, SPAN 314, 315

Spanish American novels.

862. Spanish-American Short Story (LAMS 462) (3 cr) Lec 3.

Prereq: 6 hrs from: SPAN/LAMS 311, 312, SPAN 314, 315

Masterpieces of the Spanish-American short story from its origins. Works of the twentieth century by authors such as Horacio Quiroga, Jorge Luis Borges, María Luisa Bombal, Juan Rulfo, Julio Cortázar, Rosario Castellanos, and Luisa Valenzuela.

863. Twentieth-Century Spanish and Spanish-American Essay (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Reading and analysis of twentieth-century Spanish and Spanish-American essays, with emphasis on Unamuno, Maeztu, Ortega y Gasset, Marañon, Marías, Picón, Salas, Arciniegas, Mañach, Reyes, Paz.

870. Women Writers of Spanish America (LAMS 470) (3 cr) Lec 3.

Prereq: 6 hrs from: SPAN/LAMS 311, 312, SPAN 314, 315

Masterpieces by women writers of Spanish America such as Sor Juana Inés de la Cruz, Gertrudis Gómez de Avellaneda, Gabriela Mistral, María Luisa Bombal, and Victoria Ocampo.

873. Cervantes (3 cr)

Prereq: 6 hrs from SPAN 311, 312, 314, 315

Don Quixote, the Entremeses, and selected Novelas Ejemplares.

*878. Pro-seminar in Latin American Studies (ANTH 878; EDPS 878; GEOG 878; HIST 878; LAMS 478; MODL 878; POLS 878; SOCI 878) (3 cr, max 6) Lec 3.

Prereq: Permission

Interdisciplinary analysis of the mechanics and consequences of cultural continuity and social change in Latin America.

896. Independent Study in Spanish (1-24 cr)

Prereq: Permission

Special research project or reading program under the direction of a staff member in the department.

898. Special Topics in Spanish (1-24 cr)

Prereq: Permission

Specific topic to be covered in any given semester and credit to be awarded to be determined by the instructor at that time. Topics in the area of language, literature, and civilization.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

925. Generation of 1898 (3 cr)

942. Golden Age (1-3 cr)

943. Colonial Spanish America (3 cr)

948. Twentieth-Century Spanish (1-3 cr)

949. Twentieth-Century Spanish America (1-3 cr)

952. Spanish Medieval Literature (3 cr)

Prereq: Permission

Medieval Spanish literature. Seminars in Spanish Under the headings listed below the works of one author, or a group of works centering in a period, or those illustrating the development of a literary age are studied with respect to content, sources, style, and influence.

957. Literary Movements (1-3 cr)

961. Special Topics (1-3 cr)

996. Research Problems in Spanish (1-8 cr)

Prereq: Permission and successful completion of a graduate seminar Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis

997. Directed Readings in Spanish (1-24 cr)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Russell Ganim, Ph.D.

Graduate Committee: Professors Carr (chair), Guevara, Pereira, Shirer

A bachelors degree and

- 24 undergraduate hours in French;
- 24 undergraduate hours in Spanish; and
- 20 undergraduate hours in German;

on the junior/senior level, or the equivalent, constitute the prerequisite for registration in graduate courses. An examination may be required of students to determine undergraduate courses needed to remove deficiencies.

Master of Arts Degree.

While the general requirements for the masters degree apply (see), a minor under Option I and II may also be selected from a second language (French, German, or Spanish) upon the approval of the major adviser.

Doctor of Philosophy Degree.

In addition to the general requirements of the Graduate College for the degree of doctor of philosophy, the department requires a reading knowledge of French, German, Italian, Latin, Portuguese, Russian, or Spanish, in addition to the target language and

English, and the equivalent of two years of college-level work (101 through 202) of a second of the above languages.

In consultation with the supervisory committee and in accordance with the general provisions of the Graduate College, see , the candidate may select a minor from a second language (French, German, or Spanish).

Specializations available at the masters and doctoral levels:

French, German and Spanish

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Balasubramanian, Radha -1990; Associate Professor; BA 1971 Jawaharlal Nehru (India); MA 1979 Central Institute of English and Foreign Languages (India); PhD 1987 Indiana
- Brantner, Christina -1987; Associate Professor; MA 1983, PhD 1987 Washington (St. Louis)
- Buhlmann, Joan -1977; Associate Professor Emeritus; AB 1962 William and Mary; MA 1969 Middlebury; PhD 1978 North Carolina (Chapel Hill)
- Carr, Thomas M. -1972; Professor; BA 1966 Catholic; MA 1968, PhD 1972 Wisconsin
- Ganim, Russell -1993; Associate Professor and Chair; AB 1983 Grinnell; MA 1987, PhD 1992 Virginia
- Gibbon, William B. -1959; Professor Emeritus; BS 1949 Georgetown; MA 1954, PhD 1960 Pennsylvania
- Gonzalez, Jose E. -1998; Associate Professor; BA 1987 Puerto Rico; MA 1989, PhD 1994 SUNY (Binghampton)
- Guerara, Jose Rigoberto -2001; Assistant Professor; BA 1996, MA 1999 George Mason; PhD 2001 Arizona
- Hayden-Roy, Priscilla -1988; Associate Professor; BA 1977 Bryn Mawr; MA 1982, PhD 1988 Washington
- Jacobson, Evelyn M. -1978; Professor and Associate Vice Chancellor for Academic Affairs; BA 1966 City (New York); MA 1968, PhD 1977 Chicago
- Jacobson, Manfred -1973; Professor; BA 1960, MA 1966, PhD 1972 Chicago
- Kalisa, Marie-Chantal -2001; Assistant Professor; BA 1990 Universite du Burundi; MA 1992 Nebraska (Lincoln); PhD 1999 Iowa
- Karch, Dieter -1966; Professor Emeritus; BA 1963, MA 1964, PhD 1967 Washington
- Martinez, Adelaida -1988; Professor Emeritus; BA 1962, PhD 1975 Texas
- Martinez, Antonio H. -1988; Associate Professor Emeritus; MA 1957 Zaragoza (Spain); MS 1953 Angelicum Pontisice (Rome, Italy); PhD 1971 Zaragoza (Spain)
- Mejias-Vicandi, Errapel -1994; Associate Professor; BA 1985 Spain (Bilbao); PhD 1993 California
- Nickel, Catherine A. -1985; Associate Professor; BA 1968 California (Berkeley); MA 1974, PhD 1984 Nebraska (Lincoln)
- Olds, Marshall C. -1984; Professor; BA 1972 Colgate; PhD 1980 Case Western Reserve
- Pasten, J. Agustin -1993; Associate Professor; BA 1979 Chile; BA 1982 Berea; MA of Divinity 1985 Duke; MA 1988 Kentucky; PhD 1993 Pennsylvania
- Pereira, Oscar -1993; Associate Professor; MA 1984 Madrid (Spain); MA 1988, PhD 1993 Minnesota
- Saskova-Pierce, Mila -1989; Associate Professor; Licence Brussels (Belgium); MA 1980, PhD 1986 Kansas
- Shirer, Robert K. -1983; Associate Professor; BA 1973 Wisconsin; MA 1976, PhD 1983 Chicago
- Smith, Nicole -1968; Professor; MA 1966 Lyon-Grenoble; PhD 1974 Nebraska (Lincoln)
- Stebbins, Charles E. -1969; Professor Emeritus; BA 1958 Boston; MA 1964, PhD 1970 Iowa
- Stump, Jordan -1995; Professor; BA 1985, MA 1987 Kansas (Lawrence); PhD 1992 Illinois (Urbana)
- Turner, Harriet Stevens -1991; Professor; BA 1960 Smith; MA 1963 Texas (Austin); PhD 1970 Wisconsin (Madison)
- Wilhelmsen, Elizabeth C. -1988; Associate Professor; BA 1971 Dallas; MA 1974, PhD 1980 St. Louis

Courses for Opera (MUOP)

Courses for Ensembles (MUEN)

Courses for Ensembles for Degree Credit (MUDC)

Courses for Ensembles for Elective Credit Only (MUCO)

Courses for Composition (MUCP)

Courses for Music Education (MUED)

Courses for Music-Student Recitals (MUSR)

Courses for Music (MUSC)

Courses for Applied Music (MUAP)

Music

Subject Areas

- Applied Music (MUAP)
- Music (MUSC)
- Music-Student Recitals (MUSR)
- Music Education (MUED)

- Composition (MUCP)
- Ensembles for Elective Credit Only (MUCO)
- Ensembles for Degree Credit (MUDC)
- Ensembles (MUEN)
- Opera (MUOP)

*800A. Voice (1 cr)

*800B. Keyboard (1 cr)

*800D. String (1 cr)

*800E. Brass (1 cr)

*800G. Woodwind (1 cr)

*800J. Percussion (1 cr)

*801. Voice (1-2 cr)

*802. Piano (1-2 cr)

*803. Organ (1-2 cr)

*804. Harpsichord (1-2 cr)

*805. Violin (1-2 cr)

*806. Viola (1-2 cr)

*807. Cello (1-2 cr)

*808. Double Bass (1-2 cr)

*809. Harp (1-2 cr)

*810. Trumpet (1-2 cr)

*811. French Horn (1-2 cr)

*812. Trombone (1-2 cr)

*813. Euphonium (1-2 cr, max 2)

*814. Tuba (1-2 cr)

*815. Flute (1-2 cr)

*816. Oboe (1-2 cr)

*817. Clarinet (1-2 cr)

*818. Bassoon (1-2 cr)

*819. Saxophone (1-2 cr)

*820. Percussion (1-2 cr)

822. Keyboard Skills I (1 cr)
Prereq: Permission

833. Keyboard Skills II (1 cr)

901. Voice (1-4 cr per sem)

902. Piano (1-4 cr per sem)

903. Organ (1-4 cr per sem)

904. Harpsichord (1-4 cr per sem)

905. Violin (1-4 cr per sem)

906. Viola (1-4 cr per sem)

907. Cello (1-4 cr per sem)

908. Double Bass (1-4 cr per sem)

909. Harp (1-4 cr per sem)

910. Trumpet (1-4 cr per sem)

911. French Horn (1-4 cr per sem)

912. Trombone (1-4 cr per sem)

913. Euphonium (1-4 cr per sem)

914. Tuba (1-4 cr per sem)

915. Flute (1-4 cr per sem)

916. Oboe (1-4 cr per sem)

917. Clarinet (1-4 cr per sem)

918. Bassoon (1-4 cr per sem)

919. Saxophone (1-4 cr per sem)

920. Percussion (1-4 cr per sem)

921. Choral Conducting (1-4 cr, max 12)

922. Orchestral Conducting (1-4 cr, max 12)

923. Wind Band Conducting (1-4 cr, max 12) Stu.

822. Keyboard Skills I (1 cr)

Prereq: Permission

Practicum in sight-reading, improvisation, harmonization, and playing by ear.

824. Piano Pedagogy I: Foundations, Philosophies and Theories (3 cr)

Prereq: 10 hrs undergraduate applied piano

MUSC 824 requires observation experience and a supervised teaching practicum. History, materials and methodologies of piano pedagogy from a perspective of wellness promotion. Special issues pertaining to teaching beginning, intermediate and advanced students.

825. Piano Pedagogy II: Approaches to Studio Teaching (3 cr)

Prereq: MUSC 824

MUSC 825 requires observation experience and a supervised teaching practicum. Issues pertaining to studio piano teaching,

including business issues. Effective strategies for teaching selected musical and technical skills.

*826. Piano Pedagogy III: Pedagogical Methods and Literature (3 cr)

Prereq: MUSC 825

MUSC 826 requires observation experience and a supervised teaching practicum. Teaching methods and literature. Identification of musical/interpretive and technical challenges in literature. Development of strategies for sequencing literature.

827. Piano Pedagogy IV: Group Teaching and Research and/or Writings (3 cr)

Prereq: MUSC *826

MUSC 827 requires observation experience and a supervised teaching practicum. Teaching piano in group settings. Relational dynamics and curricular issues. Individual research and writing on selected topic of interest serves as a culminating experience for the piano pedagogy course sequence.

*830J. Music and Text in the English Renaissance (ENGL *830J) (3 cr)

Prereq: MUSC 366

Interconnections between musical and literary composition at a time when practitioners in both areas were profoundly influenced by developments in each others' fields.

833. Keyboard Skills II (1 cr)

Prereq: Permission

Continuation of MUSC 822.

835. Music and Film: History and Analysis (3 cr) Lec 3.

Prereq: MUSC 366 or THEA 489/889

MUSC 435/835 may only be taken once in a lifetime.

Selected films, composers, scores, and historical contexts. Historical trends in film and film scoring. Interpretation of the trends by contemporary filmmakers.

*836. Introduction to Graduate Studies in Music I (2 cr)

Music as a field of scholarly inquiry, incorporating basic research tools and techniques.

837. History of Jazz: 1900 to Bop (3 cr) Lec 3.

Prereq: MUSC 366

MUSC 437/837 may only be taken once in a lifetime.

History of jazz from the 19th Century to modern jazz via Bebop in the 1940s. Artists and trends within the larger context of American history.

838. History of Jazz: Post Bop (3 cr) Lec 3.

Prereq: MUSC 366

MUSC 438/838 may only be taken once in a lifetime.

Development of modern jazz from the late 1940s to the present. Artists and trends within the larger context of American history in the 20th Century.

*839. Music in the Lives of People (2-3 cr, max 3)

Roles and functions of music among various groups of people. Importance of music in the development of children and young people, specialized meanings of music that distinguish musicians from non-musicians, and a survey of musical cultures from around the world.

*840. Technology Strategies for Teaching Composition (2-3 cr, max 3)

Process and product of music composition in educational settings. Notation, sequencing, and digital audio software and hardware. Composing and arranging.

841. Skills for the Church Musician (3 cr I) Lec 3.

Prereq: MUSC 274 and MUAP 232. Keyboard facility recommended.

MUSC 441/841 may be taken only once in a lifetime.

Skills and philosophical issues for those providing and organizing music for sacred institutions.

842. Great Composers and Performers in Music (3 cr per sem, max 6 I) Lec 3.

Prereq: MUSC 366 or equivalent

Historical and stylistic study of the life and music of one or more important composers and/or performers in the European-American or non-Western musical traditions.

*847. Graduate Review of Music History (3 cr)

Enrollment will be required as determined by the results of the Graduate Diagnostic Survey in Music History. Review of music history for graduate students including examples from all major style periods: Medieval, Renaissance, Baroque, Classical, Romantic, and Contemporary.

*848. Review of Music Theory (3 cr) Lec.

Enrollment in one or more MUSC 848 courses will be required as determined by the results of the Graduate Diagnostic Survey in Music Theory.

Review of music theory. Fundamentals, diatonic and/or chromatic harmony, form, and analysis.
A. Review of Theory Diatonicism (1 cr) Introduction to part writing and voice leading.
B. Review of Theory: Chromaticism (1 cr) Chromatic theory.
E. Review of Theory: Form (1 cr) Sonata and fugue.

849. Medieval Music (3 cr)

Prereq: MUSC 366 or permission

Historical and stylistic study of medieval music and its antecedents.

850. Johann Sebastian Bach (2-3 cr)

Prereq: MUSC 366 or permission

Life and music of J. S. Bach, with emphasis on the most recent developments in Bach scholarship.

851. Music and the Church (3 cr)

Prereq: MUSC 365 or REGL 150 or CLAS/JUDS/RELG 205 or CLAS/HIST/RELG 307; or permission

Historical relationship of music and the church; a survey of the major developments in the history of church music in light of theological presuppositions.

852. Hymnology (3 cr)

History and literature of hymnology (texts and tunes) and their significance for music, church, and society.

855. Techniques of Counterpoint (3 cr I) Lec 3.

Prereq: MUSC 266

Counterpoint from the 16th century through the 20th century. Analysis of excerpts from the literature and composition of representative musical examples.

*856. Schenkerian Analysis (3 cr) Lec 3.

Application of the theories of Heinrich Schenker to the analysis of tonal (common practice period) music.

857. Post-Tonal Theory (3 cr) Lec 3.

Prereq: MUSC 266

Recent techniques for the analysis of 20th century music. The theories of Schoenberg, Forte, Babbitt, Perle, Lewin, Morris, and others. Application of music examples.

858. History of the Opera (3 cr)

Prereq: MUSC 366

Literature of the opera from its prehistory and beginnings to the present.

859. Symphonic Literature (3 cr)

Prereq: MUSC 366

Literature of the symphony orchestra from Baroque era to the present.

860. Musical Form (3 cr) Lec 3.

Prereq: MUSC 266

The formal structure and design in music of the common practice period and the present, smaller structural units, motivic processes, binary and ternary forms, vocal forms, theme and variation, sonata, rondo, concerto, suite, ostinato, and contrapuntal forms.

862. Instrumental Literature and Pedagogy (2-3 cr, max 3 each) Lec.

Survey of the pedagogy and the solo, chamber and pedagogical literature of instruments from elementary to advanced levels, for class as well as private instruction.
A. Brass/Percussion Instruments (2-3 cr, max 3)
D. String Instruments (2-3 cr, max 3)
E. Woodwind Instruments (2-3 cr, max 3)
I. Violin (2-3 cr, max 3)
J. Viola (2-3 cr, max 3)

K. Cello (2-3 cr, max 3)
L. Double Bass (2-3 cr, max 3)
M. Trumpet (2-3 cr, max 3)
N. French Horn (2-3 cr, max 3)
P. Trombone (2-3 cr, max 3)
Q. Euphonium, Tuba (2-3 cr, max 3)
R. Flute (2-3 cr, max 3)
T. Oboe (2-3 cr, max 3)
U. Clarinet (2-3 cr, max 3)
V. Bassoon (2-3 cr, max 3)
W. Saxophone (2-3 cr, max 3)
Y. Percussion (2-3 cr, max 3)
Z. Guitar (2-3 cr, max 3)

865. Jazz Theory (3 cr)

Prereq: MUSC 266

Theoretical foundation of jazz composition and performance. Ear training and keyboard skills emphasized.

866. Jazz Styles (3 cr)

Prereq: MUSC 366 and 387 or equivalent; or permission

Jazz styles from 1920 to the present, with emphasis on the development of listening skills required to aurally identify improvisors, composer/arrangers and stylistic characteristics within the jazz idiom.

867. Jazz Improvisation (3 cr)

Prereq: MUSC 866 or permission

Formal and harmonic analysis of standard tunes and jazz classics. Application of modal and scalar approach to performance of jazz chord progressions. Analysis of recorded jazz solos.

868. Jazz Pedagogy (3 cr)

Musical repertoire and rehearsal technique of the school jazz ensemble, the various methods of jazz improvisation instruction, the musical roles of the rhythm section, and the materials (books, audio and video recordings, etc.) that are available to the jazz teachers.

869. Organ Design and Construction (2-3 cr)

Prereq: 10 hours of applied organ or permission

Comparison of the most important methods of designing and constructing organs in Europe and America from 1500 to the present.

870. Introduction to Vocal Pedagogy (3 cr) Lec 3.

The process of teaching singing. Basic physiology, scientific and acoustical terms. Process for teaching breathing, phonation, registration, resonance strategies, and sound concept. Practice teaching. How to run a private studio.

871. Art Song I (3 cr)

Prereq: Permission

Development of the art song, emphasizing the European and New World traditions from the eighteenth century to the present. Les Six.

872. Art Song II (3 cr)

Prereq: Permission

An intensive study of the German, French and American art song literature from the eighteenth century to the present.

874. Organ Literature and Pedagogy (3 cr) Lec 3.

Prereq: 10 hrs organ or equivalent

Survey of the most important trends in organ literature and pedagogy from medieval times to the present day. Interrelationships between the music and organ design.

875. The Organ and Its Literature from 1800 to the Present (2-3 cr)

Prereq: 10 hrs organ or permission

The organ and its literature from 1800 to the present, with emphasis on the interrelationships between the music and organ design.

876. Piano Literature (3 cr)

Prereq: 12 hrs undergraduate piano or permission

Literature for solo piano from the early Baroque through the twentieth century, with emphasis on musical styles.

877. Piano Literature Seminar (3 cr)

Prereq: 12 hrs piano or permission

Literature for solo piano. Specific style periods rotate.
A. Baroque/Classical
B. Romantic
D. Twentieth-Century Repertoire

878. Music of the Twentieth Century I (3 cr)

Prereq: MUSC 365 or permission

Historical and stylistic study of the music composed from the last decade of the nineteenth century through World War II.

880. Advanced Tonal Theory (3 cr) Lec 3.

Prereq: MUSC 266

Compositional practices of late 19th century European music. Chromatic harmony and devices of tonal and motivic expansion. Analytical concepts of Schenker, Schauonberg, and Hindemith. Style imitation.

*881. Music Bibliography (1 cr)

Prereq: MUSC 365

Basic procedures and tools for music scholarship.

882. Music of the Twentieth Century II (3 cr)

Prereq: MUSC 365 or permission

Historical and stylistic study of the music composed from the end of World War II to the present, and its antecedents.

*884. Music in 20th-Century American Society (3 cr)

Prereq: Permission

Twentieth century art and vernacular music in the social and historical contexts of its creation, including issues and repertoires that involve multiculturalism and the relationship between popular and art traditions and genres.

885. Music of the Classic Period (3 cr)

Prereq: MUSC 366 or permission

Forms, styles, composers, and aesthetics of the classic period.

886. Music of the Renaissance (3 cr)

Prereq: MUSC 366 or permission

Forms, styles, composers, and aesthetics of music of the Renaissance.

887. Music of the Baroque Era (3 cr)

Prereq: MUSC 366 or permission

Forms, styles, composers, and aesthetics of the Baroque Era.

888. Music of the Romantic Period (3 cr)

Prereq: MUSC 365 or permission

Forms, styles, composers, and aesthetics of the Romantic Era.

889. American Music (3 cr)

Prereq: MUSC 365 or permission

American music and musical life in its cultivated and vernacular traditions including a consideration of its cultural and social background as well as principal stylistic trends and predominant musical attitudes.

894. Internship (1-3 cr, max 3)

Prereq: Permission

MUSC 894 also offered as MUSC 094 for zero credit hours.

*898. Special Topics in Music (1-4 cr, max 24)

Prereq: Permission

*899. Masters Thesis or Original Composition (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

941. Theory Pedagogy (3 cr)

Prereq: Permission

Current materials and approaches for the teaching of music fundamentals, harmony counterpoint, ear training, sight singing,

form and analysis. Activities.

952. Twentieth-Century Church Music (3 cr)

Prereq: MUSC 366 or equivalent

Recent developments in church music seen in the light of twentieth-century theological trends. New directions in church music.

969. Diction for Graduate Students (3 cr)

Lyric diction in English, Italian, ecclesiastical Latin, French, and German.

971. The Science of Singing (3 cr) Lec 3.

Prereq: MUSC 470/870

The science of singing. The physiology, functioning, and acoustics of the singing voice. Research in singing and the various applications of scientific concepts. Research in the art of teaching singing.

972. Seminar: Choral Literature (1-4 cr, max 12)

Prereq: Permission

Designed for the serious conductor. Analytical and stylistic study of choral literature from the beginning of the respective genre. Major works of the ensemble's history and important contemporary works.
A. Choral Literature to 1600 (1-4 cr)
B. Choral Literature from 1600 to 1750 (1-4 cr)
D. Choral Literature from 1750 to 1900 (1-4 cr)
E. Choral Literature from 1900 to the present (1-4 cr)

973. Seminar: Orchestral Literature (1-4 cr, max 12)

Prereq: Permission

Designed for the serious conductor. Analytical and stylistic study of orchestral literature from the beginning of the respective genre. Major works of four distinct historical periods.
A. Orchestral Literature to 1800 (1-4 cr)
B. Orchestral Literature from 1800 to 1875 (1-4 cr)
D. Orchestral Literature from 1875 to 1910 (1-4 cr)
E. Orchestral Literature from 1910 to the present (1-4 cr)

974. Seminar: Wind Band Literature (1-4 cr, max 12)

Prereq: Permission

Major works and compositional trends of wind band literature. Insights into historical and cultural influences, composers' biographies, analysis of form and style, and correlation with other media (orchestra, choral, etc.).
A. 1892-1952 (1-4 cr)
B. 1952-Present (1-4 cr)
D. The Symphony (1-4 cr)
E. Evolution of Wind Ensemble Instrumentation (1-4 cr)

977. Topics in Performance Practice (3 cr) Lec 2, lab 1.

Problems of interpretation and execution in music literature with emphasis on examination of literary and musical sources bearing on performance.

978. Chamber Music Performance (1 cr per sem, max 6)

May not be used for ensemble credit. Performance and textual problems of selected works of chamber music literature for instrumental, vocal, or mixed ensembles, including historical and analytical studies, detailed investigation of technical problems, interpretation, and style.

979. Seminar in Music Theory (1-24 cr)

History of music theory, in the works of major theorists, or in special problems in music theory.

982. Orchestration (3 cr)

Prereq: MUSC 365 or permission

Techniques of orchestration including scoring and the study of representative orchestral compositions from the standpoint of orchestration.

986. Seminar in the History and Literature of Music (1-24 cr)

Interpretative and historical studies in music; intensive study of special topics in the history and literature of music.

988. Introduction to the Interdisciplinary Study of the Middle Ages (AHIS 988; ENGL 988; HIST 988; MODL 988) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Middle Ages. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly

by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

989. Introduction to the Interdisciplinary Study of the Renaissance (AHIS 989; ENGL 989; HIST 989; MODL 989) (3 cr)

Methods and state of research in the disciplines--art, music, literature, language, history, philosophy--dealing with the Renaissance. Assistance in independent reading and research in subjects related to the student's own research interests. Taught jointly by faculty members in art, music, theatre, English, history, classics, modern languages, and philosophy.

995. Graduate Conducting Project (3 cr)

996. Special Problems (1-6 cr)

Prereq: Permission; obtain adviser's permission to repeat for credit

Individual research projects in musicology, music theory, or music education.

997. Doctoral Seminar (3 cr per sem)

May be repeated for credit.

999. Doctoral Document (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

998. Graduate Recital in Applied Music (1-3 cr, max 12)

*834. Advanced Instrumental Conducting (2-3 cr, max 3)

Prereq: MUSC 376 or permission

Extension of basic conducting skills as related to orchestral and band literature; score analysis, keyboard and pitch imagery skills, advanced baton technique, interpretation and expressive conducting. Addresses the art of conducting from the experienced educator's perspective.

*836. Psychology and Sociology of Music (2-3 cr, max 3)

Psychological and sociological principles involved in music learning and performance. Musical aspects of human development, motivation, expressive performance, creativity, performance anxiety, emotional response to music listening, and social uses of music.

*838. Inclusive Music Education (2-3 cr, max 3)

Function and contribution of music in the education of the handicapped. Methodology and materials to implement an effective music program. Development of musical experiences for exceptional students of all ages. Public Laws 94-142 and 95-561, music Individualized Education Programs, assessments, adaptations of curriculum materials, current methodologies and research.

843. Introduction to Research in Music Education (2-3 cr)

Prereq: Undergraduate degree in music education or permission

Interpretation and application of research results. Enables student to design, implement, and report research in the classroom.

*845. Historical and Philosophical Foundations of American Music Education (TEAC *845) (2-3 cr, max 3) Lec.

Prereq: Undergraduate degree in MUED

MUED *845 is required for a graduate degree in music education. Historical overview of American music education practices from the Singing School tradition to today. Major philosophical influences in American music education, writings regarding aesthetic education, equity, ethical practice, meaning, and profundity. The writings of Murcell, Dewey, Langer, Reimer, Elliott, Bowman, and others.

850. American Cultural Perspectives through Popular Music and Guitar (MUNM 450; TEAC 850) (3 cr)

Exploration of the historical, social and cultural context of late 19th and 20th century America through learning to play jazz and popular music on the guitar to provide an authentic, performance-based encounter in music.

*862. Choral Literature and Conducting for School Ensembles (2-3 cr, max 3)

Prereq: MUSC 374

Selection and evaluation of choral music for the school ensemble. Curricular concerns, rehearsal and conducting techniques.

*863. Instrumental Literature and Conducting for School Ensembles (2-3 cr, max 3)

Prereq: MUSC 374

Selection and evaluation of instrumental music for the school ensemble. Curricular concerns, rehearsal and conducting techniques.

873. Approaches to Middle School General Music (TEAC 873) (3 cr)

Prereq: MUED 344 or permission

For prospective new and experienced general music/middle school teachers. Includes characteristics of middle school students, materials, methodology, guitar and recorder techniques, and curriculum development.

*881. Music in Early Childhood Education (TEAC *881) (3 cr)

Prereq: MUED 344 or 370 or permission

Prepares the teacher of the young child (3-8 years) in the musical skills, methodology, and materials needed to carry out a successful program of music in the public and private schools, the nursery schools, and day-care centers.

882. Music Technology: Foundations and Principles (1-3 cr)

Prereq: Admission to the Teacher Education Program or permission

Advanced music technology presented in a seminar format where students can focus on particular areas of interest such as MIDI sequencing, advanced music notation, and the development of sound and MIDI files for multi-media uses.

883. Music Technology: Advanced Techniques and Applications (1-3 cr)

Prereq: MUED 882 or permission

Advanced music technology presented in a seminar format where students can focus on particular areas of interest such as MIDI sequencing, advanced music notation, and the development of sound and MIDI files for multi-media uses.

*886. Advanced Choral Conducting (2-3 cr)

Prereq: Permission

Designed for the practicing choral directors. Conducting techniques for, and score preparation of, Renaissance, Baroque and twentieth-century choral literature.

890. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

*893. Workshop Seminar

Refer to Workshop Seminars in Education under the "Education" section of this bulletin.

896. Independent Study in Music Education (1-6 cr)

Prereq: Permission

Individual, scholarly study designed to enable a student to pursue a selected topic in music education with the direction and guidance of a faculty member.

897. Student Teaching (1-12 cr)

This course will not fulfill MM degree requirements. Supervised teaching experiences in schools with accompanying seminar which focuses on: teacher certification, teacher and students rights and responsibilities, proper conduct of teachers, selected legal aspects of education, methods of communicating with parents and community members, and current issues which impact education.
D. Elementary Music (1-12 cr, max 12)
T. Secondary Music (1-12 cr, max 12)
Y. Mainstreaming (1 cr)
Z. Multicultural (1 cr)

*898. Masters Research Project (1-6 cr)

Prereq: MUED 843 or permission

Opportunities to design and implement a major research project with the direction and guidance of a faculty member.

*899. Masters Thesis (6-10 cr, max 12)

Prereq: Admission to Master of Music Option I program and permission of major adviser

928. Seminar in the Curriculum and Teaching of Music (2-3 cr, max 3)

Prereq: Undergraduate degree in music education or permission

Critical evaluation of current literature, yearbooks, research, new developments, and experiments in the curriculum and teaching of general music.

961. Current Approaches to Elementary Music Education (TEAC 961) (3 cr)

Prereq: Teaching experience

Implementation of current programs, materials, and techniques for the improvement of music instruction in the elementary school.

982. College Teaching in Music (3 cr) Lec 3.

MUED 982 is for graduate students in music who are preparing to teach at the college level. Competencies and understandings in music curriculum design and development, instructional strategies, and assessment techniques that contribute to being an effective college music instructor.

987. Seminar in Music Education (1-6 cr)

Intensive study of topics in music education.

990. Workshop Seminar (1-24 cr)

Refer to s in Education under the "Education" section of this bulletin.

993. Workshop Seminar (1-24 cr)

Refer to s in Education under the "Education" section of this bulletin.

983. Seminar in Music Composition (1-24 cr)

840A. Accompanying Vocal (MUDC 840A) (1 cr, max 5) Stu.

840B. Accompanying Instrumental (MUDC 840B) (1 cr, max 5) Stu.

840A. Accompanying Vocal (MUCO 840A) (1 cr, max 5) Stu.

840B. Accompanying Instrumental (MUCO 840B) (1 cr, max 5) Stu.

*844/044. Small Ensembles (1 cr, max 4 each)

Stu. Requires off-campus performances as approved. Small groups of primarily like instruments organized for supervised and scheduled rehearsals of music appropriate for the ensemble.
A. String Ensemble (1 cr, max 4)
E. Brass Ensemble (1 cr, max 4)
I. Clarinet Choir (1 cr, max 4)
J. Flute Ensemble (1 cr, max 4)
L. Trombone Ensemble (1 cr, max 4)
M. Horn Ensemble (1 cr, max 4)
P. Percussion Ensemble (1 cr, max 4)
T. Saxophone Ensemble (1 cr, max 4)
U. New Music Consort (1 cr, max 4)
V. Small Vocal Ensemble (1 cr, max 4)
W. Tuba/Euphonium Ensemble (1 cr, max 4)
Y. Pep Band (1 cr, max 4) Prereq: Audition. Must meet and maintain full-time enrollment status at UNL.
Z. Jazz Small Group (1 cr, max 12)

*845/045. Large Ensembles (1 cr, max 4 each)

Stu. Large groups organized for supervised and scheduled rehearsals of music appropriate for the group.
A. Symphony Orchestra (1 cr, max 4)
B. University Singers (1 cr, max 4)
E. Wind Ensemble (1 cr, max 4)
K. Symphonic Band (1 cr, max 4)
L. Jazz Ensemble I (1 cr, max 4)
M. Jazz Ensemble II (1 cr, max 4)
N. All-Collegiate Choir (1 cr, max 4)
P. University Chorale (1 cr, max 4)
Q. Varsity Chorus (1 cr, max 4)
R. Chamber Singers (1 cr, max 4)

*852/052. Graduate Chamber Music (1 cr, max 12)

Stu. Off-campus performances as approved. Quartets, trios, duos, and miscellaneous chamber groups organized for supervised and scheduled rehearsals of music appropriate for the ensemble.

855. Musical Theatre Techniques (THEA 855) (3 cr)

Advanced training in the integration of acting, movement, and singing skills for the performance of musical theatre. Training in artistic decision making that generates a character within a musical. Discipline of preparation and the resulting practice of performance; including practical experiences and solos, duets, and ensembles from American Musical Theatre Repertoire.

*856. Advanced Opera Performance Techniques (2 cr per sem)

Prereq: MUOP 356 or audition and permission

Techniques of role development. Advanced opera performance training through the coordination of singing, movement, emotional expression, and characterization.

*857. Music Theatre Performance (1-3 cr per sem)

Prereq: Audition and permission

Preparation for and performance of a chorus, minor, or major role in a fully staged Nebraska (Lincoln) Opera Theatre production.

*858/058. Philharmonia: Opera and Chamber Orchestra (1 cr, max 12) Stu.

Prereq: Parallel MUEN 045A/*845A; or MUEN 045E/*845E; or MUEN 045K/*845K

Open by audition or permission of ensemble director. Rehearsal and performance of chamber orchestra and operatic repertoire of the seventeenth through the twenty-first centuries.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Director of School of Music: John W. Richmond, Ph.D.

Associate Director: Glenn E. Nierman, D.M.E.

Graduate Committee: Professors Nierman (chair), Harler-Smith, Starr; Associate Professors Anderson, Barnes, Eklund

Lecturer: Fischer

The School of Music offers graduate work leading to the master of music and the doctor of musical arts degree. A specialization in music education is also available at the masters level. Once admitted, graduate students will be assigned or will select a Chair of their Supervisory Committee, who must be a member of the Graduate Faculty of the UNL School of Music; and they are required to take a diagnstic survey. Applicants should contact the chairperson of the School of Music's Graduate Committee for further details.

Master of Music Option I.

This option requires the submission of a thesis or an original composition. Total credits: 30, of which 8 credits must be earned in courses open exclusively to graduate students, not including thesis or composition.

- Plan A: Music History
- Plan B: Music Theory
- Plan C: Composition
- Plan D: Music Education

(See Master of Music Handbook for specific course requirements.)

Master of Music Option II.

This option is a "summers-only" program (meaning all of the courses in the major are offered only in Summer Sessions) designed for the practicing K-12 music educators who wish to continue teaching K-12 or who wish to pursue further study in preparation for teaching at the college level. A total of 36 credits are required for degree completion of which 12 credits must be earned in courses open exclusively to graduate students. Specific requirements include:

- Major: Music (Music Education), 18 cr
- Music Education Core (836, 838, 843, 845, 928), 15 cr
- Music Education Elective (862, 863, or 893 Orff workshop, 3 cr
- Minor: Music, 9 cr
- Music History/Theory, 3 cr
- Music Technology (MUSC 840 Composition), 3 cr
- Applied Music/Pedagogy, 3 cr
- Second Minor or Supporting Courses, 9 cr

Master of Music Option III.

This option offers six areas of emphasis to students in music performance. In addition to other entrance requirements, a successful audition must precede entry into this option. Total credits 36, of which 18 credits must be earned in courses open exclusively to graduate students.

- Solo performance: applied music 12 cr, music core classes 11 cr, pedagogy/literature 2-9 cr, other music courses 4-11 cr, (1 recital)
- Woodwind Specialties: applied music 14 cr, music core courses 15 cr, other music courses 7 cr, (3 recitals)
- Piano Pedagogy: applied music 9 cr, pedagogy 12 cr, music core courses 11 cr, other music courses 4 cr (includes ensemble) (1 recital)
- Choral Conducting: music core courses 23 cr, other music courses 4-6 cr (includes ensemble), applied music 4-6 cr, conducting project 3 cr
- Orchestral Conducting: music core courses 17 cr, applied music 4 cr (minimum 4 cr piano), other music courses 12 cr (includes ensemble), conducting project 3 cr
- Wind Band Conducting: music core courses 17 cr, applied music 6 cr, other music 10 cr (includes ensemble), conducting

project 3 cr

Doctor of Musical Arts Degree.

The prerequisite to admission is a masters degree in music or its equivalent. The application for admission must include transcripts (graduate and undergraduate), four to six references, a pre-audition screening tape, a live audition (for performers-a half-hour recital; for composers-tapes and scores representative of their styles; for conductors-videotape to include a repertoire from the major composers, and should cover a sampling of most of the periods), an interview with professors in the student's field of concentration, and an entrance writing skills examination. NOTE: International students not residing in the United States or domestic students studying abroad may submit a 20-30 minute videotape (VHS format) or DVD in Lieu of the pre-audition screening tape and on-campus audition. (If sound quality on the videotape is a concern, a CD or cassette tape may be submitted concurrently.) After a review by an auditions committee, successful international students or domestic students studying aboard will be asked to complete (1) the writing exercise via e-mail and (2) the interview via a conference call.

The student will ordinarily be required to complete from 54-60 hours of course work beyond the masters degree. Of these hours a minimum of 45 cr hrs must be completed at UNL after the filing of the Program of Studies.

When a substantial amount of course work and the language requirement have been completed, the student will take comprehensive examinations, the successful completion of which will lead to admission to candidacy. Presentation of the final recital or composition and the doctoral document--including successful oral defense of the latter--will complete requirements. A detailed description of the DMA degree program is available in the DMA Handbook on the School of Music Website at www.unl.edu/music/handbooks/handbooks.html.

NOTE: This bulletin may not reflect some subsequent revisions in the School of Music programs. Students should check with the School of Music Graduate Office for up-to-date changes which have been approved by the Graduate Committee of the School of Music.

The 900-level series is intended for performance majors studying in their major applied area ($25 fee). The 800-level series (not alpha) is intended for students other than performance majors studying in their major applied area ($25 fee). The 800 alpha-series is intended for music majors studying in a secondary applied area ($25 fee) and non-music majors ($80 fee).

To enroll in applied lessons, the student must audition or have permission of the instructor.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Anderson, Scott -1996; Associate Professor, Trombone; BM 1985 Iowa State; MM 1987 Northwestern; DMA 1995 Minnesota
- Bailey, John -1986; Professor, Flute; BS 1980 Indiana; MM 1981, DMA 1986 Northwestern
- Barber, Carolyn -2001; Associate Professor and Director, Bands; BM 1990 Northwestern; MM 1992 Yale; DM 1995 Northwestern
- Barger, Diane -1994; Professor, Clarinet; BM 1988 Florida State; MM 1989 Northwestern; DMA 1999 Florida State
- Barnes, Paul -1995; Associate Professor, Piano; BM 1985, MM 1987, DM 1992 Indiana
- Becker, Karen -1995; Associate Professor, Cello; BM 1984 Ohio; MM 1986, DMA 1999 Texas (Austin)
- Bedient, Gene -1981; Adjunct Associate Professor; BME 1967, MM 1971 Nebraska (Lincoln)
- Bushard, Anthony -2006; Assistant Professor, Music History; BA 1996 St. John's; MM 2000, PhD 2006 Kansas
- Butler, Kathleen -2004; Assistant Professor, Voice; BM 1976, MM 1978 Louisiana State
- Bybee, Ariel -1998; Associate Professor, Voice; BS 1965 Brigham Young
- Chang-Barnes, Ann -1995; Senior Lecturer, Piano; BM 1985, MM 1987, DM 1993 Indiana
- Clinton, Mark -1995; Associate Professor, Piano; BM 1984, MM 1986 Peabody Conservatory; DMA 1989 Rice
- Eklund, Peter -1998; Associate Professor and Director, Choral Activities; BM 1980, MA 1982, DMA 1992 Iowa
- Foley, Gretchen -2001; Associate Professor, Theory; BM and BME 1984 Memorial (Newfoundland); PhD 1999 Western Ontario
- Fought, Robert -1974; Professor, Saxophone and Band; BS 1964 Penn State; MM 1965 Northwestern; EdD 1971 Penn State
- Fuelberth, Rhonda -2001; Associate Professor, Secondary Choral Music Education; BFAE 1991 Wayne State; MM 1997 Nebraska (Lincoln); PhD 2001 Missouri (Kansas City)
- Fuller, Craig -1989; Senior Lecturer, Tuba and Euphonium; BM 1978 Indiana
- Haar, O. Paul -2004; Assistant Professor, Saxophone; BM 1994, MM 1996 Kansas; DMA 2004 Texas
- Hanrahan, Kevin -2005; Assistant Professor, Voice; BFA 1998, MAM 1999 Carnegie Mellon; MM 2002, DMA 2005 Arizona State
- Harler-Smith, Donna -1976; Professor, Voice; BA 1966 Denison; MM 1968 Cincinnati Conservatory
- Hibbard, Therees -2005; Assistant Professor, Choral; BME 1978 Longwood; MM 1980 Colorado State; DMA 1994 Oregon
- Lefferts, Peter M. -1989; Professor, Musicology; BA 1973, MA 1976, PhD 1983 Columbia
- Levine, Susan -2004; Assistant Professor, Dance; BA 1996 Keene State; MFA 1999 Smith
- Marks, Christopher -2006; Assistant Professor, Organ; BM 1992 Richmond; MM (piano) 1994, MM (organ) 1995 Illinois (Urbana-Champaign); DMA 1999 Eastman
- Mattingly, Alan -2006; Assistant Professor, Horn; BM 1990 Alabama; MM 1992, DMA 1998 Florida State
- McMullen, William W. -1986; Professor, Oboe; BME 1974 Baldwin-Wallace; MM 1980, DMA 1985 Juilliard
- Moore, Brian R. -1986; Associate Professor; BA 1977, BM 1977 New Hampshire; MM 1982, PhD 1986 Wisconsin
- Narboni, Nicole -1995; Senior Lecturer, Piano; BM 1985 Texas (Austin); MM 1988 Rice; DMA 1992 Peabody Conservatory
- Neely, David -1993; Associate Professor, Violin; BM 1984 Iowa State; MFA 1987 California Institute of Arts
- Nierman, Glenn E. -1979; Professor, Music Education; BM 1972 Washburn; MM 1977, DME 1979 Cincinnati
- Oliva, Giacomo -2001; Dean, Hixon-Lied College of Fine and Performing Arts and Professor; BME 1971, MM 1975 Mont Clair

State; EdD 1980 New York
- Potter, Clark -1996; Associate Professor, Viola; BM 1983 West Washington; MM 1986 Indiana; MFA 1987 California Institute of Arts
- Richards, Eric -2008; Assistant Professor
- Richmond, John W. -2003; Professor, Music; Director, School of Music; BA 1977 William Jewell; MM 1980 Conservatory of Music, Missouri (Kansas City); PhD 1990 Northwestern
- Rometo, Albert A. -1972; Professor, Percussion; Vice Director, School of Music; BS Ed 1970 Indiana; MM 1972 Ohio (Athens)
- Shomos, William -1994; Associate Professor, Voice and Opera; BA 1982 Knox; MM 1983 Northwestern; DMA 1999 Illinois
- Snyder, Randall -1974; Professor, Theory/Composition; BA 1966 Quincy; MM 1967, DMA 1973 Wisconsin
- Starr, Pamela F. -1987; Professor, Musicology; MLS 1975 Columbia; MA 1981 Wisconsin; MPhL 1983, PhD 1987 Yale
- White, Darryl -1997; Associate Professor, Trumpet; BM 1987 Youngstown State; MM 1991 Northwestern; DMA 2001 Colorado
- White, Russell -1981; Associate Professor, Double Bass and Jazz Performance; BM 1977 Cincinnati Conservatory; MM 1982 North Texas State
- White, Tyler -1994; Associate Professor and Director, Orchestral Activities; AB 1983 North Carolina; MFA 1986, DMA 1991 Cornell
- Woody, Robert -2001; Associate Professor, Music Education; BM 1990 Nebraska (Lincoln); MME 1993, MS 1998, PhD 1998 Florida State
- Wristen, Brenda -2001; Associate Professor, Piano Pedagogy; BA 1993 Lubbock Christian; MM 1995, PhD 1998 Texas Tech

Courses for (NREE)

Courses for Natural Resource Sciences (NRES)

Natural Resource Sciences

Subject Areas

- Natural Resource Sciences (NRES)
- (NREE)

*801. Laboratory Earth: Concepts and Application (3 cr) Lec, lab.

NRES *801 is designed to meet the needs of pre-college educators. Fundamental concepts in the earth and physical sciences and "real world" applications. Interaction of energy and matter in the geosphere and the atmosphere. Earth's relationships to the sun, moon, and other astronomical objects.

802. Aquatic Insects (BIOS 885; ENTO 802) (2 cr II) Lec 2.

Prereq: 12 hrs biological sciences or permission

Biology and ecology of aquatic insects.

802L. Identification of Aquatic Insects (BIOS 885L; ENTO 802L) (1 cr II) Lab 1.

Prereq: Must be taken parallel with ENTO/NRES 802/BIOS 885

Identification of aquatic insects to the family level.

806. Plant Ecophysiology: Theory and Practice (AGRO 806; HORT 806) (4 cr I) Lec 3, lab 1.

Prereq: 4 hours of ecology; 4 hours of botany or plant physiology

Offered fall semester of even-numbered calendar years. A field/greenhouse experiment is assigned to students registered for 806. Principles of plant physiology which underlie the relationship between plants and their physical, chemical and biotic environments. Introduction to the ecological niche, limiting factors and adaptation. Seed germination and ecology, plant and soil water relations, nutrients, plant energy budgets, photosynthesis, carbon balance and plant-animal interactions. Introduction to various field equipment used in ecophysiological studies.

*807. Plant-Water Relations (AGRO *807; BIOS *817) (3 cr I) Lec 3.

Prereq: AGRO 325 or equivalent; MATH 106 recommended

Quantitative study of water relations in the soil-plant-atmosphere system. Basic physical processes, which describe the movement of water in the soil and the atmosphere, and the physiological processes, which describe water movement inside of the plant. Stomata physiology and the effects of internal water deficits on photosynthesis, respiration, nitrogen metabolism, cell division and cell enlargement. Results from integrative models used to study the relative importance of environmental versus physiological factors for several plant-environment systems.

808. Microclimate: The Biological Environment (AGRO 808; GEOG 808; HORT 808; METR 808; WATS 408) (3 cr I)

Prereq: MATH 106 or equivalent; 5 hrs physics; or permission

Physical factors that create the biological environment. Radiation and energy balances of earth's surfaces, terrestrial and marine. Temperature, humidity and wind regimes near the surface. Control of the physical environment through irrigation, windbreaks, frost protection, manipulation of light and radiation. Applications to air pollution research. Instruments for measuring environmental conditions and remote sensing of the environment.

809. Laboratory Earth: Earth and Its Systems (3 cr) Lec, lab.

The earth as a system and the "real world" applications of fundamental physical science processes in this system. Interaction of energy and matter in the geosphere, in the hydrosphere, and in the atmosphere. The earth's relationships to the sun, moon, and other astronomical objects in the solar system.

*810. Landscape Ecology (HORT *812) (3 cr II)

Prereq: 12 hrs biological sciences or related fields including BIOS 320 or permission

Spatial arrangements of ecosystems, the interaction among component ecosystems through the flow of energy, materials and organisms, and alteration of this structure through natural or anthropogenic forces.

*811. Plant Tissue Culture (BIOS *811; HORT *811) (4 cr II) Lec 2, lab 4.

Prereq: BIOS 109; AGRO 325 which includes CHEM 109, 110; or equivalent

Survey of techniques used in plant cell, tissue and organ culture, including current research. Laboratory emphasizes practical manipulation of plant cells, tissues, and organs, including examples from woody and herbaceous plant species.

812. Introduction to Geographic Information Systems (GEOG 812) (4 cr) Lec 3, lab 2.

Introduction to the conceptual foundations and applications of computer-based geographic information systems (GIS). GIS database development, spatial data analysis, spatial modeling, GIS implementation and administration. Lab exercises provide practical experience with GIS software.

813. Environmental Leadership (ALEC 810) (3 cr) Lec 3.

Major leaders in conservation and ecology who emphasize agricultural and cultural issues and relationships with the environment.

*814. Laboratory Earth: Earth's Natural Resource Systems (3 cr) Lec, lab.

Fundamental concepts in the Earth and physical sciences in the understanding of Earth's natural resource systems. Rock and mineral, water, soil, and energy resources. Social factors, human dependence, and the impact of these on natural resource systems.

815. Water Resources Seminar (AGRO 881; GEOG 881; GEOL 815) (1 cr II)

Seminar on current water resources research and issues in Nebraska and the region.

816. Veterinary Entomology/Ectoparasitology (ASCI 816; ENTO 816; VBMS 816) (2 cr II) Lec 2.

Prereq: 10 hrs entomology or biological science or related fields or permission

Arthropods that cause or vector diseases in animals. Arthropod recognition and biology, and disease epidemiology.

816L. Veterinary Entomology/Ectoparasitology Lab (ASCI 816L; ENTO 816L; VBMS 816L) (1 cr II)

Prereq: ASCI, NRES, VBMS 816; or parallel

817. Agroforestry Systems in Sustainable Agriculture (HORT 818) (3 cr) Lec 3.

Prereq: 12 hrs biological or agricultural sciences

At least one course in production agriculture and one course in natural resources is strongly suggested. Offered odd-numbered calendar years. Roles of woody plants in sustainable agricultural systems of temperate regions. Ecological and economic benefits of trees and shrubs in the agricultural landscape. Includes: habitat diversity and biological control; shelterbelts, structure, function, benefits and design; intercropping systems; silvopastoral systems; riparian systems; and production of timber and speciality crops. Comparison of temperate agroforestry systems to those of topical areas.

818. Introduction to Remote Sensing (GEOG 818) (4 cr) Lec 3, lab 2.

Prereq: 9 hrs earth science or natural resource sciences including GEOG 150 and 152 or GEOG 155

Introduction to remote sensing of the earth from aerial and satellite platforms. Aerial photography, multispectral scanning, thermal imaging and microwave remote sensing techniques. Physical foundations of remote sensing using electromagnetic energy, energy-matter interactions, techniques employed in data acquisition and methods of image analysis. Weekly laboratory provides practical experience in visual and digital interpretation of aerial photography, satellite imagery, thermal and radar imagery. Emphasis on applications in geographic, agricultural, environmental and natural resources analyses.

819. Chemistry of Natural Waters (GEOL 818) (3 cr II) Lec 3.

Prereq: Two semesters college chemistry or equivalent, or permission

Offered even-numbered years. Principles of water chemistry and their use in precipitation, surface water, and groundwater studies. Groundwater applications used to: determine the time and course of groundwater recharge, estimate groundwater residence time, identity aquifer mineralogy, examine the degree of mixing between waters of various sources, and evaluate what types of biological and chemical processes that occurred during the water's journey through the aquifer system.

819L. Chemistry of Natural Waters Lab (GEOL 818L) (1 cr II, offered even numbered calendar years or

Prereq: Two semesters college chemistry or permission

Parallel: GEOL 818/NRES 819/WATS 418. Basic laboratory techniques used to perform water analysis including various wet

chemical techniques, instrument use (AA, IC, UV-Visable) and computer modeling. Techniques for sample collection and preservation, parameter estimation, and chemical analysis.

820. Applications of Remote Sensing in Agriculture and Natural Resources (AGRO 819; GEOG 819; GEOL 819) (4 cr) Lec 3, lab 2.

Prereq: GEOG/NRES 818; or permission

Introduction to the practical uses of remote electromagnetic sensing in dealing with agricultural and water-resources issues.

821. Field Techniques in Remote Sensing (GEOG 821) (3 cr II) Lec 2, lab.

Prereq: NRES 818

Field techniques as they relate to remote-sensing campaigns. Research methods, systematic approaches to data collection, field spectroscopy, collecting ancillary information linked with spectroscopic data sets as well as aircraft or satellite missions, and subsequent analyses of acquired data.

823. Integrated Resources Management (3 cr II) Lec 3.

Prereq: Natural resource science or related major; permission

Integrated and multiple-use management. Economic, political, social, and physical impacts on natural resources management priorities.

824. Forest Ecology (4 cr I) Lec 3. Field/lab 3.

Prereq: BIOS 320 or permission

Includes weekend field trip to forested sites in Nebraska. Principles of forest stand dynamics, including forest responses to natural and human disturbance. Ecology of North American forests, emphasis on woodland and savanna vegetation in the Great Plains and identification of native trees and shrubs.

*825. Geostatistics (GEOL *825) (3 cr I)

Prereq: MATH 106 and STAT 218

Offered fall semester of odd-numbered calendar years. Practical methods for solving spatial interpolation and related estimation problems with emphasis on geostatistical methods. Introduction to applied statistical simulation and prediction in geology, hydrogeology and environmental studies.

828. Leadership in Public Organizations (3 cr II)

Leadership in theories, research, and practices in public organizations and natural resource agencies.

835. Agroecology (AGRO 835) (3 cr II) Lec 3.

Prereq: 12 hours biological or agricultural sciences or permission

Integration of principles of ecology, plant and animal sciences, crop protection, and rural landscape planning and management for sustainable agriculture. Includes natural and cultivated ecosystems, population and community ecology, nutrient cycling, pest management, hydrologic cycles, cropping and grazing systems, landscape ecology, biodiversity, and socioeconomic evaluation of systems. Also includes discussions and team projects for developing communication skills and leadership experience.

842. Environmental Geophysics I (GEOL 842) (4 cr) Lec 3, lab 3.

Prereq: MATH 107; PHYS 211; GEOL 101 or 106; or equivalent or permission

Introduction to the principles of seismic, ground-penetrating radar, and bore-hole geophysical methods and their application to groundwater, engineering, environmental, and archaeological investigations.

843. Environmental Geophysics II (GEOL 843) (4 cr) Lec 3, lab 3.

Prereq: MATH 107; PHYS 211; GEOL 101 or 106; or equivalent or permission

Introduction to principles of magnetic, electromagnetic, resistivity, and gravity methods and their application to ground water, engineering, environmental, and archaeological investigations.

845. Human Remains in Forensic Science (4 cr) Lec 2, lab 2.

Prereq: AGRI 120

Forensic anthropology within the broader context of forensic sciences and physical anthropology. Decomposition and bone modification through artificial means. Determination of individual identity, diet, chronic pathology and cause of death from human remains.

846. Analysis for Behavioral, Biological and Forensic Science (4 cr) Lec 2, lab 2.

Prereq: FORS 120 or BIOS 109

Introduction to forensic anthropology within the broader context of forensic sciences and physical anthropology. Human osteology, archaeology, and other research methods to address mediocolegal problems

848. Advanced Topics in Wildlife Damage Management (2 cr II) Lec 2.

Prereq: NRES 348

Participation in a three day professional conference is strongly encouraged. Economic, global, and public policy issues relative to

situations in which wildlife damage personal property or natural resources, threaten human health and safety, or are a nuisance. Technological advances in fertility control, damage resistance, toxicology, behavioral modification and biological management.

*849. Woody Plant Growth and Development (BIOS *849; HORT *849) (3 cr I) Lec 2.

Prereq: CHEM 251 and AGRO 325

Offered fall semester of odd-numbered calendar years. Plant growth and development specifically of woody plants as viewed from an applied whole-plant physiological level. Plant growth regulators, structure and secondary growth characteristics of woody plants, juvenility, senescence, abscission and dormancy.

850. Biology of Wildlife Populations (BIOS 850) (4 cr II) Lec 3, lab 3.

Principles of population dynamics. Management strategies (for consumptive and nonconsumptive wildlife species) utilizing principles developed.

851. Soil Environmental Chemistry (ENVE 851) (3 cr II) Lec 3.

Prereq: CHEM 252

Offered even-numbered calendar years. Theory, mechanisms and processes related to chemical behavior in soil-water environments. Application of computer simulation models for predicting contaminant fate in soil. Basic chemical and biological principles of remediating contaminated soil and water.

852. Climate and Society (AGRO 850; GEOG 850; METR 850) (3 cr)

Prereq: METR 200 or 351 or equivalent, or permission

Offered spring semester of even-numbered calendar years. Identify the impact of climate and extreme climatic events on society and societal responses to those events. Global in scope and interdisciplinary.

853. Hydrology (CIVE 853) (3 cr)

Prereq: MATH 106

Credit in CIVE 353/853/NRES 853 will not count towards a major in civil engineering. Introduction to the principles of hydrology, with emphasis on the components of the hydrologic cycle: precipitation, evaporation, groundwater flow, surface runoff, infiltration, precipitation runoff relationships.

854. Ecological Interactions (BIOS 854) (4 cr) Lec 3, lab 4.

Prereq: BIOS 220 or equivalent

May also be offered at Cedar Point Biological Station. Nature and characteristics of populations and communities; interactions within and between populations and community structure and dynamics. Examples from plants and animals. Direct and indirect interactions and ecological processes, competition, predation, parasitism, herbivory and pollination. Structure, functioning and persistence of natural communities, foodweb dynamics, succession and biodiversity.

855. Soil Chemistry and Mineralogy (AGRO 855; SOIL 455) (3 cr I) Lec 3.

Prereq: AGRO/SOIL 153 or GEOL 101; CHEM 109 and 110; CHEM 221 or 251; or equivalent

Chemical and mineralogical properties of soil components with emphasis on the inorganic colloidal fraction. Structures of soil minerals discussed as a means of understanding properties such as ion exchange and equilibria, release and supply of nutrient and toxic materials, and soil acidity and alkalinity.

857. Soil Chemical Measurements (AGRO 857; SOIL 457) (2-3 cr, max 3 I) Lec 2, lab 4-6.

Prereq: AGRO/SOIL 153; CHEM 116 or 221 or equivalent or permission

Permission required to register for 2 cr. Students registering for 3 cr will design, carry out, and report on an independent study project conducted during the term.Offered even-numbered calendar years. Theory and practice of soil chemical analyses commonly encountered in research and industrial settings. Wet analyses of inorganic fraction of soil and operation of instrumentation necessary to quantify results of the analyses.

858. Soil Physical Determinations (AGRO 858; SOIL 458) (2 cr I) Lab 3 plus 3 hours to be arranged.

Prereq: SOIL/AGRO/GEOL/WATS 361; PHYS 141 or equivalent; MATH 102 or 103

Graduate students in NRES/AGRO 858 are expected to carry out an independent project and give an oral report. Measurement techniques and principles used in characterizing the physical properties of soils. Analysis of experimental design and sources of experimental error. Techniques included: particle size analysis, soil water content, pore size analysis, field sampling techniques, soil strength, and saturated hydraulic conductivity.

859. Limnology (BIOS 859; WATS 459) (4 cr II)

Prereq: 12 hrs biological sciences, including introductory ecology, 2 sems chemistry

Lab by permission. Field trips, assigned readings. Physical, chemical, and biological processes that occur in freshwater; organisms occurring in freshwater and their ecology; the biological productivity of water and its causative factors; eutrophication and its effects.

860. Soil Microbiology (AGRO 860; BIOS 847; SOIL 460) (3 cr II) Lec 3.

Prereq: One semester microbiology; one semester biochemistry or organic chemistry

Soil from a microbe's perspective-growth, activity and survival strategies; principles governing methods to study microorganisms and biochemical processes in soil; mechanisms controlling organic matter cycling and stabilization with reference to C, N, S, and P; microbial interactions with plants and animals; and agronomic and environmental applications of soil microorganisms.

861. Soil Physics (AGRO 861; GEOL 861; SOIL 461; WATS 461) (3 cr I) Lec 3.

Prereq: AGRO/SOIL 153, PHYS 141 or equivalent, one semester of calculus

Recommended: Parallel enrollment in AGRO/NRES 858. Principles of soil physics. Movement of water, air, heat and solutes in soils. Water retention and movement, including infiltration and field water regime. Movement of chemicals in soils.

*862. Conservation Biology (3 cr)

Prereq: 12 hours of biological sciences, including BIOS 320 or AGRO 315 or equivalent

Typically offered second semester. Current issues in conservation biology. Theoretical principles from the areas of ecology and genetics to effectively preserve and manage biological diversity and small populations.

863. Fisheries Science (4 cr I) Lec 3, lab 3.

Fisheries biology emphasizing the determination and evaluation of vital statistics for the management of fish populations. Basis of specific management techniques discussed.

864. Fisheries Biology (BIOS 864) (3 cr) Lec 3.

Prereq: BIOS/NRES 889 or equivalent

Biology of fishes. Factors that affect fishes in the natural environment. Techniques used in the analysis and management of fish populations.

865. Soil Geomorphology and Paleopedology (GEOL 865) (3 cr) Lec, lab.

Prereq: GEOL 850 and NRES 877, or permission

Two field trips required. Soils and paleosols as evidence in reconstructing landscape evolution and paleoenvironments. Role of paleosols in stratigraphy.

*866. Advanced Limnology (BIOS *860) (3 cr I)

Prereq: NRES 859 or equivalent

In-depth consideration of selected areas of limnology including stream limnology, primary production, secondary production, nutrient cycling, and eutrophication.

867. Global Climate Change (METR 883) (3 cr) Lec 3.

Prereq: MATH 106/106B/108H; 5 hrs PHYS; METR 475/875

METR 883 is offered fall semester of even-numbered calendar years.

Elements of the climate systems, El Niño and/or La Niña cycle and monsoons, and natural variability of climate on inter-annual and inter-decadal scales. Paleo-climate and future climate. Develop climate change scenarios and climate change impacts on natural resources and the environment.

868. Wetlands (BIOS 458; WATS 468) (4 cr II) Lec 3, lab 4.

Prereq: 12 hrs biological sciences; BIOS 320; CHEM 109 and 110

Offered spring semesters of even-numbered calendar years. Physical, chemical, and biological processes that occur in wetlands; hydrology and soils of wetland systems; organisms occurring in wetlands and their ecology; wetland creation, delineation, management and ecotoxicology.

869. Bio-Atmospheric Instrumentation (AGRO 869; GEOG 869; HORT 807; METR 869; MSYM 869) (3 cr I)

Prereq: MATH 106 and 4 hrs physics

Offered fall semester of odd-numbered calendar years. Discussion and practical application of principles and practices of measuring meteorological and related variables near the earth's surface including temperature, humidity, precipitation, pressure, radiation and wind. Performance characteristics of sensors and modern data collection methods discussed and evaluated.

870. Lake and Reservoir Restoration (3 cr II) Lec 3.

Prereq: 12 hrs NRES or related fields

NRES 470/870 is offered even-numbered calendar years.

Theory, processes, and mechanisms underlying lake and reservoir water quality degradation and/or pollution. Remediation of eutrophication and its effects. Current techniques used to restore and protect degraded lakes.

873. Ecological Anthropology (ANTH 873) (3 cr)

Integrative study of human adaptive systems and their ecological contexts. Examination of the dynamic interrelationships between subsistence, technology, social behavior, human demography, and ecological variability.

874. Herpetology (BIOS 874) (4 cr) Lec 4.

Prereq: BIOS/NRES 386

BIOS 388 recommended. May also be offered at Cedar Point Biological Station. Fossil and living amphibians and reptiles. Anatomy, classification, ecology, and evolution.

875. Water Quality Strategy (AGRO 875; CIVE 875; CRPL 875; GEOL 875; MSYM 875; POLS 875; SOCI 875; SOIL 475; WATS 475) (3 cr II) Lec 3.

Prereq: Permission

Holistic approach to the selection and analysis of planning strategies for protecting water quality from nonpoint sources of contamination. Introduction to the use of methods of analyzing the impact of strategies on whole systems and subsystem for selecting strategies; and for evaluating present strategies.

876. Mammalogy (BIOS 876) (4 cr) Lec 3, lab 3.

Prereq: 8 hrs BIOS; BIOS 386 or NRES 311

Field trips may include time outside regularly scheduled class. May also be offered at Cedar Point Biological Station. Evolution, natural history, ecology, and functional morphology of planetary mammals and mammals of the Northern Great Plains. Lab and field time emphasize diversity of mammalian families and species identification of Nebraska mammals.

877. Great Plains Field Pedology (AGRO 877; GEOG 867/877; SOIL 477) (4 cr II)

Prereq: AGRO/SOIL 153 or permission

Spacial relationship of soil properties on various parts of landscape typical of the Plains, causal factors, and predictions of such relationships on other landscapes. Also grouping these properties into classes, naming the classes, and the taxonomy that results from this grouping. Finally, requires the application of a taxonomy to a real situation through making a field soil survey in region representative of the Plains border, predicting land use response of various mapped units as it affects the ecosystem, and evaluating the effectiveness of the taxonomic system used in the region surveyed.

878. Regional Climatology (METR 878) (3 cr) Lec 3.

Prereq: METR 370

Regional differentiation of the climates of the earth on both a descriptive and dynamic basis. The chief systems of climatic classification.

*883. Ecological Economics (AECN *883) (3 cr I) Lec 3, rec.

Prereq: AECN 141 or ECON 212 or equivalent

A synthesis across the notion of “utility” as represented in traditional environmental and natural resource economics, “ecology” in ecological economics, and “community” in behavioral economics. Ideas from thermodynamics with a focus on renewable resources. Development, organization, and enhancement of eco-business, eco-industry, eco-government and eco-communities.

*887. Hydrogeology (GEOL *889) (3 cr)

Prereq: GEOL 888/NRES 488 and MATH 208

Principles of flow through porous media with emphasis on basic classical solutions, flow-net analysis, and elementary modern numerical solutions that aid in the analysis and development of groundwater supplies.

888. Groundwater Geology (GEOL 888) (3 cr)

Prereq: GEOL 100-level course; MATH 106 or equivalent

Occurrence, movement and development of water in the geologic environment.

889. Ichthyology (BIOS 889) (4 cr I) Lec 3, lab 4.

Prereq: 12 hrs biological sciences

May also be offered at Cedar Point Biological Station. Fishes, their taxonomy, physiology, behavior, and ecology; the dynamics of fish stocks and factors regulating their production.

891. Seminar in Natural Resource Sciences (1 cr, max 2 cr I, II)

Presentations of special non-thesis topics, and/or research plans, and/or thesis research results.

892. Study Tours in Natural Resource Management (1-3 cr, max 6) Fld.

Prereq: Permission

Choice of subject matter and coordination of on- and off-campus study at the discretion of the instructor. Off-campus travel required. Group educational tours to specific sites that illustrate aspects of natural resource management.

896. Independent Study (1-5 cr, max 12 I, II, III)

Prereq: 12 hrs natural resource sciences or closely-related fields; permission

Individual or group projects in research, literature review or extension of course work under supervision and evaluation of a departmental faculty member.

897. Career Experiences in Natural Resource Sciences (1-6 cr, max 6 I, II, III)

Prereq: Permission and advanced approval of a plan of work

Off-campus work experiences sponsored by natural resource agencies, companies and organizations. Students collaborate in the development of a plan of work that will identify student responsibilities, including a final written report. Internships are coordinated by SNRS faculty and administered through the UNL Student Employment and Internship Center (SEIC).

898. Special Topics (1-6 cr, max 12) Lec.

Prereq: 6 hrs NRES or parallel

*899. Masters Thesis (6-10 cr I, II, III)

Prereq: Admission to masters degree program and permission of major adviser

906. Crop Growth and Yield Modeling (AGRO 906) (3 cr II)

Prereq: NRES 808 or equivalent or permission

Experience in programming in a high-level computer language. Offered spring semester of even-numbered calendar years. Descriptive and explanatory crop growth and yield models studied in detail. Descriptive models focus on yield predictions using easily available inputs while the processes that lead to yield will be examined in explanatory models.

907. Agricultural Climatology (AGRO 907; HORT 907; METR 907) (3 cr II) Lec 2, lab 2.

Prereq: NRES 808; STAT 801 or equivalent

Offered spring semester of odd-numbered calendar years. Analysis and use of climatological data as applied to agricultural activities and the use of climatological information to assist in decision making.

908. Solar Radiation Interactions at the Earth's Surface (AGRO 908; HORT 908; METR 908) (3 cr II)

Prereq: MATH 208; NRES 808 or equivalent or permission

Offered spring semester of even-numbered calendar years. Quantitative study of radiative transfer to the earth's surface and subsequent interactions of radiation with vegetative components and underlying surfaces. Applications of canopy radiative modeling and remote sensing techniques, particularly in understanding land-surface processes, are discussed.

909. Crop Responses to Environment (AGRO 909; HORT 909) (3 cr II)

Prereq: MATH 208, NRES 808, or equivalent or permission

Offered odd-numbered calendar years. Physiological and developmental aspects of hardiness and growth of crop plants as affected by light, temperature, wind, and water. Design, function, and limitations of controlled environment facilities in plant research.

915. Horticultural Crop Improvement and Breeding (AGRO 915; HORT 915) (3 cr II)

Prereq: 18 hrs plant sciences including AGRO 315 and *815

Offered even-numbered calendar years. Application of the principles of genetics and plant breeding to the improvement of vegetables, fruits, and ornamental plants.

916. Environmental Law and Water Resource Management Seminar (CIVE 916; LAW 774G) (1-4 cr, max 4)

Prereq: Permission

An interdisciplinary seminar with the Department of Civil Engineering. Contemporary environmental issues and water resource management.

917. Environmental Isotope Hydrology (GEOL 917) (3 cr)

Prereq: NRES 819 or equivalent or permission

Theory and use of stable, radiogenic and radioactive isotopes in hydrologic studies. Abundance and variation of the stable isotopes of oxygen, hydrogen, carbon, sulphur, chlorine, nitrogen, and strontium. Application of the isotopes to determine water origin, movement, geochemical history, recharge age and residence time, and to delineate contaminant sources and solute migration.

918. Applied Groundwater Modeling (3 cr I) Lec 3.

Prereq: GEOL/NRES 488/888 or *889, MATH 208/208H, or equivalent

Offered fall semester of odd-numbered calendar years. Forward and backward numerical analysis of groundwater flow systems and their interactions with other hydro-logic components. Groundwater model development and parameter estimation using MODFLOW, PEST, and other widely used modeling packages.

920. Xenobiotics in the Environment (AGRO 920; ENTO 920; HORT 920; TOXI 920) (3 cr II) Lec 3.

Prereq: Recommend one course each in organic chemistry, soil science, biochemistry, plant physiology, microbiology and ecology

Offered odd-numbered calendar years. Fate and ecotoxicological impacts of biologically foreign compounds in soil-water-plant environments; uptake, mechanisms of toxicity and metabolism in plants and other biota. Herbicides and other pesticides.

922. Seminar in Geographic Information Systems (GEOG 922) (3 cr)

Prereq: GEOG 812 and 822; or equivalent

Third in a sequence of courses on Geographic Information Systems (GIS). Advanced topics in computer oriented geographical data analyses. Current problems facing the designers and users of GIS. Demonstrations of modern computer hardware and/or software used in GIS done.

943. Advanced Avian Physiology (ASCI 943) (3 cr I) Lec 3.

Prereq: One semester of physiology or ornithology, or permission

Anatomical and physiological aspects of the major body systems of birds; discussions cover both domesticated and other species and their adaptations. Comparison with mammalian systems is included, especially to illustrate divergent evolution of structure and function. Behavior is related to adaptations of both anatomy and physiology, and environmental influences are emphasized. Selected techniques (anesthesia, some surgical procedures, artificial insemination, embryo manipulations) are incorporated as laboratory sessions as needed.

950. General Seminar (AGRO 992; HORT 950) (1 cr, max 5 cr)

Prereq: Permission

Expected of all horticulture graduate students and all agronomy PhD students; optional for agronomy MS students. Presentation of thesis or non-thesis topics in agronomy, horticulture or related subjects. For course description, see AGRO 992.

954. Turbulent Transfer in the Atmospheric Surface Layer (BSEN 954) (3 cr)

Prereq: MATH 821; MECH 310 or NRES 808 or BIOS 857; or equivalent or permission

Offered spring semester of odd-numbered calendar years.

958. Theoretical Aspects of Physical Chemistry of Soils (AGRO 958) (3 cr II) Lec 3.

Prereq: MATH 208, AGRO 855, CHEM 871 or 882 or permission

Offered even-numbered calendar years. Topics in physical chemistry which have a special significance in the field of soil chemistry. Includes problems and outside readings in this area of soil chemistry.

961. Advanced Soil Physics (AGRO 961) (3 cr II) Lec 3.

Prereq: MATH 208 and PHYS 212, or equivalent; or permission

Offered odd-numbered calendar years. Physics of soils and porous media, with emphasis on the physics and mathematics of the movement of water, air, and heat through soils.

966. Soil Fertility (AGRO 966) (3 cr I) Lec 3.

Prereq: MATH 106; AGRO 855 and 857; STAT 801

Conditions and transformations involved in the transfer of a mineral nutrient ion from the soil into the plant. Evaluation of nutrient supply to plants.

977. Soil Genesis and Classification (AGRO 977; GEOG 967) (3 cr II) Lec 2, rct 1.

Prereq: AGRO 153, AGRO 877/GEOG 867, and permission

Procedures used to classify soils, concepts behind the systems in use, and the genesis of the soils in the major categories of each system.

996. Research Other Than Thesis (1-6 cr I, II, III)

Prereq: Permission

996A. Research in Soils (AGRO 996A) (2-5 cr, max 5 I, II, III) Ind.

Prereq: 12 hrs AGRO or closely related sciences, and permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

856/456. Environmental Law (AECN 856) (3 cr II) PSI.

Prereq: AECN/NREE 357 recommended

Offered odd numbered years. Available through Extended Education and Outreach. Administrative law; risk assessment; environmental impact review; Clean Air Act; Clean Water Act; nonpoint source pollution control; wetlands regulations; pesticide and toxic substance regulation; solid and hazardous waste regulation; drinking water protection; land use regulation; energy policy; international environmental law.

857/457. Water Law (AECN 857; WATS 457) (3 cr II) PSI.

Prereq: AECN/NREE 357

Offered even numbered years. Available through Extended Education and Outreach. Environmental impact review; public trust doctrine; endangered species; land use controls; wetlands regulation; surface and ground water rights; Indian and federal water rights; impact of water quality regulations on water allocation.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Director of the School of Natural Resources: Donald A. Wilhite, Ph.D.

Graduate Committee: Assistant Professor Awada (chair); Professors Freeman, Reinhard; Assistant Professors Pegg, Schoengold

The School of Natural Resources (SNR) offers graduate programs leading to a master of science or doctor of philosophy degree in a rich spectrum of areas in natural resources. The broad diversity of climate, hydrology, soils, surface and subsurface geology, habitats, and flora and fauna across Nebraska provides many opportunities for field studies. Faculty are not limited to research within Nebraska and have projects in other states and countries as well. Excellent laboratory and computer facilities, and museum collections are available for performing up-to-date analyses. Water chemistry, GIS, computer modeling, and remote sensing and image analysis are state-of-the-art facilities. Unique opportunities for cooperative research are also available through many state, federal, and private organizations. Courses are offered within the various areas of emphasis within SNR: Biological Resources, Climate and Bio-Atmospheric Systems, Earth Resources, Ecosystem Science, Geospatial Information, Human Dimensions and Water Science.

Master of Science Degree

The master of science degree provides students with an interdisciplinary education in natural resource sciences, encompassing the biological, atmospheric, water, earth and geospatial information resources, as well as in the related human and community elements.

Applicants for admission to the program are required to have maintained an undergraduate grade point average of at least 3.0 (on a 4.0 system), submit scores for the general Graduate Record Examination (verbal-500, quantitative-620 and analytical writing-4.0), three letters of recommendation, a statement of purpose, and satisfy the general admission requirements of the Graduate College. Admission to full graduate standing in the MS program requires an earned baccalaureate and demonstrated proficiency in mathematics, physics, chemistry, life sciences, and earth sciences. Contact the SNR Graduate Secretary for specific course requirements. A TOEFL score of at least 600 paper, 300 computer or 79 Internet is required for students whose native language is not English and who have not earned a baccalaureate in the US. The master of science program may be carried out under Option I or II (see) conforming to the general requirements of the Graduate College.

Doctor of Philosophy Degree

The doctor of philosophy degree provides students with advanced interdisciplinary education, encompassing the biological, atmospheric, water, earth and geospatial information resources, as well as in the related human and community elements.

Students applying for admission to the doctor of philosophy program must provide evidence of preparation in his/her anticipated field of emphasis in addition to meeting Graduate College admissions requirements. Additional requirements will be as stipulated by the SNR Graduate Committee and prospective adviser(s). Admission to Candidacy for the PhD degree requires the successful completion of a written, and oral comprehensive examination.

Specialization Areas

Currently twelve specializations are available at the masters level: Agroforestry, Aquatic Ecology, Bioatmospheric Interactions, Climate Assessment and Impacts, Environmental Studies, Geographic Information Systems (GIS), Great Plains Studies, Human Dimensions, Hydrologic Sciences, Remote Sensing, Soil Science, and Wildlife Ecology. Students can also pursue a masters degree with a minor in Water Resources Planning and Management. At present, only Applied Ecology, Bio-Atmospheric Interactions, Climate Assessment and Impacts, Human Dimensions, Hydrologic Sciences and Soil Science specializations are available at the doctoral level. Other specializations may become available pending approval. A student does not have to declare an area of specialization.

NOTE: This bulletin may not reflect some subsequent revisions in the School of Natural Resources (SNR) programs. Students should check with the SNR Graduate Secretary for up-to-date changes which have been approved by the SNR Graduate Committee.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Allen, Craig R. -2004; Associate Professor; BS 1989 Wisconsin (Greenbay); MS 1993 Texas Tech; PhD 1997 Florida
- Anderson, Mark -1987; Associate Professor; BS 1977, MS 1980 Northern Illinois; PhD 1985 Colorado
- Arkebauer, Timothy J. -1994; Professor; BS 1979 Michigan State; MS 1981 Florida; PhD 1986 Nebraska (Lincoln)
- Awada, Tala N. -1999; Associate Professor; BS 1992 Lebanese (Beirut); MS 1995 Mediterranean Agronomic Institute of Chania (Greece); PhD 2000 Saskatchewan (Canada)
- Ayers, Jerry F. -1985; Associate Professor; BA 1972, MS 1976 California State; PhD 1980 Washington State
- Bleed, Ann -1988; Professor; MS Nebraska (Lincoln); MS Penn State; PhD 1974 Wisconsin
- Bogardi, Istvan -1988; Professor; BS 1959, MS 1960, PhD 1965, MS 1969 Technical (Budapest)
- Carlson, Marvin P. -1976; Professor; AB 1962 Ripon; MS 1964 Illinois; PhD 1971 Kansas State (Manhattan)
- Chavez-Ramirez, Felipe -2005; Professor; BS 1988 Sul Ross State (Texas); MS 1992, PhD 1996 Texas A&M (College Station)
- Chen, Xun-Hong -1994; Professor; MS 1988 California State; PhD 1994 Wyoming
- Comfort, Steven D. -1993; Professor; BS 1981 Wisconsin (Madison); MS 1984 Minnesota (St Paul); PhD 1988 Wisconsin

(Madison)
- Dewey, Kenneth F. -1974; Professor; BA 1969 Elmhurst; MS 1970 Northern Illinois; PhD 1973 Toronto
- Diffendal, Robert F. Jr. -1980; Professor Emeritus; AB 1962 Franklin and Marshall; MS 1964, PhD 1971 Nebraska (Lincoln)
- Dosskey, Michael -2000; Assistant Professor; BS 1974 Oregon State; MS 1978 British Columbia; PhD 1989 Oregon State
- Eisenhauer, Dean E. -1975; Professor; BS 1971, MS 1973 Kansas State; PhD 1984 Colorado State
- Francis, Charles -1977; Professor, Agronomy and Horticulture; BS 1961 California (Davis); MS 1967, PhD 1970 Cornell
- Franti, Thomas G. -1993; Associate Professor; BS 1983 Wisconsin (Madison); MS 1985 Iowa State; PhD 1987 Purdue
- Freeman, Patricia W. -1981; Professor, State Museum; BA 1969 Randolph-Macon Woman's; PhD 1977 New Mexico
- Genoways, Hugh H. -1986; Professor Emeritus, State Museum, School of Natural Resource Sciences; AB 1963 Hastings; PhD 1971 Kansas
- Gitelson, Anatoly -1999; Professor; MS 1964 Taganrog State (Russia); PhD 1972 Taganrog Institute for Radio Technology (Russia)
- Gosselin, David C. -1989; Professor; BA 1982 St. Thomas; PhD 1987 South Dakota School of Mines
- Hanson, Paul -2005; Assistant Professor; BA 1994 Wisconsin (Milwaukee); MS 2003, PhD 2005 Nebraska (Lincoln)
- Harrell, Mark O. -1980; Professor; BS 1975 William and Mary; MS 1978, PhD 1980 Wisconsin
- Harvey, F. Edwin -1996; Associate Professor; BS 1986 Olivet Nazarene; MS 1990 Purdue; PhD 1996 Waterloo (Ontario)
- Hayes, Michael J. -1995; Associate Professor; BS 1986 Wisconsin (Madison); MS 1989, PhD 1994 Missouri (Columbia)
- Hergenrader, Gary L. -1967; Professor Emeritus and State Forester; BS 1961 Nebraska (Lincoln); MS 1963, PhD 1967 Wisconsin
- Hoagland, Kyle D. -1990; Professor; BS 1973 Michigan State; MS 1975 Eastern Michigan; PhD 1981 Nebraska (Lincoln)
- Holland, Richard -1995; Assistant Professor; BS 1977, MS 1980, PhD 1987 Nebraska (Lincoln)
- Holz, John C. -1998; Research Assistant Professor; BS 1991, MS 1994, PhD 1998 Nebraska (Lincoln)
- Hu, Qi (Steve) -1999; Associate Professor; BS 1982 Lanzhou; MS 1986, PhD 1992 Colorado State
- Hubbard, Kenneth G. -1981; Professor; BS 1971 Chadron State; MS 1973 South Dakota School of Mines; PhD 1981 Utah State
- Hygnstrom, Scott E. -1995; Professor; BS 1980, MS 1983, PhD 1988 Wisconsin (Madison)
- Joeckel, Robert M. -2000; Associate Professor; BS 1985, MS 1988 Nebraska (Lincoln); PhD 1993 Iowa
- Johnson, Ron J. -1979; Professor; BS 1968, MS 1973 Ohio State; PhD 1979 Cornell
- Josiah, Scott J. -1998; Associate Professor, State Forester and Director of Nebraska Forest Service; BS 1975 SUNY; MS 1986 Southern Illinois; PhD 1996 Minnesota
- Kamble, Shripat T. -1978; Professor; BS 1964, MS 1966 Nagpur; PhD 1974 North Dakota State
- Kamil, Alan C. -1992; Professor; BA 1963, MS 1966, PhD 1967 Wisconsin
- Keeler, Kathleen -1975; Professor and Director of Biological Field Station; BS 1969 Michigan; PhD 1975 California (Berkeley)
- Kuzelka, Robert D. -1979; Associate Professor Emeritus, Director of Environmental Studies Program; BS 1962 Nebraska (Lincoln); MS 1967 Texas
- Kuzila, Mark S. -1993; Professor; BS 1973, MS 1976 Kansas State; PhD 1988 Nebraska (Lincoln)
- Leger, Daniel W. -1980; Professor; AB 1973 Humboldt State; MA 1975 California (Riverside); PhD 1980 California (Davis)
- Lenters, John N. -2006; Associate Professor; BS 1992 Hope (Holland, MI); MS 1995, PhD 1997 Cornell (Ithaca, NY)
- Lin, Xiaomao -2001; Assistant Professor; BS 1986 Chengdu University of Information Technology (China); MS 1991 China Agricultural; PhD 1999 Nebraska (Lincoln)
- Louda, Svata -1984; Professor; BA 1965 Pomona; MS 1972 California (Santa Barbara); PhD 1978 California (Riverside)
- Lynne, Gary D. -1995; Professor, Agricultural Economics; BS 1966, MS 1969 North Dakota State; PhD 1974 Oregon State
- Marquet, Pablo A. -2007; Professor; BS 1987 Universidad de Concepcion, Concepcion (Chile); PhD 1993 University of New Mexico
- Marx, David B. -1989; Professor; BA 1968 Wooster (Ohio); MS 1970 Missouri; PhD 1977 Kentucky
- McCallister, Dennis L. -1980; Professor; BS 1972 Notre Dame; MS 1977 Ohio State; PhD 1981 Texas A&M
- Merchant, James W. -1989; Professor; BS 1969 Towson State; MA 1973, PhD 1984 Kansas
- Narumalani, Sunil -1994; Professor; MA 1989 Georgia; PhD 1993 South Carolina
- Pabian, Roger K. -1993; Professor Emeritus
- Pederson, Darryll T. -1975; Professor; BS 1961 Valley City State; MST 1966, PhD 1971 North Dakota
- Pope, Kevin -2005; Associate Professor; BS 1991 Texas A&M; MS 1993 Auburn; PhD 1996 South Dakota State
- Powell, Larkin -2001; Associate Professor; BS 1990 Graceland; MS 1992 Iowa State; PhD 1998 Georgia
- Powers, Thomas O. -1985; Professor; BS 1976 Purdue; MS 1979 Florida; PhD 1983 California (Riverside)
- Reinhard, Karl J. -1989; Professor of Anthropology; BA 1977 Arizona; MS 1984 Northern Arizona; PhD 1988 Texas A&M
- Riordan, Terrance P. -1978; Professor; BS 1965, MS 1968, PhD 1970 Purdue
- Rowe, Clinton M. -1987; Associate Professor; BA 1978, MS 1982, PhD 1988 Delaware
- Rundquist, Donald -1982; Professor; BS 1967 Wisconsin (Whitewater); MA 1971 Nebraska (Omaha); PhD 1977 Nebraska (Lincoln)
- Scanlon, Bridget -2005; Professor; BS 1980 Trinity (Dublin, Ireland); MS 1983 Alabama; PhD 1985 Kentucky
- Schacht, Walter H. -1994; Professor; BS 1975 Dana; MS 1981 Nebraska (Lincoln); PhD 1986 Utah State
- Schoeneberger, Michele M. -1991; Research Assistant Professor, National Agroforestry Center; BS 1976 Wisconsin (Green Bay); MS 1981 Oregon State; PhD 1987 North Carolina State
- Shea, Patrick -1981; Professor; BS 1975 Fordham; MS 1979 Connecticut; PhD 1981 North Carolina State
- Skopp, Joseph M. -1980; Associate Professor; BS 1971 California (Davis); MS 1975 Arizona; PhD 1980 Wisconsin
- Snow, Daniel -1998; Research Assistant Professor; BS 1982 Southwest Missouri State; MS 1988 Louisiana State; PhD 1996 Nebraska (Lincoln)
- Spalding, Mary Exner -1976; Professor; BS 1970 Chestnut Hill (Pennsylvania); MS 1972 Texas A&M
- Stubbendieck, James L. -1974; Professor; BS 1966, MS 1968 Nebraska (Lincoln); PhD 1974 Texas A&M
- Swinehart, James B. -1986; Professor; BA 1965 California (Riverside); MS 1979 Nebraska (Lincoln)
- Szilagyi, Jozsef -1997; Associate Professor; MS 1989 Eotvos University (Budapest); MS 1994 New Hampshire; PhD 1997

California (Davis)
- Tadesse, Tsegaye -2006; Assistant Geoscientist; BS 1982 Addis Ababa (Ethiopia); MSS 1998 International Space (France); PhD 2002 Nebraska (Lincoln)
- Tenhumberg, Brigitte -2003; Research Assistant Professor; Diplom-Agraringenieur 1988 Hannover (Germany); PhD 1992 Göttingen (Germany)
- Thomas, Steven A. -2006; Assistant Professor; BS 1987 New Hampshire; MS 1991 Wyoming; PhD 2000 Idaho State
- Tyre, Richard A.J. -2003; Assistant Professor; BS 1991 Alberta (Canada); MS 1994 Simon Fraser (Canada); PhD 1999 Adelaide (Australia)
- VerCauteren, Kurt C. -2000; Assistant Professor; BS 1990 Wisconsin (Stevens Point); MS 1993, PhD 1998 Nebraska (Lincoln)
- Verma, Shashi -1974; Professor; BS 1965 Ranchi (India); MS 1967 Colorado; PhD 1971 Colorado State
- Walter-Shea, Elizabeth A. -1989; Professor; BS 1978 Central Arkansas; MS 1981 Texas A&M; PhD 1987 Nebraska (Lincoln)
- Walters, Daniel T. -1984; Professor; BS 1973 Illinois; MS 1975 Illinois; PhD 1984 Minnesota
- Wardlow, Brian D. -2006; Research Assistant Professor; BS 1994 Northwest Missouri State (Maryville); MA 1996 Kansas State (Manhattan); PhD 2005 Kansas (Lawrence)
- Wedin, David -1998; Associate Professor; BA 1981 St. Olaf; PhD 1990 Minnesota
- Weiss, Albert -1974; Professor; BS 1962 City College (New York); MS 1969 Rutgers; PhD 1975 Cornell
- Wilhite, Donald A. -1977; Professor; BS 1967 Central Missouri State; MA 1969 Arizona State; PhD 1975 Nebraska (Lincoln)
- You, Jinsheng -2006; Assistant Professor; BS 1993, MS 1996 Hohai (China); PhD 2004 Utah

Nutrition

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Area Committee: Professor J. Albrecht (chair); Associate Professors Erickson, Zempleni

Departments Cooperating: Animal Science, Food Science and Technology, Nutrition and Health Sciences

The nutrition area offers programs of study leading to master of science and doctor of philosophy degrees. The Area Committee will evaluate the qualifications for the admission of students leading to masters and doctoral degrees in this area. Students applying for study in the nutrition area must present a bachelors degree preferably in agriculture, biological sciences, biochemistry, chemistry, or food and nutrition and indicate a departmental preference based on research interest. Identification of a departmental affiliation or preference is especially important for students seeking an assistantship. Applicants must submit GRE scores (verbal, quantitative, and analytical). Desirable undergraduate background includes courses in biology, zoology, physiology, mathematics, organic chemistry, and biochemistry. In addition, sociology, psychology, and anthropology are desirable background courses for students interested in pursuing a degree in human nutrition. If appropriate background is lacking, undergraduate courses may be required as specified by the Area Committee.

The requirements for admission to candidacy and for courses and thesis or doctoral dissertation are those established and maintained by the Graduate College. Masters degree proposals are approved by the adviser in consultation with the chairperson of the Area Committee and PhD programs by the student's supervisory committee.

Courses offered by cooperating units are listed below. Specific programs of study are developed for each student based on background, research interest, and career plans. Participation in the Interdepartmental Nutrition Seminar is required of all students enrolled in this area. MS students are required to enroll and present one seminar; PhD students are required to enroll and present two seminars.

More information is available at the following Web site: nsd.unl.edu/nsd/inp/inp.htm.

Descriptive information, prerequisites, etc., for each course are given in the appropriate departmental listing. Page numbers for departmental course listings are indicated in parentheses. Masters thesis and doctoral dissertation courses, 899 and 999 respectively, are offered in each cooperating department.

Offered in the Department of Animal Science
821. Advanced Animal Nutrition (3 cr I)
822. Advanced Feedlot Nutrition & Management (3 cr)
842. Endocrinology (BIOS, VBMS 842) (3 cr)
845. Physiology of Domestic Animals I (VBMS *845, BIOS *813) (4 cr)
846. Physiology of Domestic Animals II (VBMS *846, BIOS *814) (4 cr)
921. Interdepartmental Nutrition Seminar (NUTR 921) (1 cr per sem, max 4 I, II)
922. Advanced Animal Nutrition (Ruminant) (3 cr)
924. Forage Evaluation (AGRO 940) (3 cr II)
925. Energy Metabolism (NUTR 925) (3 cr I)
926. Carbohydrate & Lipid Nutrition (NUTR 926) (3 cr II)
927. Protein Nutrition (NUTR 927) (2 cr II)
927L. Protein Nutrition Lab (NUTR 927L) (1 cr)
928. Mineral Nutrition (NUTR 928) (2 cr I)
928L. Mineral Nutrition Lab (NUTR 928L) (1 cr)
929. Vitamin Nutrition (NUTR 929) (3 cr II)

Offered in the Department of Nutrition and Health Sciences
805. Research Methods (3 cr)

857. Classroom & Outreach Experiences in Food & Nutrition (1-3 cr, max 3)
892. Nutrition Problems (1-6 cr)
896. Independent Study (1-5 cr)
898. Research Experiences (1-5 cr)
921. Interdepartmental Nutrition Seminar (ASCI 921) (1 cr per sem, max 4 I, II)
925. Energy Metabolism (ASCI 925) (3 cr I)
926. Carbohydrate & Lipid Nutrition (ASCI 926) (3 cr II)
927. Protein Nutrition (ASCI 927) (2 cr II)
927L. Protein Nutrition Lab (ASCI 927L) (1 cr)
928. Mineral Nutrition (ASCI 928) (2 cr I)
928L. Mineral Nutrition Lab (ASCI 928L) (1 cr)
929. Vitamin Nutrition (ASCI 929) (3 cr II)
950. Integrated Principles of Human Nutrition (3 cr)
952. Advanced Clinical Nutrition Seminar (2 cr)
954. Fundamentals of Nutrition Counseling (2 cr)
956. Community Nutrition (3 cr)
986. Graduate Seminar (1-2 cr per sem, max 4)
992. Advanced Human Nutrition Problems (1-4 cr per sem, max 4)

Recommended Courses in Other Units

Offered in the Department of Biochemistry
831. Biochemistry I (BIOS, CHEM 831) (3 cr I, II, III)
832. Biochemistry II (BIOS, CHEM 832) (3 cr II)
833. Biochemistry Laboratory (BIOS, CHEM 833) (2 cr I, II)
837. Research Techniques in Biochemistry (BIOS 837) (4 cr II)
949. Biochemistry of Nutrition (BIOS 949) (3 cr I)

Offered in the Department of Food Science and Technology
805. Food Microbiology (BIOS 845) (3 cr I)
806. Food Microbiology Laboratory (BIOS 846)(2 cr I)
825. Food Toxicology (2 cr II)
848. Food Chemistry (3 cr I)
849. Food Chemistry Laboratory (1 cr I)
880. Advanced Food Science: Selected Topics (2-6 cr)

Offered in the Department of Statistics
801. Statistical Methods in Research (4 cr I, II)
802. Experimental Design, (3 cr I, II)

Offered in the Department of Veterinary and Biomedical Sciences
835. Animal Biochemistry (BIOS *835) (3 cr, II)
843. Immunology (BIOS 843) (3 cr)

Offered at the University of Nebraska Medical Center
BIOC 810. Biochemistry I (6 cr)
BIOC 811. Biochemistry II (2 cr)
Physiology and Biophysics 810. Physiology (9 cr)

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Albrecht, Julie A. -1990; Professor; BS 1972 North Dakota; MS 1985, PhD 1990 Minnesota
- Burke, Thomas -2006; Assistant Professor; BA 1996 Rockford; MS 2003, PhD 2006 Kansas State
- Carr, Timothy P. -1996; Associate Professor; BS 1980 California Polytech; MS 1982, PhD 1989 Arizona
- Cuppett, Susan L. -1985; Professor; BS 1968, MS 1970 West Virginia; PhD 1985 Michigan State
- Driskell, Judy A. -1989; Professor; BS 1965 Southern Mississippi; MS 1967, PhD 1970 Purdue
- Erickson, Galen -2001; Associate Professor; BS 1995 Iowa State; MS 1997, PhD 2001 Nebraska (Lincoln)
- Grandjean, Ann C. -1985; Clinical Assistant Professor (UNMC); BS 1962 West Texas State; MS 1966 Texas Tech; EdD 1987 Kansas
- Kiviniemi, Marc -2001; Assistant Professor; BA 1995 North Carolina (Ashville); PhD 2001 Minnesota
- Klopfenstein, Terry J. -1965; Professor; BS 1961, MS 1963, PhD 1965 Ohio State
- Kononoff, Paul J. -2006; Assistant Professor; BSA 1995, MS 1998 Saskatchewan; PhD 2002 Penn State
- Koszewski, Wanda -1996; Assistant Professor; BS 1981 Utah State; MS 1984 Nebraska (Lincoln); PhD 1988 Kansas State
- Lewis, Nancy M. -1990; Associate Professor; BS 1968 New Mexico State; MS 1973 Iowa State; PhD 1985 Nebraska (Lincoln)
- Miller, Phillip S. -1990; Associate Professor; BS 1984, MS 1988, PhD 1990 California (Davis)
- Miner, Jess L. -1996; Assistant Professor; BS 1984 Nebraska (Lincoln); MS 1986 Montana State; PhD 1989 Missouri
- Schnepf, Marilynn I. -1990; Professor; BS 1969 Briar Cliff; MS 1980, PhD 1984 Nebraska (Lincoln)
- Stanek Krogstrand, Kaye L. -1986; Associate Professor; BS 1971 Nebraska (Omaha); MS 1975, PhD 1986 Nebraska (Lincoln)
- Taylor, Stephen L. -1987; Professor; BS 1968, MS 1969 Oregon State; PhD 1973 California

- Vanderhoof, Jon A. -1976; Professor (UNMC); BS 1968 Nebraska (Lincoln); MD 1972 Nebraska (Medical Center)
- Wehling, Randy -1983; Professor; BA 1976, MS 1980, PhD 1983 Kansas State
- Zempleni, Janos -2001; Associate Professor; BS 1988, PhD 1992 Giessen (Germany)

Courses for Nutrition and Health Sciences (NUTR)

Nutrition and Health Sciences

*800. Contemporary Nutrition (3 cr)

Prereq: 3 hrs undergraduate nutrition and 6 hrs undergraduate natural science or permission

Not open to students emphasizing nutritional science area. Basis for dietary recommendations and guidelines, nutrient functions, and current issues.

803. Physiological Foundations of Health and Disease (3 cr)

Topical review of current concepts of health and disease including homeostasis, bioenergetics, epidemiology, and the major chronic and infectious diseases.

*805. Research Methods (3 cr) Lec 3.

Prereq: Graduate standing

Philosophy, goals, and methodologies related to research in nutritional science. Survey and application of basic research tools.

*806. Advanced Teaching Strategies (ALEC *805; TEAC *805) (3 cr) Lec.

Contemporary and innovative teaching strategies, emphasizing learner-centered instruction, suitable to teaching in college and postsecondary institutions, outreach programs public schools, and other settings. Students participate in active learning as they apply learning theory in practice, prepare and demonstrate teaching methods, and plan for instruction in discipline areas of their choice.

*812. Multimedia Applications for Education and Training (ALEC 812) (3 cr) Lec/lab.

Practical applications in developing and evaluating multimedia resources for students. New applications, creation and development of various instructional materials, and review of current practice against relevant theory. Projects use current software packages to develop materials for various audiences.

815. Principles and Practice of Stress Management in Education (3 cr)

Conceptual understanding of stress in educational settings and stress coping strategies to enhance the learning environment. Identification of physical, emotional, cognitive and behavioral indicators; awareness of perception, appraisal and interpretation of challenges, frustrations, conflicts and competition; and an introduction to social, lifestyle and environmental change strategies together with self-regulation and behavioral management techniques.

*820. Molecular Nutrition (2 cr)

Prereq: BIOC 831

Roles for nutrients in signal transduction, gene expression, intracellular trafficking and cell death.

*821. Molecular Nutrition Techniques (3 cr) Lec 2, lab 3.

Prereq: BIOC 831

NUTR 820 recommended. Basic techniques for molecular studies in nutritional sciences.

830. Nutritional Anthropology (ANTH 830) (3 cr) Lec 3.

Prereq: 12 hrs ANTH and permission

Anthropological approaches to the study of nutrition. Background to nutrition science; bio-cultural aspects of obesity, fertility, lactose intolerance, and infant feeding practices; biological differences in nutritional requirements, fertility, and mortality; interpretation of nutritional deficiencies in skeletal remains; reconstructing prehistoric diets from archaeological evidence; and evidence of relationships between dietary patterns and dental remains in fossil record.

841. Functional Properties of Food (FDST 841) (3 cr) Lec 2, lab 3.

Prereq: NUTR 340 and BIOC 321 or FDST 848 or permission

Relationship of structure and functionality of ingredients in food systems.

845. Experimental Foods (FDST 845) (3 cr) Lec 1, lab 6.

Prereq: NUTR 340, BIOC 321 or permission

Introduction to food research; application of research techniques to selected problems.

*846. Foundations of Health Behavior (EDPS *846) (3 cr)

The epidemiological, developmental and cognitive foundation of health-related behaviors and identifies opportunities for health promotion and education.

*847. Theoretical Models of Health Behavior Change (EDPS *847) (3 cr)

Application of widely used theoretical models of health behavior change. Specification of behaviors and development and evaluation of theory-based interventions to reduce health-related risks.

*855. Teaching Learners to Learn (EDAD *855; EDPS *855; SPED *855; TEAC *855) (3 cr)

Effective teachers facilitate student learning. Facilitating student learning depends on understanding learning principles and on designing instruction that is compatible with learning principles. Instructors can provide learning-compatible instruction that helps students learn more effectively and ultimately teaches them how to learn. Assists teachers to teach in learning-compatible ways and helps them embed within their curriculum a program for teaching learners to learn.

856. Clinical Exercise Physiology (3 cr)

Prereq: NUTR/BIOS 884 and NUTR 886

Cardiovascular, pulmonary, metabolic, pharmacologic, endocrinologic, renal, neurologic, inflammatory, and orthopedic aspects of clinical exercise physiology as they relate to exercise testing and programming.

857. Classroom and Outreach Experiences in Food and Nutrition (1-3 cr, max 3) (UNL)

(UNL, UNO) Supervised classroom or outreach experiences in educational or community settings.

858. Nutrition and Exercise (3 cr) (UNL) Lec 3.

Prereq: NUTR 151, physiology, 6 hrs natural science or permission

Synergistic effects of proper nutrition and exercise on health and physical performance. Normal nutrition provides the basis for exploring the influence of dietary components and exercise on chronic disease development.

*859. Nutrition: A Focus on Life Stages (3 cr) (UNL, UNO) Lec 3.

Prereq: 3 hours undergraduate nutrition and 6 hours undergraduate natural sciences

Nutritional needs throughout the life span including pregnancy, lactation, growth and aging. Approaches to nutrition education for different ages.

870. Cost Control for Foodservice (2 cr) (UNL, UNO) Lec 2.

Prereq: NUTR 370

Application principles of cost control for foodservice. Integration of cost control and foodservice/restaurant management principles which influence financial integrity. Utilization of computer as a tool to enhance decision making capabilities.

871. Vines, Wines and You (HORT 871) (3 cr II) Lec, lab.

Prereq: 6 hrs science or equivalent experience; 21 years or older

Proof of age required. Origin, botany, historical and cultural significance of the grapevine and related species. Principles and practices of vineyard establishment, management and processing of grape products, importance and/or scope of grape and wine industry; global and local significance. Culinary applications, health, environmental and safety-related issues, business and industry relations and experience.

873. Organization and Administration of Foodservice (3 cr) (UNL, UNO) Lec 3.

Prereq: NUTR 370

Application of organizational, administrative, and human relations concepts to foodservice. Utilization of computer applications in administration of a foodservice facility.

874. Food and Beverage Management (3 cr) Lec 3.

Prereq: NUTR 372 and 374

Principles of food and beverage management. Functioning and operation of foodservice units.

*875. Applied Dietetic Practice and Concepts (6 cr)

Prereq: Admission to Dietetic Internship

Scientific basis for clinical and community practice and current developments in foodservice systems in professional settings. Documenting professional development.

876. Internship in Hospitality (6 cr) Fld 40.

Prereq: Permission of the Hospitality Management Committee

Professional experience as entry level manager in the hospitality industry emphasis area.

877. Hospitality Facility Planning and Design (3 cr) Lec 3.

Prereq: NUTR/ASCI 343 or NUTR 370

Hospitality facility concept development and planning. Selection and specification of food, equipment, and furnishings resulting in effective resource utilization.

878. Tourism Resources and Development (3 cr) (UNL, UNO) Lec 2, lab 3.

Prereq: NUTR 280

Planning and development of local, state, regional, national and international tourist attractions and resources. Analysis of economic impacts and the role of attractions/resources in tourism development.

880. Introduction to Functional Electrocardiography (3 cr) Lec, lab.

Prereq: NUTR/BIOS 484 and NUTR 486

Theory and application of electrocardiography in graded exercise testing.

884. Physiology of Exercise (BIOS 884) (3 cr) Lec, disc 2, lab 3.

Prereq: 12 hrs BIOS including BIOS 213 or equivalent, and BIOS 214

Effects of physical activity on the circulatory, respiratory, and other physiological processes.

885. Advanced Lodging Operations (3 cr) Lec 3.

Prereq: NUTR 171 and 285

NUTR 485/885 requires field trips to local lodging facilities.

Senior management techniques required to operate a lodging facilitiy applying strategic and critical thinking with case study analysis to solve problems.

886. Exercise Testing and Exercise Programming in Adult Fitness and Cardiac Rehabilitation (4 cr)

Prereq: HHPG 884 and EDPS 859

Analysis and development of the techniques and knowledges prerequisite for certification in adult fitness and cardiac rehabilitation as prescribed by the American College of Sports Medicine.

*887. Theory and Assessment of Exercise and Health Behavior (3 cr)

Reviews the current research in the psychology of exercise and health behavior. Various theoretical models of exercise and health behavior as well as ways to implement effective behavioral change strategies. Students are introduced and gain competence in administering a variety of questionnaire, psychophysiological, and behavioral research techniques.

889. Advanced Event Operations (3 cr) Lec 3.

Prereq: NUTR 171 and 289

NUTR 489/889 requires field trips to local conference and meeting centers.

The management and operation of events. design, marketing, ad promotion efforts. Identifying sponsors. Marketing to attendees, exhibitors, and other participants.

*890. Workshop (1-3 cr)

Special topics related to foods, nutrition or food service management in depth. Food preservation, food and nutrition update, use of computer in planning food service operations.

*891. Special Topics in Human Sciences (CYAF *891; HUMS *891; SLPA *891; TEAC *891; TXCD *891) (1-3 cr, max 12)

Aspects of human sciences not covered elsewhere in the curriculum.

892. Nutrition Problems (1-6 cr, max 6) (UNL)

Prereq: NUTR *455 or equivalent and permission

Individual problems selected in diet therapy, animal feeding, metabolism studies, or surveys.

895. Restaurant and Foodservice Management Study Tour (1-6 cr, max 6) (UNL, UNO)

Prereq: NUTR 370

Number of credits determined by tour length, assignment and sites visited. A learning experience for broadening the students perspective and developing a more thorough understanding of the restaurant and foodservice industry. Visits to hospitality facilities, national food and equipment shows, food processors, equipment manufacturers and trade exchanges.

896. Independent Study (1-5 cr)

Prereq: 12 hrs in major department or closely related areas, and permission

Work supervised and evaluated by departmental faculty members. Individual projects in research, literature review, or creative production may or may not be an extension of course work.

898. Research Experiences (1-5 cr)

Prereq: Permission

Participation in an ongoing research project. Select from foods, human nutrition, nutrition education, small animal, or survey research area.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

905. Research and Evaluation Literature on Health Promotion (EDPS 905) (3 cr)

Philosophical and empirical review and critique of contemporary literature on school, community, work place and health care-based health promotion and education programs.

920. Teaching Practicum (CYAF 920; TXCD 920) (1-3 cr, max 3)

Prereq: CYAF 918 or permission of department chair

Supervised classroom experiences designed to develop competencies in teaching at the college level.

921. Interdepartmental Nutrition Seminar (ASCI 921) (1 cr per sem, max 4, I, II)

Prereq: Permission

Presentation and discussion of current literature and research in the field of nutrition.

925. Energy Metabolism (ASCI 925) (3 cr I) Lec 3.

Prereq: ASCI 821, BIOC 831, or NUTR 455 or 950; or permission

Offered odd-numbered calendar years. Critically evaluate how research in bioenergetics has contributed to scientific discoveries in the fields of nutrition, biochemistry, and physiology. Methodologies for determination of human and animal energy expenditure and body composition. Specifically, direct calorimetry, indirect calorimetry and comparative slaughter techniques. Emphasis on components of organ and tissue energy expenditures. Background information important in other nutrition courses.

926. Carbohydrate and Lipid Nutrition (ASCI 926) (3 cr II) Lec 3.

Prereq: BIOC 831, ASCI 821 or NUTR 455 or 950

Offered even-numbered calendar years. Nutrition and metabolism of carbohydrates and lipids by animals and humans. Emphasis on fundamental principles and current concepts.

927. Protein and Amino Acid Nutrition (ASCI 927) (3 cr II) Lec 3.

Prereq: ASCI 421/821 or NUTR 455 or 950; BIOC/BIOS/CHEM 431/831

Offered even-numbered calendar years. Nutrition and metabolism of proteins and amino acids by animals and humans. Fundamental principles and current concepts.

928. Mineral Nutrition (ASCI 928) (2 cr I) Lec 2.

Prereq: ASCI 821 or NUTR 455 or 950 and BIOC 831; or permission

Offered even-numbered calendar years. Nutrition and metabolism of mineral elements by animals and humans. Information and current concepts on the metabolism of minerals and requirements for growth, finishing, maintenance, lactation, and reproduction. Interrelationships among minerals and other nutrients discussed and observed in the laboratory.

928L. Mineral Nutrition Laboratory (ASCI 928L) (1 cr I) Lab.

Prereq: Parallel ASCI/NUTR 928

Laboratory experiments that complement material covered in ASCI 928.

929. Vitamin Nutrition (ASCI 929) (3 cr II) Lec 3.

Prereq: BIOC 831, ASCI 821 or NUTR 455 or 950

Offered odd-numbered calendar years. History, chemistry, assay procedures, food content, metabolism, biochemical functions, deficiencies, pharmacological doses, toxicities, and factors influencing vitamin status in animals, including humans.

930. Sociological/Anthropological Research Methods in Education (CYAF 930; EDPS 930; TEAC 930) (1-3 cr, max 15)

Empirical and theoretical research into the sociocultural problems and the lived experiences of people across educational, family and community settings.
A. Ethnographic Methods (1-3 cr, max 3)
B. Special Topics in Qualitative and/or Quantitative Research Methods (1-3 cr, max 3)
D. Discourse Analysis Across School, Home and Community Settings (1-3 cr, max 3)
E. Introduction to Linguistic Analysis of Classroom Interaction (1-3 cr, max 3)
J. Hermeneutic Traditions in Education (1-3 cr, max 3)
K. Quantitative Research Traditions in Education (1-3 cr, max 3)

930A. Ethnographic Methods (1-3 cr)

930B. Special Topics in Qualitative and/or Quantitative Research Methods (1-3 cr)

930D. Discourse Analysis Across School, Home and Community Settings (1-3 cr)

930E. Introduction to Linguistic Analysis of Classroom Interaction (1-3 cr)

930J. Hermeneutic Traditions in Education (1-3 cr)

930K. Quantitative Research Traditions in Education (1-3 cr)

941. Advanced Food Research Problems (2-5 cr)

Prereq: NUTR 841 or 845 or FDST 848; BIOC 831, or permission

Scientific investigation in selected topics in food research; in-depth study of selected food research methodology and critical evaluation of current literature.

949. Biochemistry of Nutrition (ASCI 949; BIOC 949; BIOS 949) (3 cr I) Lec 3.

Prereq: BIOC 832 or *839, or permission

Offered odd-numbered calendar years. Interrelationships of nutrients, nutritional state and metabolic processes. Energy metabolism, integration of nutrition and metabolism and nutritional regulation of gene function.

950. Integrated Principles of Human Nutrition (3 cr) Lec 3.

Prereq: 12 hours of biological sciences which includes biochemistry and physiology

Integration of concepts of nutrient metabolism with food intake recommendations.

952. Advanced Clinical Nutrition (3 cr) (UNL) Lec 3.

Prereq: 6 hrs medical nutrition therapy or clinical nutrition

Interrelationships between diet intervention and disease. Current theories.

954. Fundamentals of Nutrition Counseling (3 cr) Lec 3. (UNL) Lec 2.

Prereq: 12 hours NUTR and 6 hrs social science

Theories of behavior change and application to nutrition counseling. Practice in development of nutrition counseling skills. Current nutrition problems and applications to diverse clients.

956. Community Nutrition (3 cr)

Prereq: NUTR 356 or permission

Historical perspectives, research methodology, and assessment techniques.

960. Nutrient Function During Exercise (3 cr) (UNL) Lec 3.

Prereq: NUTR 950 or 350 or 858, HHPG 884, BIOC 831 or equivalents of these courses

Exercise and its influence upon human nutrition via biochemical and physiological functions. Interrelationships between exercise and energy, macro- and micro-nutrients will be examined.

973. Organizational Administration in Food Service and Restaurant Management (3 cr)

Prereq: NUTR 873 or permission

Investigation of foodservice/restaurant organizations and administration. Critical evaluation of current literature.

984. Advanced Exercise Physiology (3 cr)

Prereq: HHPG 884 or equivalent

Theory and laboratory experiences focusing on physiological influences and outcomes relating to exercise performance. Areas for in-depth and critical consideration include cardiovascular and respiratory responses, growth and development effects, environmental, nutritional, and pharmacological influences, evaluative techniques, and special interest topics.

986. Graduate Seminar (1-2 cr per sem, max 4)

Prereq: Permission

991. Field Studies in Education (EDAD 991; TEAC 991) (1-3 cr, max 6)

Prereq: Permission

Identification and solutions of problems associated with program planning; organizational, administrative, and instructional procedures within an institutional setting. Designing, implementing, and evaluating new or modified patterns of operation and teaching within a public school, postsecondary institution, or adult education agency.

992. Advanced Human Nutrition Problems (1-4 cr per sem, max 4)

Prereq: NUTR 455 or 950 or permission

In-depth evaluation of current human nutrition issues.

993. Current Topics in Nutrition (ASCI 993) (1 cr per sem, max 4)

Prereq: NUTR 455 or 950 or ASCI 821

Reading and evaluation of current nutrition research.

995. Doctoral Colloquium (1-6 cr, max 18) Ind.

Prereq: Permission

Intended primarily for doctoral students, although non-doctoral students are admitted with permission. Work with a faculty mentor, either on an individualized or on a small group basis. Outcome-based scholarly activities. The interaction between research and practice.

996. Research Other Than Thesis (1-8 cr)

Prereq: Permission

998. Special Topics in Human Sciences (CYAF 998; TXCD 998) (1-3 cr, max 6)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Marilynn Schnepf, Ph.D.

Graduate Committee: Professors Carr (chair), Schmidt; Associate Professor Zempleni; Assistant Professor of Practice Perry

The Department of Nutrition and Health Sciences offers graduate programs leading to a master of science degree. Students may develop their research programs related to human health and nutrition in the areas of biochemical and molecular nutrition, clinical and community nutrition, nutrition and exercise, food quality and safety, and food service and lodging. Applicants must meet the general admission requirements of the Graduate College. In addition, applicants must submit Graduate Record Examination scores (verbal, quantitative, and analytical) and a letter of intent regarding educational and career goals. Applicants whose native language is not English must submit a Test of English as a Foreign Language (TOEFL) demonstrating a score of at least 550 on the paper-based scoring system or a total score of at least 213 on the computer-based scoring system. Desirable undergraduate background should include a bachelor of science or bachelor of arts degree in areas related to nutrition, food service administration, and/or dietetics and include appropriate courses in chemistry, biochemistry, microbiology, physiology, statistics, and management.

More information is available at the following Web site: cehsdept.unl.edu/nhs/.

Doctor of Philosophy Degree.

Studies leading to a PhD are conducted under the or Human Sciences with a specialization in Nutrition and Health Sciences.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Albrecht, Julie A. -1990; Professor; BS 1972 North Dakota; MS 1985, PhD 1990 Minnesota
- Boeckner, Linda S. -1986; Professor; BS 1975 Nebraska (Lincoln); MS 1977 Case Western Reserve; PhD 1982 Nebraska (Lincoln)
- Carr, Timothy -1996; Professor; BS 1980 California Polytechnic State; MS 1985, PhD 1989 Arizona
- Driskell, Judy A. -1989; Professor; BS 1965 Southern Mississippi; MS 1967, PhD 1970 Purdue
- Hamouz, Fayrene -1991; Associate Professor; BS 1968, MS 1982, PhD 1990 Nebraska (Lincoln)
- Housh, Terry J. -1986; Professor; BA 1977 Doane; MPE 1979, PhD 1984 Nebraska (Lincoln)
- Jones, Georgia -2001; Associate Professor; BS 1982 Tennessee (Knoxville); MS 1985 Nebraska (Lincoln); PhD 1996 Alabama A&M
- Koszewski, Wanda -1996; Extension Associate Professor; BS 1981 Utah State; MS 1984 Nebraska (Lincoln); PhD 1988 Kansas State
- Lee, Ji-Young -2005; Assistant Professor; BS 1991 Kyung Hee (South Korea); MS 1998, PhD 2002 Nebraska (Lincoln)
- Lewis, Nancy M. -1990; Professor; BS 1968 New Mexico State; MS 1973 Iowa State; PhD 1985 Nebraska (Lincoln)
- Perry, Christina M. -2004; Assistant Professor of Practice; BS 1979 Illinois State; MS 1980 Southern Illinois (Carbondale); PhD 1987 New Mexico
- Rudy, Jeffrey P. -1998; Assistant Professor of Practice; BS 1987, MS 1990 Pittsburgh; PhD 1997 Kansas State
- Scheer, John -1970; Associate Professor; BS 1968, MEd 1969, PhD 1974 Nebraska (Lincoln)
- Schmidt, Richard J. -1971; Associate Professor; BS 1969, MEd 1971, PhD 1988 Nebraska (Lincoln)
- Schnepf, Marilynn -1990; Professor and Chair; BS 1967 Briar Cliff; MA 1969, MS 1980, PhD 1984 Nebraska (Lincoln)
- Stanek Krogstrand, Kaye L. -1986; Associate Professor; BS 1971 Nebraska (Omaha); MS 1975, PhD 1986 Nebraska (Lincoln)
- Zempleni, Janos -2001; Associate Professor; BS 1988, PhD 1992 Giessen (Germany)

Courses for Philosophy (PHIL)

Philosophy

*801. Philosophical Analysis (3 cr)

Prereq: Permission from philosophy graduate adviser

Seminar for beginning graduate students whose primary goal is the development of basic philosophical skills such as the analysis of primary texts, the writing of philosophical papers, and sustained oral discussion. Readings include a significant number of important works drawn from diverse areas of philosophical inquiry. Class meetings devoted primarily to student presentations of reading materials and their own written work. Effective oral discussion on the part of the student required.

*805. Philosophy of Language (3 cr)

Critical examination of some concepts and problems involved in the philosophical study of language, e.g., truth, meaning, reference, grammaticality, speech acts, language acquisition, the relation of language to other symbol systems, and the use of language in literature.

809. Theory of Knowledge (3 cr)

Intensive study of some basic problems in the theory of knowledge: the nature of knowledge, the analysis of perception and memory, the justification of induction, the problem of how one knows other minds, and the analysis of a priori knowledge. Readings are chiefly from recent work.

811. Formal Logic (3 cr) Lec 3.

Prereq: PHIL 211 or equivalent

PHIL 811 is a second course in symbolic logic. The main metalogical results of the twentieth century. Completeness, compactness and undecidability of first-order logic; the Lowenheim-Skolem Theorem; axiomatic set theory; the Godel incompleteness theorems; and non-classical logics.

812. Modal Logic (3 cr)

Prereq: PHIL 211 or equivalent or permission

Syntax and model theory of quantified modal logic with applications to e.g., deontic logic, epistemic logic, and the philosophy of logic.

814. Philosophy of Mind (3 cr)

Main problems in the philosophy of mind, including dualism and materialism, instrumentalism and eliminativism, wide and narrow content, qualia, and mental causation.

*817. Philosophy of Science (3 cr)

Intensive study of some main problems in the philosophy of science: explanation and prediction in the sciences, the nature of scientific laws, functional explanations in the biological and social sciences, the structure of scientific theories, the ontological status of theoretical entities, the reduction of scientific theories, the confirmation of scientific hypotheses, and value judgments in the acceptance of scientific hypotheses.

818. Metaphysics (3 cr)

Intensive study of some main problems in metaphysics, especially universals and particulars, the relation of mind and matter, the categories of the real, criteria of identity, and existential propositions. Readings mainly from recent philosophers.

820. Philosophy of Social Science (3 cr) Lec 3.

Philosophical exploration of the epistemological character of the social sciences. The character and explanatory role of social scientific generalizations, various explanatory strategies for social matters, the continuity of discontinuity of the social sciences with the special sciences, the importance of interpretation, and the place of rationality.

823. Advanced Ethics (3 cr)

Critical study of some leading theories in ethics, with attention to major works, chiefly modern and contemporary. Includes naturalism, intuitionism, emotivism, utilitarianism, Neo-Kantian ethics, and various current positions.

825. Political and Social Philosophy (3 cr)

Critical study of some main problems and leading theories in social and political philosophy. Includes the origin and justification of political obligation, with emphasis on social contact theories; the nature and foundation of individual rights and the strength of these rights when they conflict with each other and with concern for the common good; the principles of social justice and the obligation to protect the welfare of others; and the concepts of personal autonomy, liberty, equality, and freedom. Readings from a combination of historical and recent work, and emphasis on relating the various issues to current problems in society.

850. Ancient Philosophy (3 cr)

Advanced survey of ancient philosophy from pre-Socrates through Aristotle, concentrating on central epistemological and metaphysical issues.

860. History of Modern Philosophy (3 cr)

Advanced survey of early European philosophy from the late renaissance through the Enlightenment, concentrating on central epistemological and metaphysical issues.

871. Kant (3 cr)

Prereq: PHIL 232 or permission

's philosophy, and of problems in the interpretation of his writings. The primary text will be the First Critique.

889. Philosophical Themes (1-24 cr)

Library work and conferences.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

903. Philosophy of Mathematics (1-24 cr)

905. Philosophy of Language (1-24 cr)

911. Topics in Logic (1-24 cr)

913. Advanced Epistemology (1-4 cr)

914. Philosophy of Mind (3 cr)

915. Advanced Metaphysics (1-4 cr)

917. Philosophy of Science (1-24 cr)

920. Ethical Theory (1-24 cr)

921. Aesthetics (1-4 cr)

Prereq: Graduate standing in the humanities

923. Philosophy of Psychology (1-24 cr)

925. Social and Political Philosophy (1-4 cr)

Intensive discussion of one or more of the main problems of social and political philosophy. Variable content. Possible topics are: political obligation, the concept of political authority, natural rights, the public interest, the aims of the state, and distributive justice.

950. Plato (1-24 cr)

951. Aristotle (1-24 cr)

952. Greek Philosophy (1-24 cr)

955. Empiricism (1-24 cr)

957. Quine (1-24 cr)

960. Rationalism (1-24 cr)

971. Kant (1-24 cr)

991. Special Studies in Philosophy I (1-24 cr)

992. Special Studies in Philosophy II (1-24 cr)

998. Dissertation Seminar (1-24 cr)

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Joseph Mendola, Ph.D.

Graduate Committee: Professors van Roojen (chair), Gibbons, McKitrick, Potter

The Department of Philosophy offers graduate courses leading to the degrees of master of arts and doctor of philosophy. Facility in particular foreign languages and/or special research tools may be required by the supervisory committee when they are particularly relevant to a student's area of specialization. Students may become candidates for the masters or doctoral degree only after passing general qualifying exams. Candidates for advanced degrees are required to teach as part of their program.

Students should consult the Department of Philosophy Graduate Student Handbook for a complete statement of academic policies and student responsibilities in the Philosophy Department Graduate Program.

The seminar unit is normally represented by 3 credit hours per semester. However, in exceptional cases a student may be given permission to register for more or less than 3 hours.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Becker, Edward -1968; Associate Professor; AB 1962 Stanford; PhD 1970 Johns Hopkins
- Casullo, Albert -1979; Professor; BA 1971 Syracuse; MA 1974, PhD 1975 Iowa
- Dowell, Janice -2007; Assistant Professor, BA 1989 Johns Hopkins; MA 1992 Michigan; PhD 2002 Pittsburgh
- Gibbons, John -2001; Assistant Professor; BA 1987 Evergreen State; MA 1990, PhD 1993 Brown
- Hayaki, Reina -2005; Assistant Professor; BA 1992 Oxford; PhD 2002 Princeton
- Henderson, David -2007; Professor, BA 1979, Wichita State; MA 1985, PhD 1985 Washington
- Ide, Harry A. -1987; Associate Professor; BA 1983 Temple; MA 1986, PhD 1988 Cornell
- McKitrick, Jennifer -2004; Associate Professor; BA 1994 Brown; PhD 1999 MIT
- Mendola, Joseph R. -1986; Professor and Chair; AB 1979 Haverford; MA 1981, PhD 1983 Michigan
- Potter, Nelson -1965; Professor; BA 1961 Monmouth; PhD 1969 Johns Hopkins
- Sayward, Charles -1963; Professor; BA 1959 Bates; PhD 1964 Cornell
- Schopp, Robert -1989; Professor; PhD 1977 North Carolina State; PhD 1989, JD 1988 Arizona
- Sobel, David -2007; Professor; BA 1987 Swarthmore; PhD 1997 Michigan
- van Roojen, Mark -1991; Associate Professor; BA 1981 Reed; MA 1988, PhD 1993 Princeton

Courses for Physics (PHYS)

Courses for Astronomy (ASTR)

Physics and Astronomy

Subject Areas

- Astronomy (ASTR)
- Physics (PHYS)

803. Galactic and Extragalactic Astronomy (3 cr)

Prereq: ASTR 204, PHYS 213, and permission

Introduction to the techniques for determining the constituents and dynamics of our galaxy, including interstellar matter and theories of spiral arm formation. Extragalactic topics include basic characteristics of galaxies, active galaxies, quasars, evolution, and the cosmological distance scale.

804. Stellar Astrophysics (3 cr)

Prereq: ASTR 204 and PHYS 213 and permission

Stellar atmospheres, interiors, and evolution. Theoretical and observational aspects of stellar astronomy. Included: relation between observed parameters and theoretical parameters, star formation, stellar energy generation, and degenerate stars.

805. Physics of the Solar System (3 cr) Lec 3.

Prereq: ASTR 204; PHYS 212 or 142; and MATH 107

Celestial mechanics, tidal effects, planetary interiors, atmospheres and surfaces, comets, asteroids, and the origin of the solar system. Application of physics to the solution of solar system problems.

806. Astronomical Instrumentation and Techniques (3 cr)

Prereq: ASTR 204

Techniques and instrumentation of observational astronomy. Includes telescopes, spectrographs, photometers, and detectors.

807. Physics of the Interstellar Medium (3 cr) Lec 3.

Prereq: ASTR 204 and PHYS 213

Gaseous nebulae, interstellar dust, interstellar clouds and star forming regions. Theoretical and observational aspects of the various components of the interstellar medium. Includes the physics of emission nebulae, the properties of the interstellar dust, interstellar molecules and the properties of clouds in which star formation occurs.

898. Special Topics (3 cr, max 9) Lec 3.

Prereq: ASTR 204 and permission

997. Special Topics in Astronomy (1-3 cr)

Prereq: Permission

Offered as the need arises to treat special topics in astronomy not covered in other 900-level courses.

801. Computational Physics (3 cr) Lec 1, lab 3.

Prereq: PHYS 311 or parallel

PHYS 801 designed to accompany PHYS 311. Reformulation of physics problems for solution on a computer, control of errors in numerical work and programming.

822. Introduction to Physics and Chemistry of Solids (ELEC 822) (3 cr) Lec 3.

Prereq: PHYS 213 or CHEM 881; MATH 820 or 821; or permission

Introduction to structural, thermal, electrical, and magnetic properties of solids, based on concepts of atomic structure, chemical bonding in molecules, and electron states in solids. Principles underlying molecular design of materials and solid-state devices.

831. Thermal Physics (3 cr)

Prereq: PHYS 213

Thermal phenomena from the point of view of thermodynamics, kinetic theory, and statistical mechanics.

841. Experimental Physics I (3 cr) Lec 1, lab 3.

Prereq: PHYS 213, 223, and 231; or permission

Lab fee required. Methods and techniques of modern experimental physics.

842. Experimental Physics II (3 cr) Lec 1, lab 3.

Prereq: PHYS 841 or permission

Lab fee required. Continuation of PHYS 841.

843. Experimental Physics III (1-3 cr)

Prereq: PHYS 842 or permission

Lab fee required. Continuation of PHYS 842.

851. Electromagnetic Theory (3 cr)

Prereq: PHYS 213

Theory of electric and magnetic fields and their interaction with charges and currents, Maxwell's equations, electric and magnetic properties of matter.

852. Optics and Electromagnetic Waves (3 cr)

Prereq: PHYS 851

Production of electromagnetic waves, wave guides and cavities, properties of waves, plane waves, reflection and refraction, interference and coherence phenomena, polarization. Optical properties of matter.

861. Quantum Mechanics I (3 cr) Lec 3.

Prereq: PHYS 213 and 311; or permission

Basic concepts and formalism of quantum mechanics with applications to simple systems.

862. Atoms, Nuclei, and Elementary Particles (3 cr) Lec 3.

Prereq: PHYS/ASTR 861 or permission

Basic concepts and experimental foundation for an understanding of the physics of atoms, nuclei, and elementary particles.

870. Special Topics in Physics (1-3 cr, max 9)

Prereq: Permission

Offered as the need arises to treat special topics not covered in other 800-level courses.

880. Introduction to Lasers and Laser Applications (ELEC 880) (3 cr I)

Prereq: PHYS 213

Physics of electronic transitions producing stimulated emission of radiation. Threshold conditions for laser oscillation. Types of lasers and their applications in engineering.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

911. Classical Mechanics (3 cr)

Lagrangian and Hamiltonian formulations of the laws of motion; variational principles; dynamics of rigid bodies; other advanced topics.

912. Statistical Physics (3 cr)

Prereq: or parallel: PHYS 911 and 916, or permission

The laws of thermodynamics and thermodynamic functions; ensembles; Boltzmann, Fermi-Dirac, and Bose-Einstein statistics; kinetic theory and transport phenomena. Application to macroscopic systems.

913. Electromagnetic Theory I (3 cr)

Electrostatics, magnetostatics, and Maxwell's equations; solutions to boundary value problems and Green's functions; electromagnetic radiation.

914. Electromagnetic Theory II (3 cr)

Prereq: PHYS 913 or permission

Special relativity and covariant formulation of electrodynamics; kinematics and dynamics of charged particles; radiation from moving charges; multipole radiation fields.

916. Quantum Mechanics I (3 cr)

Prereq: Permission

Introduction to the formalism of quantum mechanics; applications to elementary systems; angular momentum; scattering theory.

917. Quantum Mechanics II (3 cr)

Prereq: PHYS 916 or permission

Hilbert-space formulation of quantum mechanics; stationary and time-dependent perturbation theory; variational methods; spin; many-particle systems and identical particles.

918. Quantum Mechanics III (3 cr)

Prereq: PHYS 913 and 917, or permission

Introduction to relativistic electron theory; formal scattering theory; semi-classical radiation theory; second quantization and application to many-particle systems, elements of quantum electrodynamics.

925. Introduction to Atomic and Molecular Physics (3 cr)

Prereq: PHYS 916 or permission

Selected topics in atomic and molecular physics with emphasis on experimentally observed phenomena, including atomic and molecular spectra and scattering phenomena, and molecular structure.

926. Introduction to Nuclear and Elementary-Particle Physics (3 cr)

Prereq: PHYS 917 or permission

Selected topics in nuclear and elementary particle physics with emphasis on experimentally observed phenomena, including nuclear forces, energy levels, nuclear models, decay of unstable nuclei, fundamental interactions and classification schemes.

927. Introduction to Solid-State Physics (3 cr)

Prereq: PHYS 912 and 916, or permission

Selected topics in solid-state physics with emphasis on experimentally observed phenomena, including the structure and thermal, electric, magnetic, and elastic properties of metals, semiconductors, and insulators.

951. Advanced Topics in Solid-State Physics (3 cr per sem, max 9)

Prereq: Advanced graduate standing and permission

955. Advanced Topics in Atomic Physics (3 cr per sem, max 9)

Prereq: Permission

996. Research Other Than Thesis (1-6 cr per sem, max 18)

Supervised nonthesis research and independent study.

998. Special Topics in Physics (1-3 cr per sem, max 9)

Prereq: Permission

Offered as the need arises to treat special topics not covered in other 900-level courses.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Roger D. Kirby, Ph.D.

Vice Chair: Stephen Ducharme, Ph.D.

Graduate Committee: Professors Gay (chair), Fabrikant, Liou; Associate Professor Tsymbal; Assistant Professor Bloom

The Department of Physics and Astronomy offers the master of science and doctor of philosophy degrees.

MS Degree Program

In addition to the masters degree requirements outlined earlier in this Bulletin, a candidate for the MS degree must satisfactorily complete the following courses:

- PHYS 911. Classical Mechanics
- PHYS 913. Electromagnetic Theory I
- PHYS 916. Quantum Mechanics I
- PHYS 998. Special Topics in Current Research
- MATH 842. Methods of Applied Mathematics I

plus one of the following courses:

- PHYS 912. Statistical Physics
- PHYS 914. Electromagnetic Theory II

The Graduate Committee will determine the form of the Comprehensive Examination, which is required of all MS degree candidates. The Committee has the option of giving an oral examination, a written examination, or both. Ordinarily the first session of the Advanced Qualifying Exam (see below) will be used as the Comprehensive Exam. For a student selecting Option I (thesis) the Graduate Committee may give an oral Comprehensive Examination on the thesis research and on the graduate courses taken as part of the degree requirements.

PhD Degree Program

The required courses for every student seeking a PhD degree are:

- PHYS 911. Classical Mechanics
- PHYS 912. Statistical Physics
- PHYS 913. Electromagnetic Theory I
- PHYS 914. Electromagnetic Theory II
- PHYS 916. Quantum Mechanics I
- PHYS 917. Quantum Mechanics II
- PHYS 918. Quantum Mechanics III
- PHYS 925. Intro to Atomic & Molecular Physics
- PHYS 926. Intro to Elementary Particle & Nuclear Physics
- PHYS 927. Intro to Solid State Physics
- PHYS 998. Special Topics in Current Research
- MATH 842. Methods of Applied Mathematics I

plus at least one additional mathematics course, chosen in consultation with an adviser, from the following list:

- MATH 814. Applied Linear Algebra (Matrix Theory)
- MATH 822. Advanced Calculus
- MATH 823. Intro to Complex Variable Theory
- MATH 824. Intro to Partial Differential Equations
- MATH 827. Mathematical Physics
- MATH 843. Methods of Applied Mathematics II
- STAT 880. Intro to Mathematical Statistics
- MATH 935/936. Advanced Methods of Applied Mathematics

Students with little, or no, laboratory experience as undergraduates are urged to take PHYS 231. Normally 911, 913, 914, 916, and 917 will be offered once each year, and Statistical Physics, Quantum Mechanics III, and the introductory courses will be offered at least once every two years.

Soon after a student has taken the Advanced Qualifying Exam (see below), the entire departmental faculty will meet to decide whether the student is qualified to begin dissertation research. This decision is to be based on all information available, including the student's performance on the Advanced Qualifying Exam, in courses, in research projects, etc. If the faculty decides that the student is qualified to begin dissertation research, the Graduate Committee will recommend to the Dean of Graduate Studies that

a supervisory committee be formed for the student.

A written comprehensive examination is required. This examination is administered by the student's Supervisory Committee and will normally have the form of a written report based on approximately one week of intensive research on a subject approved by the Supervisory Committee.

Advanced Qualifying Examination

The purpose of the Advanced Qualifying Examination is to test the student's understanding of physics at the graduate level. The exam comprises both written and oral parts. The written part is given in three sessions lasting a minimum of three hours each. The oral part is given in one session of about one hour.

The first session of the Advanced Qualifying covers mechanics, thermodynamics, electricity and magnetism, optics, elementary quantum mechanics, and experimental physics. Students who take only the first session of the Exam and who later wish to enter the PhD program must take the entire Advanced Qualifying Exam at one time, including the first session.

The Advanced Qualifying Exam will normally be given at the beginning of each spring semester. At the beginning of the prior fall semester the Graduate Committee will review the academic progress of all students who have not yet formed a supervisory committee and, after consulting with the students, will specify which students must take the exam. Usually, a student will take the Advanced Qualifying Exam after his or her third semester as a graduate student. Students may not withdraw from the examination without the permission of the Graduate Committee.

NOTE: All beginning graduate students must take PHYS 998 Special Topics in Current Research. This is a 1-credit course introducing students to the research activities in the department.

Although the Physics and Astronomy Department has no general foreign language requirement, individual supervisory committees may include a language (or research tool requirement) in the student's program if they feel it is appropriate.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Adenwalla, Shireen -2003; Associate Professor; BS 1982 Bombay (India); PhD 1989 Northwestern
- Batelaan, Herman -1999; Associate Professor; Drs 1987 Leiden (Netherlands); PhD 1991 Utrecht (Netherlands)
- Belaschenko, Kirill D. -2005; Assistant Professor; PhD 1999 Kurchatov (Russia)
- Binek, Christian -2003; Assistant Professor; PhD 1995 Gerhard-Mercator (Germany)
- Bloom, Kenneth -2004; Assistant Professor; AB 1992 Chicago; PhD 1997 Cornell
- Burns, Donal J. -1968; Professor and Associate Executive Vice President; BS 1962, PhD 1965 Queens (Belfast)
- Burrow, Paul D. -1976; Professor Emeritus; SB 1960 Massachusetts Institute of Technology; PhD 1966 California (Berkeley)
- Campbell, William B. -1965; Professor Emeritus; BA 1959 Rice; PhD 1965 Colorado
- Claes, Daniel R. -1996; Associate Professor and Chair; BA 1976 Northern Iowa; PhD 1991 Northwestern
- Dominguez, Aaron -2004; Assistant Professor; BA 1992 Whitman; BS 1992, MS 1994, PhD 1998 California (San Diego)
- Dowben, Peter A. -1993; Charles Bessey Professor of Physics; BA 1977 Haverford; PhD 1981 Cambridge (United Kingdom)
- Ducharme, Stephen -1991; Professor and Vice Chair; BS 1981 Lowell; MA 1982, PhD 1986 Southern California
- Eckhardt, Craig J. -1967; Professor; BA 1962 Colorado; MS 1965, PhD 1967 Yale
- Enders, Axel -2007; Assistant Professor; Diploma 1995 Martin Luther; PhD 1999 Max Planck Institute (Germany)
- Fabrikant, Ilya -1989; Professor; MS 1971 Latvian State; PhD 1974 Riga Institute of Physics
- Finkler, Paul -1965; Associate Professor Emeritus; AB 1958 Brooklyn; PhD 1963 Purdue
- Fuller, Robert G. -1969; Professor Emeritus; BS 1957 Missouri (Rolla); MS 1958, PhD 1965 Illinois
- Gay, Timothy J. -1993; Professor; BS 1975 California Institute of Technology; SM 1976, PhD 1980 Chicago
- Hardy, John R. -1967; George Holmes University Professor Emeritus; BS 1956, PhD 1959 Bristol
- Hardy, Robert J. -1967; Professor Emeritus; BA 1956 Reed; MS 1958, PhD 1962 Lehigh
- Jaecks, Duane H. -1966; Professor Emeritus; BA 1958 Wisconsin; MA 1960 Miami; PhD 1964 Washington
- Jaswal, Sitaram S. -1966; Professor Emeritus; BS 1958, MS 1959 Punjab (India); PhD 1964 Michigan State
- Jones, C. Edward -1973; Professor Emeritus; BS 1958 Massachusetts Institute of Technology; PhD 1964 California (Berkeley)
- Kirby, Roger D. -1971; Professor; BS 1964 Michigan State; PhD 1969 Cornell
- Leslie-Pelecky, Diandra L. -1996; Associate Professor; BA 1986, BS, 1986 North Texas; PhD 1991 Michigan State
- Leung, Kam-Ching -1970; Professor; BS 1961 Queens (Canada); MA 1963 Western Ontario; PhD 1967 Pennsylvania
- Liou, Sy-Hwang -1988; Professor; BS 1974 Soochow (Taiwan); MS 1979 Florida Institute of Technology (Melbourne); MA 1981, PhD 1985 Johns Hopkins
- Kravchenko, Ilya -2008; Assistant Professor
- Morgan, Thomas A. -1964; Associate Professor Emeritus; BS 1958 Massachusetts Institute of Technology; PhD 1964 Syracuse
- Pearlstein, Edgar A. -1956; Professor Emeritus; BS 1947, DSc 1950 Carnegie Institute of Technology
- Schmidt, Edward G. -1974; Professor and Associate Dean; BS 1965 Chicago; PhD 1970 Australian National
- Sellmyer, David J. -1972; George Holmes Distinguished University Professor; Director, Center for Materials Research and Analysis; BS 1960 Illinois; PhD 1965 Michigan State
- Simon, Norman R. -1970; Professor Emeritus; BA 1959 Syracuse; MA 1964 City (New York); PhD 1968 Yeshiva
- Snow, Gregory R. -1993; Associate Professor; AB 1976 Princeton; PhD 1984 Rockefeller
- Starace, Anthony F. -1973; George Holmes Distinguished University Professor; AB 1966 Columbia; MS 1967, PhD 1971 Chicago
- Tsymbal, Evgeny -2002; Professor; MSc 1981 Moscow State (Russia); PhD 1988 Russian Academy of Sciences

- Uiterwaal. Cornelis J. -2001; Assistant Professor; MS 1989, PhD 1994 Utrecht (Netherlands)
- Umstadter, Donald P. -2005; Leland J. and Dorothy H. Olson Professor of Physics; BS 1981, MS 1983, PhD 1987 California (Los Angeles)
- Wang, C.H. -1989; Mabel D. Clark Professor Emeritus; BS 1961 National Taiwan; MS 1964 Utah State; PhD 1967 MIT
- Weymouth, John W. -1958; Professor Emeritus; AB 1943, MA 1950, PhD 1951 California (Berkeley)
- Woollam, John A. -1979; George Holmes Distinguished University Professor; BS 1961 Kenyon; MS 1963, PhD 1967 Michigan State; MS 1978 Case Western
- Zeng, Xiao C. -1993; Charles Bessey Professor of Chemistry; BS 1984 Peking (China); PhD 1989 Ohio State

Courses for Plant Pathology (PLPT)

Plant Pathology

*813. Biological Control of Pests (ENTO *813) (3 cr II) Lec 3.

Prereq: 12 hrs BIOS and/or agricultural sciences

*ENTO/PLPT *813 is offered spring semester of even-numbered calendar years.*

Principles and practices of using natural enemies and antagonists to manage the abundance of pests and reduce economic losses.

*867. Plant Associated Microbes (4 cr II) Lec 3, lab 3.

Prereq: A course in general microbiology, bacteriology, or mycology. A course in general plant pathology is highly recommended.

*PLPT *867 is offered in odd-numbered calendar years.*

Biology, ecology, and taxonomy of bacteria and fungi pathogenic or beneficial to plants. Microorganism isolation from plants and soil. Identification and plant inoculation.

Description

For a brief description of the program options, application requirements and contact information, view the Biological Sciences and/or Agronomy and Horticulture graduate program summaries.

Head: Professor James R. Steadman, Ph.D.

Through the School of Biological Sciences and the Department of Agronomy and Horticulture, the Plant Pathology Department offers graduate programs leading to the master of science and doctor of philosophy degrees with a major in biological sciences or agronomy and a specialization in plant pathology. Located on East Campus, at the Beadle Center, and the Panhandle Research and Extension Center, plant pathology offers the advantages of an excellent, energetic faculty with diverse research interests in an interactive department environment.

State-of-the-art facilities support research programs in such areas as molecular plant pathology, fungal molecular genetics, phytobacteriology, nematology, virology, epidemiology, biocontrol, disease resistance, and plant diseases, especially of food and fiber crops, as well as range and urban grasses. Opportunities also exist for interdisciplinary programs in biotechnology, plant breeding, microclimatology, plant stress, pest management, and international agriculture.

Please refer to "Biological Sciences" and "Agronomy and Horticulture" for degree requirements. Thesis and dissertation research normally is performed under the supervision of plant pathology graduate faculty. NOTE: The following courses in plant pathology are derived from the School of Biological Sciences listings. To register for a plant pathology course refer to the School of Biological Sciences section of the Schedule of Classes.

NOTE: The following courses in plant pathology are derived from the School of Biological Sciences listings. To register for a plant pathology course refer to the School of Biological Sciences section of the Schedule of Classes.

Faculty

For faculty research interests and contact information, view the Biological Sciences and/or Agronomy and Horticulture graduate program summaries.

- Alfano, James -2000; Professor; BS 1986 San Diego State; PhD 1993 Washington State
- Drijber, Rhae -1994; Professor; BSc 1982, MSc 1986 University of British Columbia; PhD 1993 University of Alberta
- French, Roy -1987; Adjunct Associate Professor, (USDA); BS 1977 Colorado State; PhD 1983 Louisiana State
- Funnell, Deanna -2002; Adjunct Assistant Professor (USDA); BS 1978 California; PhD 1996 Arizona
- Giesler, Loren -1999; Associate Professor; BS 1992 Chadron State; MS 1994, PhD 1998 Nebraska (Lincoln)
- Harris, Steven -2001; Associate Professor; BSc 1983, MSc 1986 Windsor (Canada); PhD 1992 Michigan
- Harveson, Robert -1999; Associate Professor; BS 1985 Tarleton; MS 1989 Texas A&M; PhD 1999 Florida
- Jackson, Tamra A. -2005; Assistant Professor; BS 1996 Central Arkansas; MS 1999 Arkansas; PhD 2005 Illinois
- Mitra, Amitava -1989; Associate Professor; BSC 1977 Kalyani; MSC 1980 Indian Agricultural Research; PhD 1985 Montana
- Morris, T. Jack -1990; Professor, School of Biological Sciences; BS 1968, MS 1970 McGill; PhD 1973 Nebraska (Lincoln)
- Nickerson, Kenneth -1975; Professor; BS 1963 Rutgers; PhD 1969 University of Cincinnati
- Partridge, James -1978; Professor; BS 1966, PhD 1973 California (Riverside)
- Powers, Thomas O. -1985; Professor; BS 1976 Purdue; MS 1979 Florida; PhD 1983 California (Riverside)
- Steadman, James R. -1969; Professor and Head; BA 1964 Hiram; MS 1968, PhD 1969 Wisconsin (Madison)

- Tatineni, Satyanarayana -2008; Adjunct Associate Professor (USDA); BS 1983, MS 1985, PhD 1992 Sri University, India
- Van Etten, James L. -1966; Professor; BA 1960 Carleton; MS 1963, PhD 1965 Illinois
- Vidaver, Anne M.K. -1966; Professor; BA 1960 Russell Sage; MA 1962, PhD 1965 Indiana
- Wegulo, Stephen N. -2005; Assistant Professor; BS 1991 Davidson; MS 1994, PhD 1997 Iowa State
- Yuen, Gary Y. -1988; Professor; BS 1977, MS 1980, PhD 1984 California (Berkeley)

Courses for Political Science (POLS)

Political Science

*800. Research Methods (SRAM *800) (3 cr)

Basic techniques used in quantitative political science research. The general linear model. Basic probability theory, ordinary least squares regression, and how to solve problems often encountered when conducting quantitative analyses in political science.

*801. Scope and Methods of Political Science (3 cr)

The character of political science as a form of inquiry-what it seeks to know it and how it seeks to know it. The discipline of political science as a science; the meaning of concepts, generalizations, laws, theories and explanations; and concept formation and theory building as embodied in major studies of politics. Alternative understandings of the character and possibility of a science of politics.

*802. Professional Development in Political Science (3 cr)

Prereq: Permission

Professional development topics, teaching methods, grant writing and article writing.

810. The Administrative Process (3 cr)

Internal dynamics of public and private organizations.

814. Intergovernmental Relations (3 cr)

See description under Public Policy courses. Analysis of the nature and problems of the American federal system, with particular emphasis on the politics and administration of federal grants; problems in national-state and national-local governmental coordination in administration.

817. Policy and Program Evaluation Research (SOCI 868) (3-6 cr)

Techniques useful for research aiding in policymaking and for assessing the impact of policy. Role of research in policy formulation and evaluation and to experience in conducting such research.

*818. Taxation-Farm and Ranch (ACCT *818; AECN *818; LAW 618G) (1-4 cr)

Prereq: ACCT 812 or LAW 637/G

Selection of substantial income tax problems affecting farms and ranches.

*820. Core Seminar in American Government (3 cr)

Literature in American governmental institutions, processes, policies, and law. Students required to do extensive reading in these areas. Introduces the beginning graduate student to the field of American government.

825. Congress and Public Policy (3 cr)

The policy-making role of the Congress including the institutionalization of the House and the Senate, an analysis of congressional behavior, the committee process, and the policy responsiveness of Congress.

826. Topics in American Public Policy (3 cr per sem, max 6)

Students should check the semester schedule for current offering. Significant public policy in American politics. Topics: Government Control of Business; Science, Technology, and Public Policy; or Environmental Politics.

830. Political Communication (COMM 830) (3 cr)

Prereq: COMM 200, 201 or political science major or minor, or permission

Role of communication in the political process, with an emphasis on communication strategies in political campaigns. Communication variables important in the political process, an application of communication theory and principles to political rhetoric, and analysis and criticism of selected political communication events.

*831. Core Seminar in Public Policy and Process (3 cr)

Intended for graduate students interested in a review of the field.

*836. Public Policy Analysis: Methods and Models (3 cr)

Qualitative and quantitative approaches to public policy analysis. Nature of politics and policy, formation of public policy, analysis of policy content, methodological triangulation, participatory policy making designs, and the role of the analyst. Construct and implement a multi-method policy analysis for a local community agency.

841. Constitutional Law (3 cr)

Supreme Court doctrine determining the distribution of powers within the national government and between the national government and the state governments.

842. Civil Liberties: Freedom of Expression and Conviction (3 cr)

Supreme Court doctrine interpreting the First Amendment, covering freedom of speech, assembly, and association; freedom of the press; and freedom of religion.

843. Civil Liberties: Issues of Fairness and Equality (3 cr)

Supreme Court doctrine covering the rights of the accused, the right to privacy and the right to racial and sexual equality.

859. International Political Economy (3 cr)

Interface of politics and economics in the international arena. Political dimension of international economic issues emphasized. Includes: liberal, mercantile, and radical approaches; theories of imperialism; dependency and interdependency; distribution of the global product; the global division of labor; the political aspects of markets; the politics of trade, aid, investment, multinational corporations, food, and energy.

*860. Core Seminar in International Politics (3 cr)

Extensive reading required. Rigorous survey of the literature in international relations, including international law and international organization. Intended to introduce the beginning graduate student to the field of international relations.

862. Security in the Post-Cold War Era (3 cr)

Emerging trends in security studies. The claim or hope that military force is no longer important in the post-Cold War era. The continued utility and effectiveness of war as evidenced throughout the world. New threats, environmental problems, population growth, and non-governmental organizations, as threats to the international system.

863. [863x] American Foreign Policy and the Use of the Military (3 cr) Lec 3.

Military action as an instrument of American Foreign Policy. Constitutional basis of the President's and Congress's war powers; assessments of the role of the White House, Congress, CIA, senior Pentagon officials, the American public, and military alliances--NATO and coalitions of the willing--in supporting and directing the use of military action abroad; and the political and strategic consequences of various American applications of military force.

864. Political Economy of the Asia-Pacific (3 cr)

International relations of the Asia-Pacific. Security, economics, and interaction between China, Japan, the United States, and other regional powers.

866. Pro-seminar in International Relations I (AECN 467; ANTH 879; ECON 866; GEOG 848; HIST 879; SOCI 866) (3 cr)

Prereq: Permission

Open to students with an interest in international relations. Topic varies.

867. Pro-seminar in International Relations II (ECON 867) (3 cr)

Prereq: Permission

Open to students with an interest in international relations. Topic varies.

868. Organizing World Order (3-6 cr per sem, max 6)

Course may be repeated once for credit if content changes. Structures and forces relevant to creation of order in world politics. Contents vary according to semester and instructor involved. Examples: trends within the United Nations system; transnational economic integration; patterns in arms control and disarmament; prospects for a United States of Europe; human rights and international violence; the United States response to terrorism and guerrilla warfare; the management of conflict; economic development and world order.

869. International Law (LAW 640G) (1-4 cr)

Nature and sources of international law, its effect on the diplomatic, military, economic, and cultural activities of states, international organizations, private associations, and individuals.

870. International Human Rights (3 cr)

Development of international norms on human rights and attempts to implement those standards. Emphasis on political process, with attention to law, philosophy, economics, and culture. Includes coverage of the United Nations, regional organizations, private agencies, and national foreign policies.

871. Comparative Public Policy: A Cross-National Approach (3 cr)

Various approaches to public policy outside the United States with emphasis on Western industrial societies. Includes policy formation and the various factors that influence policy outputs, the relationship between policy outputs and policy outcomes, efforts to classify and evaluate various types of policy outputs, and the influence of policy on politics.

873. Problems in International Law and Organization (3 cr)

Prereq: POLS 361 or 869 highly recommended

Selected issues in international law and organization. Content varies. Could include: US Senate's treatment of treaties, use of customary law by US courts, current cases before the World Court, leading legal issues handled by the UN Security Council and General Assembly, etc.

874. Comparative Institutions (3 cr)

Formal and informal institutions such as constitutions, electoral rules, property rights, and civil rights. How and why people in different groups, countries, and cultures construct institutions to facilitate collective action. Whether different groups construct distinctly different institutions to deal with similar problems and why similar institutions seem to work differently in distinct societies.

875. Water Quality Strategy (AGRO 875; CIVE 875; CRPL 875; GEOL 875; MSYM 875; NRES 875; SOCI 875; SOIL 475; WATS 475) (3 cr II) Lec 3.

Prereq: Permission

Holistic approach to the selection and analysis of planning strategies for protecting water quality from nonpoint sources of contamination. Introduction to the use of methods of analyzing the impact of strategies on whole systems and subsystem for selecting strategies; and for evaluating present strategies.

876. Ethnic Conflict and Identity (JUDS 476) (3 cr)

Theories of nationalism and ethnic conflict. Case studies of Europe, the Middle East, and Africa.The post-Cold War era as multi-polar and multi-civilizational. The states and different cultures that compete for influence and authority to dominate the "New World order". The division of the world along ethnic, religious, and class lines rather than by ideology. The future of international politics and the reassessment of the causes of "conflicts of culture" and their containment.

877. Israel and the Middle East (JUDS 472) (3 cr)

Israeli politics and society and its relations with its neighbors, particularly, the Palestinians. The rise of Zionism and the Palestinian response to it, the wars between Israel and its Arab neighbors, and the eventual peace agreements between the two, the internal dynamics of Israeli political life, and the state of Zionism today.

878. Pro-seminar in Latin American Studies (ANTH 878; EDPS 878; GEOG 878; HIST 878; LAMS 478; MODL 878; SOCI 878; SPAN *878) (3 cr, max 6) Lec 3.

Prereq: Permission

Interdisciplinary analysis of the mechanics and consequences of cultural continuity and social change in Latin America.

*879. Core Seminar in Comparative Politics (3 cr)

POLS 879 is intended to introduce the beginning graduate student to the field of comparative politics. Survey of the field of comparative politics. General theory and methodology; issues and crises in a number of functional areas; participation and socialization; and the special problems confronting the area specialist.

*880. Core Seminar in Political Theory (3 cr)

Students required to read extensively and to take a final examination. Rigorous survey of some of the major areas of concern in empirical and normative political theory.

881. Political Behavior (3 cr)

Various theories of political behavior at the individual level. The usefulness of these theories in explaining individual political behavior.

*891. Individual Readings (1-6 cr, max 24)

Prereq: Permission

*895. Internship (3 cr) Fld.

Stuent is assigned and suprevised by designated faculty member. Pass/No Pass only.

Internship in government agencies, quasi public agencies, private firms (profit and nonprofit), and other organizations.

898. Special Topics (3 cr, max 24)

*899. Masters Thesis (6-10 cr)

Prereq: Permission

Prereq: Admission to masters degree program and permission of major adviser.

901. Dissertation Prospectus (3 cr)

Prereq: Permission

920. Seminar in American Government (3 cr, max 12)

Prereq: Permission

931. Seminar in Public Policy (3 cr, max 12)

Prereq: Permission

941. Seminar in Methods (3 cr, max 9)

Prereq: Permission

960. Seminar in International Relations (3 cr, max 12)

Prereq: Permission

965. Seminar in International Human Rights (3 cr)

Prereq: Permission

979. Research Seminar in Comparative Politics (3 cr per sem, max 9)

991. Minor Research Problems (1-6 cr, max 24)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Permission

Prereq: Admission to doctoral degree program and permission of supervisory committee chair.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: John Comer, Ph.D.

Graduate Chair: Patrice McMahon, Ph.D.

The department offers graduate courses leading to the degrees of master of arts, doctor of philosophy, and a joint degree with the law school leading to a master of arts in political science and juris doctorate. Graduate work may be pursued in: American government, comparative government, historical and normative theory, international relations, methodology and empirical theory, public administration, and public policy.

Graduate work in public administration is a cooperative program with the Department of Public Administration at the University of Nebraska at Omaha. Within the above areas, students can combine their work in political science with work in other departments leading to a concentration in various interdisciplinary programs such as human rights and human diversity, and public policy analysis and evaluation.

The Political Science Department hosts an interdisciplinary Certificate in Public Policy Analysis that provides students with the knowledge and skills to be participants in the public policy process and/or researchers capable of analyzing public policy problems and programs. Both degree and non-degree students are eligible.The certificate requires 15 hours of course work plus a three-credit-hour internship or policy analysis project for a total of 18 credit hours.

All students will be required to work with a public agency in an actual analytical or evaluation project. Students already working in government will be expected to develop some supervised experience comparable to an internship.

Requirements for the various degree programs are available on-line at **www.unl. edu/polisci/home.html.**

Courses in public administration are offered through the University of Nebraska at Omaha

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Combs, Michael W. -1978; Professor; BA 1973 Southern; PhD 1978 Washington
- Comer, John C. -1971; Professor and Chair; AB 1965 Miami (Ohio); MA 1967 Kent State; PhD 1971 Ohio State
- Forsythe, David -1973; Professor; BA 1964 Wake Forest; MA 1966, PhD 1968 Princeton
- Gruhl, John R. -1976; Professor; BA 1969 De Pauw; MA 1973, PhD 1976 California (Santa Barbara)
- Hibbing, John R. -1981; Professor; BS 1976 Dana; MA 1978, PhD 1980 Iowa
- Humes, Brian D. -1991; Associate Professor; BS 1982 Iowa; MA 1985 Stanford; PhD 1988 Washington (St. Louis)
- Kohen, Ari -2007; Assistant Professor; BA 1999 James Madison; PhD 2002 Duke
- McMahon, Patrice C. -1999; Assistant Professor; BA 1988 American; MA 1993 George Washington; PhD 1998 Columbia
- Michaels, Sara -2007; Professor; BA 1983 Waterloo; PhD 1990 Colorado
- Miller, ross -2007; Associate Professor; BA 1987 Concordia; MA 1990 New Mexico; PhD 1994 California (Davis)
- Orey, Byron D'Andra -2001; Assistant Professor; BS 1988 Mississippi Valley State; MS 1990 Mississippi; MA 1993 SUNY

(Stony Brook); PhD 1999 New Orleans
- Rapkin, David P. -1977; Associate Professor; BA 1972, PhD 1979 Florida State
- Smith, Kevin B. -1994; Associate Professor; BA 1986 Texas Tech; MA 1991, PhD 1994 Wisconsin (Milwaukee)
- Theiss-Morse, Elizabeth -1988; Professor; BA 1982, PhD 1989 Minnesota
- Tillman, Erik -2006; Assistant Professor; BA 1998 Rhodes; PhD 2005 Emory
- Wagner, Michael -2007; Assistant Professor; BA 1998 Nebraska (Lincoln); PhD 2006 Indiana
- Wedeman, Andrew H. -1994; Associate Professor; BA 1982, MA 1984 George Washington; PhD 1989 California (Los Angeles)

Courses for Psychology (PSYC)

Psychology

821. Psychology of Gender (WMNS 821) (3 cr) Lec 3.

Prereq: 12 hrs PSYC

Theory and research on the role of gender in human behavior and attitudes. Exploration of diverse theoretical positions on the development of gender and evaluation of the biological, social and cultural bases that influence the relationship between gender and a variety of areas of human experience (e.g., intelligence and achievement, emotion, relationships, sexuality, physical fitness, stress, and coping).

825. Psychology of Racism (ETHN 425) (3 cr)

Prereq: For psychology majors, PSYC 350

For non-majors, any research methods course. Major terms and issues in psychology that pertain to race and racism in the United States, as well as general principles of the psychology of racism that are universal. The psychologies of the major racial minority groups in the United States examined through discussion of their unique cultures, histories, traditions, and collective identities. Research methods for studying the psychology of racism are reviewed to provide a basis for interpreting research results.

828. Health Psychology (3 cr)

Relationship between psychological factors and physical health including health behavior, health decision-making, health promotion, and copying from a variety of theoretical perspectives.

840. Perspectives in Psychology (3 cr)

Prereq: 12 hrs psychology or permission

Currently important fundamental issues in psychology considered within a framework of their philosophical foundations and historical perspectives.

845. Industrial/Organizational Psychology (3 cr)

Prereq: 12 hrs psychology including one 200-level Group 2 course

Psychology as it applies to the workplace. Topics: selection tests, job analysis, performance appraisal, worker motivation, job satisfaction, leadership, and organizational theory.

851. Psychological Measurement and Prediction (4 cr) Lec 3, lab 3.

Prereq: 12 hrs PSYC

A course in elementary statistics is highly recommended. Course may not be taken Pass/No Pass. Theoretical issues and practical problems relating to measurement and prediction in psychology. Interpretation of mental-test statistics.

860. Human Memory (3 cr)

Prereq: 12 hrs psychology, including PSYC 350

Issues in human memory within the context of cognitive psychology. Topics: attention, short and long term memory, retrieval processes, semantic memory, how memory is involved in comprehension and knowledge, and how emotion affects memory. In order to better understand the theories that are covered, some of the major research paradigms used in the study of memory are discussed.

861. Learning Processes (3 cr)

Prereq: 12 hrs psychology, including PSYC 268

Theoretical evaluation of studies of learning, thinking, and perception.

862. Motivation and Emotion (3 cr)

Prereq: 12 hrs psychology, including PSYC 350

Major problems and methods involved in the study of motivation and emotion including theoretical considerations.

863. Perception (3 cr)

Prereq: 12 hrs psychology, including either PSYC 263 or 373

Analysis and comparison of several approaches to the study of current problems in human perception and information processing. Psychophysical judgment, signal detection theory, perception of form and space, and the role of imagery in perception.

865. Behavioral Neuroscience (BIOS 819) (2-3 cr)

Prereq: 12 hrs psychology or 12 hrs biological sciences, including PSYC or BIOS 373

Relationship of physiological variables to behavior: an introduction to laboratory techniques in neuropsychology.

871. Human Sexuality and Society (CYAF 871; EDPS 871; SOCI 871) (3 cr) (UNL)

Prereq: Permission

Open to advanced students planning careers in the professions in which knowledge of human behavior and society is important (e.g., helping professions, medicine, law, ministry, education, etc.).

Interdisciplinary approach to human sexuality in terms of the psychological, social, cultural, anthropological, legal, historical, and physical characteristics of individual sexuality and sex in society.

872. Transpersonal Psychology (3 cr)

Prereq: 12 hrs psychology

Transpersonal psychology perspective which includes biological, social, psychological and spiritual aspects in a holistic conception of human nature. Integrates the psychology of Christian Mysticism, Buddhist meditation, and Eastern wisdom with Western scientific personality theory.

883. Psychology of Social Behavior (3 cr)

Prereq: 12 hrs psychology, including one 200-level Group 2 course

Major problems, methods and findings in the study of individual behavior as it is influenced by the social environment. Culture, personality, group behavior, aggression, pro-social behavior, attitudes and social cognition.

885. Theories of Personality (3 cr)

Prereq: 12 hrs psychology, including one Group B 200-level course

Classic and modern theories of personality from the point of view of conflicts in the philosophies of science and images of man implied in the various theories.

886. Clinical Psychology (3 cr)

Prereq: 12 hrs psychology

Fundamental procedures in clinical practice, a critical evaluation of diagnostic and therapeutic techniques.

888. Community Psychology (3 cr)

Prereq: 12 hrs psychology

Phenomena and perspectives which are typically included under the rubric community psychology, e.g., community mental health, crisis intervention, and social change interventions.

889. Child Behavior and Development (3 cr)

Prereq: 12 hrs psychology, including one 200-level Group B course

Current issues in theory and research in developmental psychology (e.g., emotional development, the changing American family, the preschool years, social understanding), along with methods of research in these and other areas.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Pro-seminars in Psychology (3 cr each)

Prereq: Permission

920. Seminars in Psychology (1-9 cr each)

Prereq: Advanced graduate standing and permission

925. Ethics for Psychologists (1 cr)

Prereq: Permission

Introduction to ethical principles and reasoning for research, teaching and professional practice in psychology.

925A. Ethics for Clinical Psychologists (1 cr)

Prereq: Advanced graduate standing and permission

Application of ethical principles to practica and professional practice. Critique of the status of a professional mental health discipline, a discipline's ethical code, and practice in society.

925B. Ethics for Psychology and the Law (1 cr) Lec 1.

Prereq: PSYC 925

Application of ethical principles to the practice of psychology in interaction with legal institutions with an emphasis on the communication of psychological expertise and research to those legal institutions.

941. Psychometric Methods I (3 cr)

Prereq: Permission

Applications of statistical methods and probability theory to psychological problems. Scaling methods, correlation, chi-square, and graphic methods of studying relationships.

942. Psychometric Methods II (3 cr)

Prereq: PSYC 941 or permission

Psychophysical methods, analysis of variance, design of experiments, advanced correlation analysis.

943. Factor Analysis (3 cr)

Prereq: PSYC 942 or EDPS 971 or permission

Analysis of mental ability and personality into sets of variables.

944. Multilevel Models for Longitudinal Data (3 cr) Lec 3.

Prereq: PSYC 941 and 942

Applications of the multilevel model (hierarchical linear model, general linear mixed model) for examining longitudinal data, random effects (growth curve) models, within-person variation models, and prediction of between- and within-person variation using covariates.

945. Advanced Multilevel Models (3 cr) Lec 3.

Prereq: PSYC 944

Advanced applications of the multilevel model (hierarchical linear model, general linear mixed model) for examining multiple sources of variation, models for crossed sources of nesting, three levels of nesting, heterogeneous variances, multivariate outcomes, and non-linear outcomes.

946. Psychology of Survey Response (SRAM 946) (3 cr)

Cognitive and communicative processes affect on dynamics of survey interviewing and relationships to principles of survey design. Effects of question wording on comprehension; question order and context on attitude; communicative and retrieval processes on validity of retrospective behavioral reports; and impact of response alternatives on answers.

947. Questionnaire Design (SRAM 947) (3 cr)

Design of questionnaires for survey research and the theoretical and practical issues arising from them. Selection of appropriate measurement techniques for assessing opinions, past behaviors and events, and factual material.

948. Latent Trait Measurement Models (3 cr) Lec 3.

Prereq: PSYC 941 and 942

Contemporary measurement theory and models for scale construction and evaluation, confirmatory factor analysis, and item response modeling.

955. Introduction to Clinical Assessment (3 cr)

Prereq: Permission

Introduction to the theory and application of assessment procedures and techniques. Measurement and interpretive issues in clinical assessment. Laboratory introduction to structured techniques emphasizing intellectual assessment.

956. Clinical Assessment Techniques (3 cr)

Prereq: PSYC 955 or permission

Didactic and laboratory training in the administration, scoring, and beginning interpretation of projective and objective assessment techniques.

957. Topics in Clinical Assessment (3 cr)

Prereq: PSYC 955 and 956 and permission, or equivalent advanced training and permission

A selected topic taught during the course. Examples include clinical neuropsychology, assessment techniques and assessment batteries, individual case conference presentation, and assessment of sexual dysfunctions.

958. Seminar in Dispositional Assessment (3 cr)

Prereq: PSYC 955 and 956 or permission

Advanced interpretation, issues, and research in clinical psychology assessment. Emphasis on the “dispositional assessment” model of clinical analysis. Student presentations and individual case interpretation.

960. Seminar in Alcohol Use and Abuse (3 cr)

Prereq: Permission

Biopsychosocial perspective of alcohol abuse. Focus on multiple factors that contribute to alcohol problems, including physiological/genetic, psychological and sociocultural determinants. Intervention, treatment and prevention issues. Societal and governmental attitudes and policies. Emphasis on theoretical and empirical literature bearing on the above areas.

963. Group Processes and Group Psychotherapy (3 cr)

Prereq: Open to students in community-clinical psychology or permission

Group phenomena which are relevant to mental health service providers. Incorporates both didactic and experiential teaching of group process and group outcome issues. Focus on group process issues in group therapy (using the group concepts of Yalom and other writers) and experiencing these concepts in a training group.

970. Clinical Interviewing (1-3 cr, max 3)

Prereq: Admission to the community-clinical psychology program or permission

Basic skills needed in seeing a mental health client (e.g., listening, empathy, reflection and restatement) explored through didactic, group interaction and live individual interviews. Focus is preparing the student to meet their first psychotherapy client in a competent manner. Doing observing and rating pseudo and patient interviews.

971. Psychological Literature I (1-6 cr)

Reading assignments in special fields; library reading, conferences.

972. Psychological Literature II (1-6 cr)

For course description, see PSYC 971.

974. Teaching Methods for Psychology (1-3 cr)

Prereq: Permission

Teaching methods, philosophical perspectives to teaching, practical ideas about classroom instruction, and career issues in higher education.

975. Advanced Experimental Psychology (1-9 cr, max 9)

Prereq: Permission

Typical refinements of controlled investigations. General methodology and practice in carrying out a few prolonged experiments.

976. Psychology of Race and Ethnicity (3 cr) Lec 3.

Theoretical and practical implications for the impact of race and ethnicity on psychological processes and functioning. The meaning of race and ethnicity for notions of self, identity acquisition and maintenance, intra- and inter-group processes, measurement of biases and discrimination. Methods to improve the treatment of race and ethnic issues within the field of psychology.

979. Cultural Diversity in Psychology (3 cr)

Prereq: Permission

Influence of culturally driven world-views on psychological functioning and on psychological theory. American psychological theory, research and practice influenced by the socialization and world-views of the contributing psychologists. Ways in which existing theory and practice accommodate--or fail to accommodate--the world-views and experiences of racial/ethnic minorities in the contemporary United States.

981. Clinical Intervention I (3 cr)

Prereq: Graduate standing in clinical psychology training program or permission of director of clinical training

Practical and didactic training in assessment and intervention for psychological and behavioral disorders. Emphasis on entry-level clinical skills including establishment of the therapeutic relationship, case conceptualization, and development of treatment plans within the scientist-practitioner model.

982. Clinical Intervention II (3 cr)

Prereq: PSYC 981 and either graduate standing in clinical psychology training program or permission of director of clinical training

Practical and didactic training in assessment and intervention for psychological and behavioral disorders. Emphasis on conceptualization of more complex cases, assessment and treatment of a broader range of cases, and evaluation of efficacy of interventions within the scientist-practitioner model.

983. Therapy in Clinical Psychology I (3 cr)

Prereq: Permission

Theory and methods employed by different “schools” of therapy analyzed and related to basic psychological theory.

985. Law and Behavioral Science (LAW 762G) (1-4 cr)

General issues in the interaction between law and the behavioral sciences; discussion of the use/misuse/nonuse of the behavioral sciences in the law, with attention to ways of making behavioral science input most useful; analysis of the law as a behavioral instrument.

986. Child Psychopathology and Assessment (3 cr)

Prereq: Advanced graduate standing and permission

Major categories of child psychopathology, theoretical formulations of etiology of such disorders, empirical findings and issues related to each disturbance and appropriate instruments for assessing each disorder.

987. Child Therapy (3 cr)

Prereq: Advanced graduate standing and permission

Various child intervention techniques with an emphasis on behavioral parent training for child noncompliance.

988. Mental Health Law (LAW 763G) (1-4 cr)

Critical review of the mental health laws throughout the nation and their psychological foundations. Emphasis on the research that illuminates the problems facing mental health law, system, and processes and the available solutions. Includes the insanity defense, competency to stand trial, guardianship, conservatorship, and civil commitment.

989. Topics in Law and Psychology I (LAW 764G) (1-4 cr)

May be repeated once. Analysis of specific psycholegal topics. Previous course titles include Privacy, Mental Health Policy, Legal Decision Making, Institutional Reform and Deinstitutionalization, Legal Policy and Child Development, and Domestic Violence.

989A. Topics in Law and Psychology II (LAW 765G) (1-4 cr)

May be repeated once. For course description, see LAW 764G.

990. Practicum in Teaching Methods for Psychology (1-6 cr, max 6) Ind.

Prereq: PSYC 974 and permission

Students will contract with instructor to teach an undergraduate psychology course under supervision. Individual instruction on teaching methods, classroom assessment, and practical classroom techniques.

991. Research Methods in Social and Personality Psychology (3 cr)

Prereq: Permission and second-year graduate standing; at least 1 sem graduate-level statistics

Research design and the application of design to real research problems, including the application of statistics, problems of control, confounding, alternative explanations, demand characteristics, and experimenter effects. In addition to readings in theory of design and experimentation, the practical solution of design problems and critique of research are emphasized.

992. Field Methods in Psychology (3 cr)

Prereq: Second-year graduate standing and permission

Design and implementation of field research, including observational methods, experimental and quasi-experimental designs, and program evaluation. In addition to readings in the theory of field research methodology, the solutions to specific, commonly occurring design and statistical problems are emphasized.

993. Seminar in Program Evaluation (3 cr)

Major issues involved in the evaluation of programs which deliver human services. Includes needs assessments, outcome evaluation techniques, qualitative methods, goal attainment scaling, multi-attribute utility theory, role relationships and political problems with which evaluators must contend.

995. Psycholegal Research Other than Thesis I (LAW 757G) (3-6 cr)

Research is supervised and approved by a faculty member in the Law/Psychology program. Absent the prior approval of the Dean, only those students enrolled in the Law/Psychology Joint Degree Program may register for this course. Absent the prior approval of the Dean, no student may take more than 6 hours of research in a selected and/or psycholegal research. A substantial research and writing project on a psychological topic.

995A. Psycholegal Research Other than Thesis II (LAW 758G) (3-6 cr)

Research is supervised and approved by a faculty member in the Law/Psychology program. Absent the prior approval of the Dean, only those students enrolled in the Law/Psychology Joint Degree Program may register for this course. Absent the prior approval of the Dean, no student may take more than 6 hours of research in a selected and/or psycholegal research. For course description, see LAW 757G.

996. Research Problems Other Than Thesis (1-24 cr)

997. Clinical Practicum (1-30 cr, max 30)

Prereq: Full graduate standing in clinical psychology training program or permission of director of clinical training

Individually supervised evaluative and diagnostic work with clinic subjects. Emphasis on the refinement of skills in evaluating and diagnosing behavior deviations.

998. Practicum in Law and Psychology (3 cr per sem, max 6)

Prereq: Full graduate standing in Law/Psychology Graduate Training Program or permission of the director of the Law/Psychology Program

See description under Law/Psychology Studies which follows. Supervised fieldwork in law and psychology. Emphasis on the integration of legal analysis and psychological research in the formulation or implementation of public policy.

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: David J. Hansen, Ph.D.

The department offers doctoral programs in six program areas of psychology (biopsychology, clinical, cognitive, developmental, law and psychology, and social-personality). Students are admitted into one of these six programs.

Those admitted to graduate standing must have completed an undergraduate major in psychology, or its equivalent, including a laboratory course in experimental psychology. An undergraduate course in statistics is required. Students with otherwise superior undergraduate credentials who do not meet admission requirements may be admitted as either provisional or unclassified students while removing deficiencies.

In deciding on admissions, the primary considerations are the undergraduate transcript, the student's GPA, scores on the Graduate Record Examination, letters of recommendation, and relevant background experiences and skills.

Students admitted into their program will be presented with opportunities to acquire teaching, research and/or service skills, and expertise in psychology.

The PhD program in clinical psychology requires successful completion of a one-year, full-time clinical internship. The internship must be taken at a facility approved by the clinical faculty.

Law/Psychology Studies

Advisory Committee: Professor Wiener (chair)
Department of Psychology: Professors Bornstein, Flowers, Spaulding, Tomkins, Wilcox; Associate Professor Scalora
College of Law: Professors Gardner, Lawson, Schopp, Willborn; Assistant Professor Poser

Departments Participating: College of Law and the Department of Psychology at Lincoln

Under the dual sponsorship of the Department of Psychology and the College of Law at the University of Nebraska-Lincoln, the Law/ Psychology Program is intended to train scholars who are engaged in basic and applied research and writing on social issues and problems in the law, the legal system, and the legal process. Law/psychology training is available in each of the major subfields of psychology.

One track leads to both the JD degree in law and the PhD degree in psychology, with specialization in nonclinical subfields. Students typically work six years in the program, with a seventh year likely if the student chooses to complete an internship in community psychology or mental health administration. Eighteen hours of course work (12 hours of didactic course work; 6 hours of interdisciplinary research) apply toward both degrees. Students interested in legal problems affecting mental health services may elect to specialize in mental health policy and administration.

Those who wish to concentrate their efforts primarily in the discipline and methods of psychology but who wish to apply those efforts at least partially to legal and policy issues may find the PhD/MLS (master of legal studies) track more conducive to their purposes. This option directs primary investment of time and energy to the PhD in psychology, but it also provides the opportunity to develop a sufficient command of the relevant legal background to enable the student to pursue psychological research in a manner that increases its relevance to legal and policy issues. The MLS is a law degree that requires the equivalent of one year of full-time legal study and provides the opportunity to study legal topics relevant to the individual's primary field of study. For further information about the MLS, .

For students who wish to be legal practitioners but who desire to obtain a strong background in psychology or social science methods, a joint JD/MA program is available. Under this option, 15 hours of course work (9 hours of didactic course work; 6 hours of interdisciplinary research) of the required 36 apply toward both degrees. Persons already holding the JD degree may also seek a terminal MA degree under this program as part of the Law/Psychology Program's post-doctoral fellowship tracks. Although it is non-degree, post-doctoral training is also available for persons holding the PhD degree in psychology.

Finally, the Law/Psychology Program offers a specialty program in community-clinical psychology with emphasis on forensic psychology. The latter program leads to the PhD degree only, but it includes psycholegal course work, research, and clinical experiences. Students in other subfields of psychology also may construct specialty programs (e.g., developmental psychology and the law).

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Belli, Robert -2002; Professor; BA 1977 Notre Dame; MA 1984 State University of New York; PhD 1987 New Hampshire
- Bevins, Rick A. -1996; Associate Professor; BS 1989 Jacksonville State; Associate in Arts 1986 Macon; PhD 1993 Massachusetts
- Bornstein, Brian -2000; Professor; BA 1985 Duke; MA 1987, PhD 1991 Pennsylvania
- Carlo, Gustavo -1994; Professor; BA 1986 Florida International; PhD 1994 Arizona State
- Crockett, Lisa J. -1996; Professor; BA 1978 Pennsylvania; PhD 1986 Chicago

- Dienstbier, Richard -1969; Professor Emeritus; BA 1965, MA 1967 Rhode Island; PhD 1969 Rochester
- DiLillo, David-2000; Assistant Professor; BA 1989 Rhodes; MS 1992 Kentucky; MS 1993, PhD 1997 Oklahoma State
- Edwards, Carolyn -1997; Professor; BA 1969, PhD 1974 Harvard
- Espy, Kimberly -2005; Professor and Associate Vice Chancellor for Research; PhD 1994 Houston
- Flowers, John H. -1972; Professor; BA 1968 Wesleyan (Connecticut); PhD 1972 Yale
- Garbin, Calvin P. -1985; Professor; BS 1979 Slippery Rock State; PhD 1985 Texas
- Hansen, David J. -1992; Professor; BA 1980 Creighton; MA 1983, PhD 1985 Mississippi (Oxford)
- Hoffman, Lesa -2006; Assistant Professor; BA 1999 Nebraska (Lincoln); MA 2000, PhD 2003 Kansas
- Hope, Debra A. -1990; Professor; BA 1983 Oregon; MA 1988 New York; PhD 1990 State (Albany)
- Howe, Herbert E., Jr. -1969; Professor Emeritus; BA 1964 Allegheny; MS 1967, PhD 1969 Penn State
- Leger, Daniel W. -1980; Professor; AB 1973 Humboldt State; MA 1975 California (Riverside); PhD 1980 California (Davis)
- Li, Ming -2005; Assistant Professor; BS 1991, MS 1996 Beijing (China); PhD 2002 Toronto (Canada)
- McChargue, Dennis E. -2005; Assistant Professor; BA 1993 New York (Oswego); MS 1994, PhD 1998 Oklahoma State (Stillwater)
- Raffaelli, Marcela. -1995; Professor; BA 1982 Williams; MA 1987, PhD 1990 Chicago
- Scalora, Mario J. -1989; Associate Professor; BS 1983 St. Joseph's (Philadelphia); BA 1986, PhD 1989 Nebraska (Lincoln)
- Schopp, Robert F. -1989; Associate Professor, Law and Psychology; BS 1977 North Carolina State; JD 1988, PhD 1989 Arizona
- Shutte, Anne R. -2004; Assistant Professor; BA 1992, MA 1998 Concordia; PhD 2004 Iowa
- Spaulding, William D. -1979; Professor; BA 1972 Pomona; MA 1975, PhD 1976 Arizona
- Tomkins, Alan J. -1986; Professor; BA 1975 Boston; MA 1980, JD 1984, PhD 1984 Washington (St. Louis)
- Weisz, Victoria -1986; Research Associate Professor, Center on Children, Families and the Law; BA 1975 Rochester; MA 1980, PhD 1981 Washington
- Wiener, Richard -2002; Professor; BA 1975 Cleveland State; MA 1978, PhD 1980 Houston; MLS 1989 Nebraska (Lincoln)
- Wilcox, Brian -1994; Professor; BA 1973 California Lutheran; PhD 1979 Texas (Austin)
- Willis-Esqueda, Cynthia -1991; Associate Professor; BA 1984 Washburn; MA 1987, PhD 1990 Kansas

Public Administration

Description

School Director: Russell L. Smith, Ph.D.

UNL MPA Program Coordinator: Meagan Van Gelder, Ph.D.

UNL Graduate Adviser: Ethel Williams, Ph.D.

Master of Public Administration

The mission of the master of public administration (MPA) is to strengthen the public service in a democratic and diverse society by educating students to manage and lead public and nonprofit institutions effectively, ethically and democratically.

The School of Public Administration is a member of the National Association of Schools of Public Affairs and Administration (NASPAA). Ranked among the top MPA programs in the US, the MPA program is fully accredited through 2004-2005.

Students living in Lincoln may complete the MPA degree by taking courses in Lincoln and/or Omaha.

Additional information may be obtained from:

School of Public Administration
University of Nebraska at Omaha
Annex 27
Omaha, NE 68182
(402) 554-2625
or
MPA Program-Lincoln
University of Nebraska-Lincoln
309 Architecture Hall
PO Box 880649
Lincoln, NE 68588-0649
(402) 472-4378<br.

Faculty

- Bartle, John -1994; Professor; BA 1979 Swathmore; MPA 1983 Texas; PhD 1990 Ohio State
- Blair, Robert -1997; Associate Professor; BA 1973, MPA 1975 Nebraska (Omaha); PhD 1996 Nebraska (Lincoln)
- Box, Richard -1998; Professor; BS 1971, MS 1975 Southern Oregon State; MPA 1983 Golden State; DPA 1990 Southern California
- Brown, Sam -2002; Assistant Professor; PhD 1998 Maryland (Baltimore)
- Ebdon, Carol -1997; Associate Professor; BA 1978 John Carroll; MPA 1979 Toledo; PhD 1997 SUNY (Albany)
- Hamilton, Mary -2004; Sr. Executive-in-Residence; BA 1966 Bethel; MA 1969 North Carolina (Chapel Hill); PhD 1976 Maryland (College Park)
- Krane, Dale -1989; Professor; BA 1965, MA 1966 Indiana; PhD 1973 Minnesota
- Kriz, Ken -2003; Assistant Professor; PhD 2000 Indiana (Bloomington)

- Marshall, Gary -1995; Associate Professor; BA 1981 Massachusetts; MPA 1987 George Washington; PhD 1993 Virginia Tech
- Milliken, J. B. -2004; Professor and President, University of Nebraska; BA 1978 Nebraska (Lincoln); JD 1983 New York
- Reed, B. J. -1982; Professor and Dean, College of Public Affairs and Community Services; BA 1971, MS 1972 Fort Hays State; PhD 1977 Missouri
- Reed, Christine -1982; Professor; PhD 1983 Brown
- Schumaker, Alice -1998; Assistant Professor; PhD 1997 Nebraska (Lincoln)
- Smith, Russell -1986; Professor and Chair; BA 1972 Houston; MA 1974 North Texas State; PhD 1977 Tennessee
- Tarry, Scott -2000; Associate Professor; PhD 1993 Michigan
- White, Jay D. -1987; Professor; BBA 1970, MBA 1975, DPA 1982 George Washington
- Williams, Ethel -1996; Associate Professor; PhD 1996 Nebraska (Lincoln)

Social Work

Description

School Director: Theresa Barron-McKeagney, Ph.D., LCSW

The School of Social Work is administered by the University of Nebraska at Omaha. The school's BSW and MSW degree programs are accredited by the Council on Social Work Education (CSWE), the national accrediting body for all social work education. All graduate classes are offered on the Omaha campus. (A few graduate courses are offered off campus). Because practicum placements for supervised field study are available in Lincoln and surrounding locales as well as in Omaha, it is usually possible for students living outside of Omaha to limit their commuting to Omaha to two days per week. For information or application for admission, please contact:

School of Social Work
University of Nebraska at Omaha
Annex 40
Omaha, NE 68182-0293
(402) 554-2792
www.unl.edu/~socialw/

Faculty

- Anderson, Debra K. -2002; Associate Professor; BSW 1982 Mary Bismarck; MSW 1988 Missouri (Columbia); PhD 2000 Nebraska (Omaha)
- Barron-McKeagney, Theresa -1989; Associate Professor and Director; BSW 1981 Iowa; MSW 1986 Nebraska (Omaha); PhD 1993 Nebraska (Lincoln)
- Coyne, Ann -1975; Professor; BA 1958 Cornell; MSW 1975, PhD 1980 Nebraska (Lincoln)
- D'Souza, Henry -1988; Professor; MSW 1975 Mysore; PhD 1989 Michigan
- Weber, Gwen -1986; Professor; BA 1967, MSW 1969, PhD 1979 Nebraska (Lincoln)
- Woody, Jane -1975; Professor; MSW 1973 Western Michigan; PhD 1970 Michigan State

Courses for Sociology (SOCI)

Sociology

807. Strategies of Social Research: Qualitative Methods (3 cr)

Systematic review and application of qualitative research methods, including participant observation, unstructured interviewing, audiovisual techniques and personal document analysis; data collection and interpretation emphasized as well as different theoretical assumptions underlying their various approaches.

815. Social Change (3 cr)

Analysis of sociological principles of social change, at both the community and primary group level, analysis of research and theoretical literature.

825. Contemporary Family Issues (3 cr)

Prereq: 9 hrs sociology or related social sciences

Several contemporary issues confronting American families and family research. Includes issues as adolescent pregnancy, work-family policy, family violence, divorce, single parents, and step families.

835. Mass Communication (3 cr)

Analysis of the structure and effects of the media of mass communication.

841. Social Psychology (3 cr)

Psychosocial bases of group behavior, interstimulation, and behavioral products.

842. Personality and Social Structure (3 cr)

Personality and the sociocultural environment.

844. Social Demography (3 cr)

Historical and cross-cultural approach to population issues by linking changes in fertility and mortality to social institutions. Focus on the link between population processes and such issues as gender roles, the role of the family, Third World poverty, and inequality.

845. Sociology of Urban Areas (3 cr)

Trends in urbanization which incorporate demography, ecology, and planning. Selected urban problems emphasized.

846. Environmental Sociology (3 cr)

Prereq: 9 hours sociology or related social sciences

Role of humans in the ecosystem, especially the interaction of human societies with the actural environment, including other species and other human societies. Attention to theories of the sociocultural causes of environmentally-related problems and the policies designed to deal with these problems.

848. Family Diversity (ETHN 448) (3 cr)

Prereq: 9 hrs sociology or related social science

Analyzes diversity in family structure and family choices. Topics: rural families, gay/lesbian families, Native American families, African American families, Latino families, working class and working poor families and cohabitation.

849. Family Research and Theory (3 cr)

Contemporary theory and research dealing with family structure and change. Focuses on family systems that characterize different social classes and various ethnic groups in our society. Selected problems and contemporary research emphasized.

850. Social Institutions (3 cr)

Analysis of means of social control, with special emphasis upon social institutions.

852. Sociology of Religion (3 cr)

Sources and nature of religion, drawing on the contributions of anthropologists, sociologists, psychologists, and others. Emphasis on the interaction of religion and society.

853. Sociology of Health and Health Professions (3 cr)

Critical analysis of the social and cultural bases of health and illness. Social factors in the definition of illness and in the organization and distribution of health care.

855. History of Sociological Theory (3 cr)

Nineteenth- and early twentieth-century writers whose ideas have had a strong impact on the development of contemporary sociology and sociological theories. Emphasis on the work of such persons as Karl Marx, Emile Durkheim, Max Weber, George Herbert Mead, and Georg Simmel.

860. Education and Society (3 cr)

Prereq: 9 hours sociology or related social sciences

Analysis of education as a social institution and its relationship to other institutions, e.g., economy, polity, religion and family. Emphasizes the role of the educational institution as an agent of stability and change. Special emphasis on research and policy evaluation.

862. Advanced Methods of Social Research I (3 cr)

Intensive analysis of the logic and design of sociological research; the nature of science and logic of social inquiry; epistemic relations; design of research problems; data collection techniques and sampling.

863. Advanced Methods of Social Research II (SRAM 863) (3 cr)

Intensive analysis of the logic and techniques of sociological analysis: techniques of scaling and index construction; contingency table analysis; measures of association; parametric and nonparametric statistical inference; and generalizations from systematic findings.

864. Sociological Theory (3 cr)

Prereq: 9 hrs sociology or related social science

Intensive examination of the conceptual structures of selected theorists and of the basis of theory construction and testing.

865. Survey Design and Analysis (SRAM 865) (3 cr)

Basic issues related to the design and analysis of sample surveys. Basics of questionnaire construction, sampling, data collection, analysis and data presentation.

866. Pro-seminar in International Relations I (AECN 467; ANTH 879; ECON 866; GEOG 848; HIST 879; POLS 866) (3 cr)

Prereq: Permission

Open to students with an interest in international relations. Topic varies.

868. Policy and Program Evaluation Research (POLS 817) (3-6 cr)

Techniques useful for research aiding in policymaking and for assessing the impact of policy. Role of research in policy formulation and evaluation and to experience in conducting such research.

870. Sociology of Occupations and Professions (3 cr)

Presentation of frameworks for the study of occupations and professions; analysis of occupational structure and mobility in American society and its relation to adult socialization and career development; examination of occupational and professional associations and society.

871. Human Sexuality and Society (CYAF 871; EDPS 871; PSYC 871) (3 cr) (UNL)

Prereq: Permission

Open to advanced students planning careers in the professions in which knowledge of human behavior and society is important (e.g., helping professions, medicine, law, ministry, education, etc.).

Interdisciplinary approach to human sexuality in terms of the psychological, social, cultural, anthropological, legal, historical, and physical characteristics of individual sexuality and sex in society.

874. Sociology of Deviance (3 cr)

Prereq: 9 hrs sociology or related social sciences

CRIM 413 and SOCI 874 cannot both be applied toward the degree. Theory and empirical research on conformity and deviance. Survey of the development of scholarly thinking on the nature and sources of deviance, societal reactions to deviance, and processes of social control.

875. Water Quality Strategy (AGRO 875; CIVE 875; CRPL 875; GEOL 875; MSYM 875; NRES 875; POLS 875; SOIL 475; WATS 475) (3 cr II) Lec 3.

Prereq: Permission

Holistic approach to the selection and analysis of planning strategies for protecting water quality from nonpoint sources of contamination. Introduction to the use of methods of analyzing the impact of strategies on whole systems and subsystem for selecting strategies; and for evaluating present strategies.

878. Pro-seminar in Latin American Studies (ANTH 878; EDPS 878; GEOG 878; HIST 878; LAMS 478; MODL 878; POLS 878; SPAN *878) (3 cr, max 6) Lec 3.

Prereq: Permission

Interdisciplinary analysis of the mechanics and consequences of cultural continuity and social change in Latin America.

880. Social Inequality: Stratification and Life Changes (3 cr)

Prereq: 9 hours sociology or related social sciences

Structured inequalities, including social class, race/ethnicity, gender and age stratification. Intersections of these as institutionalized inequalities examined for their causes and effects on individuals and groups. Emphasis on the role of social power, economic resources and occupational structures in the nature of inequality and social mobility in the United States.

881. Minority Groups (ETHN 481) (3 cr)

Prereq: 9 hrs sociology or related social sciences

Systematic examination of racial, ethnic, and other minority groups. History and present status of such groups, the origins of prejudice and discrimination, and the application of social science knowledge toward the elimination of minority group problems.

890. Sociology of Women (3 cr)

Evaluation and application of scholarly theory and research on women in their societal context. Nature and effects of sex stratification, gendered culture, institutionalized sexism, feminist theory and sociology of knowledge.

891. Political Sociology (3 cr)

Application of sociological analysis to the problem of power; power structures and elite formation as they relate to democratic society and political extremism.

896. Topics in Crime, Deviance, and Social Control (3 cr)

Prereq: See course description in the Schedule of Classes

Variety of topics in crime, deviance, and social control. Topic for the term announced prior to early registration.

*897. Fieldwork in Sociology (1-6 cr)

Prereq: Permission

Opportunity to apply concepts and methods in field setting and to obtain experience that will be valuable preparation for professional assignments in research, policy analysis, and administration.

898. Special Topics (3 cr)

Prereq: See course description in the Schedule of Classes
Wide variety of different topics. Topic for the term announced prior to early registration.

*899. Masters Thesis (6-10 cr)
Prereq: Admission to masters degree program and permission of major adviser

901. Seminar in Sociological Theory (3 cr, max 9)
Prereq: Permission

902. Seminar in Research Methods (SRAM 902) (3 cr, max 9)
Prereq: Permission

903. Seminar in Social Psychology (3 cr, max 9)
Prereq: Permission

904. Seminar in Family (3 cr, max 9)
Prereq: Permission

905. Seminar in Stratification, Class, and Inequality (3 cr, max 9)
Prereq: Permission

906. Seminar in Race and Ethnicity (3 cr, max 9)
Prereq: Permission

907. Seminar in Sex and Gender (3 cr, max 9)
Prereq: Permission

908. Seminar in Crime and Deviance (3 cr, max 9)
Prereq: Permission

995. Seminar in Professional Development (1 cr, max 3)
P/N only. Professional development for careers in college teaching and research in sociology.
A. Teaching (1 cr)
B. Graduate Study and Career Research (1 cr)
D. Publications (1 cr)

995A. Teaching (1 cr)

995B. Graduate Study and Career Research (1 cr)

995D. Publications (1 cr)

996. Research Other Than Thesis (1-9 cr)
Prereq: Permission

998. Special Topics Seminar (3 cr, max 9)
Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)
Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description
For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Dan R. Hoyt, Ph.D.

Graduate Committee: Professor Moore (chair); Associate Professor McQuillan; Assistant Professors Goosby, Hagewen

The department offers graduate courses leading to the degrees of master of arts and doctor of philosophy. Applicants are expected to take the general test of the Graduate Record Examination and have their scores submitted as part of their application. Facility in particular foreign languages and/or special research tools may be required by the supervisory committee when they are particularly relevant to a student's chosen area of specialization. Students are required to take SOCI 855, 862, 863, and 864. All candidates for advanced degrees are required to take SOCI 995 and teach as part of their program.

Prerequisites.

The prerequisite for all 800-level courses in sociology, except cross-listed courses, is 9 hours of sociology or related social sciences.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Carranza, Miguel A. -1975; Professor, Sociology and Ethnic Studies; BA 1971 Kearney State; MA 1974, PhD 1977 Notre Dame
- Ceballos, Miguel -2005; Assistant Professor, Sociology and Ethnic Studies; BA 1981 California (Berkeley); MA 1990 Texas (Austin); MS 1995, PhD 2003 Wisconsin (Madison)
- Cheadle, Jacob E. -2007; Assistant Professor; BS 1998, MA 2000 Western Washington; PhD 2004 Penn State
- Dance, Lori J. -2008; Associate Professor; BA 1985 Georgetown; MA 1991 Harvard; PhD 1995 Harvard
- Deegan, Mary Jo -1975; Professor; BS 1969, MA 1973 Western Michigan; PhD 1975 Chicago
- Falci, Christina D. -2006; Assistant Professor; BA 1995 Virginia; MA 1997 Virginia Polytechnic Institute; PhD 2006 Minnesota
- Goosby, Bridget J. -2007; Assistant Professor, Sociology and Ethnic Studies; BA 1997 Southwestern; MA 2001, PhD 2003 Penn State
- Hagewen, Kellie J. -2005; Assistant Professor, Sociology and Ethnic Studies; BA 1998 Adams State; MA 2000 Kansas State; PhD 2005 Duke
- Hoyt, Dan R. -2001; Professor and Chair; BA 1972, MA 1975, PhD 1980 Nebraska (Lincoln)
- Kimberly, James C. -1972; Professor Emeritus; BA 1950, MA 1955 Emory; PhD 1963 Duke
- Kort-Butler, Lisa A. -2007; Assistant Professor; BA 1996 Bowling Green State; MA 1999 Akron; PhD 2006 North Carolina State (Raleigh)
- McQuillan, Julia -1998; Associate Professor and Director of Bureau of Sociological Research; BA 1989, MA 1991, PhD 1998 Connecticut
- Moore, Helen A. -1979; Professor; BS 1974, MA 1976, PhD 1979 California (Riverside)
- Olson, Kristen M. -2007; Assistant Professor; Ba 1999 Northwestern; MS 2003 Maryland (College Park); PhD 2007 Michigan
- Schwadel, Philip M. -2005; Assistant Professor; BA 1997 florida; MA 1999, PhD 2003 Penn State
- Torres Stone, Rosalie -2001; Assistant Professor; BA 1993 Lehigh; MA 1995, PhD 2000 Connecticut
- Tyler, Kimberly A. -2001; Associate Professor; BA 1990 Winnipeg (Canada); MA 1992 North Dakota; PhD 1999 Iowa State
- Whitbeck, Les B. -2001; Professor; BA 1969 Western Washington State; MA 1973 Earlham School of Religion (Indiana); MA 1975 Purdue (Indianapolis); PhD 1986 Washington State
- Whitt, Hugh P. -1969; Professor; BA 1962 Princeton; MA 1966, PhD 1968 North Carolina
- Williams, Jr., J. Allen-1970; Professor; AB 1958 North Carolina; MA 1961 Cornell; PhD 1963 North Carolina
- Wortmann, Susan L. -2003; Lecturer; BS 1996 Wayne State; MA 1999, PhD 2003 Nebraska (Lincoln)

Courses for Statistics (STAT)

Statistics

*801. Statistical Methods in Research (4 cr) Lec 3, lab 2.

Prereq: Introductory course in statistics

Statistical concepts and statistical methodology useful in descriptive, experimental, and analytical study of biological phenomena. Practical application of statistics in biology rather than on statistical theory.

*802. Experimental Design (4 cr) Lec 3, lab 2.

Prereq: STAT *801

Suitability and efficiency of various designs in conducting experimental investigations in agriculture and related areas and the statistical analysis of the data.

*804. Survey Sampling (3 cr)

Prereq: STAT 880 or IMSE 321 or permission

Sampling techniques: simple random sampling, sampling proportions, estimation of sample size, stratified random sampling, ratio and regression estimates.

830. Sensory Evaluation (FDST 830) (3 cr I) Lec 2, lab 3.

Prereq: Introductory course in statistics

Offered fall semester of odd-numbered calendar years. Food evaluation using sensory techniques and statistical analysis.

*831. Spatial Statistics (3 cr)

Prereq: STAT *802

Offered odd-numbered calendar years. Statistical methods for modeling and analyzing correlated data, with emphasis on spatial correlation. Descriptive statistics, time series, correlograms, semivariograms, kriging and designing experiments in the presence of spatial correlation.

*832. Statistics in Sports (2 cr) Lec 2.

Offered even-numbered calendar years. Statistical methods useful for analyzing sports-related data. Descriptive statistics, graphical representations, experimental design, discriminate analysis and optimization.

*870. Multiple Regression Analysis (3 cr)

Prereq: STAT *801, *802

Linear regression and related analysis of variance and covariance methods for models with two or more independent variables. Techniques for selecting and fitting models, interpreting parameter estimates, and checking for consistency with underlying assumptions. Partial and multiple correlation, dummy variables, covariance models, stepwise procedures, response surfaces estimation, and evaluation of residuals.

*873. Applied Multivariate Statistical Analysis (3 cr) Lec 3.

Prereq: STAT *801

Multivariate techniques used in research. Reduction of dimensionality and multivariate dependencies, principle components, factor analysis, canonical correlation, classification procedures, discriminant analysis, cluster analysis, multidimensional scaling, multivariate extensions to the analysis of variance, and the general linear model.

*874. Nonparametric Statistics (3 cr)

Prereq: STAT *801 or 880

Statistical methods useful when data does not adhere to classical distributional assumptions. Analysis of interval/ordinal/categorical data for one, two and k sample problems, correlation and regression, goodness-of-fit methods and related topics.

*875. Categorical Data Analysis (3 cr)

Prereq: STAT *801, *802 or *870 recommended

Measures of associating contingency tables analysis, chi-squared tests, log-linear and logistic models, generalized estimating equations, planning studies involving categorical data.

880. Introduction to Mathematical Statistics (3 cr) Lec 3.

Prereq: MATH 208 or 107H; STAT 218 or equivalent

STAT 880 is not open to students earning a MA or MS degree in mathematics or statistics. Introductory mathematical statistics. Probability calculus; random variables, their probability distributions and expected values; sampling distributions; point estimation, confidence intervals and hypothesis testing theory and applications.

*882. Mathematical Statistics I-Distribution Theory (3 cr)

Prereq: MATH 208 or 107H

Sample space, random variable, expectation, conditional probability and independence, moment generating function, special distributions, sampling distributions, order statistics, limiting distributions and central limit theorem.

*883. Mathematical Statistics II-Statistical Inference (3 cr)

Prereq: STAT 882

Interval estimation; point estimation, sufficiency and completeness; Bayesian procedures; uniformly most powerful tests, sequential probability ratio test, likelihood ratio test, goodness of fit tests; elements of analysis of variance and nonparametric tests.

*884. Applied Stochastic Models (3 cr)

Prereq: STAT 880 or IMSE 321 or equivalent

Introduction to stochastic modeling in operations research. Includes the exponential distribution and the Poisson process, discrete-time and continuous-time Markov chains, renewal processes, queueing models, stochastic inventory models, stochastic models in reliability theory.

885. Applied Statistics I (3 cr)

Prereq: STAT 880 or IMSE 321, and knowledge of matrix algebra

General linear models for estimation and testing problems analysis and interpretation for various experimental designs.

*889. Statistics Seminar (1 cr)

Prereq: Permission

*892. Topics in Statistics and Probability (1-5 cr, max 24)

Prereq: Permission

Special topics in either statistics or the theory of probability.

*898. Statistics Project (1-5 cr, max 5)

Prereq: Permission

*899. Masters Thesis (1-6 cr)

Prereq: Admission to the Masters Degree Program and permission of major adviser

902. Advanced Experimental Design (3 cr) Lec 2.

Prereq: STAT *802

Continuation of STAT *802. The use, construction, analysis and interpretation of incomplete block designs useful in research. Partially and completely confounded factorials, lattices, augmented designs, and other topics.

904. Theory of Experimental Design (3 cr)

Prereq: Permission

Theory of underlying construction and analysis of designed experiments. Multifactor designs, fractional factorials, incomplete block designs, row and column designs, orthogonal arrays, and response to surface designs. Optimality criteria. Mathematical and computer-aided design theory.

930. Principles of Statistical Consulting (2 cr) Lec 2.

Prereq: Permission

STAT 930 is primarily for graduate students in statistics. Role and purpose of consulting. Statistical issues: understanding the client's problem and choosing an appropriate procedure. Interpersonal issues: client expectations, difficult clients, working effectively with people and teamwork.

932. Biometrical Genetics and Plant Breeding (AGRO 932) (3 cr) Lec 3.

Prereq: AGRO 931

STAT *802 recommended. Offered odd-numbered calendar years. Theoretical concepts involved in planning breeding programs for the improvement of measurable morphological, physiological, and biochemical traits that are under polygenic control in crop plants of various types.

950. Bootstrap Methods and Their Application (3 cr) Lec 3.

Prereq: STAT *883; STAT *870 or 970; prior experience with "R" software

Application, theory, and computational aspects of the bootstrap. Parametric, nonparametric, and jackknife re-sampling; influence function and nonparametric delta method; bootstrap confidence intervals and hypothesis tests; permutation tests; applications to regression; implementation using statistical software.

960. Matrix Algebra Applications in Statistics (2 cr) Lec 2.

Prereq: STAT *801 and *802

Concepts and matrix operations useful to expanding determinants, computing matrix inverses, determining ranks and linear (in)dependence, and finding latent roots and latent vectors. Introduction to matrix algebra applications in regression analyses and linear models.

970. Linear Models (3 cr) Lec 3.

Prereq: MATH 314/814

Methods and underlying principles for analyzing primarily unbalanced data based on a linear statistical model. General linear model with specific models as special cases. Linear models applications.

971. Advanced Statistical Modelling (3 cr)

Prereq: STAT 970

Advanced theory and methods for statistical analysis. Systematic development of the needs and requirement of statistical modelling in biology. Distribution and estimation theory for analysis of categorical data, survival data, data with correlated errors. Theory and practice of generalized linear models, mixed linear models. Introduction to non-linear models.

972. Variance Component Estimation (3 cr)

Prereq: STAT 970

Offered odd-numbered calendar years. Design and analysis of random effects and mixed models Basic theoretical background for models with fixed effects, distribution of quadratic forms, quadratic estimators including ANOVA methods, likelihood estimators including ML and REML, computing strategies, and optimal design for nested and cross classifications.

973. Theory of Multivariate Analysis (3 cr)

Prereq: STAT 873 or equivalent

Statistical inference concerning parameters of multivariate normal distributions with applications to multiple decision problems.

974. Nonlinear Regression Analysis (3 cr)

Prereq: STAT 870 and introductory calculus

Offered even-numbered calendar years. Basic concepts of nonlinear models and their associated applications. Estimating the parameters of these models under the classical assumptions as well as under relaxed assumptions. Major theoretical results and implementation using standard statistical software.

980. Advanced Probability Theory (3 cr) Lec 3.

Prereq: MATH *825

Probability spaces and random variables, expectations and fundamental inequalities, characteristic functions, four types of

convergence, central limit theorem, introduction to stochastic processes.

982. Statistics Theory I (3 cr) Lec 3.

Prereq: MATH *825 and STAT *883

General decision problems, admissibility, mini-max and Bayes rules, invariance and unbiasedness, families of distributions problems in estimation theory.

983. Statistics Theory II (3 cr)

Prereq: STAT 982

UMP tests, likelihood ratio tests, confidence ellipsoid multiple decision and multiple comparisons, sequential decision problems.

992. Advanced Topics in Probability and Statistics (1-5 cr, max 24)

Prereq: Permission

Special topics in either statistics or probability.

997. Practicum in Statistical Consulting (4 cr) Fld.

Prereq: STAT 930

Participation in statistical consulting activities of the Statistics Department under faculty supervision. Prepare written reports to clients summarizing consultation results and to statistics supervisor summarizing statistical issues and findings.

999. Doctoral Dissertation (1-24 cr)

Prereq: Admission to Doctoral Degree Program and permission of supervisory committee

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Walter W. Stroup, Ph.D.

Graduate Committee: Professors Eskridge (chair), Bilder, Parkhurst, Zhang

Graduate programs are offered leading to a master of science and a doctor of philosophy in statistics.

Master of Science Degree

The program of study for the masters degree may be under Options I, II, or III, with Option III the most common and Option I, the thesis option, rare. The primary aim of the statistics masters program is to provide students with an education that equips them to be competent practitioners of applied statistics. Programs can be tailored to emphasize applications in the biological sciences, environmental sciences, economics, engineering, agriculture, survey statistics or other areas of interest. Competence includes mastery of statistical theory and methods, significant exposure to disciplines with which statisticians interact, facility with statistical consulting tools, and training and experience with statistical consulting. Programs can also be tailored to prepare students who plan to go on for doctoral study.

Requirements are designed to allow flexibility in designing programs around individual student needs. Students are expected to take a common core consisting of two semesters of mathematical statistics, (STAT 882 and 883), two semesters of statistical modeling (STAT 970 and 971), one semester of design and analysis of experiments (STAT 802), and one semester of multivariate methods (STAT 873). In addition, students must attain proficiency in a statistical computing language, gain statistical consulting experience and become familiar with at least one discipline to which statistics is applied. Students are required to pass a comprehensive examination based on ability to integrate material from the core curriculum. Students who choose a non-thesis option are required to complete a project. All students must present a seminar as part of their masters program.

Doctor of Philosophy Degree

The goal of the statistics PhD program is to train students to conduct original methodological and/or theoretical research in statistics and to apply advanced statistical methods to scientific problems. Students are expected to take advanced graduate classes in the theory and applications of statistics and other relevant classes. The PhD program requires a qualifying exam, a PhD comprehensive exam and a final oral exam. The Statistics PhD Qualifying Examination is intended to verify mastery of tasks that require integration among fundamental statistics courses, (STAT 802, 882, 883, and 970). Each PhD student in statistics must complete courses in advanced statistical modeling (STAT 971), advanced probability (STAT 980) and the two-semester advanced statistical inference sequence (STAT 982 and 983). In addition, students must complete twelve hours of 900-level classes excluding STAT 970, 997 and 999. The PhD requires 90 hours of graduate credit, including a dissertation. At least 45 hours must be completed at UNL after the filing of the program of studies which must be approved by the student's PhD graduate committee. The PhD program typically includes 20 to 25 hours of dissertation research. In addition there is a research tool requirement.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Bilder, Christopher R. -2003; Associate Professor; BS 1994 Nebraska (Omaha); MS 1996, PhD 2000 Kansas State
- Blankenship, Erin -1999; Associate Professor; BS 1994 Truman State; MS 1996, PhD 1999 North Carolina State

- Eskridge, Kent M. -1983; Professor; BSBA 1976, MA 1981, Missouri; PhD 1987 Nebraska (Lincoln)
- Kachman, Stephen D. -1990; Professor; BS 1981 Michigan State; MS 1986 Illinois; PhD 1988 Montana State
- Marx, David B. -1989; Professor; BA 1968 Wooster (Ohio); MS 1970 Missouri; PhD 1977 Kentucky
- Parkhurst, Anne M. -1969; Professor; BA 1962 Virginia; MS 1965 Yale; PhD 1992 Nebraska (Lincoln)
- Roy, Ananya -2007; Associate Professor; BS 2000 Calcutta; PhD 2007 Florida
- Stroup, Walter W. -1979; Professor and Head; BA 1973 Antioch; MS 1975, PhD 1979 Kentucky
- Zhang, Shunpu - 2004; Associate Professor; BA 1982 Zhejang Normal; MS 1990 Science and Technology (China); PhD 1997 Alberta

Courses for Survey Research and Methodology (SRAM)

Survey Research and Methodology

*800. Research Methods (POLS *800) (3 cr)

Basic techniques used in quantitative political science research. The general linear model. Basic probability theory, ordinary least squares regression, and how to solve problems often encountered when conducting quantitative analyses in political science.

*815. Applied Sampling (3 cr) Lec 3.

Design of probability samples, sampling populations of humans and unique challenges posed by such populations, restricted by cost and available sampling frames. Simple random sampling, stratification, cluster sampling, systematic sampling, multistage sampling, and probability proportional to size sampling, area probability sampling, and telephone samples.

*816. Principles of Survey Analysis (3 cr) Lec 3.

Introduction to the basic principles of causality and inductive logic in contemporary social and behavioral science. One, two, and multi-way layouts in analysis of variance, fixed effects models, and linear regression in several variables; the Gauss-Markov-Theorem; multiple regression analysis; and basic principles of experimental and quasi-experimental designs.

*817. Cross-cultural and Multi-population Survey Methodology (3 cr) Lec 3.

Multi-national research projects and the methodological challenges. Key aspects of cross-national, cross-cultural survey research, study design and organization; survey error and bias; question design; harmonization; adaptation and translation; survey process quality monitoring and control; and process and output documentation.

*818. Data Collection Methods (3 cr) Lec 3.

Effects of various data collection methods on survey errors. The strengths, weaknesses, and challenges of data collection modes and mixed-mode methods. Processes underlying data collection and practical challenges that arise with each mode; coverage error; nonresponse error; interviewer effects and training; timing; and mode effects.

*824. Advanced Quantitative Analysis in Marketing (MRKT *824) (3 cr)

Prereq: GRBA *813 or equivalent, or permission

Review, evaluation, and design of advanced marketing research investigations. State-of-the-art methodological issues relevant to marketing to provide an understanding of multivariate data analysis pertinent to the marketing literature. Analysis of linkage, structure, and causality/change for marketing phenomena.

863. Advanced Methods of Social Research II (SOCI 863) (3 cr)

Intensive analysis of the logic and techniques of sociological analysis: techniques of scaling and index construction; contingency table analysis; measures of association; parametric and nonparametric statistical inference; and generalizations from systematic findings.

865. Survey Design and Analysis (SOCI 865) (3 cr)

Basic issues related to the design and analysis of sample surveys. Basics of questionnaire construction, sampling, data collection, analysis and data presentation.

*895. Internship (3-6 cr)

Prereq: Permission

Experience applying concepts and methods of survey research in preparation for a professional career.

*896. Practicum in Survey Research and Methodology (3 cr)

Prereq: Permission

Application of theory and research gained during internship.

*898. Special Topics (3 cr, max 24)

Topic varies.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

902. Seminar in Research Methods (SOCI 902) (3 cr, max 9)

Prereq: Permission

915. Advanced Sampling (3 cr) Lec 3.

Advanced topics related to sampling error in surveys. Complex sample designs used to measure populations of humans, effect of nonresponse on sampling error and data analysis; methods available to "repair" the missing information; the implications of complex sample designs for analyses; and variance estimation.

920. Instrument Design and Development for Cross-cultural Surveys (3 cr) Lec 3.

Design instruments for multi-population surveys and to produce versions in different languages. Major approaches and strategies used in cross-national and cross-cultural research to design, test, adapt, and translate instruments for multilingual use.

921. Total Survey Error (3 cr) Lec 3.

Common language of survey errors across social science disciplines. Causes of survey coverage, nonresponse, measurement, and processing errors; techniques used to reduce the error in practice; and statistical models and designs that exist to measure the error. Implications of cost and trade-offs between error sources.

922. Randomized and Nonrandomized Research Design (3 cr) Lec 3.

Logic of causal inference in research design. Obstacles to causal inference, faulty measurement, un-representativeness, spuriousness, specification errors, and confounds, Experimental and quasi-experimental designs, with inferential pitfalls peculiar to each design. Statistical procedures to illustrate the logic behind various data analytic approaches and the different problems that can limit conclusions derived from these tools.

941. Intermediate Statistics: Experimental Methods (EDPS 941) (3 cr)

Prereq: EDPS 859

Computation, interpretation, and application of analysis of variance techniques, including factorial and mixed model designs. Computer and microcomputer software accessed.

942. Intermediate Statistics: Correlational Methods (EDPS 942) (3 cr)

Prereq: EDPS 859 or equivalent

Various correlational-based statistical procedures presented, including linear and nonlinear regression, multiple regression, statistical control, analysis of interactions, the general linear model, factor analysis, and discriminant analysis.

946. Psychology of Survey Response (PSYC 946) (3 cr)

Cognitive and communicative processes affect on dynamics of survey interviewing and relationships to principles of survey design. Effects of question wording on comprehension; question order and context on attitude; communicative and retrieval processes on validity of retrospective behavioral reports; and impact of response alternatives on answers.

947. Questionnaire Design (PSYC 947) (3 cr)

Design of questionnaires for survey research and the theoretical and practical issues arising from them. Selection of appropriate measurement techniques for assessing opinions, past behaviors and events, and factual material.

970. Theory and Methods of Educational Measurement (EDPS 970) (3 cr)

Prereq: EDPS 859 and 870; EDPS/SRAM 941; or equivalent

Presentation of various measurement theories and concepts, including classical true-score theory, reliability and validity, test construction, item response theory, test equating, test bias, and criterion-referenced tests.

971. Structural Equation Modeling (EDPS 971) (3 cr)

Prereq: EDPS/SRAM 942 and 970; or equivalent

Introduction to the techniques of path analysis, confirmatory factor analysis, and structural equation modeling with emphasis on the set-up and interpretation of different models using the LISREL program. Model testing and evaluation, goodness-of-fit indices, violations of assumptions, specification searches, and power analyses.

972. Multivariate Analysis (EDPS 972) (3 cr)

Prereq: EDPS/SRAM 941 and 942

Techniques of multivariate analyses, including multivariate analysis of variance and covariance, multivariate multiple regression, multigroup discriminant analysis, canonical analysis, repeated measures (Multivariate model), and time series. Mathematical models presented and analyzed. Instruction complemented by appropriate statistical software packages.

998D. Seminar in Special Topics (MRKT 998D) (3 cr)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Program Director: Janet Harkness, Ph.D.

Graduate Chair: Robert F. Belli, Ph.D.

The SRAM degree programs prepare students for professional positions and leadership in survey research disciplines in the U.S. context and around the world. The skills and knowledge SRAM students acquire enable them to collect, interpret, and present empirical data in cogent and powerful ways relevant for professional contexts.

The Survey Research and Methodology (SRAM) program offers both master of science (MS) and doctor of philosophy (PhD) degrees. The curricula are interdisciplinary and combine theory with practical application. Students receive a thorough grounding in all aspects of survey methodology from study design through data collection to data analysis.

The MS program is a two-year, non-thesis program designed to train students to fill the expanding need in the public and private sectors for people who are able to design, execute and analyze survey research. Graduates can expect to find challenging, creative and well-paid positions in the private and nonprofit sectors; in media, research, government, and business. The program requires 45 credits; 27 in the core and elective areas, 9 in a minor area of emphasis and 9 in an internship and a related practicum. Core areas studied include general survey methodology, applied sampling, intermediate and advanced statistics, cognitive aspects of survey design, and cross-cultural and cross-national methodology. Minor areas of emphasis in the MS degree can include business, educational psychology, marketing, political science, psychology, public administration, sociology or statistics.

The PhD program is a four-year program that requires a dissertation of original work that advances knowledge in the field of survey methodology. In addition to advanced opportunities in government, business and nonprofit sectors, PhD graduates are expected to have opportunities in academic settings. The PhD requires completion of the MS program in Survey Research and Methodology or a comparable qualification. The PhD program requires a minimum of 90 credits. Students will have a choice of emphasis (study tracks) in either statistics or design and implementation more generally. Elective courses may be taken from numerous fields. The completion of the PhD requires a dissertation of original research advancing knowledge in the field of survey methodology.

Both MS and PhD programs in Survey Research and Methodology are based on interdisciplinary curricula and the combination of theory and practice in instruction.

Research Opportunities. Students in the graduate programs in Survey Research and Methodology have access to research opportunities through assistantships, on-going faculty research, conference participation, as well as internships and practica in the MS program.

Opportunities Abroad. The Survey Research and Methodology Program currently has two exchange programs with European universities. One is a one-semester exchange program with the post-graduate program in Quantitative Analysis at the Catholic University in Brussels, Belgium, the other is an exchange program with the Social Research graduate program at V U University Amsterdam, in the Netherlands, a program which focuses on topics related to quantitative and qualitative research design and data collection.

Applications to SRAM. Students seeking admission must apply through the UNL Office of Graduate Studies. The application can be found at: www.unl.edu/gradstudies/prospective/app-degree.shtml.Applications are due by February 1 of each year.

Graduate Studies also requires applicants to submit test scores from all sections of the Graduate Record Examinations (GRE) or from the GMAT (for students seeking to minor in marketing); two official copies of transcripts from all colleges/universities attended. Where relevant, students from abroad are also required to submit TOEFL results. These items should be mailed to:

Graduate Admissions Office
University of Nebraska-Lincoln
1100 Seaton Hall
Lincoln, NE 68588-0619

All applicants must submit a personal statement explaining their interest in pursuing a degree in survey research and methodology and include three letters of recommendation. The personal statement and letters of recommendation are to be sent to:

SRAM Program Admissions
University of Nebraska-Lincoln
200 North 11th Street
Lincoln, NE 68588-0241

SRAM Funding Opportunities. The Gallup Organization funds a number of scholarships for the SRAM MS degree program. SRAM applicants interested in applying for one of these scholarships are asked to take the Clifton StrengthsFinder®. Students accepted into the PhD degree program normally receive SRAM graduate assistantships. For more information on these funding opportunities, please contact the SRAM office.

All UNL programs have possibilities to fund exceptional out-of-state and minority students.

Master of Science Program Description

The curriculum constitutes a total of 45 credit hours of study, divided between 27 credit hours in the core and elective research areas, 9 credit hours in the student's minor area of emphasis, and 9 credit hours in the student's internship and practicum.

Master of Science Curriculum

An introductory (undergraduate) statistics course is a program prerequisite. New students lacking this prerequisite will be expected to fulfill this requirement **without program credit** in their first semester of study.

Major Requirements (27 credits)
Core Areas:
One course (or equivalent) from each of the 8 areas listed below (24 credits) and one elective (3 credits) are required.

1. Data Collection Methods: Face-to-face, telephone, mail, and internet data collection methods; impact of data collection methods on survey errors; mode effects
   - SRAM 818
2. Research Design: Experimental design; quasi-experimental design; panel designs; and quantitative v. qualitative data collection and analysis
   - SRAM 898
   - SRAM 922
   - STAT 802
3. Survey Error and Measurement: Reliability, validity, bias; measurement models; and scale analysis
   - SRAM 921
   - EDPS 870
   - PSYC 948
4. Sampling: Sampling design; variance estimation and adjustment; and response rates and bias
   - SRAM 815
   - SRAM 915
   - STAT 804
5. Instrument Design and Evaluation: Questionnaire design; cognitive and communicative processes in answering survey questions; question- and response- order effects; attitude measurement; measurement of facts and behaviors.
   - SRAM/PSYC 946
   - SRAM/PSYC 947
   - One SRAM course TBA
   - One SRAM course TBA
6. Cross Cultural Survey Research: Study design; study specifications; study management; instrument design; instrument adaptation and translation; instrument testing; data collection
   - SRAM 817
   - SRAM 920
7. Intermediate Statistics: Multivariate analysis; ordinary least squares and logit regression; and analysis of interaction effects
   - SRAM 816
   - EDPS 969
   - SRAM/SOCI 863
   - SRAM/EDPS 941
   - SRAM/EDPS 942
   - STAT 870
8. Advanced Statistics: Structural equation modeling; modeling categorical data; discriminant analysis; general linear models; and conjoint analysis
   - PSYC 944
   - PSYC 945
   - SRAM/MRKT 824
   - SRAM 898
   - SRAM/SOCI 902
   - SRAM/EDPS 971
   - SRAM/EDPS 972
   - STAT 873
   - STAT 875
   - STAT 880
   - STAT 882
   - STAT 883
   - STAT 885
   - STAT 970

Please Note: One course each (or equivalent) from the intermediate and advanced statistics areas, or two courses from the

advanced statistics area (6 credits) are required. Courses in the Core Areas may NOT be taken as Pass/No Pass. SRAM students are required to earn a grade of B or better in each Core Area course.

Research Electives (3 credits)

With the major adviser's approval, students choose one additional course to broaden their training in survey research and methodology. A course used to fill one of the required content areas may not also be used as an elective. However, with the adviser's approval, a student can take a second course from a required topic area and have this count as an elective. Electives may include courses in research methods, analysis, the theory of public opinion, program evaluation, qualitative methods, philosophy of science, market research, consulting, data reporting or other areas, at the adviser's discretion.

Minor Requirements (9 credits)

Students in survey research and methodology choose a minor area of emphasis from a wide variety of fields such as: sociology, political science, psychology, educational psychology, marketing, statistics, journalism, public administration, or education. This allows students to hone their skills and knowledge for particular future career environments. Students will select a minor area adviser in their selected area who will assist in the selection of courses in this area. Some minor areas require 12 credit hours. In such cases, students may elect to use one course as both a research elective and as a minor requirement.

Internship and Practicum (9 credits total)

Students in the survey research and methodology MS program are required to complete an internship (6 credits) and practicum (3 credits). Internship opportunities will be arranged with one of several commercial survey and market firms, media groups, governmental agencies, academic research establishments and nonprofit associations. These internships normally take place between the students' first and second years of residence.

Internship (6 credits)

The internship is a crucial component of student training in the SRAM program and reflects our philosophy of combining survey practice with theory. As part of their participation in actual research settings, students may be required to attend seminars covering ethics, contribute to grant writing, and work with statistical packages (e.g., SPSS, SAS, LIMDEP, GAUSS, S-PLUS, Stata) or data collection systems (e.g., CAPI, CASI, CATI).

Practicum (3 credits)

Students complete a written practicum that is based on elements of their internship.

More information on the internship/practicum can be found at: sram.unl.edu/programs/courses_ms.htm.

Survey Research and Methodology Certificate Program

- SRAM 816 – Principles of Survey Analysis
- SRAM 815 – Applied Sampling
- SRAM/PSYC 947 – Questionnaire Design
- SRAM 921 – Total Survey Error
- SRAM 818 – Data Collection Methods
- One elective from SRAM MS core curriculum with the exception of an Intermediate Statistics course

Survey Research and Methodology Ph.D minor

- SRAM 815 – Applied Sampling
- SRAM/PSYC 947 – Questionnaire Design
- SRAM 921 – Total Survey Error
- SRAM 818 – Data Collection Methods
- An Intermediate or Advanced Statistics course from SRAM MS core curriculum
- One elective from SRAM MS core curriculum with the exception of an Intermediate Statistics course

Electives must be taken with the approval of a minor advisor who must be a member of the SRAM core faculty. SRAM core faculty consists of Graduate Faculty with at least a .5 FTE in the SRAM program.

Survey Research and Methodology Master's minor

12 credits from SRAM MS core curriculum as approved by a minor advisor who must be a member of the SRAM core faculty. The minor would likely include courses in Instrument Design and Evaluation, Data Collection Methods, and Sampling. SRAM core faculty consist of Graduate Faculty with at least a .5 FTE in the SRAM program.

Advising

All students are assigned a major adviser. MS students will select a minor areas adviser.

Information about the SRAM PhD comprehensive examination

The general purpose of the SRAM Ph.D. comprehensive examination is to demonstrate mastery in both core and specialty areas of Survey Research and Methodology. The goal of the exam on core areas of survey methodology is to demonstrate each student's

breadth of knowledge across the fundamental areas of survey methodology. The goal of the exam on a student's specialty area is to demonstrate depth of knowledge in a particular area in which the student wants to be considered an expert after completion of the Program.

The Graduate Faculty has agreed that Ph.D. students will be provided with a reading list with regard to the core areas of survey methodology. In addition, students will be required to develop their own reading list for their specialty area. This needs to be submitted in a timely fashion for approval by the student's supervisory committee.

The examination will consist of two four-hour sessions, the first in the morning, the second in the afternoon of the same day. The examination will be closed book, that is, no books, notes, or electronic files of any kind are to be used. Students will be presented with four questions for each session, and will be required to answer three of these in each session, thus answering six questions in total. The morning session will cover core areas, and the afternoon session will cover the student's specialty area.

Students have the choice to write their answers by hand or to type in their answers electronically on a computer. Examinations will be proctored. The scheduling of the examination, and who will serve as graders of the examination, requires approval by the student's supervisory committee and the majority consent of the core SRAM faculty.

Doctor of Philosophy Program Description

The PhD program builds on the kind of skills and knowledge acquired in the SRAM MS program in Survey Research and Methodology. To be admitted into the PhD program, applicants must usually have completed a masters degree or its equivalent in Survey Research and Methodology, or a related field accepted by the Graduate Committee. Anyone accepted into the program may be required to complete courses that demonstrate that their credentials match the skills and knowledge that students acquire from earning an MS in Survey Research and Methodology. These required courses must be completed in order to become eligible to have a Supervisory Committee appointed. Decisions about which courses are required will rest with the Graduate Committee.

The PhD program consists of a minimum of 90 credit hours. These may include transfer credits for students who have earned degrees outside of the University of Nebraska-Lincoln; 45 credit hours must be earned after the appointment of the PhD student's Supervisory Committee. No courses may be taken on a Pass/No Pass basis and all PhD students are required to maintain a cumulative grade point average of 3.5 or higher.

The PhD program is designed to train students both in the issues that govern sound survey research practice and in the theoretical frameworks of those disciplines that contribute to Survey Research and Methodology. Students will opt for either statistical or design and implementation tracks, each of which have their own sets of requirements. The PhD dissertation must consist of an original research contribution that advances knowledge in the field of Survey Research and Methodology and demonstrates the candidate's expertise in both practice and theory.

Doctor of Philosophy Curriculum

Language and Research Tool Requirement

Prior to admission to candidacy, students must demonstrate proficiency in technical and scientific writing. The student's supervisory committee may require course work as part of the language and research tool requirement. Core Courses (minimum of 15 credit hours) Core courses are designed to ensure that students acquire the methodological and theoretical skills necessary to design sound Survey Research and Methodological studies. Ph.D. students must satisfy the core course requirements of the SRAM MS program. The following courses (or equivalents) are also required:

- SRAM 915-- Advanced Sampling
- SRAM 921 – Total Survey Error
- SRAM 947 – Questionnaire Design
- SRAM 998 – Advanced Topics in Survey Analysis (Special Topics)
- SRAM 998 -- Survey Management (Special Topics)

Statistical or Design and Implementation Tracks (minimum of 15 credit hours)
Each student's supervisory committee will tailor a program of study that best matches the student's interests and strengths. Students will decide either to follow a statistical track or to follow a design and implementation track in their course of studies. Within either track, their studies will concentrate on essential aspects that contribute to Survey Research and Methodology.

Within the statistical track, students will be required to complete course work and seminars dealing with statistical, probability and sampling theory. For example, courses on the general linear model, mixed and hierarchical linear models, issues in advanced sampling, finite mixture models, analysis of data from complex sample designs, missing data imputation and related topics will be included in this track.

Within the design and implementation track, students complete course work in their areas of interest such as cognitive and social psychology, health and educational research, cross-cultural comparative research, or in any social science discipline that is dependent on survey data to draw scientific inferences.

Comprehensive Examination

In order to advance to candidacy (to be able to submit a dissertation), the student must pass a written comprehensive examination demonstrating mastery in core areas of Survey Research and Methodology and also in the student's specialty area which is chosen from the statistical or the design and implementation tracks. In general, students are encouraged to pass the comprehensive examination before submitting a dissertation proposal.

Steps for Ph.D. comprehensive examination

1. The supervisory committee works with the student to a) create a proposed reading list for the specialty section of the examination, b) determine who will be the proposed question writers and graders for the specialty section (who must be either supervisory committee members or SRAM core faculty), and c) determine a proposed date in which the examination is to take place.
2. The supervisory committee chair notifies all of SRAM core faculty with a) the proposed specialty section reading list, b) the proposed question writers and graders for the specialty section, and c) the proposed examination date. The provision of these materials must be submitted to the SRAM core faculty (including the graduate chair) at least one month before the proposed examination date. SRAM core faculty are defined as Graduate Faculty who have at least a .5 FTE in SRAM.
3. The graduate chair determines whether there is majority approval from the SRAM core faculty on the examination provisions that are proposed by the supervisory committee (via the supervisory committee chair). The graduate chair notifies the supervisory committee chair of any necessary revisions to the proposed plan within two weeks following the provision of materials. If any revisions are to be made, the supervisory committee must a) resubmit the revised plan to each of the SRAM core faculty, and b) allow for an additional week to receive majority approval from the SRAM core faculty on revisions to the plan. If the revisions are deemed to be inadequate, the process continues to cycle until majority approval is obtained. The date of the examination will be postponed as needed to accommodate majority approval.
4. Under the auspices of the Graduate Chair, the graduate committee seeks agreement among the SRAM core faculty who will serve as the question writers and graders for the core section of the examination to meet any agreed upon examination date.
5. As needed, approved examination question writers and graders will be informed that they are to determine a grade (a letter grade, letter grade range, or a judgment as to failure, pass, or high pass) and to provide comments on how the grade was determined for each question to which they are responsible, and which the student has answered.
6. Following the administration of the examination, the Graduate Chair collects the grades and comments from each of the graders of the core section of the examination, and the Supervisory Committee Chair collects the grades and comments from each of the graders of the specialty section of the examination. The Graduate Chair submits the core section grades and comments to the Supervisory Committee Chair. On the basis of these grades and comments, the Supervisory Committee makes a determination on whether the student has passed the examination.
7. If the Supervisory Committee Chair is the Graduate Chair, the Director serves in the capacity of the Graduate Chair for the purposes of these proceedings.

Dissertation Research (minimum of 12 credit hours). As an original contribution to the knowledge base of Survey Research and Methodology, the dissertation must consist of an empirical study that includes analysis of primary or secondary data sources, or both. For completion of degree requirements, in addition to a written dissertation, students must pass an oral dissertation defense as required by Graduate Studies.

Courses for Textiles, Clothing and Design (TXCD)

Textiles, Clothing and Design

803. Apparel Design by Draping (3 cr, max 6) (UNL) Studio 6.

Prereq: 12 hrs textiles, clothing, and design including TXCD 209 and 216

Creative experience in designing apparel through the use of draping techniques.

805. Advanced Textiles (3 cr) (UNL) Lec 2, lab 2.

Prereq: TXCD 206; CHEM 105 or 109 or 113

Recent advances in the production and performance of fibers, yarns, finishes and dyes for textile products. Laboratory experiences designed to familiarize the students with standards, methods and equipment for evaluating textile product performance.

806. Textile Testing and Evaluation (3 cr) Lec 1, lab 2.

Prereq: TXCD 206

TXCD 406/806 is taught every other year. Physical and chemical analysis of textiles using standard testing procedures. The calculation, interpretation, and evaluation of test results.

807. History of Costume (3 cr) (UNL) Lec 3.

Prereq: AHIS 101 and 102 or 3 hours HIST 100 or 101 (Western Civilization)

A theoretical approach to the history of dress from ancient times through the twentieth century, examining dress in the context of social, economic, and artistic development of Western culture.

808. History of Textiles (3 cr) (UNL) Lec 3.

Prereq: AHIS 101 and 102 or 3 hours HIST 100 or 101 (Western Civilization)

Textiles in the context of artistic, social, political and economic developments in the cultures of Europe, Asia, Africa and the Americas. Emphasis on the evolution of textile design and stylistic differences between cultures.

809. Care and Conservation of Textile Collections (3 cr, max 6) (UNL)

Prereq: TXCD 206 or permission

Recommended practices for accessioning, handling, storage, exhibition, and preventative conservation of textiles and dress in museum collections. Philosophical and ethical issues confronting curators and collection managers.

810. Socio-psychological Aspects of Clothing (WMNS 810A) (3 cr) Lec 3.

Prereq: 3 hrs PSYC or SOCI; TXCD 123

Theories and research findings about the social and psychological effects of clothing and appearance in relation to the self and others.

*811. Textiles, Clothing, and Design Problems (1-6 cr each per sem, max 12)

Prereq: 12 hrs textiles, clothing, and design and permission

Selected problems related to textiles, clothing, and design.
A. Textiles
B. Clothing
D. Design

812. Apparel Market Analysis and Product Development III: Trend Analysis and Product Conceptualization (3 cr I) Lec 3.

Prereq: TXCD 312 and 314

Synthesis of processes involved in product development from product initiation to the development of market strategies. Career and portfolio development course.

813. Merchandising III: Merchandising Development and Sourcing (3 cr) (UNL) Lec 3.

Prereq: ACCT 201; ABUS/MRKT 341; MRKT 346; TXCD 313 and 314

Sourcing and problems involved in the merchandising of textiles and apparel. Cultural and economic aspects of textile and apparel distribution. Structure of the industry, and marketing practices specific to the textile and apparel industry.

816. Apparel Design for Industry (3 cr, max 6) (UNL) Studio.

Prereq: TXCD 209 and 216

Creative experience in designing apparel, computer-aided design, pattern making, and line development for specific markets.

*817. Textiles and Dress: A Cultural Perspective (3 cr) Lec 3.

Prereq: 6 hours of history or art history; TXCD 206

TXCD 807, 808, and ANTH 100 recommended. Textiles and dress as an expression of the life, arts and material culture of Europe, Asia, the Middle East, Africa and the Americas. Literature and theoretical approaches.

*818. History of Quilts (3 cr)

Prereq: Permission

Influence of social, political, artistic and technological developments on quiltmaking traditions worldwide.

*823. Advanced Design in Mixed Media (3 cr, max 6) (UNL) Studio 6.

Prereq: TXCD 209, 216, 312, and 803 or 816L; or permission of instructor

Creative experience in designing textiles and apparel as three-dimensional art forms with emphasis on conceptualization, expression, media, techniques, lighting, space, and movement as influential factors combined with exhibition experience. Topics vary.

*824. Rendering and Production of Textiles and/or Apparel (3 cr, max 6) (UNL) Studio.

Prereq: Permission of instructor

Studio experience in working with a variety of media, including digital, to render and produce textiles and/or apparel; and Portfolio development.

*825. Advanced Work in Digital and Other Media for Textile Design (3 cr, max 6) (UNL) Studio 6.

Prereq: TXCD 225 and 325

Digital and other media for textiles. Design development, professional practice, and expressive communicative concepts.

828. Coloration (3 cr) Lec 2, lab 3.

Prereq: TXCD 206 and 4 hrs CHEM

Application classes of dyes. Emphasis on the physical and chemical properties of dyes within each class, methods of dye-fiber association, fastness properties of dyes and recommended application procedures.

*870. Current Issues in Textiles, Clothing, and Design (3 cr ea, max 9)

Prereq: 9 hrs textiles, clothing and design and permission

Significant issues in textiles, clothing, and design.
A. Textiles
B. Clothing
D. Design

870A. Textiles

870B. Clothing

870D. Design

872. Inventing the Crafted Fabric (3 cr II) Stu 6.

Prereq: TXCD 216 and 225; parallel TXCD 471

TXCD 325 and 403/803 recommended. TXCD 872 requires a public presentation of work. Advanced work in the creation of textiles. Design conceptualization; development and experimentation in media, structure and application; and product development.

*873. Design Perspectives and Issues (3 cr I)

Lec 2, stu 2. TXCD 873 culminates in an exhibition in the Robert Hillestad Textiles Gallery. Contemporary issues in design with creative and/or curatorial work.

*874. Theory Development (1 cr) (UNL) Lec 1.

Emergence and synthesis of theory, an assessment of current theoretical development, conceptual structures, with emphasis on theory construction as a framework for research.

*875. Research Methods (HUMS *875) (3 cr) (UNL) Lec 3.

Research methods that addresses practical and theoretical issues involved in designing, conducting, and evaluating research.

*876. Artifact Analysis (3 cr)

Prereq: TXCD 206; TXCD 807 or 808

Research methods for material culture study applied to textiles and dress. Methodologies for artifact study and skills. Fiber microscopy as a tool for artifact analysis. Conceptual development, application and evaluation of a model for artifact study.

890. Workshop/Seminar (1-3 cr, max 9)

Workshops on a variety of topics by department faculty and visiting artists, scholars and scientists. Opportunity to analyze and evaluate techniques, develop skills, or study topics of special interest.
A. Textiles
B. Clothing
D. Design

890A. Textiles

890B. Clothing

890D. Design

*891. Special Topics in Human Sciences (CYAF *891; HUMS *891; NUTR *891; SLPA *891; TEAC *891) (1-3 cr, max 12)

Aspects of human sciences not covered elsewhere in the curriculum.

892. Professional Study Tour--International or Domestic (1-6 cr, max 12)

Prereq: 12 hrs textiles, clothing and design or permission

Number of credits determined by the time spent, assignment, and sites visited. Expands students' experience and knowledge of the textile and apparel industry. Includes visits to museums, showrooms, manufacturers, retail establishments in major domestic and/or foreign markets. Sites such as the following: Chicago, Dallas, New York City, Paris, London, and Rome.

896. Independent Study (1-5 cr each per sem, max 10)

Prereq: 12 hrs textiles, clothing, and design and permission

The work will be supervised and evaluated by departmental faculty members. Individual projects in research, literature review, or creative production, may or may not be an extension of course work.
A. Textiles
B. Clothing
D. Design

896A. Textiles

896B. Clothing

896D. Design

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

905. Advanced Problems (1-6 cr each per sem, max 12) (UNL)

Prereq: Permission of chair

Reading, discussions, and reports dealing with the economic, sociological, historical, technical, and aesthetic phases of textiles and clothing.
A. Textiles
B. Clothing
D. Design

905A. Textiles

905B. Clothing

905D. Design

907. Textiles and Apparel Economics (3 cr) (UNL)

Prereq: TXCD 813 plus 9 hrs textiles, clothing and design, 6 hrs economics (undergraduate hrs) or permission

Current status of the domestic textile and apparel complex; current theories of textile consumption and demand within the international market; factors influencing textile and apparel production, distribution, and expenditures; the role of international trade and its influence on the domestic textile and apparel industry and foreign policy.

910. Appearance and Space as Nonverbal Communication (3 cr)

Prereq: TXCD 810, or permission

Appearance and space as systems of nonverbal communication with emphasis on their relationship to the development of the self and the micro and macro processes of life.

913. Theory and Issues in Merchandising (3 cr)

Prereq: TXCD 813 or permission

Common theoretical frameworks found in the textile/apparel/interior merchandising and marketing literature, plus issues which impact the textiles and apparel industry.

920. Teaching Practicum (CYAF 920; NUTR 920) (1-3 cr, max 3)

Prereq: CYAF 918 or permission of department chair

Supervised classroom experiences designed to develop competencies in teaching at the college level.

978. Seminar in Textile History

(1-3 cr per sem, max 9

986. Seminar in Textiles, Clothing, and Design (1 cr per sem, max 2)

Prereq: Permission

995. Doctoral Seminar (1-3 cr, max 18)

Prereq: Permission

Intended primarily for doctoral students, although non-doctoral graduate students may be admitted with permission. Immersion in outcome-based scholarly activities with a faculty mentor. Develop, execute and report on one or more projects addressing the interaction between research and practice, individually or in small groups.

996. Research Other Than Thesis (1-6 cr)

Prereq: Permission

997. Internship (1-9 cr, max 9) Fld.

Prereq: 9 hrs textiles, clothing and design graduate credit

Supervised independent professional experience under direction of a practicing professional within the textile and apparel industry, government agencies, museums and/or businesses.

998. Special Topics in Human Sciences (CYAF 998; NUTR 998) (1-3 cr, max 6)

Prereq: Permission

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Michael James, M.F.A.

Graduate Committee: Professor Trout (chair); Professors Crews, James, Kean, Miller, Niemeyer, Weiss, Yang; Associate Professor Vigna; Assistant Professors Gao, Ha, McLeod

The Textiles, Clothing and Design Department was the 1999 recipient of the prestigious American Textiles Manufacturers Association (ATMI) Award of Excellence which recognizes outstanding academic achievement in the field of textiles and apparel. Faculty and students within the department have a distinguished record of national recognition and awards for their research, creative and scholarly work. The Textiles, Clothing and Design Department houses the International Quilt Study Center and Museum and the Robert Hillestad Textiles Gallery. Students have access to additional outstanding resources including over 5000 objects in the historic textile and costume collections and faculty and student design studios equipped with state-of-the-art Lectra software systems, electric looms and a digital textile printer.

Graduate work in textiles, clothing and design provides the opportunity to increase knowledge in the field of study and competence in research and creative endeavors. Students may qualify for study in this area by presenting a baccalaureate degree from an accredited institution and having completed a minimum of 12 hours of undergraduate course work beyond the freshman level in textiles, clothing and design, or equivalent from a related area such as art, theatre, history, chemistry or business. Graduate programs in textiles, clothing and design are delivered through on-campus instruction and in Textile History and Quilt Studies also through hybrid distance education. Current information regarding graduate study in textiles, clothing and design is available on the department's Web site: textiles.unl.edu.

All applicants for admission are required to submit the results of the Graduate Record Examination in addition to the other application materials required by the Graduate College. A minimum undergraduate GPA of 3.00 on a 4.00 scale is also required. International applicants must submit a TOEFL score of at least 550-paper, 213-computer, 79-internet based. Finally, all applicants are asked to send a letter to the chair of the Textiles, Clothing and Design Graduate Committee describing his/her background, experience, and goals in pursuing graduate study.

The Graduate Committee will consider the qualifications of applicants for admission to study in textiles, clothing and design leading to a master of science or master of arts degree and will make recommendations to the Graduate College. Deficiencies as assessed on an individual basis may be removed concurrently with graduate studies.

Doctor of Philosophy Degree.

Studies leading to a PhD are conducted under the Human Sciences PhD program in Textiles, Clothing and Design. Current information regarding the PhD program is available on the department's Web site: textiles.unl.edu.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Crews, Patricia Cox -1984; Professor; BS 1971 Virginia Tech; MS 1973 Florida State; PhD 1984 Kansas State
- Gao, Xia -2007; Assistant Professor; BA 1995, ME 1998 Textile University (China); MFA 2006 Wisconsin (Madison)
- Ha, Young -2006; Assistant Professor; BA 1998 Hanyang (Korea); MA 2002, PhD 2006 Ohio State
- James, Michael -2001; Professor and Chair; BFA 1971 Massachusetts (Dartmouth); MFA 1973 Rochester Institute of Technology
- Kean, Rita C. -1980; Professor; BS 1971 SUNY (Buffalo); MS 1975, PhD 1984 Nebraska (Lincoln)
- Laughlin, Joan -1974; Professor Emeritus; BS 1962 Saint Mary; MS 1965 Iowa State; PhD 1974 Penn State
- McLeod, Harriet -2003; Assistant Professor; BS 1992 Florida; MS 1998, PhD 2003 Iowa State
- Miller, Nancy -2002; Professor; BS 1978, MS 1979, PhD 1994 Nebraska (Lincoln)
- Niemeyer, Shirley -1985; Professor; BS 1978 Nebraska (Lincoln); MS 1982 Iowa State; PhD 1990 Nebraska (Lincoln)
- Trout, Barbara L. -1981; Professor; BS 1970 Nebraska (Lincoln); MS 1978 Colorado State; PhD 1987 Nebraska (Lincoln)
- Vigna, Diane -2000; Associate Professor; BS 1971, MS 1990, PhD 1996 Nebraska (Lincoln)
- Weiss, Wendy -1986; Professor; BA 1979 Colorado College; MFA 1983 Kansas
- Yang, Yiqi -2001; Professor; BS 1980, ME 1984 Shanghai Textile Institute (China); PhD 1991 Purdue

Courses for Theatre Arts (THEA)

Theatre Arts

801. Advanced Acting (3 cr per sem, max 12)

Prereq: THEA 254, 256, 224 or equivalent and permission

Specific content for each semester may be obtained from the teaching faculty. The actor's methods of character development in the major styles of acting including Realistic Drama, Elizabethan, Comedy, Theatre of the Absurd, Musical Theatre, and others, and the acting profession itself.

802. Advanced Stage Movement (2 cr per sem, max 8)

Prereq: THEA 256, 224 or equivalent and permission

Actor movement training intended for the graduate and advanced undergraduate. Focus on the process of building a physical characterization, tumbling, kinesthetic awareness, movement improvisation, period styles, court dancing, mask, Commedia

dell'Arte, and stage combat.

803. Advanced Stage Voice (2 cr per sem, max 8)

Prereq: THEA 254, 224 or equivalent and permission

Actor voice training intended for the graduate and advanced undergraduate. Linklater-based training supplemented by the study of Lessac principles, phonetics, verse scansion, and dialects.

804. Evolution of Dramatic Theory I (3 cr)

Prereq: 12 hrs theatre arts and dramatic literature

Dramatic theory from Aristotle to Lessing with emphasis on the relationship of theory and practice on the stage.

805. Evolution of Dramatic Theory II (3 cr)

Prereq: 12 hrs theatre arts and dramatic literature

Dramatic theory continued from Lessing to the present.

807. Auditioning (1 cr)

Prereq: THEA 114, 115, 223, 224 and permission

Instruction in the auditioning process including resumes, interviews, preparation of pieces (forms, styles, and genres) cold readings, songs, etc.

808. Advanced Projects in Acting and/or Directing (1-3 cr per sem, max 12)

Prereq: (acting) THEA 112G, 114, 204, 801 or equivalent and permission; (directing) THEA 203, 801, 810, 812, 818 and permission

Selected performance in acting and directing in University Theatre, Experimental Theatre, and Laboratory Theatre.

809. Advanced Projects in Technical Theatre (1-3 cr per sem, max 12)

Prereq: THEA 810, 812, 818 or equivalent and permission

Projects in scene design, costume design, lighting design, sound design, or technical direction. Planning and execution of designs for actual production.

810. Stage Lighting I (3 cr)

Prereq: 12 hrs theatre arts including THEA 201 and 202

Theory and practice of stage lighting. Instruments and control systems employed in lighting the stage. Color in light, its effect upon costume, makeup, and settings. The planning of light plots.

811. Stage Lighting II (3 cr)

Prereq: THEA 810

Intensive work in designing light plots with particular emphasis on design style for musicals, opera, and multiset productions.

812. Scene Design I (3 cr)

Prereq: 12 hrs theatre arts including THEA 201 and 202

Theory and practice of scene design. Application of the principles of design to stage settings. Development of the scene design for a play through sketches, color plates, models, and drawings.

813. Scene Design II (3 cr)

Prereq: 12 hrs theatre arts including THEA 201 and 202, and 812

Theory and practice of scene design with special emphasis on rendering techniques, period research, and multiset productions.

814. Stage Lighting III (3 cr) Lec, lab.

Prereq: THEA 811 or equivalent

Advanced lighting design through the rendering of light story boards.

*815. Production Design for Film and Television (3 cr) Lec 3.

Prereq: THEA 413/813 or 489/889

Theory and practice of production design for the camera. Research, design techniques, tools, and aspects of art direction specific to film and television.

816. Computer-Aided Design (CAD) for the Theatre (3 cr)

Prereq: 12 hrs theatre arts including THEA 201 and permission

Computer-aided design (CAD) as it applies to scenic, costume, and lighting design. Two-dimensional drafting, three-dimensional modeling, and computer graphics.

818. Costume Design I (3 cr)

Prereq: 12 hrs theatre arts including THEA 201 and 202

Theory and practice of stage costume design. Principles of design as they apply to theatrical costuming. Development of costume designs for the characters in a play through sketches, drawings, and color plates.

819. Costume Design II (3 cr)

Prereq: THEA 818

Costume design in the areas of design conception and techniques of design communication. Opportunity to apply principles learned in Costume Design I .

820. Problems in Technical Production (3 cr)

Prereq: THEA 201, 810, 812 or equivalent and permission

Reading, research, and discussion of technical problems relating to the use of new materials, special effects, sound design, projections and multimedia techniques, electromechanical devices. Procedures of technical direction and advanced technical drafting.

821. Drafting for Theatre (3 cr)

Advanced techniques and practice in technical drafting as applied to theatrical scene construction.

822. Theatre Architecture (3 cr)

Planning of a theatre facility, including program writing, working with consultants and architects, equipment specification, space allocation, codes and regulations.

823. Rendering for the Theatre (3 cr)

Advanced practices in scenic rendering for theatre and film.

826. Lighting for Film (3 cr)

Prereq: THEA 811 or 889, or permission

Advanced application of film lighting concepts and techniques.

827. The American Theatre I (3 cr)

Prereq: 12 hrs theatre arts including THEA 112G, 335, and 336 or equivalent

History and development of the professional American theatre from the beginning to 1900. Selected American plays which best characterize the period under consideration.

828. The American Theatre II (3 cr)

Prereq: 12 hrs theatre arts including THEA 112G, 335, and 336 or equivalent

History and development of the professional American theatre from 1900 to the present day. Includes selected American plays which best characterize the period.

831. Advanced Playwriting (3 cr per sem, max 6)

Prereq: 12 hrs theatre arts including THEA 112G, 131 or equivalents and permission

Composition of a three-act play or equivalent long play.

832. Scene Painting (3 cr)

Prereq: 12 hrs theatre arts including THEA 201, or permission

Techniques and practice of scene painting for theatre, film, and television. Texture simulation, faux finished, and realistic drop painting.

840. Continental Drama (3 cr)

Prereq: 12 hours in theatre arts including THEA 335 and 336

Significant plays written and produced in the theatres of Europe (excluding Britain) between 1688 and 1875. Period of study encompasses late neoclassicism, Sturm und Drang, romanticism, melodrama and precursors of realism in French, German, Italian and Russian theatre.

850. Sound Design I (3 cr)

Prereq: THEA 201 or permission

Theory and practice of sound design for live theatre. Extensive work with recording, mixing, effects, and playback devices.

851. Sound Design II (3 cr)

Prereq: THEA 850 or permission

Advanced work with recording, mixing, effects, and playback devices. Training on digital editing using Pro Tools LE platform. Planning and execution of full-length, realized, sound designs for Departmental Mainstage productions.

854. Sound for Film (3 cr)

Prereq: THEA 851 or 889

Advanced application of studio and field recording techniques. Advanced DAW editing.

855. Musical Theatre Techniques (MUOP 855) (3 cr)

Advanced training in the integration of acting, movement, and singing skills for the performance of musical theatre. Training in artistic decision making that generates a character within a musical. Discipline of preparation and the resulting practice of performance; including practical experiences and solos, duets, and ensembles from American Musical Theatre Repertoire.

857. Stage Rigging I (3 cr)

Prereq: THEA 201 or permission

Theory and practice of rigging for live theatre events. Extensive work with fly systems, rope systems, and standard rigging hardware.

*860. Script Analysis (3 cr)

Prereq: Permission

Systematic approach for analyzing a play based on the four works of Stanislavski.

*863. Director/Designer Communication (3 cr)

Prereq: Undergraduate major in theatre

Projects, planning, and execution of various forms and styles involving the communication process between director and designer.

*864. Detailed Scene Work I (3 cr)

Prereq: 12 hrs theatre arts

Practical work on scenes with actors and directors from selected realistic plays.

*865. Detailed Scene Work II (3 cr)

Prereq: 12 hrs theatre arts

Further practical work on scenes with actors and directors, involving classical plays, verse drama, expressionistic pieces, or musical comedy.

*870. Introduction to Pedagogy (1 cr per sem, min 3)

Introduces the graduate student to contemporary university level teaching theories and their classroom applications.

880. Technological Innovations in Film Production (3 cr)

History of technological innovation in film. Sound, film format, color systems, lenses and lighting that have enhanced the finished product in the film industry.

881. Screen-writing: The Short Script (3 cr)

Prereq: BRDC 370 or ENGL 252 or 254 or 259 or THEA 131 or permission

Character development, story structure and problem solving. Writing for the short film.

882. Film Production I (3 cr)

Prereq: BRDC 269; THEA 114, 201 and 202; BRDC 474/874 or ENGL 252 or 254 or 259 or THEA 131 or permission

Students must have access to a camcorder. Introduction to “film grammar” and non-sync film production.

884. Advanced Projects in Film Production and/or New Media (3 cr) Ind 3.

Prereq: THEA 489/889 and permission

Projects in screenwriting, film production, digital animation, and new media.

885. Post Production for Film and New Media (3 cr)

Editing films on digital non-linear editing systems. Analyzing and editing various pieces such as PSAs, television episodes and scenes from film.

886. Film: Producing and Directing (3 cr)

Prereq: THEA 881

Skills required to successfully produce and direct a film. Analyze and direct scenes from films, produce and direct a final project, and create a production notebook.

887. Digital Design and Animation (3 cr)

Prereq: THEA 410/810 and 412/812; BRDC 269 or 428/828 or GRPH 221 or THEA 416/816 or permission

Advanced instruction in digital production design and animation for film and new media.

889. Film Production II (3 cr)

Prereq: THEA 881, 882, and permission

Projects are produced in film or digital video. Advanced film production techniques including sync-sound, lighting, lab post-

production and film business. Small group production of Cenema Verite's, Experimental and Narrative short films.

891. Advanced Projects in Directing and/or Theatre Management and/or Stage Management (1-3 cr, max 9) Ind.

Prereq: THEA 202, 300, and 301
Selected projects in directing, theatre management, or stage management in University Theatre or Theatrix.

*898. Special Topics in Theatre Arts (1-24 cr)

Prereq: Permission
Special topics in theatre arts.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

940. Seminar in Theatre Design (1-3 cr per sem, max 12)

Prereq: Undergraduate major in theatre arts
Prereq or parallel: THEA 810, 812, 818 and 932. Problems and theories of scenery, costume, and lighting design for ballet, opera, musicals, and legitimate plays. Discussion of student projects and designed full-scale productions.

956. Seminar in Theatre History (1-3 cr per sem, max 12)

Prereq: Undergraduate major in theatre arts including 9 hrs theatre history and evolution of dramatic theory
Specialized topics in theatre history.

957. Seminar in Modern Theatre (1-3 cr per sem, max 3 in each of the four areas l

Prereq: Undergraduate major in theatre arts including 9 hrs from THEA 801, 803, 810, 812, 831

B. Playwrights
D. Acting

957B. Playwrights

957D. Acting

960. Internship (3-12 cr)

Prereq: Permission only
Practical projects related to a professional theatre organization.

996. Research Problems Other Than Thesis (1-6 cr)

999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to doctoral degree program and permission of supervisory committee chair

Description

Johnny Carson School of Theatre and Film

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Chair: Paul Steger, M.F.A.

Graduate Committee: Professors Grange (chair), Miller; Associate Professors Brown, Endacott, H. Smith, V. Smith, E. Stauffer, J. Stauffer, Teo; Assistant Professor Parker

The Johnny Carson School of Theatre and Film offers graduate courses leading to the degree of master of fine arts.

Master of Fine Arts.

The requirements for the degree are as follows: 1) candidates must hold a bachelors degree with an undergraduate major in theatre from an accredited college or as approved by Graduate Committee; 2) at the time of application, the student must clearly state his/her degree objective, the curriculum in which he/she will work, and the area of specialization. Students applying in design and technical theatre should submit a portfolio of designs, production books, sketches, working drawings, and photographs. Applicants in acting must be auditioned and/or interviewed; 3) the completion of a minimum of 60 semester hours of credit in approved course work; 4) in lieu of a formal thesis, the production (under THEA 899) and submission of a body of original creative work in theatre of sufficient standard and related to the student's area of major interest; 5) the passing of a final examination, either written or oral, administered by the department, in the student's area of major interest.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Brown, Stan -2000; Associate Professor; BA 1984, MFA 1989 South Carolina
- Endacott, Richard -2000; Associate Professor; BA 1985 The Colorado College; MS 1990 Boston
- Grange, William -1996; Professor; BA 1970 Toledo; MFA 1972 Columbia; PhD 1981 Indiana
- Miller, Tice L. -1972; Professor Emeritus; AB 1960 Kearney; MA 1961 Nebraska (Lincoln); PhD 1968 Illinois
- Parker, Scott -2007; Assistant Professor; BA 1984 Bennington; MFA 1994 Brooklyn
- Smith, Harris -1999; Associate Professor; BA 1986 Montana State; MFA 1991 Washington
- Smith, Virginia -2000; Associate Professor; BS 1970 Moorhead State; MFA 1993 Roosevelt
- Stauffer, Edward -1979; Associate Professor and Technical Director; BS 1968, MFA 1974 Penn State
- Stauffer, Janice -1979; Associate Professor and Makeup, Costume Designer; BA 1971 Penn State; MFA 1976 Boston State
- Teo, Sharon -2000; Associate Professor; BS 1995 Texas; MFA 1999 Ohio

Courses for Veterinary and Biomedical Sciences (VBMS)

Courses for Integrative Biomedical Sciences (IBMS)

Veterinary and Biomedical Sciences

Subject Areas

- Integrative Biomedical Sciences (IBMS)
- Veterinary and Biomedical Sciences (VBMS)

*999. Doctoral Dissertation (1-24 cr, max 55)

Prereq: Admission to IBMS doctoral degree program and supervisory committee chair

*805. Introduction to Mechanisms of Disease (3 cr I) Lec 3.

Prereq: ASCI 240 or equivalent, BIOC/BIOS/CHEM 831, VBMS/BIOS 841, or permission

Offered odd-numbered calendar years. Designed for students of biological, animal, and veterinary sciences. Introduction to general pathology emphasizing etiology, pathogenesis, morphologic features, and fundamental alterations associated with the fundamental changes of disease.

808. Functional Histology (BIOS 808) (4 cr II) Lec 3, lab 2.

Prereq: BIOS 101 and 101L, or 102 or 112; BIOS 213 or ASCI 240

Recommended BIOS 315. Microscopic anatomy of the tissues and organs of major vertebrate species, including humans. Normal cellular arrangements of tissues and organs as related to their macroscopic anatomy and function, with reference to sub-cellular characteristics and biochemical processes. Functional relationships among cells, tissues, organs and organ systems, contributory to organismal well being. General introduction to pathological processes and principles underlying some diseases.

*811. Introduction to Veterinary Epidemiology (2 cr)

Prereq: Permission

Offered summer semester of odd-numbered years. Introduction to concepts of epidemiology including definition and uses of epidemiology. Casual web theory of causation discussed and compared to the Henle-Koch postulates. Students use sampling methods to define population characteristics, detect disease and test hypotheses. Practical application of confidence, power, and sample size. Use of descriptive epidemiology to discuss population characteristics.

816. Veterinary Entomology/Ectoparasitology (ASCI 816; ENTO 816; NRES 816) (2 cr II) Lec 2.

Prereq: 10 hrs entomology or biological science or related fields or permission

Arthropods that cause or vector diseases in animals. Arthropod recognition and biology, and disease epidemiology.

816L. Veterinary Entomology/Ectoparasitology Lab (ASCI 816L; ENTO 816L; NRES 816L) (1 cr II)

Prereq: ASCI, NRES, VBMS 816; or parallel

*818. Computer-Aided Sequence Analysis Primer (BIOS *816) (2 cr I)

Prereq: BIOC 831 or BIOS 801 or 820

Introductory course in biological sequence display, analysis and manipulation with computers. Applied rather than theoretical aspects of different programs are emphasized providing skills to satisfy the analysis demands of molecular biology research. Students completing this course will be able to search, display and analyze the biological information content of macromolecules.

820. Molecular Genetics (BIOS 820) (3 cr)

Prereq: 12 hrs biological sciences including BIOS 206 or equivalent

Molecular basis of genetics. Gene structure and regulation; transposable elements; chromosome structure; DNA replication, repair mechanisms and recombination.

824. Basic Molecular Infectious Diseases (3 cr I) Lec 3.

Prereq: BIOS 312; AGRO 360 or equivalent; or permission

Offered spring semester of odd-numbered calendar years. Introduction to the molecular, genetic and cellular aspects of microbial pathogenesis in humans and animals.

*835. Animal Biochemistry (BIOS *835) (3 cr II, even-numbered years) Lec/disc.

Prereq: BIOC 831 or permission

Biochemistry of animal cells and tissues, with integration of major metabolic pathways and aspects of their control mechanism.

*838. Molecular Biology Laboratory (BIOC *838) (5 cr III) Lec 6, lab 27.

Prereq: BIOC 832, BIOS 312 and 313, an advanced course in genetics and permission

Students may use a gene of their own interest if they have a suitable probe. Basic techniques for bacteriophage and plasmid molecular cloning; dideoxy DNA sequencing.

840. Microbial Physiology (BIOS 840) (3 cr) Lec 3.

Prereq: BIOS 312 and either 313 or 314; or permission

Molecular approaches to the study of prokaryotic cell structure and physiology, including growth, cell division, metabolism, and alternative microbial life styles.

841. Pathogenic Microbiology (BIOS 841) (3 cr II) Lec 3.

Prereq: BIOS 312 and either 313 or 314, or permission

Fundamental principles involved in host-microorganism interrelationships. Identification of pathogens, isolation, propagation, mode of transmission, pathogenicity, symptoms, treatment, prevention of disease, epidemiology, and methods of control.

841L. Pathogenic Microbiology Laboratory (1 cr II)

Prereq: BIOS 312 and 313 (314) or permission

Application of diagnostic microbiological techniques to the isolation, propagation and identification of common pathogens of human beings and animals. Case studies used, in the laboratory setting, to explore and test fundamentals of transmission, epidemiology and to disease pathogenesis of selected infectious agents and to relate these to disease signs, treatments and methods of control.

842. Endocrinology (ASCI 842; BIOS 842) (3 cr I) Lec 3.

Prereq: A course in vertebrate physiology and/or biochemistry

Mammalian endocrine glands from the standpoint of their structure, their physiological function in relation to the organism, the chemical nature and mechanisms of action of their secretory products, and the nature of anomalies manifested with their dysfunction.

843. Immunology (BIOS 843) (3 cr) Lec.

Prereq: BIOS 206 and one semester organic chemistry

BIOS 201 recommended. A fundamental consideration of cellular and humoral mechanisms of immunity, the structure and function of immunoglobulins, antigen-antibody interactions; hypersensitivity; transplantation and tumor immunity; immune and autoimmune disorders.

*845. Animal Physiology I (ASCI *845; BIOS *813; VMED 645) (6 cr I) Lec 5, lab 3.

Prereq: For ASCI/VBMS *845/BIOS *813: CHEM 251; BIOS 112 or ASCI 240

Prereq for VMED 645: First year standing in VMED. Primarily for students in animal or biological sciences or veterinary medicine. Mammalian physiology and cellular mechanisms. Microscopic anatomy and physiology of cells, tissues, cardiovascular system, respiratory system, and urinary system.

*846. Animal Physiology II (ASCI *846; BIOS *814; VMED 646) (6 cr II) Lec 5, lab 3.

Prereq: ASCI/VBMS *845/BIOS *813/VMED 645

Primarily for students in animal or biological sciences or veterinary medicine. Mammalian physiology and cellular mechanisms. Microscopic anatomy and physiology of the digestive system, endocrine system, and reproductive system.

*847. Interdisciplinary Concepts in Beef Production (ASCI *847) (3 cr, max 6)

Prereq: Degree in veterinary medicine or animal science, or allied agricultural degree, or permission

Classroom attendance is required during each of the modules. Between modules distance education technologies (laptop computer, Internet access, a computer operating system with a word processor, spreadsheet, and presentation software, email, etc.) are used and required for discussion and assignments. The contributions and interactions of the major academic disciplines upon the production, performance, health, profitability, and sustainability of beef cow and cattle feeding operations.
A. I (3 cr)
B. II (3 cr) Prereq: VBMS *847A.

847A. Interdisciplinary Concepts in Beef Production I (3 cr)

847B. Interdisciplinary Concepts in Beef Production II (3 cr)

Prereq: VBMS *847A

*848. Introduction to Veterinary Biotechnology (1-2 cr)

Prereq: 12 hours of veterinary and biomedical sciences or DVM degree, or equivalent and permission

Information and assignments for VBMS 848 exchanged in the classroom and via Internet. Theoretical basis for emerging cellular, molecular and reproductive technologies, and their potential applications and impacts in the practice of food animal veterinary medicine.

*852. Molecular Virology and Viral Pathogenesis (3 cr I) Lec 3.

Prereq: BIOS 843

Offered even-numbered calendar years. Introduction to virology with emphasis on molecular biology and pathogenesis. Concepts of virus replication strategies, virus-host interactions and virus pathogenesis.

*899. Masters Thesis (6-10 cr)

Prereq: Admission to masters degree program and permission of major adviser

901. Diagnostic Techniques (1-10 cr)

Application of the principles of pathology to current problems in the diagnostic laboratory.

908. T Cell Biology: Repertoire and Effector Functions (3 cr I)

Prereq: BIOS 843 or permission

Offered even-numbered calendar years. Analysis of the literature of the cellular and molecular biology of T cell recognition and effector functions. Subject areas: Scientific Methodologies; Antigen Presentation; T Cell Receptor and Coreceptor; Thymic Structure and Self/Nonself Discrimination; T Cell Regulation; Allergy and Autoimmune Diseases; and T-Cell-Mediated Inflammation and Cytokine Network.

909. Seminar (1-4 cr I, II)

P/N only.

919. Regulation of Eukaryotic Gene Expression (3 cr II) Lec 3.

Prereq: 1) BIOC 818 or 820; 2) BIOC 832; and 3) BIOC 838 or BIOS 837 or related laboratory experience

Offered even-numbered calendar years. Basic mechanisms regulating gene expression in eukaryotes during various physiological states. Emphasis on understanding specific and unique mechanisms in mammalian systems. Techniques used to study gene regulation.

920. Measurement of Animal Disease and Production (2 cr I) Lec/disc and lab.

Prereq: VBMS *811 or permission

Offered odd-numbered calendar years. Measurements of disease and production, the basic tenants of epidemiology, taught in detail including incidence density, risk rates, morbidity, mortality, cause specific rates, and life tables. Methods and implications of measuring disease at the farm, regional, and national levels. Sampling strategies and the impact of these on the standard error of the estimate. Implications and biases of using retrospective production data versus prospective data. Clinical epidemiology which includes definition of tests in veterinary medicine, individual and herd level sensitivity and specificity, receiver operating characteristics curves, positive and negative predictive values, serial and parallel interpretation of tests, Kappa statistics, and issues of precision, validity, and accuracy.

921. Analytic Observational Studies in Veterinary Epidemiology (2 cr I) Lec/disc & lab.

Prereq: VBMS *811 and 920; or permission

Offered odd-numbered calendar years. Design, implementation, and analysis of cross-sectional, cohort, and case-control studies and field trials. Limitations, biases, implications of the results, and current uses of each. Evaluation of these methods as used in the scientific literature. Analyses includes chi-square tests, Cochrane Chi-square tests, and epidemiologic measures of strength of association, effect, and total effect. Design, implementation, analysis and interpretation of field trials taught specifically as they relate to the practitioner.

925. Critical Reading of the Epidemiology Literature (1 cr, max 4)

Prereq: VBMS *811 or 920; or permission

May be repeated for credit. Analysis of current epidemiology and animal health literature. Critical evaluation of study design, methods of analysis, biases, field applicability, and basis for conclusions.

930. Advanced Food Animal Production Medicine (2 cr) Lec/disc & lab.

Prereq: Permission

Offered spring semester of even-numbered calendar years. Inter-relationships between animal health, disease, and well-being as they relate to the productivity and profitability of food animal production units. Integrates aspects of veterinary medicine, animal science, and agricultural economics. General concepts related to cattle, swine and sheep production systems, followed by specific issues that relate to different species.

942. Genetics, Genomics, and Bioinformatics of Prokaryotes (BIOS 942) (3 cr)

Prereq: BIOS 241 and 312, or permission

Prokaryotic gene regulation, DNA exchange, DNA recombination and repair, comparative prokaryotic genomics and computer-based methods of analysis.

944. Immunovirology (3 cr) Lec 3.

Prereq: Permission; organic chemistry; biochemistry; immunology and/or concepts in virology and virolopathogenesis

Pathogenic microbiology recommended. Description of virus and immune system interactions, with emphasis on mouse and human models. Mechanism of antigen presentation of viral proteins and relationship to health and disease. Analysis of the hosts immune response to selected viral infections of the major systems: neural, respiratory, gastrointestinal and immune.

948. Concepts in Experimental Immunology (3 cr II) Lec 3.

Prereq: BIOS 843 or permission

Recent advances in immunological techniques and review of conventional methods.

949. Vaccinology (2 cr) Lec/disc.

Prereq: VBMS/BIOS 841; BIOS 843, VBMS 843; VBMS/BIOS 852; or permission

Analysis of the theory and mechanisms involved in the development of efficacious vaccines. Microbiological and immunological aspects as well as the manufacturing and regulatory aspects of vaccine development.

950. Medical Molecular Virology (BIOS 950) (3 cr I) Lec.

Prereq: BIOS/CHEM/BIOC 431/831 and 432/832; VBMS *852

Offered odd-numbered calendar years. Current topics in molecular virology relevant to the natural history and pathogenesis of viral diseases of humans and animals.

951. Advanced Molecular Infectious Diseases (3 cr II) Lec 3.

Prereq: BIOC 832 or equivalent; 18 hours of biological, biomedical and/or veterinary sciences, including fundamental microbiology and genetics; or permission

VBMS 824 and 843 or equivalent recommended. Offered spring semester of even-numbered years. Molecular and cellular aspects of microbial pathogenesis. Key literature, synthesis of scientific problems into research proposals.

964. Signal Transduction (BIOS 964) (3 cr)

Prereq: BIOS 832, BIOS 820 or equivalent, or permission

Molecular basis of genetics in eukaryotes. Gene structure and regulation, transposable elements, chromosome structure, DNA replication and repair mechanisms and recombination.

966. Advanced Viral Pathogenesis (BIOS 966) (3 cr)

Prereq: BIOS 843; VBMS 852 or equivalent introductory course in virology or experience

Advanced analysis on the mechanisms of cell and tissue damage by viruses, the spread of viruses through the body, and the host response.

975. Seminar in Veterinary Histopathology (1 cr I, II) Lec 1.

Prereq: VBMS 805, or equivalent and permission

May be repeated for credit. Descriptive veterinary histopathology covering diseases of all body systems in animal species including domestic, laboratory, wildlife, birds, fishes, reptiles, and amphibians. Source material is worldwide in scope.

996. Research on Selected Problems in Veterinary Science (2-10 cr)

998. Special Topics in Veterinary Science (1-10 cr)

Prereq: Permission

The subject will be dependent on student demand and availability of staff. Reviews of specialized subject areas.

Description

For a brief description of the program, application requirements and contact information, view the graduate program summary.

Department Head: David Hardin, D.V.M.

Graduate Committee: Assistant Professor Somerville (chair); Professors Jones, McVey, Osorio, Smith

The Department offers master of science and doctor of philosophy degrees with courses of study offered in virology, bacteriology, immunology, molecular biology, pathology, epidemiology, and biomedical sciences/biochemistry. The master of science in veterinary science program is offered through Option I, Option II and Option III. The Department administers the interdepartmental doctoral program in Integrative Biomedical Sciences through which it offers the PhD degree. Biochemistry and/or biostatistics courses are required for the MS and PhD degree depending on the student's field of study with the rest of the

program of study tailored to the student's research interests and career goals, upon approval by the student's Graduate Supervisory Committee.

There is no generally specified language or research skill required for the PhD, but each student must meet the requirements set by the Graduate College, and approved by the Supervisory Committee, the Department and the Integrative Biomedical Sciences graduate committee.

In addition to the general requirements of the Graduate College, applicants for the MS and PhD degrees must submit scores from the Graduate Record Examination. All candidates for advanced degrees must engage in disciplinary training and research as a part of their program.

Applicants are encouraged to send a letter to the chair of the Graduate Committee describing their background, experience, and personal and academic goals in pursuing graduate study.

In addition to the courses listed below, STAT 801 and 802 or BIOC 831 and 832, or one of each, may be used as part of the course work constituting a major in veterinary science (MS) or Integrative Biomedical Sciences (PhD).

Cooperative Program in Veterinary Science

The University of Nebraska-Lincoln (UNL), College of Agricultural Sciences and Natural Resources is home to Nebraska's component of the Cooperative Program in Veterinary Medicine with Iowa State University (ISU). Students in this program begin their professional education on the UNL campus and will earn the 4-year doctor of veterinary medicine degree after continued study at ISU, College of Veterinary Medicine. The arrangement maintains tuition at the rate of ISU's in-state professional tuition rate all four years.

This innovative program, whose inaugural class of 25 Nebraska residents entered the fall semester of 2007, is the first of its kind in the United States. Program planning and development was jointly undertaken by the University of Nebraska as well as Iowa State University and has been reviewed and approved by the American Veterinary Medical Association's Council on Education. This approval insures that successful students in this program will meet requirements to take the North American Veterinary Licensure Exam (NAVLE) and subsequently attain licensure to practice veterinary medicine.

Though every professional veterinary program must provide a core curriculum, the unique opportunities provided by this program allow students to have more hands-on experience and a broader range of opportunities than some of their counterparts. Faculty at UNL are devoted to student learning and provide a strong basic science curriculum as the foundation for their veterinary students. While UNL's departments of Veterinary and Biomedical Sciences, Animal Science and Entomology form the core of this program, individuals and resources throughout UNL contribute to student success. Located on the University's East Campus, the Cooperative Program in Veterinary Medicine offers updated facilities, state-of-the-art teaching resources and convenient access to the C.Y. Thompson Library. Other UNL facilities, such as Great Plains Veterinary Educational Center (GPVEC) at Clay Center, NE and the Agricultural Research and Development Center (ARDC) at Mead, NE, provide opportunities for enhanced learning through participation in animal health activities during the first two years of their professional education.

For more information about this program and admission requirements, please refer to http://vetmed.unl.edu or call 402-472-7211.

Faculty

For faculty research interests and contact information, view the graduate program summary.

- Barletta, Raul G. -1991; Professor; BS 1976, MS 1976 Universidad Nacional de LaPlata (Argentina); PhD 1987 Alabama (Birmingham)
- Brodersen, Bruce -2004; Assistant Professor; BS 1976 Nebraska (Lincoln); DVM 1983 Iowa State; MS 1989 Nebraska (Lincoln); PhD 1996 Nebraska (Medical Center)
- Carlson, Michael -2003; Lecturer; BS 1974 Nebraska (Lincoln); MS 1976 Purdue; PhD 1996 Nebraska (Medical Center)
- Delhon, Gustavo -2007; Biosafety Level-3 Core Faculty Director; DVM 1980 Buenos Aires; MSc 1990 Nebraska (Lincoln); PhD 1996 Nebraska (Medical Center)
- Doster, Alan R. -1979; Professor; DVM 1975 Iowa State; MS 1977, PhD 1979 Georgia (Athens)
- Griffin, D. Dee -1991; Professor; BS 1973, DVM 1975 Oklahoma State; MS 1978 Purdue
- Hardin, David -2006; Professor and Head, Associate Dean; BS 1974, DVM 1977 Missouri (Columbia)
- Hardin, Laura -2006; Coordinator/Senior Lecturer, BS 1982 Eastern Kentucky; DVM 1987 Mississippi State; MS 1994, PhD 2001 University of Missouri-Columbia
- Hostetler, Douglas -2007; Associate Professor; BS 1989, DVM 1993 Ohio State; MS 1998 Michigan State
- Jones, Clinton -1989; Charles Bessey Professor; BA 1976 Bethany; PhD 1985 Kansas
- Kammermann, John -2007; Assistant Professor; BS 1984 Northern Illinois; MS 1994, PhD 2004 Auburn
- Keen, James -2008; Associate Professor; BS 1980 Eastern Kentucky; BS 1986, DVM 1988, PhD 1994 Illinois
- Kelling, Clayton L. -1976; Professor; BS 1968, MS 1971, PhD 1975 North Dakota State; DVM 1978 Iowa State
- Lou, Marjorie -1994; Willa Cather Professor; BS 1960 National (Taiwan); MS 1962 Virginia Tech; PhD 1966 Boston (Medical Center)
- McVey, D. Scott -2006; Professor; DVM 1980 Tennessee; PhD 1986 Texas A&M
- Moxley, Rodney A. -1983; Professor; DVM 1978, PhD 1983 Missouri
- Ondrak, Jeffrey -2006; Lecturer; BS 1988 Nebraska (Lincoln); DVM 1992 Kansas State
- Osorio, Fernando A. -1984; Professor; MV 1972 Buenos Aires; MS 1982, PhD 1984 Iowa State
- Pattnaik, Asit -2002; Professor; BS 1976 Ravenshaw; MS 1978 Jawaharlal Nehru; PhD 1984 Griffith
- Pickard, Gary -2008; Professor; BS 1972, MS 1975 Purdue; PhD 1978 Wisconsin

- Randle, Richard -2007; Associate Professor, DVM 1982 Mississippi State; MS 1987 University of Illinois
- Reddy, Jay -2007; Associate Professor; DVM 1985, MVSc 1990 Agricultural Sciences (India); PhD 1998 Guelph
- Rogers, Douglas G. -1988; Professor; BS 1973, DVM 1979, MS 1983, PhD 1987 Iowa State
- Rupp, Gary P. -1988; Professor; DVM 1964, MS 1975 Colorado State
- Smith, David -1997; Professor; DVM 1983, PhD 1997 Ohio State
- Sollars, Patricia -2008; Associate Professor; BA 1980 St. Johns; PhD 1991 Oregon
- Somerville, Greg -2004; Assistant Professor; BS 1988, MS 1993, PhD 1999 Texas
- Steffen, David -1996; Professor; DVM 1987 Iowa State; PhD 1991 Kansas State
- Zhou, Joe -2002; Research Associate Professor; BSc 1982 Nanchang (China); PhD 1991 Western Ontario

Water Resources Planning and Management

Description

(Interdepartmental Area)

An intra-university masters-level minor with emphasis on water resources planning and management. Each student will be required to complete: 1) a major in one of the departments with approval to offer option as a minor or specialization; 2) 9 hours of water resources-related courses from departments outside the student's major field (6 hours of which must be from those courses marked with a "+") and approved by the Water Resources Advisory Committee; and 3) a thesis oriented toward water resources planning and management, or under special circumstances, an alternative to a thesis which first must be approved.

The masters degree will be granted in one of the disciplines. The student must be formally registered in one of the departments with approval to offer the option as a minor or specialization. The recommended masters degree option is I (thesis) but other options may be approved. The minor or specialization can be noted on the student's final transcript, for example, civil engineering (water resources planning and management).

Departments with Approval to Offer Option as a Minor or Specialization:

Agricultural Economics, Agronomy/Horticulture, Animal Science, Biological Sciences, Biological Systems Engineering, Civil Engineering, Community and Regional Planning, Economics, Geography, Geosciences, Industrial and Management Systems Engineering, Mathematics, Political Science, School of Natural Resources, and Sociology.

A Water Resources Advisory Committee coordinates the interdisciplinary aspects of the minor/specialization. The Director of the Nebraska Water Center/Environmental Programs in the School of Natural Resource Sciences serves as chair with one member from each participating department. Approval of individual student program of studies, degree option, and thesis topics (if applicable) will have the concurrence of the student's major department and the chair of the advisory committee. One member of the student's examining committee will be appointed from the Water Resources Advisory Committee. This member cannot be from the student's major department.

Examples of courses in water resources to comprise the 9-hour minor or specialization are listed below according to departments. Course descriptions and prerequisites are contained in the appropriate departmental listings. Courses below, and courses other than those listed below, may be included as part of the 9-hour minor or specialization with concurrence of the Advisory Committee chair and the student's major department representative to the Advisory Committee.

Courses may require technical prerequisites; check bulletin listings for details. Students may take courses cross listed in an outside department to meet minor or specialization requirements.

Offered in the Department of Agricultural Economics
856. Environmental Law
857. Water Law+
865. Resource & Environmental Economics II

Offered in the Department of Agronomy/Horticulture 808. Microclimate: The Biological Environment+
825. Turfgrass Science & Culture
850. Climate & Society
855. Soil Chemistry & Mineralogy
861. Soil Physics (NRES, GEOL 861; SOIL, WATS 461)
875. Water Quality Strategy+ (CIVE, CRPL, GEOL, MSYM, NRES, POLS, SOCI 875; SOIL, WATS 475)
920. Pesticide Dissipation in Soils & Plants
961. Advanced Soil Physics

Offered in the School of Biological Sciences
859. Limnology
860. Advanced Limnology+
873. Freshwater Algae
885. Aquatic Insects

Offered by the Department of Biological Systems Engineering
853. Irrigation & Drainage Systems Engineering
855. Nonpoint Source Pollution Control Engineering
941. Agricultural Waste Management
954. Turbulent Transfer in the Atmospheric Surface Layer

Offered in the Department of Civil Engineering
821. Hazardous Waste Management
822. Hazardous Waste Treatment
823. Physical/Chemical Treatment Processes in Environmental Engineering
824. Solid Waste Management Engineering
826. Design of Water Treatment Facilities
827. Design of Wastewater Treatment & Disposal Facilities
828. Quantitative Methods in Environmental Engineering
829. Biological Waste Treatment
830. Fundamentals of Water Quality Modeling
852. Water Resources Development+
853. Hydrology+
854. Hydraulic Engineering
855. Nonpoint Source Pollution Control Engineering (BSEN 855)
856. Surface Water Hydrology
858. Groundwater Engineering
875. Water Quality Strategy+
915. Water Resources Engineering
916. Interdisciplinary Seminar in Engineering: Economic & Legal Aspects of Water Resources Systems+ (LAW 774G)
921. Advanced Topics in Hazardous Waste Treatment
926. Advanced Topics in Water Treatment
927. Advanced Topics in Wastewater Treatment
929. Industrial Waste Laboratory
930. Advanced & Industrial Wastewater Treatment
952. Water Resources Planning+
954. Advanced Hydraulics
955. Solute Movement in Soils (AGRO, AGEN 955; GEOL 985)
958. Groundwater Mechanics
959. Groundwater Modeling

Offered in the Department of Community and Regional Planning 870. Environmental Planning & Policy+
872. Environmental Survey & Analysis
875. Water Quality Strategy+

Offered in the Department of Geography
812. Intro to Geographic Information Systems
818. Intro to Remote Sensing
819. Applications of Remote Sensing in Agriculture & Natural Resources
820. Remote Sensing III: Digital Image Analysis
822. Advanced Techniques in Geographic Information Systems
881. Water Resources Seminar+

Offered in the Department of Geosciences
815. Water Resources Seminar+
850. Climate & Society
851. Severe Storms Meteorology-Climatology
852. Synoptic Meteorology
853. Physical Climatology
854. Regional Climatology
861. Soil Physics
868. Satellite Meteorology
875. Water Quality Strategy+
888. Groundwater Geology+
889. Hydrogeology
953. Seminar in Meteorology & Climatology
954. Seminar in Climatic Change
987. Seminar in Hydrogeology

Offered in the School of Natural Resources
808. Microclimate: The Biological Environment+ (AGRO, GEOG, HORT, MSYM, NRES 808)
810. Landscape Ecology
815. Water Resources Seminar+ (AGRO, GEOG 881; GEOL 815)
817. Agroforestry Systems in Sustainable Agriculture
852. Climate & Society (AGRO, GEOG 850)
859. Limnology+ (BIOS 859)
866. Advanced Limnology (BIOS 860)
863. Fisheries Science+
864. Fisheries Biology (BIOS 862)
868. Wetlands+
875. Water Quality Strategy+
889. Icthyology (BIOS 891)

907. Agricultural Climatology
908. Solar Radiation Interactions at the Earth's Surface
954. Turbulent Transfer in the Atmospheric Layer (BSEN 958)

Courses for Women's and Gender Studies (WMNS)

Women's and Gender Studies

802. Sexuality in Nineteenth and Twentieth Century America (HIST 802) (3 cr) Lec 3.

Explores sexual practices and ideologies in American history from the 1800s to the present.

808. Cross-Cultural Mentoring I (ANTH 808) (3 cr) Fld.

Requires weekly meetings with mentee. Pairs UNL student with a refugee and/or immigrant and/or minority K-12 student or adult.

Work with a refugee and/or immigrant and/or minority K-12 student or adult to assist them with the cultural transition process and the educational process Problem-solving techniques and community resources.

809. Cross-Cultural Mentoring II (ANTH 809) (3 cr) Fld.

Prereq: ANTH/WMNS 408/808

Requires weekly meetings with mentee. Continuation of ANTH/WMNS 808.

Continuation of work with refugee and/or immigrant and/or minority K-12 student or adult to assist them in educational process and/or culture transition.

810. Women and Men: An Anthropological Perspective (ANTH 810) (3 cr) Lec 3.

Prereq: 9 hrs ANTH

Cross-cultural meaning and impact of gender definition, with emphasis on women. Gender as a correlate of biology, language, economic systems, social and political structures, and belief systems.

810A. Socio-psychological Aspects of Clothing (TXCD 810) (3 cr) Lec 3.

Prereq: 3 hrs PSYC or SOCI; TXCD 123

Theories and research findings about the social and psychological effects of clothing and appearance in relation to the self and others.

814B. Modern and Contemporary Women Writers (ENGL 814B) (3 cr) Lec 3.

Selected women writers from the 20th and 21st centuries.

821. Psychology of Gender (PSYC 821) (3 cr) Lec 3.

Prereq: 12 hrs PSYC

Theory and research on the role of gender in human behavior and attitudes. Exploration of diverse theoretical positions on the development of gender and evaluation of the biological, social and cultural bases that influence the relationship between gender and a variety of areas of human experience (e.g., intelligence and achievement, emotion, relationships, sexuality, physical fitness, stress, and coping).

830. Gender and Sexuality in the Ancient World (CLAS 840) (3 cr) Lec 3.

Ancient Greek and Roman evidence pertaining to the fields of women's studies, gender studies, and sexuality.

836. Saints, Witches, and Madwomen (HIST 836) (3 cr)

Image of the madwoman throughout European and American history. How women on the margins have been labelled in different periods as saintly, as witches, or as insane.

841. Women and Gender in the United States (HIST 841) (3 cr)

Women's historical experiences and gender ideologies in American history from 1500 to the present. The impact of Europeans on Native American gender roles; race, gender, and slavery; women, science, and medicine; and women's activism.

848. History of Women and Gender in the American West (HIST 848) (3 cr)

The effect of colonialism on women and gender in the American West. The impact of Spanish, French, British, and American colonization on American Indian and Spanish/Mexican gender systems. Migration and immigration of Anglo, African-American, and Asian women to the West; women's work and community life; and women's reform movements and activism.

856. Black and/or African American Women's History (ETHN 456; HIST 856) (3 cr)

From African origins in the 15th century to the late 20th century. The transatlantic slave trade, "New World" experiences, slavery and resistance, sexuality, cultural persistence and evolution, racial strife, the struggle for civil rights, and black womanist and feminist theories.

875A. Rhetorical Theory: Rhetoric of Women Writers (ENGL 875A) (3 cr) Lec 3.

Rhetoric and rhetorical theory of women writers and speakers and its implications for literature, composition, literacy, feminist theory, and women's and gender studies.

885. Feminist Theories, Feminists' Perspectives (3 cr) Lec 3.

Introduction to feminist and gender theory texts. Important theoretical frameworks upon which Women's Studies is based and the implications of these theories in practice.

897. Internship in Women's and Gender Studies (1-6 cr, max 6) Fld.

Prereq: Permission

Experiential and service learning.

898. Special Topics in Women's and Gender Studies (2 or 3 cr, max 6) Lec.

Topic varies.

951. History of Women and Gender (HIST 951) (3 cr)

A comparative approach, offering readings on a central theme from a variety of periods and/or areas. Themes vary.

Description

Director: Margaret Jacobs

Associate Director: Rose Holz

The specialization or minor in Women's and Gender Studies provides graduate students from diverse disciplines with opportunities to broaden and enrich analytical skills in one or more disciplines while drawing on the interdisciplinary perspectives of Women's and Gender Studies. Courses offer a simultaneous focus on issues of gender, race, ethnicity, class, global feminism, and sexual orientation and offer models of scholarship, pedagogy, and professional activity that help students seeking employment in a variety of occupations related to women's and gender issues.

Women's and Gender Studies faculty supervise the specialization and minor through the Women's and Gender Studies Advisory Board chaired by the director and in consultation with the Curriculum Committee as described in Women's and Gender Studies by-laws.

Approval of students' programs is the shared responsibility of the Women's and Gender Studies Advisory Board and the student's examination/supervisory committee. Students must apply by letter to their department Graduate Chair and the Director of the Women's and Gender Studies Program. Advising will be by the students' designated adviser within the home department in consultation with the Director of Women's and Gender Studies. Students will submit their proposed program of study for the specialization to the Director of the Women's and Gender Studies Program for formal approval of the Advisory Board. This is normally done when completing the Memorandum of Courses for the MA and filing the Program of Studies for the PhD.

Admission to a department with a graduate program at the University of Nebraska-Lincoln is required for participation in the specialization or minor.

Masters-level Specialization Requirements:

An intradisciplinary masters-level specialization or minor in Women's and Gender Studies is available to any student pursuing a masters degree, with approval from the graduate chair in the home department. Each student will be required to complete:

1. Requirements for an MA in a UNL department.

2. Nine credit hours of graduate courses on women and gender outside the student's major department approved by the Women's and Gender Studies Advisory Board. Substitutions may be made with the permission of the Advisory Board. Under Graduate College rules, both Options I and II offer possibilities for completing the graduate specialization or minor without adding additional hours of course work.

3. If option I (thesis) is chosen, the thesis must address some issue(s) relevant to Women's and Gender Studies. The student must deposit a copy of the thesis with Women's and Gender Studies.

4. Confirmation to the Women's and Gender Studies office that all requirements for the specialization or minor have been met by the middle of the final semester.

Successful completion of the specialization or the minor will be indicated on the students' official transcript in parentheses following the name of the students' academic discipline.

Doctoral Degree Program Requirements:

An intradisciplinary doctoral-level specialization or minor in Women's and Gender Studies is available to any student pursuing a PhD degree, with approval of the graduate chair in the home department. Each student will be required to complete:

1. Requirements for a PhD in a UNL department.

2. Twelve credit hours of courses on women and gender outside the student's major department approved by the Women's and

Gender Studies Advisory Board. Substitutions may be made with the permission of the Advisory Board. Graduate College rules provide various options within the PhD that allow students to complete the graduate specialization or the graduate minor without adding additional hours, subject to the approval of the supervisory committee. These include supporting courses in a related field, minor field courses, and/or collateral field courses.

3. The dissertation should address some issue(s) relevant to Women's and Gender Studies. The student must deposit a copy of the dissertation with Women's and Gender Studies

4. Confirmation to the Women's and Gender Studies office that all requirements for the specialization or minor have been met by the middle of the final semester.

Successful completion of the specialization or minor will be indicated on the students' official transcript in parentheses following the name of the students' academic discipline.

Women's and Gender Studies faculty and application procedures, plus other information, may be found at: www.unl.edu/womenssp.

Reservation of the Right to Modify

It is the policy of the University of Nebraska-Lincoln to adhere to the rules and regulations, course offerings, and financial charges as announced in this Bulletin or other University publications. The University nevertheless hereby gives notice that it reserves the right to expand, delete, or otherwise modify its degree programs or courses of study, to change its rules affecting the admission and retention of students or the granting of credit or degrees, to change the academic calendar, course offerings, course content, or to alter its fees and other charges, whenever such changes are adjudged by it to be desirable or necessary.

Additional Info

NOTE Regarding Courses: Courses listed with a single asterisk (*) are open to graduate students only and do not have a counterpart undergraduate number

NOTE Regarding Faculty: The date following each faculty name represents the year that person was appointed to the University faculty. A list of graduate faculty members can be found at research.unl.edu/gradstudies/faculty/