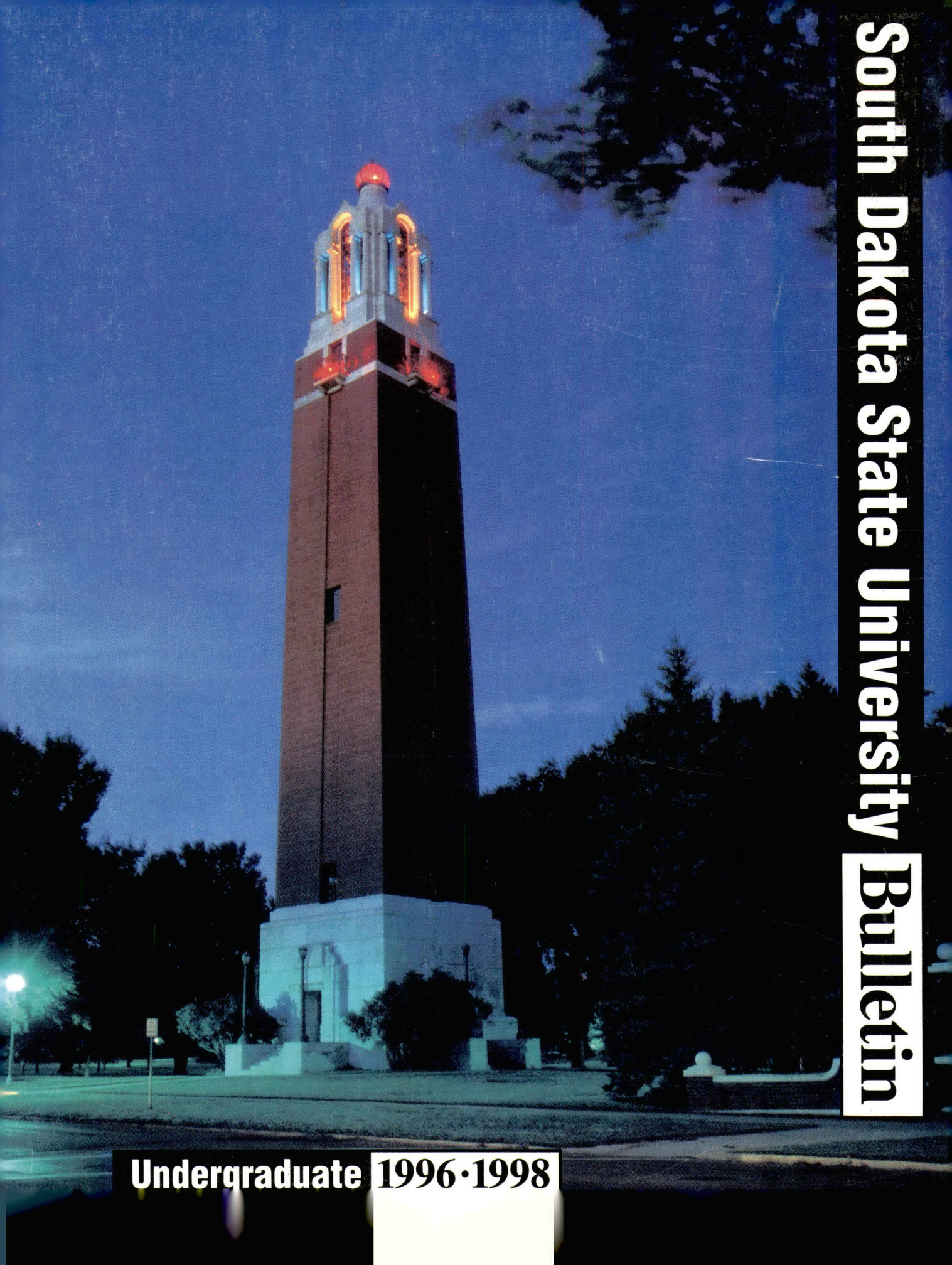

South Dakota State University Bulletin

Undergraduate 1996·1998

UNIVERSITY CALENDARS

1996 Fall Term

(1 day registration, 69 class days, 5 exam days)

September 2, Monday.....Labor Day Holiday
September 3, Tuesday.....Registration and Orientation
September 4, Wednesday.....Instruction begins
September 17, Tuesday.....Last day to drop or add and adjust final fees
September 20, Friday.....Last day to submit a graduation application for Fall 1996
October 14, Monday.....Native American Day Holiday
October 16, Wednesday.....“W” grade begins
October 23, Wednesday.....First half Fall Term ends
October 26, Saturday.....Hobo Day
October 28, Monday.....Deficiency reports due in Registrar’s Office, Adm 208, by 5:00 p.m.
November 11, Monday.....Veterans Day Holiday
November 13, Wednesday.....Last day to drop a course
November 28, 29, Thursday-Friday.....Thanksgiving Recess
December 13, Friday.....Last day of classes, Fall 1996
December 14, Saturday.....Graduation, 10:00 a.m.
December 16-20, Monday-Friday.....Final examinations
December 26, Thursday.....Grades due in Registrar’s Office not later than 5:00 p.m.

1997 Fall Term

(1 day registration, 69 class days, 5 exam days)

September 1, Monday.....Labor Day Holiday
September 2, Tuesday.....Registration and Orientation
September 3, Wednesday.....Instruction begins
September 16, Tuesday.....Last day to drop or add and adjust final fees
September 19, Friday.....Last day to submit a graduation application for Fall 1997
October 11, Saturday.....Hobo Day
October 13, Monday.....Native American Day Holiday
October 15, Wednesday.....“W” grade begins
October 22, Wednesday.....First half Fall Term ends
October 27, Monday.....Deficiency reports due in Registrar’s Office, Adm 208, by 5:00 p.m.
November 11, Tuesday.....Veterans Day Holiday
November 12, Wednesday.....Last day to drop a course
November 27, 28, Thursday, Friday.....Thanksgiving Recess
December 12, Friday.....Last day of classes, Fall 1997
December 13, Saturday.....Graduation, 10:00 a.m.
December 15-19, Monday-Friday.....Final examinations
December 24, Wednesday.....Grades due in Registrar’s Office not later than 5:00 p.m.

1997 Spring Term

(1 day registration, 73 class days, 5 exam days)

January 8, Wednesday.....Registration and Orientation
January 9, Thursday.....Instruction begins
January 20, Monday.....Martin Luther King, Jr. Day Holiday
January 23, Thursday.....Last day to drop or add and adjust final fees
February 5, Wednesday.....Last day to submit a graduation application for Spring 1997
February 17, Monday.....Presidents’ Day Holiday
February 24, Monday.....“W” grade begins
March 3-7, Monday-Friday.....Spring Break
March 11, Tuesday.....First half Spring Term ends
March 14, Friday.....Deficiency reports due in Registrar’s Office, Adm 208, by 5:00 p.m.
March 28, 31, Friday-Monday.....Easter Recess
April 3, Thursday.....Last day to drop a course
May 2, Friday.....Last day of classes, Spring 1997
May 3, Saturday.....111th Annual Commencement, 10:00 a.m.
May 5-9, Monday-Friday.....Final examinations
May 14, Wednesday.....Grades due in Registrar’s Office not later than 5:00 p.m.

1998 Spring Term

(1 day registration, 73 class days, 5 exam days)

January 7, Wednesday.....Registration and Orientation
January 8, Thursday.....Instruction begins
January 19, Monday.....Martin Luther King, Jr. Day Holiday
January 22, Thursday.....Last day to drop or add and adjust final fees
February 4, Wednesday.....Last day to submit a graduation application for Spring 1998
February 16, Monday.....Presidents’ Day Holiday
February 23, Monday.....“W” grade begins
March 3, Tuesday.....First half Spring Term ends
March 6, Friday.....Deficiency reports due in Registrar’s Office, Adm 208, by 5:00 p.m.
March 9-13, Monday-Friday.....Spring Break
March 31, Tuesday.....Last day to drop a course
April 10, 13, Friday, Monday.....Easter Recess
May 1, Friday.....Last day of classes, Spring 1998
May 2, Saturday.....112th Annual Commencement, 10:00 a.m.
May 4-8, Monday-Friday.....Final examinations
May 13, Wednesday.....Grades due in Registrar’s Office not later than 5:00 p.m.

1997 Summer Term

May 12 - June 6.....Session 1
May 26.....Memorial Day Holiday
June 9 - July 3.....Session 2
July 4.....Independence Day Holiday
July 7 - August 1.....Session 3
August 4 - August 29.....Session 4

1998 Summer Term

May 11 - June 5.....Session 1
May 25.....Memorial Day Holiday
June 8 - July 2.....Session 2
July 3 (Friday).....Independence Day Holiday
July 6 - July 31.....Session 3
August 3 - August 28.....Session 4

General Catalog 1996-98

South Dakota State University Bulletin Quarterly (USPS 474-180)

Volume 88 **Number 2** **June 1997**

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The information contained in this catalog is the most accurate available at the time of publication, but changes may become effective before the next catalog is printed. It is ultimately the student's responsibility to stay abreast of current regulations, curricula, and the status of specific programs being offered. Furthermore, the university reserves the right, as approved by the Board of Regents, to modify requirements, curricula offerings, and charges, and to add, alter, or delete courses and programs through appropriate procedures. While reasonable efforts will be made to publicize such changes, a student is encouraged to seek current information from appropriate offices. Web Site: http://www.sdstate.edu.

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SOUTH DAKOTA STATE UNIVERSITY
NON-DISCRIMINATION POLICY

It is the policy of South Dakota State University (SDSU) not to discriminate on the basis of race, color, creed, religion, national origin, ancestry, citizenship, age, gender, sexual orientation, disability, or Vietnam Era Veteran status in the offering of all benefits, services, and education and employment opportunities.

Discrimination complaints on the basis of sex, including sexual harassment complaints, should be directed to the Title IX Coordinator: Ms. Saila Gandhi, SDSU Advocacy Officer, Administration Building (AD), Room 217, Phone: 605-688-6361.

Discrimination complaints on the basis of disability should be directed to the Section 504/ADA Coordinator: Mr. Eugene T. Butler, Jr., Administration Building, Room 217, Phone: 605-688-6361 (TT/VOICE 605-688-4394).

Discrimination complaints based on other protected categories should be directed to Ms. Saila Gandhi, Advocacy Officer, Administration Building, Room 217, Phone: 605-688-6361.

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Purposes and Objectives

History and Mission: The Land-Grant Heritage

Establishment. An act of the Territorial Legislature, approved February 21, 1881, provided that "an Agriculture College for the Territory of Dakota be established at Brookings." The Legislature of 1883 provided for the first building.

The Enabling Act admitting the State of South Dakota, approved February 22, 1889, provided that 120,000 acres of land be granted for the use and support of the Agricultural College. By the Enabling Act of 1889 congress granted South Dakota 40,000 additional acres for the Agricultural College in lieu of a grant that had been made to new states in 1841.

Developments. In 1923 the institution's instructional program was organized under five divisions: Agriculture, Engineering, General Science, Home Economics, and Pharmacy. In 1956 the sixth undergraduate division, Nursing, was created, and in 1957 all graduate work was organized into a graduate division. The university organization was formally recognized when the Legislature changed the name to "South Dakota State University" on July 1, 1964. At that time the following colleges were created: Agriculture and Biological Sciences, Arts and Science, Engineering, Home Economics, Nursing, and Pharmacy, as well as the Graduate School.

In 1974 the College of General Registration was established to provide assistance to students who are undecided as to major, are preprofessional, or who want a one or two year general studies program. In 1975 the Division of Education was created to provide greater recognition of the part the University plays in preparation of teachers, counselors, and administrators for primary and secondary school systems and higher education. In 1989 this unit officially became the College of Education and Counseling.

The Agricultural Experiment Station was organized in 1887 under the Hatch Act of Congress, which provided for establishment of agricultural experiment stations in connection with agricultural colleges. The stations were established to conduct research that concerns the home or agriculture throughout the U.S.

The Cooperative Extension Service was established in 1914 to provide useful, current, research based agricultural, home, family and youth related information to the people of the state. Federal funds are appropriated through the U.S. Department of Agriculture, which cooperates with state colleges of agriculture and counties in conducting planned programs of Extension work.

Mission. Our first mission is undergraduate and graduate education from the freshman to the doctoral level. This priority is achieved through selected high quality academic, professional, extra-curricular and recreational programs. Appropriate learning opportunities inspire each scholar to attain intellectual and professional competence, enhance personal development, cultivate social and civic responsibility, achieve satisfactory human relationships, and appreciate historic, aesthetic and ethical perspectives.

The university's second mission is to conduct nationally competitive research and other scholarly and creative activities. South Dakota State University faculty and students have dual roles as imparters of existing knowledge and as active contributors of new thought, practice and culture in the world.

The third mission is the transfer of knowledge to the nation, and especially to the citizens of South Dakota, through the Cooperative Extension Service and other entities, providing a continuing stream of knowledge, technology and art for the enrichment of the state and surrounding region. By leadership and example, SDSU serves such diverse fields as agriculture, technology and management, health care, economic development, community welfare, and human development.

In order to achieve these three primary missions the university also has other secondary missions.

South Dakota State University is responsible for providing a campus environment that helps students develop leadership skills and personal interests essential for fully appreciating life and for contributing to the common good.

The university must collect, preserve, display and make available artistic, artifactual, documentary, and intellectual materials important to understanding our culture.

One mission is to be pluralistic, welcoming men and women of every race, creed, and background. As a university with a global vision, SDSU encourages enrollment diversity and international exchange opportunities.

South Dakota State University must use a variety of resources and revenues effectively and efficiently. The university seeks accountability, assessment, and evaluation as a means to determine priorities and strengthen performance. As part of that accountability it must be a good caretaker of facilities, fixtures, and funds.

Finally, South Dakota State University is a community of students, faculty, staff, alumni, constituencies, volunteers, and friends that provides generous support. South Dakota State University must invite this community to participate in university governance and serve as an advocate for our land-grant mission.

Purposes

In accepting the provisions of the "Morrill Act" of Congress (1862), the state of South Dakota pledged itself to carry out the purposes of the Land Grant College Act: to endow, support, and maintain one university where a major emphasis is teaching "agricultural and mechanic arts," including "scientific and classical studies," in order to promote a liberal and practical education in the "several pursuits and professions in life."

Within the spirit of the "Morrill Act" and the early legislative acts of South Dakota, the purposes of SDSU are to develop, maintain, and encourage:

1. Learning in the fields of agriculture; engineering; consumer and family sciences; liberal arts; pharmacy; nursing; teacher and counselor education; basic physical, biological, and social sciences; humanities and fine arts at both undergraduate and graduate levels.
2. Research and scholarship in agriculture; engineering; consumer and family sciences; liberal arts; nursing; pharmacy; teacher and counselor education; basic physical, biological and social sciences; humanities and fine arts at both the undergraduate and graduate levels.
3. Extension/outreach programs in agriculture; engineering; consumer and family sciences; liberal arts; nursing; pharmacy; teacher and counselor education; basic physical, biological and social sciences; humanities and fine arts for adults and youth in South Dakota.
4. Citizenship training and general learning essential for understanding and appreciating the American way of life and its relationship to the world community.
5. Student self-development in leadership, social, intellectual, recreational, interpersonal, ethical and spiritual attributes.
6. Student self-development in international and intercultural understanding consistent with the continually increasing cultural, economic and political interdependence of the modern world.
7. Vocational learning and training in selected areas.
8. Collection, preservation, display and study of artistic, artifactual and documentary materials which are the cultural base for all future programs.
9. Service for the welfare of South Dakota, the region and the nation.

Educational Objectives

The **broad educational objective** of SDSU is primarily to guide each student in attainment of intellectual and professional competence, growth of personal development, cultivation of a sense of social and civic responsibility, and achievement of a satisfactory adjustment in human relationships. Ideally, upon graduation, SDSU students will have attained the abilities to think, read, speak, and write effectively, both within their practiced disciplines and beyond. In confidently shaping the future, as individuals on their jobs and as people collectively charged with the responsibility of nurturing a humane, rational, and free republic, our graduates should demonstrate an abiding belief in the value of learning. They should possess both historic and aesthetic perspectives and act in accordance with high ethical and spiritual codes of behavior, even in the face of adversity. Above all, they should seek to foster understanding and harmony among their fellow citizens of this diverse nation and world.

Intellectual and professional competence is attained when a graduate:

1. Has developed knowledge and skills – including those of clear oral and written expression and evaluative listening – required for beginning competence in a vocation or profession.
2. Has acquired those self-reliant character elements that demonstrate a high personal code of ethics and willingness to pursue vocational or professional objectives within a framework of humanitarian and social goals.
3. Has developed the ability to think clearly and speculate imaginatively about both immediate and long-range problems.

Adequate personal development has been achieved when a graduate:

1. Attempts to reach sound, objective decisions after considering the values and practical and theoretical issues involved, and after exploring reliable sources of information, and then accepts responsibility for these decisions.
2. Has begun to evolve a meaningful personal philosophy of life based upon a growing knowledge of self, a perceptive awareness of the world, and a critical appraisal of his/her relationship to this code.

A satisfactory sense of social and civic responsibilities has been acquired when a graduate:

1. Has critically examined the ideas of democratic society and their underlying assumptions, which embrace a belief in: the worth of the individual, the preservation of free inquiry, free discussion, equality of opportunity, and respect for law.
2. From this examination has applied conclusions to a citizen's role for which he/she keeps informed in attempts to play a constructive role in the dynamics of social change, and the evolving of social and civic values in which he/she believes.

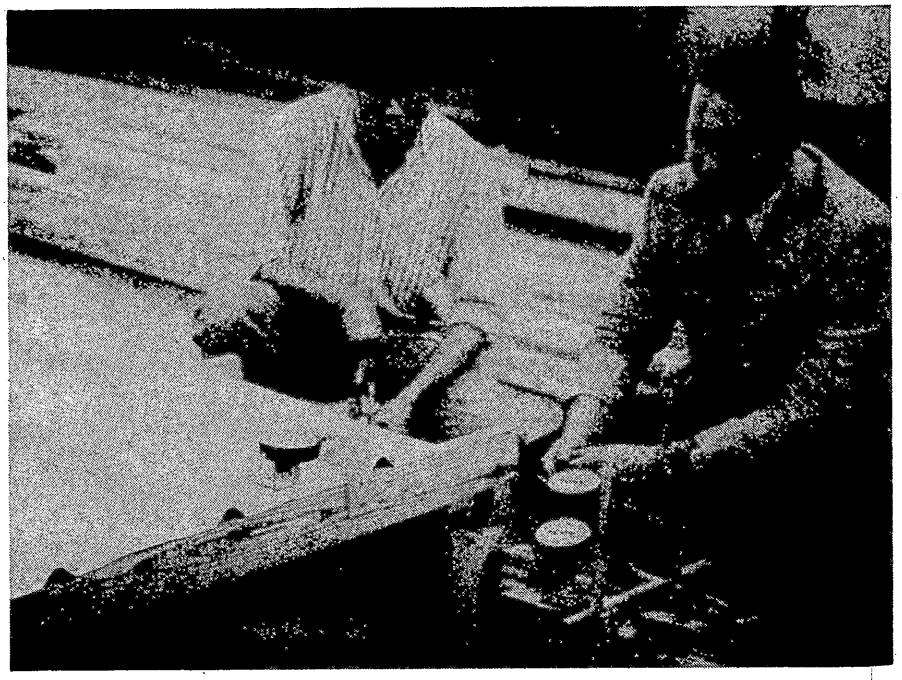
A satisfactory adjustment in human relationships has been achieved when a graduate:

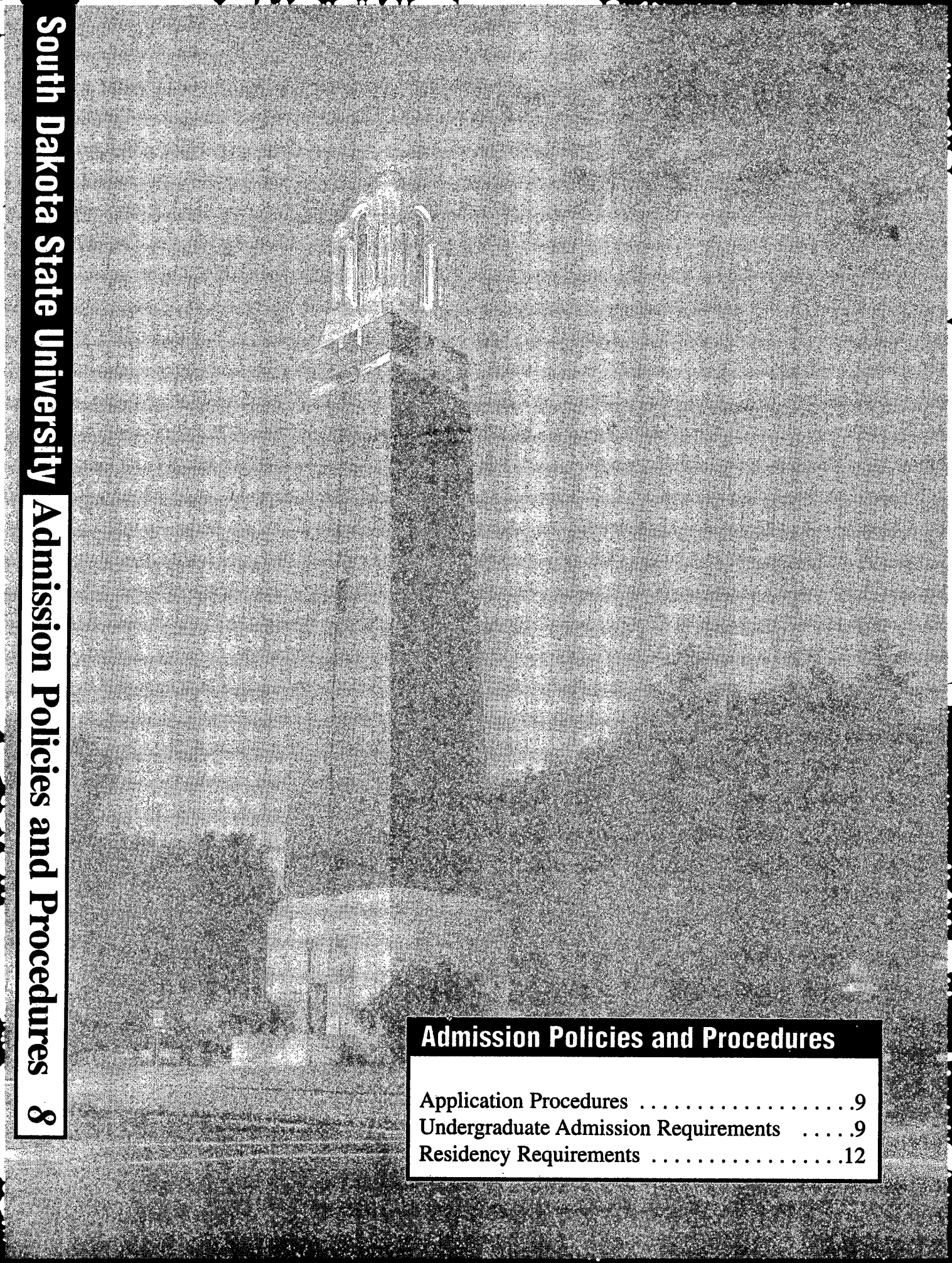
1. Respects the fellowship of many by following the principle of doing to others as he/she would have them do to him/her.
2. Supports the dignity of fellow human beings in his/her own and other cultures by respecting their social amenities, rights, abilities, and racial, religious and cultural attributes.

Research Program

The university is committed to excellence in both basic and applied research, as well as other scholarly and creative activities associated with the university's teaching mission. An effort is maintained to discover new ideas, processes, and developments which will expand and strengthen the state's industrial and agricultural economy. Research and scholarly activities are considered to be integral, essential, and traditional parts of university life involving faculty, as well as graduate and undergraduate students. The research program provides an atmosphere and encouragement for these activities in all segments of the institution. The university seeks and welcomes extramural support for its research program.

For information, contact the Director of Research, South Dakota State University, Box 2201, Brookings, South Dakota 57007-1998.





Admission Policies and Procedures

Application Procedures

The SDSU Admissions Office processes applications on a rolling basis. Students are encouraged to apply well in advance (six to ten months) of the semester they wish to attend in order to arrange housing, apply for financial assistance, and to attend new student orientation/early registration programs.

All applicants must submit the following to be considered for admission:

- **Admission Application**
- **$15 Application Fee**
  If you have previously attended SDSU or another South Dakota public university, you are not required to pay the application fee to SDSU.
- **High School Transcript**
  (except transfer applicants who have completed more than 24 semester credits)
- **Official Report of ACT**
  All students who are not two years beyond high school graduation are required to take the ACT test and have the results sent to SDSU.

In addition, all transfer applicants must provide:

- **Official College Transcript(s)**
  You must request official transcripts from all the schools you previously attended. All transcripts should be sent directly to the SDSU Admissions Office. If you are currently enrolled at another institution, you may send partial transcripts and be considered for provisional admission until the final transcript arrives.

Upon admission to the university and prior to enrolling for classes, all new applicants are required to provide proof of the Board of Regents required immunizations. This form will be sent to students prior to their enrolling at SDSU.

Applications for admission can be sent to:
South Dakota State University
Admissions Office
Box 2201
Brookings, SD 57007
phone: (605) 688-4121

Undergraduate Admission Requirements

Admission to SDSU is open to all academically qualified students and is granted without regard to age, race, color, religion, sex, handicap, or national origin.

High School Students or Current Graduates

To be a candidate for admission to a **baccalaureate degree program**, students must:

Graduate in the top 60% of their high school graduating class,
OR
Achieve an ACT composite score of 18 or above,
OR
Earn a GPA of at least a 2.6 on a 4.0 scale in the required high school courses listed below.

AND

Complete the following required courses with a cumulative grade point average of a "C" or higher (2.0 on a 4.0 scale):

4 years of English
or ACT English sub-test score of 17 or above
or AP English score of 2 or above
3 years of Advanced Mathematics [1]
or ACT Math sub-test score of 17 or above
or AP Calculus score of 2 or above
3 years of Laboratory Science [2]
or ACT Science Reasoning sub-test score of 17 or above
or AP Science score of 2 or above
3 years of Social Science
or ACT Social Studies/Reading sub-test score of 17 or above
or AP Social Studies score of 2 or above
½ year of Computer Science
or AP Computer Science score of 2 or above
½ year of Fine Arts
or AP Fine Arts score of 2 or above

[1] Advanced math includes algebra or any higher level math.
[2] Laboratory science includes biology, chemistry, physics, or other approved science courses in which there is a weekly lab period scheduled.

Admission to the **associate of arts (two-year) program** in general agriculture is granted if you:

Rank in the top two-thirds of your high school graduating class,
OR
Have an ACT composite score of at least 18.

Students enrolled in the two-year program who have not met the minimum high school course requirements may enter a bachelor's program only after they have satisfactorily completed 3 credits of English or speech, 3 credits of mathematics, 3 credits of natural science, and 3 credits of social science with a grade point average of 2.0 or higher.

Transfer Students

You are considered a transfer student if you have college credits from an accredited institution and are six or more months beyond high school graduation. If you are currently enrolled at another institution, you can send partial transcripts and be considered for provisional admission until the final, official transcript arrives.

A. Transfer students who have completed 24 or more college credits are eligible for admission if they meet the following requirements:

- Have a 2.0 (C) or higher cumulative grade point average. Students entering the professional program in Education must have a 2.5 GPA. Admission to the professional programs in nursing or pharmacy is on a competitive basis.
- Are in good standing with their most recently attended school.

B. Students with less than a cumulative 2.0 grade point average may be admitted on probation, but each applicant is considered on an individual basis.

C. Transfer students under age 21 who have earned fewer than 24 semester college credits must also meet the high school course requirements as outlined above.

Adult Learners

Students who have not previously attended college and who are 21 years of age or older will be admitted in good standing if they have graduated from high school or have completed the GED.

Former Students

Former SDSU students who want to reapply for admission must submit another admission application and transcripts from all colleges attended since leaving SDSU. Former students will be admitted upon review of all college level course work. Approval of admission is required by the dean of the appropriate college and the director of admissions. A petition process may be required if the student has been placed on probation or refused status.

Special Students

Students who are over 21 years of age and who wish to enroll with a partial load or who do not plan to work toward a degree may be classified as Special Students.

Concurrent High School Students

High school juniors and seniors may be permitted to take college level course work if they meet the concurrent admission requirements, submit a high school transcript and concurrent admission application, and provide documentation of high school approval.

U.S. Army Concurrent Admission Program (ConAP)

SDSU is a participant in the U.S. Army Concurrent Admissions Program (ConAP). This program allows a qualified applicant to be admitted to SDSU at the time they enlist in the U.S. Army. For more information contact the local U.S. Army recruiter or the SDSU Admissions Office.

Policy for Transfer of Undergraduate Credit

Undergraduate transfer credits are evaluated by the appropriate college dean based on SDSU college and major requirements. Specific questions can be directed to the dean of the college you are entering.

I. A student must submit official transcripts to SDSU of all academic course work taken at other institutions. This course work is then evaluated by the College Dean and recorded on the SDSU transcript by the Registrar. An applicant's signature on the admission application certifies that he or she has complied with this regulation and incorrect or omitted data could be grounds for denial of admission or suspension.

II. A student who takes courses at another institution after his or her initial enrollment and prior to graduation or leaving SDSU is required to submit an official transcript to the Admissions Office. The transcript will be evaluated by the Dean and recorded on the SDSU transcript. Failure to comply with this regulation could be grounds for suspension.

III. Undergraduate credits are acceptable for transfer if taken from a regionally accredited institution and are applicable to the student's degree program at SDSU. Credits from colleges or universities which are not accredited by a regional accrediting association* may be accepted for transfer subject to all other provisions of these guidelines and any conditions for validation which may be prescribed by SDSU. Course credits are acceptable for transfer if completed with a passing grade.

A. Academic courses will be transferred as meeting graduation requirements if the courses parallel the scope and depth requirements for the degree or if the courses meet electives required for the degree. Credit will not be given for duplication of courses.
B. Remedial courses, orientation, life experience, and high school level courses are not accepted for transfer credit. No transfer credit is granted for General Educational Development Tests. (SDSU Note: Joint high school/college courses are covered in formally signed articulation agreements.)
C. General education courses from regionally accredited technical-vocational institutes may be accepted in transfer, subject to evaluation for equivalency. (Note: At SDSU this includes all general education courses covered in formally signed articulation agreements.) Where specific vocational courses are applicable to an individual's degree program, credit may be accepted upon the approval of the dean of the college in which the student is enrolled if the course is equivalent to a specific SDSU course. As technical-vocational institutions develop and change, transfer policies at SDSU are under review. Therefore, check with the SDSU Admissions Office regarding these.
D. Credit earned for college level courses by examination, extension, correspondence, CLEP, advanced placement will be evaluated and accepted for transfer if equivalent to courses at and consistent with the policies of SDSU.
E. When a course has been repeated for credit, the last grade earned will be used in the evaluation of the acceptance of credit.
F. Total transfer credit for work at a junior or community college (2 year), or two-year technical college/institution **may not exceed one-half of the hours required** for completion of the baccalaureate degree at SDSU. Students who have completed more than the acceptable semester hours of junior or community college work may apply completed, transferable courses to specific course requirements and thereby not be required to repeat the courses. The semester hours of credit for those additional courses may not be applied toward the minimum credit hours required for the degree.

IV. Evaluations of courses will be made by the appropriate institutional officials at the time of admission by comparing descriptions of courses completed with those at SDSU.

V. General educational requirements successfully completed at the sending institution within the South Dakota higher education system will be accepted toward meeting these parallel requirements for SDSU.

VI. Transfer credits will be accepted with the same grade and credit as was recorded on the transcript from the institution at which the course was completed. Courses accepted in transfer from institutions with a different credit and/or grading system will be equitably converted to the SDSU system and will be transcripted with the SDSU equivalent credit and grade. Each institution may establish grade-point average requirements for graduation, honors, and academic standing based upon the work of the student at the receiving institution in addition to the cumulative credit and grade requirements. Any transferable grade, whether accepted or not, will be incorporated into the addition of the cumulative grade point average and will be included on the student's transcript.

VII. The President or his/her designee is responsible for insuring that Regental policy will be followed by those involved in determining what courses will be transferred to meet graduation requirements. Each institution shall develop and maintain a procedure for the appeal of transfer credit decisions.

* North Central Association of Colleges and Schools, Western Association of Schools and Colleges, New England Association of Schools and Colleges, Northwest Association of Schools and Colleges, Middle States Association of Colleges and Schools, Southern Association of Colleges and Schools.

Transfer between Regental Universities

Transfer between any of the six South Dakota Board of Regents universities has been further facilitated by the recent revision of the common course numbering system. Most general education courses at all six universities now have the same prefix, course number, and title. This will help transferring students understand how their courses will most likely transfer. Please be aware that majors and colleges have specific program requirements that must be met. These can include a minimum grade for transfer, a course sequence, or a more advanced course.

Articulation Agreements

South Dakota State University has established articulation agreements with Southeast Technical Institute, Lake Area Technical Institute, Mitchell Technical Institute, and Western Dakota Technical Institute. These agreements identify what courses and programs are transferrable between the institutions. Similar articulation agreements also have been established with regional community colleges, colleges and universities, and selected international educational institutions. College deans assist students in determining the status of articulated courses.

Correspondence Credit

Although SDSU does not offer correspondence courses, it will grant credit for correspondence courses from other colleges under the following circumstances: Limited credit for correspondence work may be applied toward a degree. Such credit will not be approved if the work is done while the student is enrolled in the university, unless arrangements have been made in advance with the dean of your college. Maximum acceptable credit by correspondence may be limited by the dean of the college you are entering. No credit will be given for correspondence courses in Engl 101, 301, or 379.

A person not enrolled at SDSU who wants to earn credits by correspondence and apply them toward a degree at SDSU should consult with the appropriate college dean.

Servicemembers Opportunity College (SOC)

South Dakota State University has been designated as an institutional member of Servicemembers Opportunity Colleges (SOC), a group of more than 400 colleges and universities providing voluntary postsecondary education to members of the military throughout the world. As a SOC member, SDSU recognizes the unique nature of the military lifestyle and has committed itself to easing the transfer of relevant course credits, providing flexible academic residency requirements, and crediting learning from appropriate military training and experiences. Servicemembers Opportunity College has been developed jointly by educational representatives of each of the Armed Services, the Office of the Secretary of Defense, and a consortium of thirteen leading national higher education associations. It is sponsored by the American Association of State Colleges and Universities (AASCU) and the American Association of Community and Junior Colleges (AACJC).

Admission with Advanced Standing

Students may be qualified to enter college at a level above the average freshman. Students may receive this advanced standing and/or credit through a variety of testing programs (see "Examination for University Credit"). The final decision in granting advanced standing and/or credit rests with the head of the department in which the credit is sought.

Admission of International Students on Nonimmigrant Visas

SDSU is dedicated to providing educational opportunities for students from abroad and has traditionally enrolled students from as many as 40 different countries each semester.

To be considered for admission, an international student must submit:

1. International Student Application
2. Official academic transcripts for all secondary and postsecondary education
3. Official score report for Test of English as a Foreign Language (TOEFL)
4. Financial certification form/supporting financial documentation
5. Application fee of US $15.00

International students generally need to have a secondary or college transfer grade point average of 2.5 for engineering or a 2.25 for other majors. Transfer students from academic programs at other U.S. institutions must have completed at least 25 consecutive semester credits (37.5 quarter credits) at a single institution. A minimum score of 500 on the TOEFL is required for non-native speakers of English (minimum is subject to change). Applicants whose native language is English or those who are from a country where English is the only language are not required to submit results from a TOEFL.

SDSU may grant conditional admission to students who cannot meet the minimum TOEFL requirement. Enrollment would be contingent upon successful completion of a U.S. based intensive English program, including an exit TOEFL of 500 or above.

International students are required to purchase and maintain university approved health insurance for themselves and their dependents for the duration of their enrollment at SDSU.

SDSU regrets that it is unable to offer financial aid such as scholarships or tuition waivers to international students. **Applicants must, therefore, show clear evidence of adequate resources for financing their program of study.**

SDSU reserves the right to require advance deposits of estimated tuition, fees, and living expenses when warranted by prevailing foreign exchange difficulties.

Applications for International Students must arrive by: May 1 to be considered for fall admission; September 1 for spring admission. Application materials differ from standard materials. Contact the International Student Affairs Office for forms and further information: International Student Affairs, Administration 312, SDSU, Brookings, SD 57007. Phone: (605) 688-4122.

Policy for Transfer of Foreign Undergraduate Credit

College level and advanced secondary level courses taken at foreign institutions will be evaluated for transfer consideration by an independent credential evaluation service and/or the appropriate institutional officials. Credit will be considered for transfer only when content is determined to be equivalent to SDSU courses. A syllabus from the foreign institution is required to determine equivalency. No elective credit will be allowed for courses not equivalent to SDSU courses. No English course will be accepted for credit from a foreign institution. For those

international institutions that have an articulation agreement with SDSU, the agreement determines the courses that transfer full credit.

Transfer credit grades from foreign institutions will **not** be entered in the cumulative or semester grade point averages, but will be entered on the SDSU transcript as "P" (passing) grades. There will be a limit of 32 credits which may be transferred from foreign institutions determined to be vocational/technical level programs.

Non-Native Speakers of English

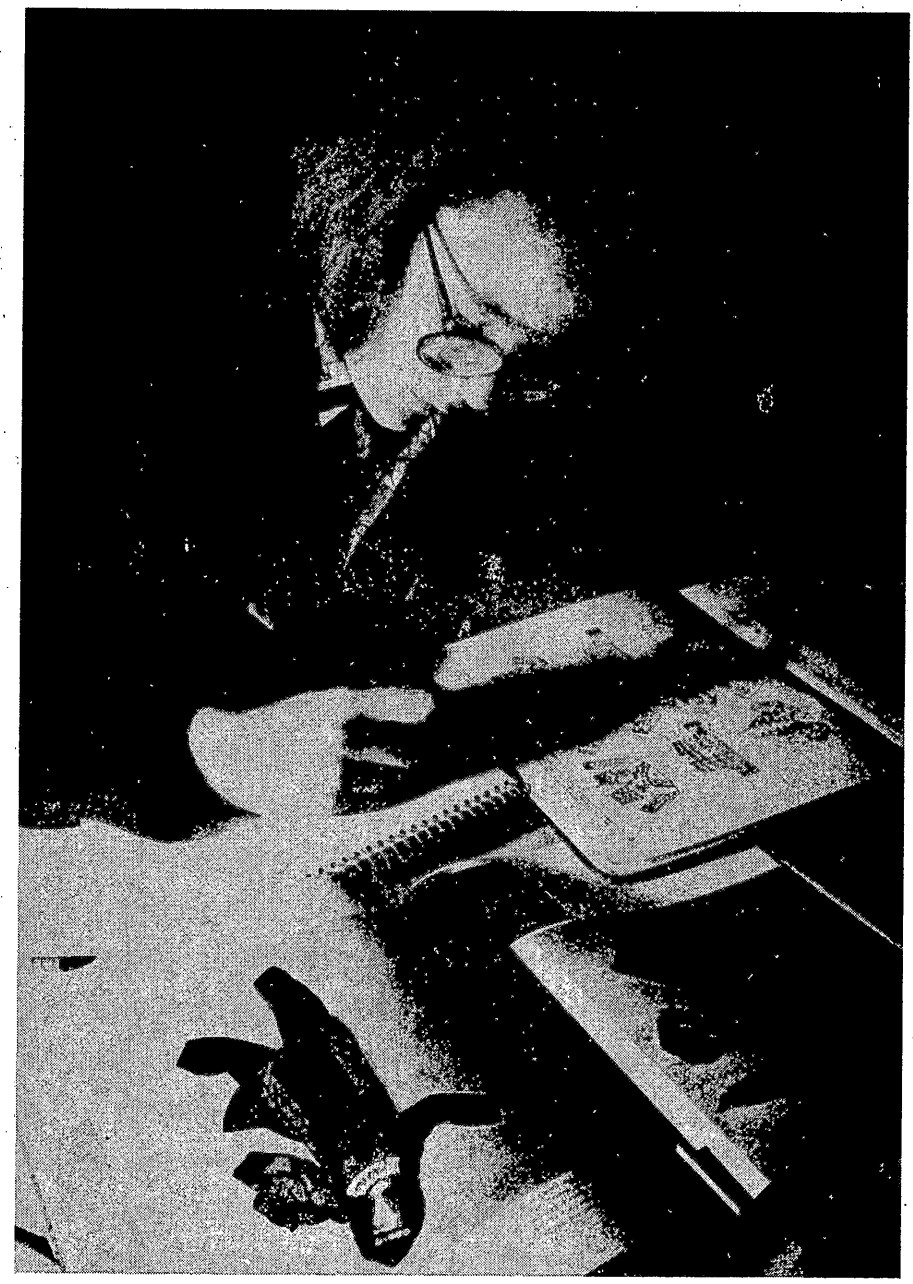
The Michigan Test of English Proficiency will be administered to non-native speakers of English. Testing may be waived with a score of a 600 or higher on the TOEFL.

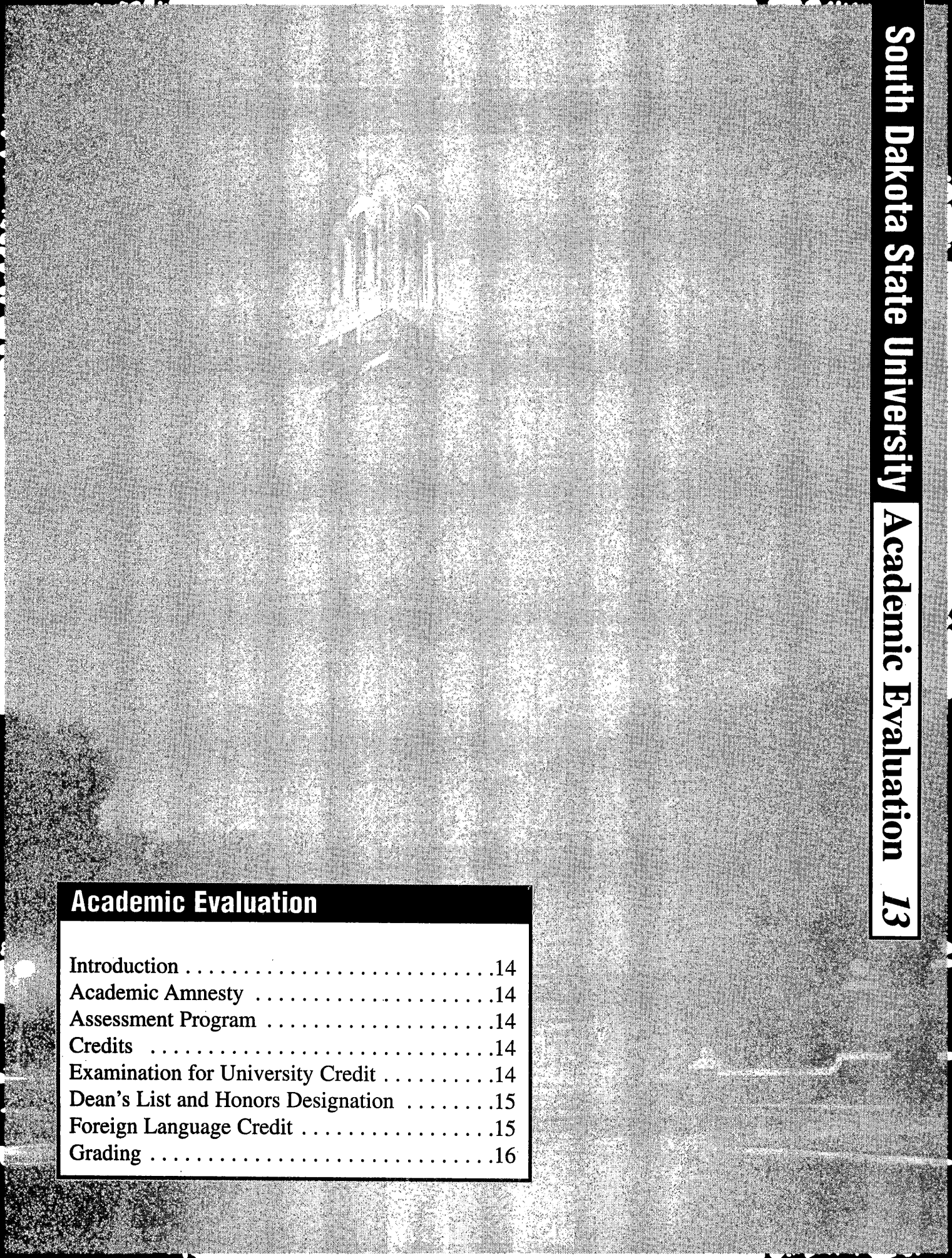
Testing will be conducted prior to enrollment. Results will be used to determine whether a student needs to complete one or more support courses in English as a Second Language in addition to regular academic classes. The courses are designed to better prepare students for their academic program in general as well as for the English core curricula required of all entering students.

Further information regarding admission and English proficiency requirements may be obtained from the International Student Affairs Office, Administration 312, SDSU, Brookings, SD 57007, Phone: (605) 688-4122.

Residency Requirements

Qualifications for residency for tuition purposes may be obtained by writing the Director of Admissions, SDSU, Box 2201, Brookings, SD 57007.





Academic Evaluation

Introduction

Each student is responsible for satisfying requirements for graduation as listed under overall university, college, and major field requirements. If a student has questions concerning the proper satisfaction of specific requirements, he or she should consult with the dean, major adviser, or the Registrar. To the extent possible, the following sections are arranged alphabetically.

Academic Amnesty

Philosophy

Some students attempted college work previously and were not successful in their efforts. They now wish to resume their college careers but are held back by poor academic records. Through the application of academic amnesty, the prior, poor academic record can be excluded from current work under certain conditions. The goal of this policy is to respond to the academic needs of matured individuals as they develop newly-identified potential.

Criteria

The student must:

1. Be seeking an undergraduate degree from SDSU. The student who has already graduated may not apply for amnesty.
2. Have last attended a formal post-secondary educational institution (including a vocational/technical institute) no less than 5 years prior to the most current SDSU admission.
3. Have completed a minimum of 12 newly attempted credits from SDSU with a minimum of 2.0 GPA and meet the program minimum GPA for those programs with a higher GPA entrance requirement. (If more than 12 credits have been completed, all credits must calculate to 2.0 GPA or program GPA.)

Procedure

1. The student must submit a formal Academic Amnesty Petition through the adviser, the department head for the undergraduate program into which the student desires entry or is already admitted, and the appropriate college dean.
2. The decision of the academic dean is final.
3. Academic amnesty may be requested for either (a) all previous post-secondary education work, or (b) all previous post-secondary education at specific institution(s). Individual courses and/or terms may not be petitioned.
4. If amnesty is approved, the student's academic amnesty record will not be counted toward completion of the current degree program.
5. All previous work, whether SDSU or transfer work, will remain on the student's permanent record. A notation will be entered when/if amnesty is granted and the appropriate calculations (e.g., cumulative grade point average) will be adjusted to reflect the amnesty decision.
6. If the student changes college and/or major, the amnesty petition must be resubmitted to the new adviser, department head and appropriate academic dean.
7. Academic Amnesty, if granted, will only be applicable at SDSU and does not impose any decision on any other institution(s) which the student may subsequently attend.
8. Academic Amnesty cannot be used for federal financial aid satisfactory academic progress purposes. Students need to visit the SDSU Financial Aid Office to complete an appeal form if financial aid eligibility is affected.

Assessment Program

SDSU has a comprehensive Assessment Program to evaluate its educational programs and services. This program is designed to measure the effectiveness of the general education core curriculum, the cognitive knowledge and skills acquired in the major program of study, and students' perceptions of their education.

To effectively evaluate programs the university must assess students at various stages of their educational program. Therefore, you are required to participate in assessment activities when requested. Assessment information is collected when you enter SDSU and additional assessments occur throughout your academic career. As a senior, you will participate in an assessment for each of your majors as part of your graduation requirements.

During Spring 1996 and Spring 1997 the South Dakota public universities are pilot testing proficiency examinations at the "rising junior" level. It is anticipated that proficiency testing will become a requirement of students who have earned 47-68 credits Spring 1998.

Credits

Semester credit hours ("credits") are the numerical values assigned to hours of academic work, according to the amount of time required for lecture or laboratory. One credit is equivalent to 50 minutes of class (lecture, discussion) and two hours of outside preparation per week for one semester.

Three hours of laboratory work, where no outside preparation is required, or two hours of laboratory where outside activity is required is assigned one credit hour.

Independent courses vary in credit according to the nature of the work involved.

Examination for University Credit

If you have studied a subject independently or have done college level coursework for which you are unable to get a transcript acceptable to this institution, you may receive credit through a variety of testing programs.

No more than 34 credits obtained by examination for credit may be applied toward the Bachelor's degree.

Students and former students who were previously in good standing, may also acquire credit by examination providing they meet the conditions outlined below.

If credit is accepted by examination, the permanent record will show:

course name — credit by examination, with an EX grade for the specified number of credits. Course equivalent credit and two grade points per credit will be allowed toward graduation. No entry will be made on the record if the examination is failed. The examination results will not be included in calculation of either the semester or the cumulative grade point averages.

NOTE: A grade given at, or transferred to, this university may not be raised by examination for university credit. If you have taken an upper level course in a given subject, you cannot receive credit by examination for a lower level course dealing with the same content.

Standardized Tests

Credit may be received in certain subjects through the College Level Examination Program (CLEP), the Proficiency Examination Program (PEP), the Advanced Placement Program (AP), or through the local placement test in Mathematics. The Mathematics and CLEP exams are administered at SDSU, the other programs are administered only through national testing centers. You are charged a testing fee for each of the testing programs except the local mathematics test.

In order to have credit earned by examination recorded on your academic transcript, you must complete an "Application for Placement Credit" form at the Academic Evaluation and Assessment Office and pay a recording fee.

Local Challenge Exams

If a standardized exam is not available for a course for which you wish credit, a special examination may be established. This process is initiated by obtaining a "Challenge By Examination" form and completing the prescribed steps:

1. Consult the head of the department in which the course is offered. This person will conduct a preliminary evaluation of your background in the subject area to determine if an examination is warranted.

2. Consult the dean of the college in which you expect to receive a degree to determine whether credits earned by examination in the proposed subject will be accepted toward the degree.

3. Pay the examination fee before taking the examination. Specific details are enumerated on the application form which is available at the Academic Evaluation and Assessment Office.

Policy for Repeating Local Challenge Examinations

If a student does not pass the local challenge examination, he or she may use the SDSU petition procedure to request one more opportunity to take a challenge examination for the same course. The guidelines for the retesting process are as follows:

1. Only one retest is allowed.
2. There will be a waiting period of one academic term before retesting may be done.
3. The department will administer a test that is completely different from the original examination used in the original challenge attempt.
4. The petition must be approved by the department head, dean, and Director of Academic Evaluation and Assessment.
5. If the petition is approved, the student must complete a new "Challenge by Examination" form and pay the examination fee before retesting may be done.

Course Exemption

You may be awarded an exemption from taking a course but not receive college credit. This may result from the SDSU policy related to a specific test or credit received by examination from another institution.

For information about credit through any of these programs contact the Academic Evaluation and Assessment Office in Room 201 in Pugsley Center. South Dakota State University cannot guarantee that credit earned via exam at SDSU will transfer to other institutions. Even though SDSU has made an effort to set cut off scores at appropriate levels, each institution develops its own procedures for accepting credit by exam. In some cases a certain test or score level acceptable at SDSU may not qualify a student for credit at another institution.

Dean's List and Honors Designation

Dean's List

Requires a semester GPA of 3.4 or above and full-time student status (minimum of 12.0 semester credits).

Honors Designation

1. To be eligible for honors, a Bachelor's Degree student must have 60 earned semester hours in residence (at SDSU).
2. Students who transfer shall receive full value toward honors for grades and credits transferred, provided the institutions are fully accredited.
3. Honors shall be awarded on the basis of cumulative grade point average.
4. Honors will be based on all grades. The commencement program will include a listing of candidates for honors. However, final determination is made after all grades are included.
   Honors shall be of three degrees:
   With Highest Honor — grade point average 3.80 or above.
   With High Honor — grade point average 3.60 to 3.79.
   With Honor — grade point average 3.4 to 3.59.
5. Honor students shall have the appropriate honors included on their diploma.

Foreign Language Credit

Students who enter the University with a background in foreign language may begin their language study at the level most appropriate to them. Students are encouraged to take the foreign language placement test to determine their level of competence. No student will be allowed to enroll in a foreign language class beyond 202 without confirmation of competence either by the placement test or the endorsement of a member of the departmental faculty.

Students completing any course beyond the 101 level, with a grade of C or better, may receive credit for the previous course(s). However, a maximum of 16 credit hours can be achieved for courses not taken. In order to receive credit, a verification form must be obtained from the Foreign Languages Department office and completed. Then an "Application for Placement Credit" form must be completed and the required fee paid in the Academic Evaluation and Assessment Office.

Students who have studied foreign language other than those offered by the Department of Foreign Languages may petition to have that study satisfy their B.A. foreign language requirement. No credit will be given for competency in a foreign language if it is the student's native language.

Grading

The grading system is based on achievement in comparison with other members of your class.

A grade report is distributed to each registered student each term and a cumulative record is maintained in the Registrar's Office.

Types of Grades

The quality of work is indicated by the following marks:

A Exceptional — 4.0 grade points
B Superior — 3.0
C Average — 2.0
D Passing — 1.0
(lowest passing mark)
AUP Audit-Pass
AUF Audit-Fail
EX Pass-Credit by exam
P Pass
TR Credit received by transfer
CR Credit
F Failure
You must repeat the subject in a regular class to get a passing mark. Repeating the course will not remove the failure from your permanent record. Beginning Fall 1995, only the most recent grade is calculated into the cumulative grade point average.
NR Grade not reported by instructor.
Will not enter into the semester or cumulative grade point average.
W Withdrew
I Incomplete
A report indicating if for reasons beyond the student's control, a student cannot finish the required work in a course, the work completed is of passing grade, and it is **deemed practical for the student to complete the subject without repeating it in a regular class,** the student may apply to the instructor for an Incomplete grade. If the instructor accepts this application, the student and the instructor must agree on a plan to complete the work of the course. The plan must be in writing and have a completion date of not more than one year from the end of the regular course. At the end of the plan or the one-year period, whichever is sooner, the instructor may assign any academic grade, from "F" to "A". Any incomplete not properly removed within one year will remain on the permanent record as an "I". A grade of "I" is not calculated into the GPA.
IP In Progress
A report indicating that the requirements for the course, as specified on the initial course syllabi by the instructor at the start of the term, extend beyond the current term. The IP grade is an acceptable grade only if the instructor files, through the department head, a request to report an IP grade for the entire course, or in the case of independent study for an individual student, prior to the census date for the course. Requests must be approved by the College Dean and must be on file each term with the Academic Vice President and the Registrar. At the time grades are recorded, the Registrar will audit the reported IP grades against approvals received. (After initial review, courses such as Thesis, Thesis Sustaining, and Research Paper can be maintained on permanent file, rather than be submitted each term.) The grade of "IP" is not calculated into the GPA.

With the exception of a year old "I", any grade reported to the Registrar may be changed by recommendation of the instructor and college dean and approval by the Vice President for Academic Affairs.

Any graduating senior and graduating graduate student who receives an incomplete or in progress grade in the final semester in a course required for graduation, or who has not removed an outstanding incomplete or in progress from a previous semester, in a course required for graduation, by the date grades are due for the semester will not be permitted to graduate that semester but will be required to apply for graduation for a subsequent semester. Emergency situations require the filing of a petition by the student to the Dean for approval prior to the final grading deadline for the final semester. **When the student has graduated and the degree has been recorded, the record is considered officially closed, and an instructor can no longer change a grade, including the "I" and "IP" grades.**

Grade Points and GPA: Grade points are related to grades as illustrated in these examples:

Course	Credits	Grade	Grade Points
Mil 101	1	A	4
Math 113	5	B	15
Chem 112	4	C	8
Fren 101	4	C	8
Engl 101	3	D	3
Total	17		38

GPA — 38 divided by 17 = 2.23

The cumulative grade point average is obtained by dividing grade points by the number of hours attempted. **In computing grade point averages all hours attempted (graded A, B, C, D, F) are included.** Note: This excludes I, AUF, AUP, CR, EX, P, NR, TR, W grades.

Repeating a Course to Raise the Grade. All courses taken appear on the student's academic record, but, effective Fall 1995, when a course is repeated, only the most recent grade is calculated into the cumulative GPA.

A repeated course must be taken the most recent time Fall 1995 or later for this policy to apply.

This policy applies only to undergraduate course work. The Graduate School uses both grades in computing the GPA.

You must notify the Registrar's Office, Ad 208, when a course, whether failed or passed, is repeated.

Pass-Fail System. The primary objective of the Pass/Fail System is to encourage students to attempt courses in areas they would normally avoid because of lack of background.

1. You may enroll in up to 20 credits.
2. These credits must be outside your major and may not serve to satisfy university, college or departmental specific course requirements.
3. Colleges may further restrict the Pass/Fail credit option.
4. A "D" letter grade or better is considered to be a passing grade in a pass/fail elective.
5. Registration for pass-fail electives will be accomplished only after registration day by add/drops to the Registrar's Office. The pass/fail option should be known only to the academic adviser, instructor, the student and the registrar.
6. You may change from pass/fail elective to credit or vice versa only during the two week add period.
7. The grade (P or F) will be recorded on your permanent record. A grade of "P" will not count in the computation of the semester or the cumulative grade point average. If the course is passed (grade of D or better), the credits and the grade points, computed as two times the number of credits, will be counted towards graduation. An "F" grade will calculate in the computation of the semester and the cumulative grade point average.
Note: Some courses are taught only on a Pass/Fail basis. Consult the department if you have a question.

Academic Expectations

Academic Performance

The normal progress rate toward graduation requires 12-16 semester credits and 24-32 grade points each semester. To be in good scholastic standing you must maintain the following minimum Cumulative Grade Point Average (CGPA): Freshman — 1.80; Sophomore — 1.90; Junior — 2.00; Senior — 2.00. To graduate, a student must have a CGPA and IGPA (Institutional Grade Point Average) of 2.00 and 32 resident credits at SDSU. A student must have 20 upper division level credits, 14 of which need to be at SDSU.

If you do not maintain the above average, your scholastic status will be affected as follows:

1. Scholastic status is reviewed at the end of each semester (term). Summer term is treated as a regular term relative to probationary and suspended status.
2. **Academic Warning.** A student who has an acceptable CGPA whose SGPA (Semester Grade Point Average) during an individual semester is deficient is given a written warning. Consultation with the adviser is expected. This does not appear on the permanent record.
3. **Probation.** At the end of the first term in which one does not meet the specified CGPA, he or she will be placed on "scholastic probation." Consultation with the academic adviser is expected. Actions such as curtailment of participation on faculty-student committees may be appropriate. The dean may require the student to carry a reduced load for the next semester.
4. **Suspended.** A student will be "suspended" upon failure to meet CGPA requirements at the end of the probationary term. Readmission may be possible on a "scholastic probation" status, upon application for readmission, and after a minimum of two terms of nonattendance. To appeal a suspended status after two terms of nonattendance, the student must do so to the dean of his or her college. **If one has been on a suspended status twice, he or she will not ordinarily be permitted to enroll again.**
5. Students on academic probation who earn a term GPA of 2.00 or higher (SGPA) at the end of the next term in which academic status is evaluated will not be dismissed at the end of that term for failure to meet the CGPA requirements. However, the student will remain on probation until the CGPA of his or her class status at that time is reached.

Note: This policy is subject to revision based on system-wide discussion that is underway. If you have a question about this policy, consult the Registrar or your college dean.

Attendance

1. Class attendance requirements will be established by each instructor and specified in writing at the beginning of the term on a course syllabus.
2. Regular class attendance is the responsibility of all students.
3. The faculty will honor absences approved by university officials where individuals or groups are absent in the interest of the University.

Class Definition

1. Sophomore rank requires 32 semester credit hours.
2. Junior rank requires 64 semester credit hours.
3. Senior rank requires 96 semester credit hours.

Electives

Electives are offered so students may develop special talents or interests. The choice of subjects is left to the student, provided the selections made are consistent with the academic standards of the University. Electives used to meet the humanities, social science, and natural science degree requirements must be chosen from the approved list.

The dean of the college in which the degree is sought must approve registration in an elective if the subject is counted toward the degree.

Rate of Progress

Each student is advised by a member of the faculty. Classes consistent with your plan of study and properly adjusted as to the amount of work are arranged by the adviser and subject to approval by the dean.

The normal rate of progress for a student classified as an undergraduate is 16 credits each semester. **To be a full-time student, all students classified as undergraduates must carry 12 semester credits; all students classified as graduates must carry 9 semester credits.** Undergraduates will not be permitted to register in more than 20 semester credits the first term. Registration in more than 20 semester credits in subsequent terms is permitted only when the previous semester's work shows high achievement.

All overloads in excess of 20 credit hours must be approved by petition through the Assistant Vice President for Academic Affairs. In general, courses will not be offered to fewer than 10 students for undergraduate courses or 7 students for graduate courses, unless there is some special reason for doing so. Instructors will cancel courses with low enrollment or for other reasons, only with the approval of the dean of the college concerned.

Academic Changes

Auditing a Course

Registration as an auditor in a course may be permitted. No credit is given. The audit fee is the established tuition and fee rate. **Registration for audit may be accomplished only after registration day by add slip procedure.**

Auditing courses by graduate and undergraduate students will be a matter of record (recorded on their academic transcript). A grade of Audit Pass (AUP) or Audit Fail (AUF) will be given in each course audited, the basis for the grade to be agreed upon by the instructor and the auditor. Audit courses are counted as part of the 20 hour rule for overloads. **Audit courses are not counted in calculating undergraduate or graduate full-time student status.**

Drop-Add Procedure

1. Approval for dropping or adding courses is initiated with your faculty adviser, add/drop is signed by the adviser and the instructor or designee, and taken to the Registrar's Office, Ad 208, for official recording.

2. Courses may be added, the pass/fail elective may be chosen, and cross listed course prefixes for that semester may be changed during the first 10 class days each semester for standard semester courses and until 13% of instruction is completed for non-standard semester courses.

3. Courses may be dropped without charge during the first 10 class days for standard semester courses or until 13% of instruction is completed for non-standard semester courses. Drops after that date are not entitled to refund.

4. You should not discontinue enrollment in a class without processing discontinuance via the official drop procedure. An "F" will be recorded for an unofficial drop.

5. When an instructor deems it advisable for you to drop from class, a drop slip must be completed, processed, and submitted to the Registrar's Office prior to calendar deadlines. Your name will not be removed from the class roll until information to do so is given to the Registrar's Office.

Grades for dropped courses:

1. Students will be allowed to drop courses until 41.7% of instruction is completed (date published in semester course schedule) with nothing recorded on their transcripts.

2. Thereafter, until 69.4% of instruction is completed (date published in semester course schedule), a "W" will be recorded on the student's permanent transcript indicating a late drop.

3. You may not drop an individual course after 69.4% of instruction is completed.

4. Similar proportional dates would be established by the Registrar's Office for summer, interim and other courses taught outside of the normal nine-month academic year.

5. After 69.4% of instruction is completed, if extenuating circumstances (i.e., illness) have prevented class participation, a petition for an individual drop may be filed through the Dean of the student's college.

Repeated Courses

All courses taken appear on the student's academic record, but, effective Fall 1995, when a course is repeated, only the most recent grade is calculated into the cumulative GPA.

A repeated course must be taken the most recent time Fall 1995 or later for this policy to apply.

This policy applies only to undergraduate course work. The Graduate School uses both grades in computing the GPA.

You must notify the Registrar's Office, Ad 208, when a course, whether failed or passed, is repeated.

Intercollege Transfer

There is a process available for changing, adding, or deleting a student's major. See your College Dean's office to begin the process. When complete, the paperwork must be filed for recording with the Registrar's Office, Adm 208.

Petitions and Appeals

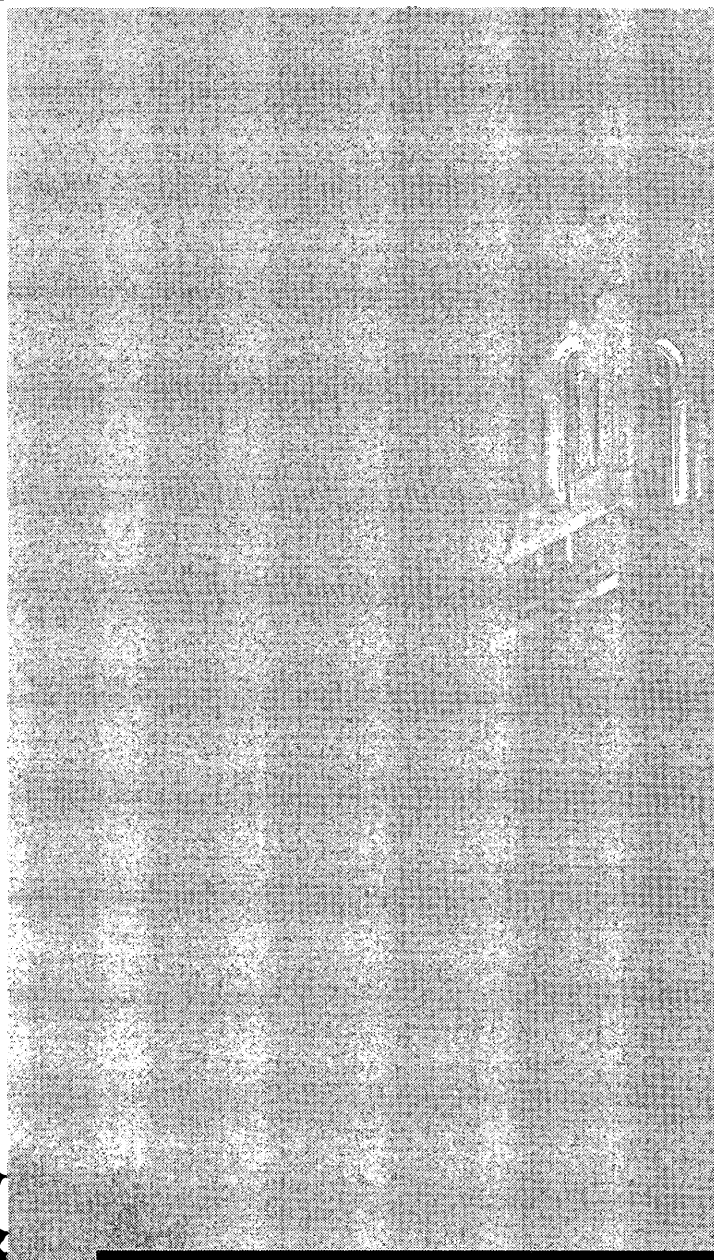
South Dakota State University has an established University Petition Process for students to follow in seeking exceptions to established academic and administrative policies.

There are four areas of appeal: Drop/Add Appeals, Academic Appeals, Graduation Appeals, and Financial Appeals.

The petition process begins with the student obtaining a University Petition form from his or her college dean's office or the Registrar's Office and then processing it through the appropriate steps as indicated on the petition form.

Withdrawal

Those finding it necessary to withdraw from the University are urged to consult with a faculty adviser to work out the best plan possible. You must then contact the Records Office, Administration Building, Room 208 to process a withdrawal. **Those who leave the university without processing an official withdrawal will be reported as having failed the semester's work.** Grades transcripted are based on the date of application for withdrawal. A student may withdraw from the university until 69.4% of instruction has been completed (See date published in Semester Course Schedule). After that date, if extenuating circumstances (i.e., illness) have prevented class participation, a petition for withdrawal may be filed through the Dean of the student's college.



Academic General Information

Academic Advising Role Statements

The overall educational objective at South Dakota State University is to guide each student in the attainment of intellectual and professional competency, growth of personal development, a sense of social and civic responsibility, and satisfactory adjustments in human relationships. Individualized attention to this objective is delivered through academic advising. Each student is assigned an academic adviser and is encouraged to meet with that adviser at least twice each semester to review plans/progress and to schedule classes. Academic advising, formal or informal, is provided by teaching, research, administrative, or service appointed faculty. Academic advising may be included in teaching, may be a part of service, or can be a specified work load assignment.

Purpose of Academic Advising: Academic advising is formal and informal guidance intended to help students investigate, identify, and accomplish individual academic and career plans.

Goals of Academic Advising:

1. Inspire students to understand their freedom of choice and accept their responsibility for academic progress and planning.
2. Assist students in the exploration of immediate and life-long goals.
3. Encourage students to explore and become involved in beneficial experiences that contribute to a complete University experience.

Role of the Advisee: The advisee role in academic planning is to be involved, responsible, and committed to developing a future career, academic, and employment plan.

Rights of the the Advisee:

1. The right to an adviser who fulfills the SDSU advising goals, role, and responsibilities.
2. The right to know and have timely access to an assigned adviser.
3. The right to protection and review of academic advising-related files and materials in accordance with the Family Educational Rights and Privacy Act (FERPA).
4. The right to receive pertinent and accurate information as needed for career, academic, and employment planning.
5. The right to request a change of academic adviser assignment and the right to clear procedures for conveying concerns relative to quality of advising help.

Responsibilities of the Advisee:

1. Responsible for initiating and advancing timely career and academic related plans and discussions with adviser.
2. Responsible for initiating regular progress appointments and seeking adviser assistance when problems arise.
3. Responsible for fulfilling additional requirements as agreed upon during discussions with adviser.
4. Responsible for recognizing that the ultimate responsibility for timely completion of academic requirements rests with the advisee.

Role of the Academic Adviser: The academic adviser role is to be a sensitive, knowledgeable, and skilled link that enhances the advisee's relationship with the University.

Responsibilities of the Academic Adviser:

1. Maintain Advisee Records. Keep current advisee records and personal information in accordance with confidentiality requirements.
2. Furnish Accurate Academic Information. Provide advisees with correct and relevant information about university, college, and departmental graduation requirements.
3. Know Advisees. Know assigned advisees and their individual educational and career goals.
4. Guide Major Program Planning. Recommend courses which correspond with advisee's academic background and educational goals.
5. Monitor Academic Decision Making. Inform advisees about relevant alternatives, limitations, and possible consequences of academic decisions, including information on academic standards, appeals, and charges of academic dishonesty.
6. Refer to Campus and Community Resources. Encourage and guide advisees to utilize available campus and community student help and student development resources.
7. Encourage Timely Progress Toward Degree. Advocate timely planning and progress toward educational goals with prompt attention to problems.
8. Advocate Professional Responsibilities. Help advisees recognize relevant institutional and/or professional responsibilities. Make recommendations to appropriate University officials when advisee behavior compromises professional and/or institutional standards to such an extent that professional disclosure is necessary.

Affirmative Action/Equal Employment Opportunity Policy

In recognition of its legal and moral responsibilities, South Dakota State University reaffirms its commitment to provide "equal opportunity" for the education and employment of all persons, without regard for age, race, color, religion, gender, sexual preference, national origin, or disability, through a continuing policy of "Affirmative Action." Positive efforts to further equality of opportunity in education and employment will be: 1) vigorously pursued; 2) conform to current legal requirements; and 3) be consistent with University standards of excellence and quality.

The "affirmative action" required to meet our responsibilities will include the statement and continual review of University policies relating to equal opportunity and non-discrimination, the collection and analysis of data, the formulation and implementation of procedure to ensure compliance with stated policy, and the continual monitoring of all administrative practices relating to these procedures.

It is recognized that the real success of an affirmative action program is measured, more by good faith efforts in achieving compliance, and not solely in the accumulation of data, analyses, and reports. Analyses, planning, and programming help bring about desired results, identify problem areas, and permit rational scheduling of corrective action. Moreover, these activities give new insights into the dynamics of the university community and help sensitize all of us to the goal of "equal opportunity."

In specific terms, this commitment to provide equal opportunity for all persons requires:

1. The eradication of the effects of any past discrimination; and,
2. The prevention of any present or future discrimination, including any potential discrimination which may arise as a result of the improper implementation of affirmative action practices.

In the final analysis, "affirmative action" is focusing of the University's creative energies on the task of developing processes that enhance human development and institutional effectiveness.

Affirmative Action questions and concerns can be directed to the Affirmative Action Officer, Mr. Eugene T. Butler, Jr. (Administration Building, Room 217; telephone 605-688-6361; fax 605-688-4443).

Disability Policy Statement

South Dakota State University (SDSU) reaffirms that it is committed to a policy of non-discrimination on the basis of physical or mental disability/impairment in the offering of all benefits, services, educational and employment opportunities. Mr. Eugene T. Butler, Jr. has been designated the SDSU "Responsible Employee" to coordinate institutional compliance with the non-discrimination requirements of the Americans with Disabilities Act (ADA) of 1990. As ADA Coordinator, Mr. Butler will also be responsible for the effective integration of ADA procedures with AA/EEO, Title IX, Sections 503 and 504, and Sexual Harassment programs. Information concerning the provisions of the Americans with Disabilities Act of 1990 and the duties and rights provided therein, are available from the office of the ADA Coordinator (Administration Building, Room 217, Telephone (605) 688-6361/Fax (605) 688-4443/ TT/Voice (605) 688-4394. Students and staff may also seek information from the Disabled Student Advisor or Dean of Student Affairs in Administration 318, telephone 688-4493.

Family Educational Rights and Privacy Act of 1974 (FERPA)

The Family Educational Rights and Privacy Act of 1974 (FERPA) (also known as the Buckley Amendment) is a Federal law designed to protect the privacy of a student's personal education records kept at the University. The law provides that the institution will maintain the confidentiality of each student's education records and covers matters relating to access to student records and the disclosure of such records. For complete information about these policies, please refer to the SDSU Student Policies Manual.

Graduation Policies and Procedures

A. Graduation Application - Date Due in Dean's Office
Check the Fall Semester and Spring Semester Course Schedules for dates.

B. Incomplete grades in courses required for graduation.
Graduating Seniors and Graduating Graduate Students (beginning Fall 1991)

1. Any graduating senior or graduating graduate student
   a. who receives an incomplete in the final semester in a course required for graduation, or
   b. who has not removed an outstanding incomplete from a previous semester, in a course required for graduation, by the date grades are due for the semester

   will not be permitted to graduate that semester but will be required to apply for graduation for a subsequent semester.
2. Emergency situations require the filing of a petition by the student to the Dean for approval prior to the final grading deadline for the final semester.

C. Incomplete grades in courses not required for graduation.

1. The student's record, up to the date of graduation, for that degree, is considered closed when the Registrar records the verified degree on the student's record (3 weeks after grades are due for the final semester prior to graduation).
2. After that date removals of Incompletes for courses not required for the degree are no longer permitted. This policy also applies to grade changes or any other academic change to the student's record.
3. This policy has always been in effect but is reinforced in this policy statement.

D. GPA's
The undergraduate GPA is frozen internally only for class rank purposes. The student's class rank does not appear on the transcript but can be requested from the Registrar's Office where it is available. Class rank is calculated in August combining the previous July, December, and May graduates.

E. Graduation List
Submission by the Deans of the final verified graduation list to the Registrar's Office.

1. Deadline for verification of degrees to the Registrar by the Deans will be 3 weeks after grades are due for the semester.
2. Prior to verification of the degree - all undergraduate transfer work in progress, or completed by the student, up to the date of graduation (whether required for graduation or not) must be evaluated by the Dean and recorded on the student's academic transcript.
3. It is the Dean's responsibility to ensure all requirements are met prior to entering the student's name on the final verified list.

F. Notification to the student of above policies and procedures.

1. Every student will receive an information letter and will sign off on these policies and procedures at the time the graduation application is filed with the Dean.
2. The Registrar will include this policy and procedures statement with the graduation information sent to all graduating students each semester.

Non-Degree Courses

In addition to courses leading to degrees, the university offers special and short courses in several lines of work. Some of these may be given for academic credit or no academic credit; others may be offered for Continuing Education Units. Consult the department head involved or the Coordinator of Outreach Programming, Adm 315, South Dakota State University, Box 2201, Brookings, SD 57007; 605-688-4431.

Policy on Sexual Harassment and Other Forms of Harassment

INTRODUCTION

Harassment is a particularly harmful and illegal form of discrimination that breaks down trust within the SDSU community and impedes the ability of students, employees, and others to participate in an environment that allows them to achieve their fullest potential. Furthermore, harassment is a violation of the expectation that every individual at SDSU deserves to be treated fairly, with respect for his or her dignity as a person.

For these reasons, it is this institution's policy that no form of harassment of employees, students, and others associated with SDSU is permitted under any circumstances. All reported incidents will be investigated promptly and acts of prohibited behavior will result in corrective action, including disciplinary action pursuant to the South Dakota Board of Regents Human Rights Complaint Procedures. Sanctions for employees include formal reprimands, suspensions without pay, reductions in responsibilities, and termination. Sanctions for students include probation, suspension, and expulsion.

POLICY STATEMENT: Harassment on any grounds, directed against individuals, is proscribed.

I. Sexual harassment in either of its recognized forms is proscribed:
   A. Sexual harassment may be established by showing that an individual has been subjected to unwelcome sexual advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature where:
      1. Submission to such conduct is made either explicitly or implicitly a term or a condition of an individual's participation or use of an institutionally sponsored or approved activity, employment, or resource; or
      2. Submission to or rejection of such conduct by an individual is used as the basis for educational, employment, or similar decisions affecting an individual's ability to participate in or use an institutionally sponsored or approved activity, employment, or resource.
   B. Sexual harassment may also be established by showing participation in the creation of an intimidating, hostile, or demeaning environment established under Section II below.

II. Harassment on the basis of race, color, creed, religion, national origin, ancestry, citizenship, gender, sexual orientation, age, or disability, or harassment on any grounds, directed against individuals, may be established by showing:
   A. Conduct toward another person that has the purpose of creating an intimidating, hostile, or demeaning environment and that interferes with his or her ability to participate in or to realize the intended benefits of an institutional activity, employment, or resource.
   B. Conduct toward another person that has the effect of creating an intimidating, hostile, or demeaning environment that adversely interferes with his or her ability to participate in or to realize the intended benefits of an institutional activity, employment, or resource.
      1. Harassment consists, in most cases, of more than casual or isolated incidents.
      2. Consideration should be given to the context, nature, scope, frequency, duration, and location of the incidents, whether they are physically threatening or humiliating as opposed to merely offensive utterances, as well as to the identity, number, and relationships of the persons involved.
      3. Harassment shall be found where, in aggregate, the incidents are sufficiently pervasive or persistent or severe that a reasonable person with the same characteristics of the victim of the harassing conduct would be adversely affected to a degree that interferes with his or her ability to participate in or to realize the intended benefits of an institutional activity, employment, or resource.
         a. The reasonable person standard includes consideration of the perspective of persons of the alleged victim's race, gender, or other circumstances that relate to the purpose for which he or she has become the object of allegedly harassing conduct.
         b. If the victim does not subjectively perceive the environment to be hostile, the conduct has not actually altered the conditions of participation and there will be no violation of this policy.
            (1) It is not necessary to show psychological harm to the victim to establish that the conduct would interfere with the person's ability to participate in or to realize the intended benefits of an institutional activity, employment, or resource.
   C. Other conduct that is extreme and outrageous exceeding all bounds usually tolerated by polite society and that has the purpose or the substantial likelihood of interfering with another person's ability to participate in or to realize the intended benefits of an institutional activity, employment, or resource.

REPORTING COMPLAINTS/GRIEVANCE PROCEDURE

University employees are required to refer all harassment complaints they receive (formal or informal, resolved or not) to Saila Gandhi, SDSU Advocacy Officer/Title IX Coordinator (Phone: 605-688-6361, Ad 217). Confidentiality will be maintained to the maximum extent possible in resolving the problem. If a complainant chooses to exercise his or her right to file a formal complaint, the South Dakota Board of Regents Human Rights Complaint Procedure will be used in the investigation and resolution.

NON-RETALIATION/NON-COERCION

Complainants, witnesses, and other persons who have assisted, testified, or participated in any manner in any phase of an investigation will be protected. This policy and applicable Board of Regents, State, and Federal regulations prohibit retaliation, coercion, interference and/or intimidation, or any other adverse act. Persons committing such adverse actions will be subject to disciplinary actions.

Student Code of Freedom and Responsibility

Academic institutions exist for the transmission of knowledge, the pursuit of truth, the development of students, and the general support for the well-being of society. Free inquiry and expression are indispensable to the attainment of these goals. Freedom to teach and freedom to learn are inseparable facets of academic freedom. The freedom to learn depends upon appropriate opportunities and conditions in the classroom, on campus and in the community. You are expected to exercise this freedom with responsibility.

The Student Code, which appears in the Student Policies Manual, is the basic guideline reflecting university-student relations. The Code defines your behavior, your expectations and related university conduct and judicial procedures.

Complete details concerning disciplinary procedures and regulations pertaining to residence halls, parking and traffic, student organizations and activities will be found in the Student Policies Manual.

Copies of the manual are available at the President's office, each Dean's office, the Student Union, the Residence Halls, and the Student Affairs office.

Trip Regulations

A) Students involved in trips related to **university-sponsored instructional activities** as defined in the catalog under Purposes of the University or **university-affiliated activities** as scheduled by the Director of Student Activities or the Director of Residential Life must receive clearance for the trip. Permit forms are available from the Office of the Vice President for Academic Affairs and must be signed by the faculty sponsor and approved by the dean of the college or his/her designate, or the Director of Student Activities or his/her designate, and returned to the Office of the Vice President for Academic Affairs prior to the trip.

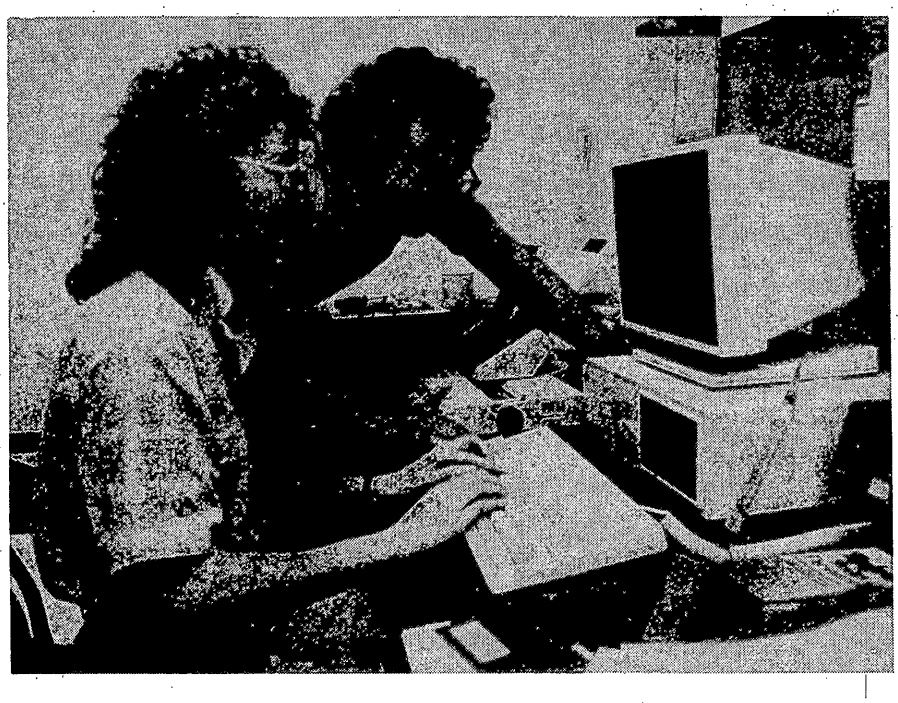
B) Students on university-approved trips are covered by accident-medical insurance. State-owned vehicles may be utilized if criteria established in the policy regulating use of state-owned vehicles are met. Drivers of personal vehicles should have liability insurance.

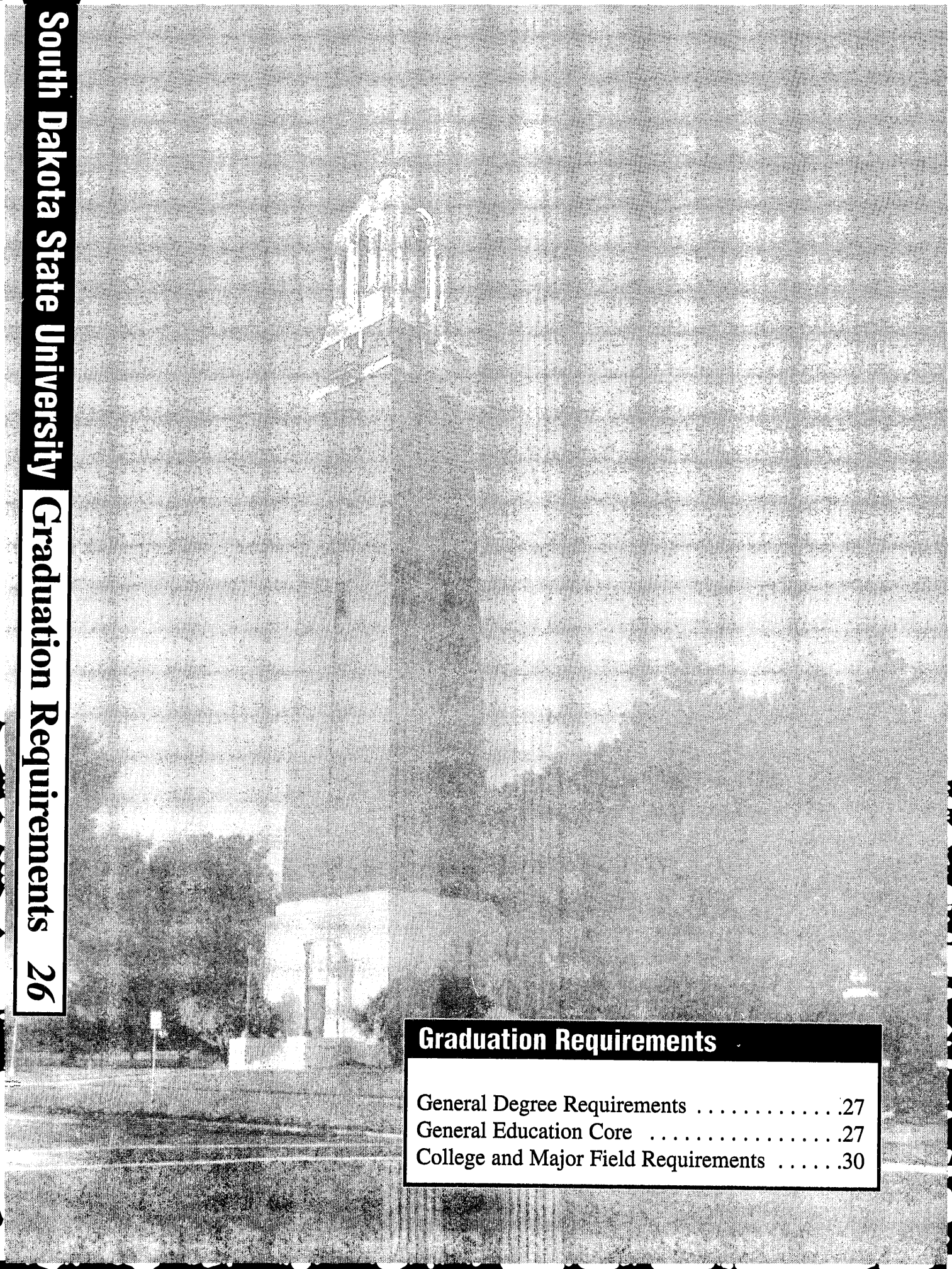
C) Students are eligible for trips if 1) activities of the student have not been curtailed by action of an authorized university judicial body; 2) no single trip shall keep students away from classes more than 5 consecutive class days.

D) The faculty will honor trip absences approved by university officials where individuals or groups are absent in the interest of the University. Differences encountered between student and instructor will be arbitrated by the Vice President for Academic Affairs.

E) A Trip Absence Card for each student involved in the trip will be issued to the faculty sponsor upon approval of the trip. The Trip Absence Card will be signed by the faculty sponsor and given to each student. The student should show the card to his/her instructors in making arrangements to make up any work missed because of a trip, previous to going on the trip. The student should retain the Trip Absence Card until after final grades are received by the student.

F) For insurance purposes, all intradepartmental trips (i.e., laboratory field trips, clinical experiences, etc.) that do not involve the missing of classes by the participating students shall be cleared through the department office or the college dean's office, and a record kept of the number of students going and the dates of the trips. This record shall be summarized by each college dean and reported to the Vice President for Academic Affairs at the end of each academic term.





Graduation Requirements

General Degree Requirements

Graduation requirements, leading to the various baccalaureate degrees, are designed to fulfill the educational objectives of the University toward:

1. Intellectual and professional competence,
2. Adequate personal development,
3. A sense of social and civic responsibility,
4. A satisfactory adjustment in human relationships.

The adviser system assists in proper course selection to meet curricular requirements and helps you avoid errors in scheduling. However, you have the final responsibility for satisfying the degree requirements for the curriculum chosen and for the university core curriculum.

The General Degree Requirements

A. Completion of **at least 128 semester credit hours** (see individual professional college requirements).

B. A Cumulative Grade Point Average (CGPA) and Institutional Grade Point Average (IGPA) of 2.00. The CGPA is based on all courses attempted, transfer or at SDSU. The IGPA is based on all course work taken at SDSU. If a course is repeated, only the last grade received will be included in the calculation of the CGPA and IGPA.

C. Resident requirement. Successful completion of at least 32 hours at South Dakota State University with a minimum of 20 credit hours of junior and senior (300-400) level courses, 14 of which need to be at SDSU. (For the two-year Associate of Arts degree program, successful completion of at least 16 hours at South Dakota State University is required.) Credits earned by examination are not counted as resident credit unless an exception has been made because of special program features.

D. Completion of University core requirements as described below (total 42 credits).

E. Completion of all college and major field requirements.

Note: No given course may satisfy more than one of these requirements, unless the minimum number of credits is exceeded. Credits in excess of the minimum credits needed may be applied in another area.

General Education Core

Your education at the University should be a total one combining the general education core, your major area of study, and your involvement in campus life and activities. The general education core is particularly important in contributing to these areas of your learning.

— Inquiry, abstract, logical thinking, critical analysis.
— Literacy: writing, reading, speaking, listening, using information.
— Understanding numerical data.
— Historical consciousness – skeptical thinking and wider understanding beyond rote learning.
— Science – understanding the intellectual and philosophical context of scientific observation, research and debate.
— Values – understanding moral philosophy.
— Art – aesthetic appreciation and experience.
— International and multicultural experience – appreciating ethnic diversity in the U.S. and throughout the world.
— Study in depth – the need of undergraduates to develop complex perspectives which connect beyond the discrete educational experience in one course.
— Commitment to Wellness – recognizing the wisdom of healthy mind and healthy body.
— Commitment to Service – practical application of knowledge in actively giving service to the student's peer groups, to the University, to the community, State, and nation, or to humanity in general.

The 42 credit hour general education core at SDSU is composed of Wellness, 2 cr.; Communications, 9 cr.; Mathematics, 3 cr.; and Liberal Studies, 28 cr.

A. Wellness: 2 cr.

Satisfactory completion of two semester credits of WEL, Skills for Healthy Living (1 credit lecture/1 credit lab taken during the same semester) is required. For students transferring from an accredited institution, PE activity credits from that institution will substitute for the WEL requirement.

Two PE 100 Fitness and Lifetime Activities may be taken as electives and will count toward graduation.

B. Communications: 9 cr.

1. **The written communication requirement:** 6 credits of English composition are required. Engl 101 Freshman Composition should be taken in the freshman year and Engl 301 (for Engineering students, Engl 301 or 379) should be taken in the junior year.

For students transferring English composition credits from an accredited institution, course equivalency is required. If the course is evaluated as equivalent to Engl 101 or 301 (or 379), regardless of the credits transferred, the requirement has been met.

2. **The oral communication requirement:** You must obtain satisfactory proficiency in oral communication by completing SpCm 101, Fundamentals of Speech, 3 cr., or by taking an advanced course approved by the Head of the Communication Studies and Theatre Department.

For students transferring speech credits from an accredited institution, course equivalency is required. If the course is evaluated as equivalent to SpCm 101 or an advanced course, regardless of the credits transferred, the requirement has been met.

C. Mathematics: 3 cr.

Satisfactory completion of three credit hours of mathematics at or above the level of college algebra (i.e., Math 102, 113, 120 or a Calculus course). Note: Math 010, 101, 140, 143, and 241 will not satisfy the Math Core.

D. Liberal Studies: 28 cr.

Humanities and Fine Arts	6-11 cr.
Natural Sciences (Biological and Physical)	8-13 cr.
Social Sciences	9-14 cr.

To give an intellectual perspective of life's meaning, the faculty has established a core requirement in liberal studies. These courses will provide a foundation in broad areas of general education. Also, they will provide an access to fields of study from which you may choose a major field. These courses can also provide a competent background for building a career in the professional curricula.

Understanding the Great Ideas: Humanities and Fine Arts

Satisfactory completion of 6-11 semester hours‡ of humanities and fine arts with the required hours from at least two disciplines (i.e., Fren, Germ, Span is one discipline; Music and Music Lit is one discipline, etc.). At least three credits must be taken from the Humanities Section.

The humanities are broadly defined as courses concerned with the understanding and expression of ideas, creative processes and critical human encounters. To encourage and facilitate selection of courses from all aspects, the approved courses are listed in two groups. Those in Humanities deal primarily with ideas and attitudes expressed in words, while those in Fine Arts deal primarily with thoughts and feelings expressed through the arts.

‡ A combined total number of 28 semester hours must be taken in Humanities (a minimum of 6 semester hours) **and** Natural Sciences (a minimum of 8 semester hours) **and** Social Sciences (a minimum of 9 semester hours) to satisfactorily meet the Liberal Studies Core Requirement.

Humanities

Art History (ArtH)
- 100 Art and Design Appreciation (3cr)
- 211 Survey of World Art and Architecture (3cr)
- 212 Western Traditions in Art and Architecture (3cr)
- 310 History of U.S. Art and Architecture (3cr)
- 320 Modern Art & Architecture Survey (3cr)

Biology (Bio)
- 383 Bioethics (4cr)

English (Engl)
- 210 Introduction to Literature (3cr)
- 211 World Literature I (3cr)
- 212 World Literature II (3cr)
- 221 English Literature I (3cr)
- 222 English Literature II (3cr)
- 241 American Literature I (3cr)
- 242 American Literature II (3cr)
- 248 Women in Literature (3cr)
- 250 Literature of Diverse Cultures (1-3cr)
- 256 Literature of the American West (3cr)
- 268 Literature: (3cr)
- 330 Shakespeare (3cr)
- 367 American Short Story: (3cr)

European Studies (EurS)
- 300 Topics in European Culture (3cr)

Foreign Languages (FL)
- 134 Foreign Cultures (3cr)

French (Fren)
- 101 Introductory French I (4cr)
- 102 Introductory French II (4cr)
- 201 Intermediate French I (3cr)
- 202 Intermediate French II (3cr)

German (Germ)
- 101 Introductory German I (4cr)
- 102 Introductory German II (4cr)
- 201 Intermediate German I (3cr)
- 202 Intermediate German II (3cr)

Lakota (Lak)
- 101 Introductory Lakota I (4cr)
- 102 Introductory Lakota II (4cr)
- 201 Intermediate Lakota I (3cr)
- 202 Intermediate Lakota II (3cr)

Russian (Russ)
- 101 Introductory Russian I (4cr)
- 102 Introductory Russian II (4cr)
- 201 Intermediate Russian I (3cr)
- 202 Intermediate Russian II (3cr)

Spanish (Span)
- 101 Introductory Spanish I (4cr)
- 102 Introductory Spanish II (4cr)
- 201 Intermediate Spanish I (3cr)
- 202 Intermediate Spanish II (3cr)

History (Hist)
- 121 History of Western Civilization to 1650 (3cr)
- 122 History of Western Civilization since 1650 (3cr)
- 322 Greece and Rome (3cr)
- 323 Roman Empire and the Early Church (3cr)

Honors (Hon)
- 301 Honors Colloquium (1-4cr)
- 302 Honors Colloquium (1-4cr)

Latin American Area Studies (LAAS)
- 301 Latin American Cultures (3cr)

Music (Mus)
- 100 Music Appreciation (2cr)
- 201 History of Country Music (3cr)
- 301 Blues, Jazz and Rock (3cr)

Music Literature (Mus)
- 130 Music Literature and History I (2cr)
- 131 Music Literature and History II (2cr)
- 230 Music Literature and History III (2cr)
- 231 Music Literature and History IV (2cr)

Nutrition and Food Science (NFS)
- 111 Food and People (3cr)

Philosophy (Phil)
- 100 Introduction to Philosophy (4cr)
- 200 Introduction to Logic (3cr)
- 215 Introduction to Social/Political Philosophy (3cr)
- 220 Introduction to Ethics (3cr)
- 313 Great Philosophers (2-3cr)
- 320 Professional Ethics (3cr)
- 331 Philosophy of Science (3cr)
- 332 Environmental Ethics (3cr)
- 383 Bioethics (4cr)

Religion (Rel)
- 213 Introduction to Religion (3cr)
- 224 Old Testament (3cr)
- 225 New Testament (3cr)
- 237 Religion in American Culture (3cr)
- 238 Native American Religions (3cr)
- 331 Feminism and Theology (3cr)
- 332 Environmental Ethics (3cr)
- 351 World Religions I (3cr)
- 352 World Religions II (3cr)

Radio, Television and Film (RTVF)
- 160 Introduction to Film (3cr)
- 360 Film Narrative (3cr)

Speech Communications (SpCm)
- 340 Oral Interpretation (3cr)

Theater (Thea)
- 100 Introduction to Theatre (3cr)

Fine Arts

Art (Art)
- 111 Drawing I (3cr)
- 121 Design I (3cr)
- 123 Three Dimensional Design (3cr)
- 212 Figure Drawing (3cr)
- 231 Painting I–Beginning Level (3cr)
- 241 Sculpture I–Beginning Level (3cr)
- 251 Ceramics I–Beginning Level (3cr)
- 281 Printmaking I–Beginning Level (3cr)

Dance (Danc)
- 130 Dance Fundamentals (1cr)
- 240 Multicultural Dance Activities (1cr)

Applied Music (MuAp)
- 100 101 102 103 Individual Instruction in Voice (1cr)
- 110 111 112 113 Individual Instruction in Keyboard (1cr)
- 120 121 122 123 Individual Instruction in Woodwinds (1cr)
- 130 131 132 133 Individual Instruction in Brass (1cr)
- 140 141 142 143 Individual Instruction in Percussion (1cr)
- 150 151 152 153 Individual Instruction in Strings (1cr)

Music Ensembles (MuEn)
- 100 University Women's Choir/Pasquettes (1cr)
- 101 Concert Choir (1-2cr)
- 102 University Men's Choir/Statesmen (1cr)
- 110 Civic-University Orchestra (1cr)
- 120 Marching Band (1-2cr)
- 121 Symphonic Band (1cr)
- 122 Concert Band (1cr)
- 180 Jazz Ensemble (1cr)

Theater (Thea)
- 131 Acting (3cr)
- 241 Stagecraft (3cr)

Understanding the Natural Sciences: Biological and Physical

Satisfactory completion of 8-13 semester hours‡ of natural science. This must include two courses in sequence from the courses listed as "sequence courses" below **and** any other additional credits from any course listed below in the biological and physical sections so as to equal from 8-13 credits.

SEQUENCE COURSES (Must take one combination of courses in sequence) Bio 101 & 103; Bio 101 & Bot 201; Chem 100 & 102; Chem 106 & 108; Chem 106 & 120; Chem 112 & 114; Chem 112 & 120; Geog 131 & 132; Phys 111 & 113; Phys 211 & 213.

Natural Sciences

The natural sciences include mathematics and the biological and physical sciences that deal with matter, energy, and their interrelationships and transformations.

‡ A combined total number of 28 semester hours must be taken in Humanities (a minimum of 6 semester hours) and Natural Sciences (a minimum of 8 semester hours) and Social Sciences (a minimum of 9 semester hours) to satisfactorily meet the Liberal Studies Core Requirement.

Biological Sciences

Biology (Bio)
- 101 Biology Survey I (3cr)
- 103 Biology Survey II (3cr)
- 105 Human Biology (3cr)
- 200 Biological Diversity (4cr)

Botany (Bot)
- 201 General Botany (3cr)

Microbiology (Micr)
- 231 General Microbiology (4cr)

Nutrition and Food Science (NFS)
- 221 Survey of Nutrition (3cr)

Plant Science (PS)
- 305 General Entomology (3cr)

Wildlife & Fisheries Sciences (WL)
- 110 Environmental Conservation (2cr)

Physical Sciences

Chemistry (Chem)
- 100 World of Chemistry I (3-4cr)
- 102 World of Chemistry II (3-4cr
- 106 Chemistry Survey (4cr)
- 108 Organic & Biochemistry (5cr)
- 112 General Chemistry I (4cr)
- 114 General Chemistry II (3-4cr)
- 115 Experimental General Chemistry II (1cr)
- 120 Elementary Organic Chemistry (3-4cr)

Geography (Geog)
- 131 Physical Geography I (4cr)
- 132 Physical Geography II (4cr)

Honors (Hon)
- 304 Honors Colloquium (1-4cr)

Mathematics (Math)
- 102 College Algebra (3cr)
- 113 College Algebra and Trigonometry (5cr)
- 120 Trigonometry (3cr)
- 123 Calculus I (5cr)
- 143 Finite Mathematics (3cr)
- 222 Calculus for Non-Math Majors (5cr)
- 224 Calculus II (4cr)
- 225 Calculus III (3cr)

Physics (Phys)
- 101 Survey of Physics (4cr)
- 111 Introduction to Physics I (4cr)
- 113 Introduction to Physics II (4cr)
- 185 Introduction to Astronomy (3cr)
- 211 University Physics I (4cr)
- 213 University Physics II (4cr)

Plant Science (PS)
- 213 Soils (3cr)
- 243 Geology (3cr)

Understanding our Social Environment

Satisfactory completion of 9-14 semester hours‡ of social science from at least two disciplines.

Social Sciences

The social sciences are among those courses that broaden your per-

spectives concerning your own identity, your participation as members of society, your understanding of human interrelationships, and your comprehension of public issues.

‡ A combined total number of 28 semester hours must be taken in Humanities (a minimum of 6 semester hours) **and** Natural Sciences (a minimum of 8 semester hours) **and** Social Sciences (a minimum of 9 semester hours) to satisfactorily meet the Liberal Studies Core Requirements.

Apparel Merchandising (AM)
- 350 Dress and Adornment in World Cultures (3cr)

Anthropology (Anth)
- 200 General Anthropology (3cr)
- 310 Cultural Anthropology (3cr)
- 421 Indians of North America (3cr)

Consumer Affairs (CA)
- 391 Consumers and the Market (3cr)

Economics (Econ)
- 201 Macroeconomics Principles (3cr)
- 202 Microeconomics Principles (3cr)
- 301 Intermediate Microeconomics (3cr)
- 302 Intermediate Macroeconomics (3cr)

Educational Foundations (EdFn)
- 375 Human Relations (3cr)

European Studies (EurS)
- 301 European Union (3cr)

General Engineering (GE)
- 231 Technology and Society (3cr)

Geography (Geog)
- 200 Introduction to Human Geography (3cr)
- 210 World Regional Geography (3cr)
- 212 Geography of North America (3cr)
- 219 Geography of South Dakota (3cr)
- 351 Economic Geography (3cr)

Gerontology (Gero)
- 201 Introduction to Gerontology (3cr)

Health Science (HSc)
- 212 Contemporary Health Problems (2cr)

History (Hist)
- 151 U.S. History to 1877 (3cr)
- 152 U.S. History since 1877 (3cr)
- 349 Women in History (3cr)
- 368 History of the American Indians (3cr)

Honors (Hon)
- 303 Honors Colloquium (1-4cr)

Human Development, Child and Family Studies (HDCF)
- 141 Individual and the Family (2cr)
- 312 Human Development and Personality II: Adolescence (3cr)
- 313 Human Development and Personality III: The Middle and Later Years (2cr)
- 327 Human Development and Personality I: Childhood (3cr)

Pharmacy (Pha)
- 201 Medication and the Consumer (2cr)

Political Science (PolS)
- 100 American Government (3cr)
- 101 American Government Honors (3cr)
- 102 American Political Issues (3cr)
- 165 Political Ideologies (3cr)
- 210 State and Local Government (3cr)
- 253 Current World Problems (3cr)
- 305 Women and Politics (3cr)

Psychology (Psyc)
- 101 General Psychology (3cr)
- 102 Introduction to Psychology (4cr)
- 202 Advanced General Psychology (3cr)
- 327 Child Psychology (3cr)
- 362 Theories of Personality (3cr)
- 366 Psychological Gender Issues (3cr)
- 451 Abnormal Behavior (3cr)

Sociology (Soc)
- 100 Introduction to Sociology (3cr)
- 150 Social Problems (3cr)
- 240 Sociology of Rural America (3cr)
- 250 Marriage (3cr)
- 340 Urban Sociology (3cr)

Women's Studies (WmSt)
- 101 Introduction to Women's Studies (3cr)

Fraction of Credits – Transfer Students

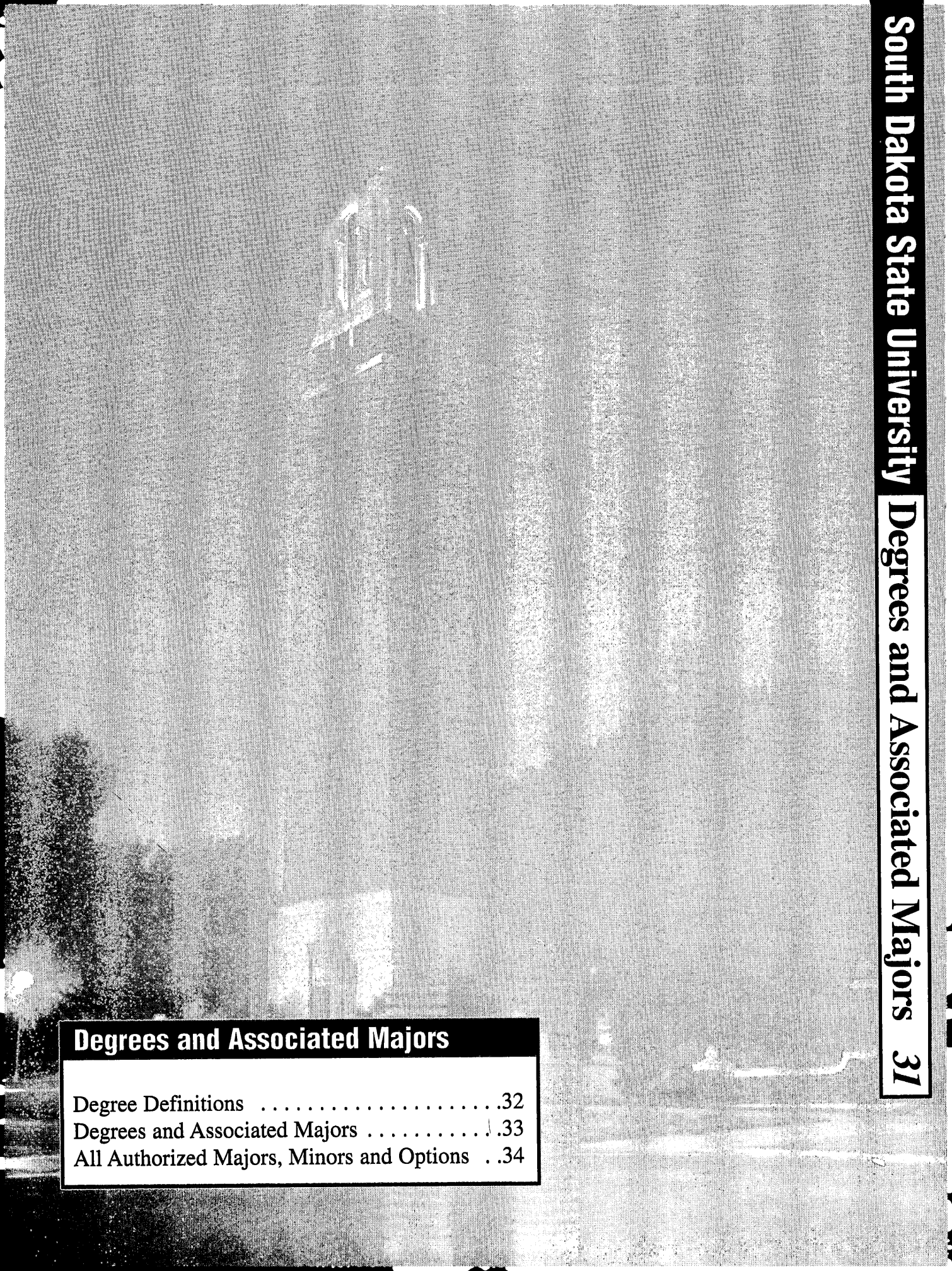
Transfer courses that are in the core areas of Physical Education, Math, Humanities, Social Sciences, and Natural Sciences should be met within a fraction of one credit of what is required in order for that core requirement to be considered met. For instance, if a student transfers in 8 1/3 credits of Social Science credit, that student will have met the 9 credit minimum for the Social Science core. If only 8 credits or fewer have been transferred, then the student must take additional credits from the list of Social Science core courses in the University Catalog to equal the minimum of 9 credits that is required. Total credits toward graduation must include specific College requirements.

College and Major Field Requirements

Courses outlined under the college and major field curricula must be completed to the satisfaction of the head of the major department and college dean. Students **in continuous attendance** have the right to graduate under the catalog curriculum in effect at entry or any subsequent catalog until they graduate. However, necessary substitutions and additional courses may be required to meet the standards of the major field at the time of graduation.

All requirements must be met under the same catalog.

Students who interrupt their college education for more than one year (two regular semesters — fall/spring) re-enter under the new catalog.



Degrees and Associated Majors

Degree Definitions

Associate Degree

An associate degree may be a two-year transfer degree that indicates the completion of a student's lower division general education requirements, or it may be a specialized degree designed to prepare a student for entry into a particular occupation upon the completion of the degree.

South Dakota State University provides a two year associate (A.A.) degree program in General Agriculture.

Bachelor's Degree

The bachelor's degree is the academic title conferred on a student by the University for satisfactory completion of a prescribed four to five year course of study. The bachelor's degree enables a student to acquire a certain amount of general learning and to also become proficient in a particular discipline or profession.

At SDSU the credits required for the bachelor's degree range from 128-136. The degrees offered are:

Bachelor of Arts (BA)
Bachelor of Science (BS)
Bachelor of Science in Education (BSE)
Bachelor of Music Education (BME)
Bachelor of Science in Technology (BST)

Master's Degree

In broad terms, the master's degree indicates that the recipient has mastered a program of advanced, specialized study in a particular field. Master's degrees may be designated as academic degrees designed to provide an introduction to scholarly activities and research, or professional master's degrees. SDSU offers M.Ed., M.A., and M.S. degrees.

Doctoral Degree

The Doctor of Philosophy (Ph.D.) program is designed to prepare a person to become a scholar, that is, to discover, integrate, and apply knowledge, as well as communicate and disseminate it. A well-prepared doctoral candidate will have developed the ability to understand and evaluate critically the literature of the field and to apply appropriate principles and procedures to the recognition, evaluation, interpretation, and understanding of issues, problems, and ethical questions at the frontiers of knowledge. SDSU offers the Ph.D. degree in these areas: Agricultural Engineering (joint with Iowa State University); Agronomy; Animal Science; Atmospheric, Environmental and Water Resources (joint with South Dakota School of Mines and Technology); Biological Sciences; Chemistry; and Sociology.

Major

An academic major within a degree program enables students to make an in-depth inquiry into a discipline or a professional field of study. It should be organized around a specific set of goals and objectives that are accomplished through an ordered series of courses, whose connections define an internal structure and whose sequence advances levels of knowledge and understanding.

Minor

An academic minor within a degree program enables a student to make an inquiry into a secondary discipline or field of study or to investigate a particular content theme. It too should be organized around a specific set of objectives or questions that are achieved through an ordered series of courses. Minors are intended to provide limited competency in the subject.

Degrees and Associated Majors

SDSU offers the following **degrees**. Listed below the degrees are the **major** areas of study.

* See Graduate School Bulletin for majors in these degrees.

All Authorized Majors, Minors and Options

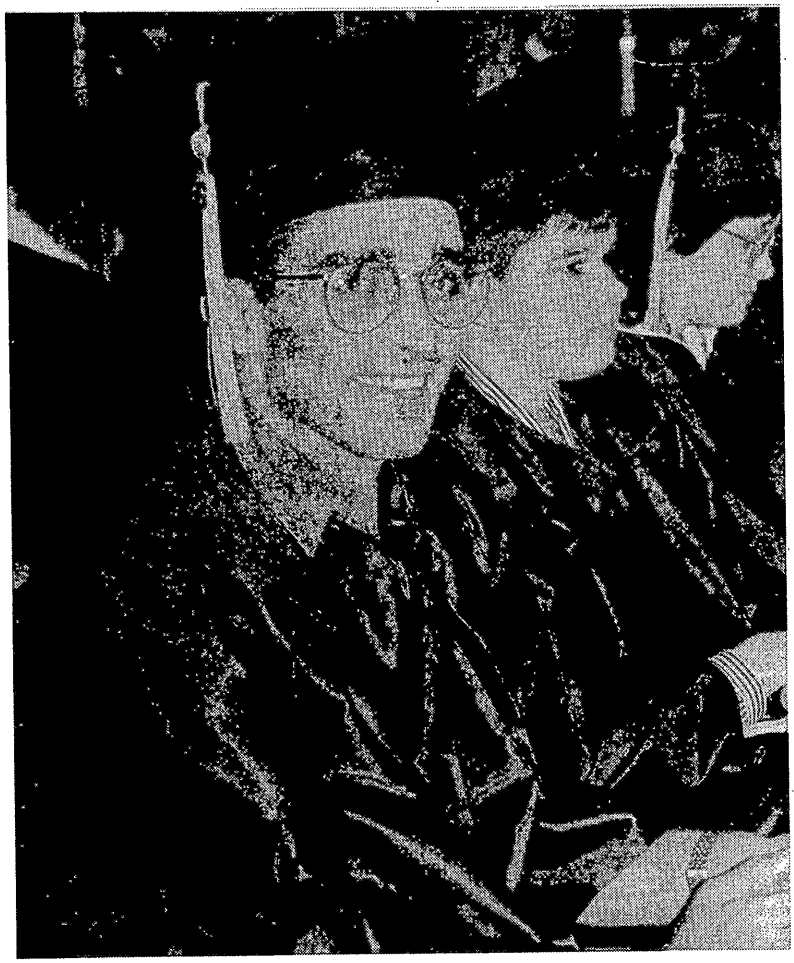
All Authorized Majors, Minors and Options

All Authorized Majors, Minors and Options

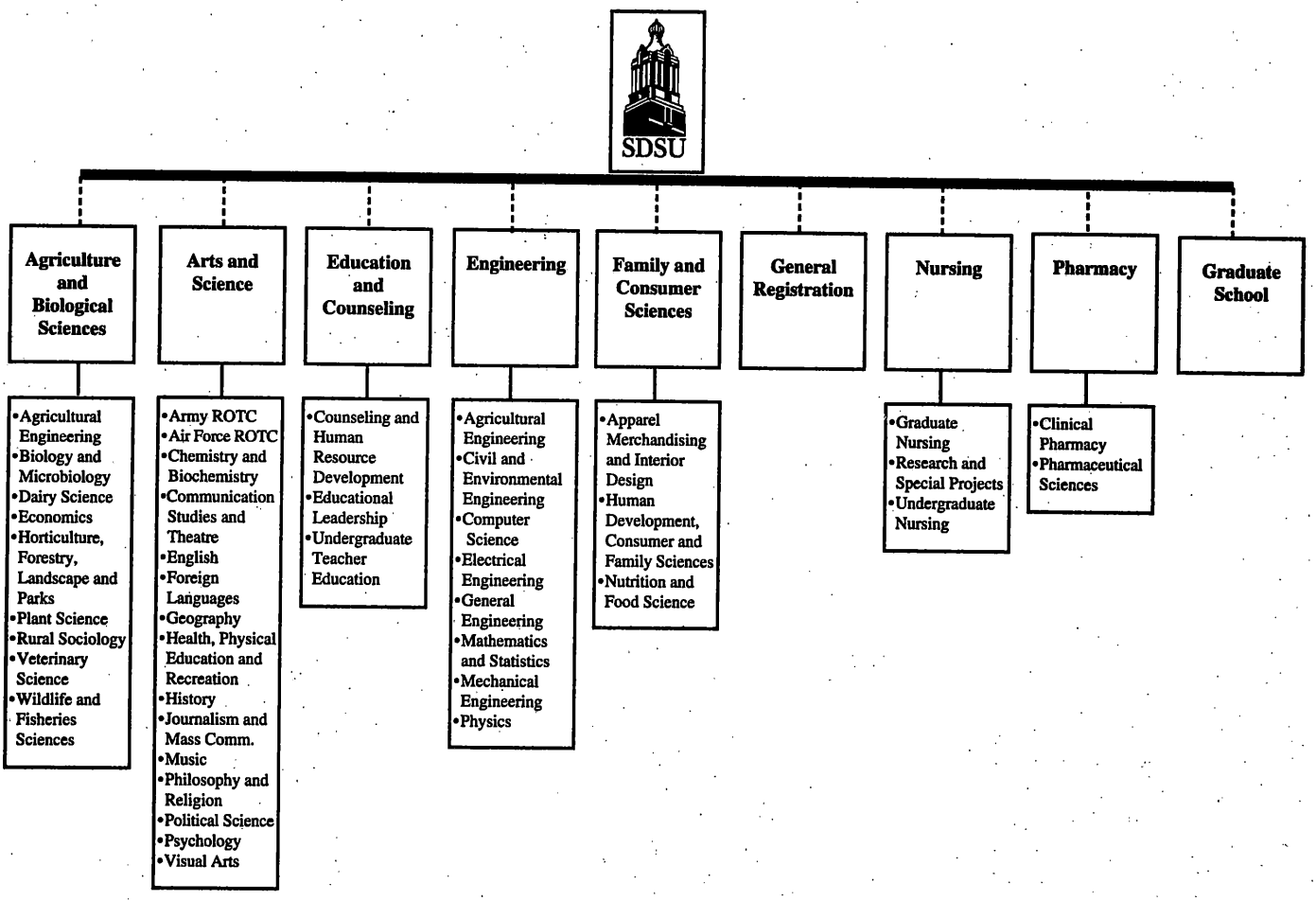
All Authorized Majors, Minors and Options

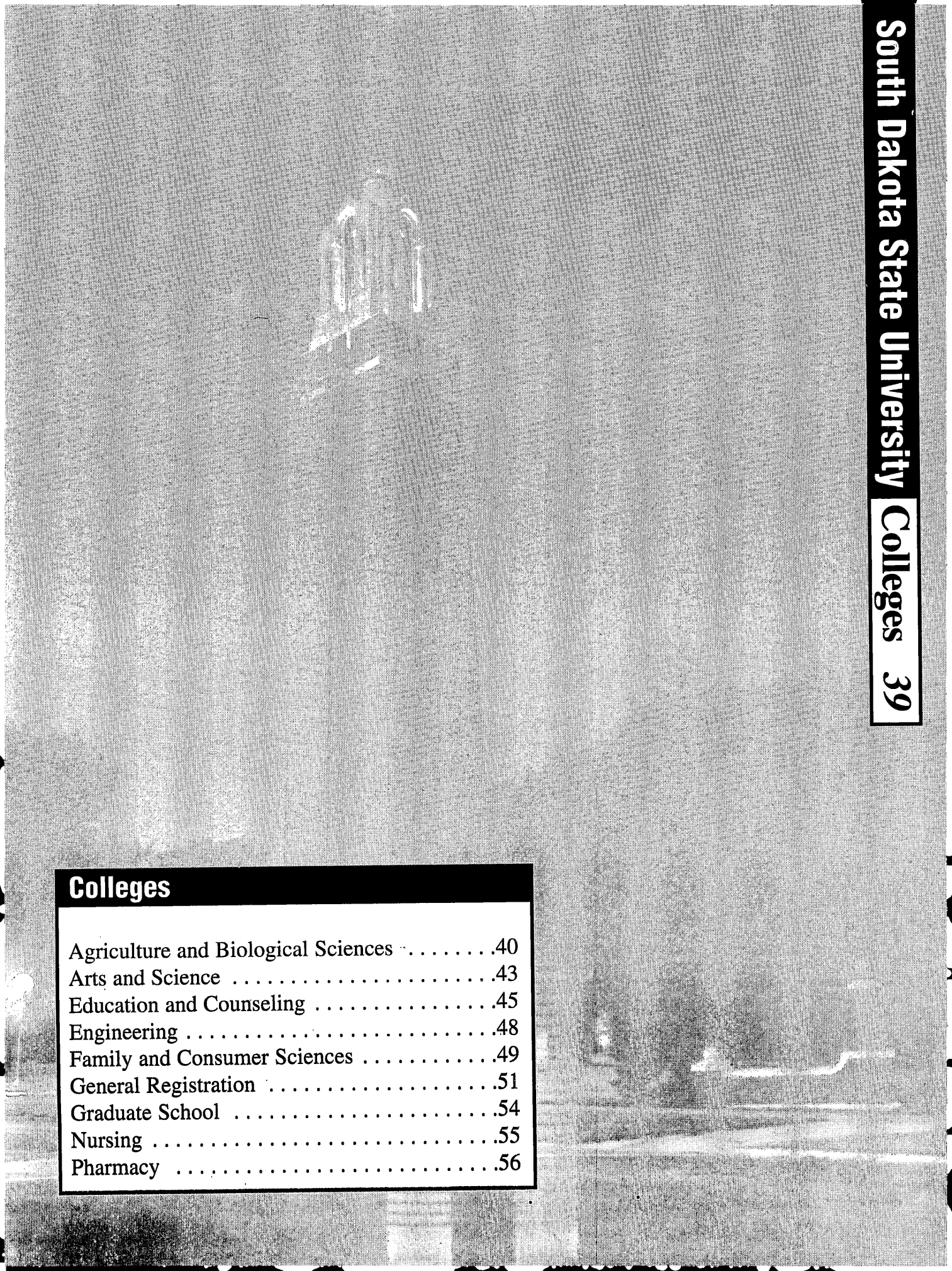
KEY TO UNITS ADMINISTERING INDIVIDUAL CURRICULUMS

A&S	College of Arts & Science
ABS/Ag	College of Agriculture & Biological Sciences, Agriculture Curriculum
ABS/BS	College of Agriculture & Biological Sciences, Biological Science Curriculum
ENGR	College of Engineering
EDUC	College of Education and Counseling
FCS	College of Family and Consumer Sciences
GR	College of General Registration
NURS	College of Nursing
PHARM	College of Pharmacy
Grad	Contact the Graduate School
VPAA	Vice President for Academic Affairs
*	option (area within a major)
(E)	Education curriculum available with these majors



Organizational Structure of South Dakota State University





Colleges

Agriculture and Biological Sciences

David A. Bryant, Dean, AgH 135, 605-688-4148
Gene Arnold, Associate Dean, Academic Programs, AgH 156, 605-688-5133
Mylo Hellickson, Associate Dean, Extension Service, AgH 154, 605-688-4792
Fred Cholick, Associate Dean, Experiment Station, AgH 129, 605-688-4149
Box 2207, Brookings, SD 57007-0191

Introduction

The academic program in the College of Agriculture and Biological Sciences is two-fold: One deals with the traditional field of agriculture and the other biological sciences. A core curriculum is available in each of these two broad fields of endeavor. Both curricula lead to a Bachelor of Science degree.

Agricultural work is divided into four areas – academic programs, research, extension, and statewide services. Experiments and investigations for the benefit of agriculture are done in connection with problems of livestock, natural resources, field crops, veterinary science, horticultural crops, agricultural economics, dairy, landscape design, and mechanized agriculture. The results of research form the basis for classroom instruction, for extension work, and for a means of answering inquiries coming to the College. The Extension Service takes the work of instruction statewide by bringing results of research to every home.

Agriculture includes technical, professional, and business occupations dealing with producing, processing, and distributing farm products. The agricultural teachers, agricultural researchers, men and women who assist the farmers with their complex needs, farmers and ranchers themselves, processors of farm products, and retailers are all part of modern day agriculture.

Work in **biological sciences** is mainly in the departments of Biology/Microbiology and Wildlife/Fisheries Sciences. One also must realize that biological science is an integral part of all departments that deal with plant and animal sciences. Many future biology teachers, wildlife biologists, plant and animal physiologists and geneticists will find the program in biological sciences a fruitful one to follow.

The biological sciences include all technical and professional occupations dealing with the basic fields of plant and animal life, collectively called biology. Such public agencies as high schools, colleges and universities, park services, fish and wildlife agencies, etc., are all demanding educated individuals capable of assuming responsible positions in society.

Departments/Units

Agricultural Engineering (Ag Systems Technology)
Animal and Range Sciences
Biology and Microbiology
Dairy Science
Economics
Horticulture, Forestry, Landscape and Parks
Plant Science
Rural Sociology
Veterinary Science
Wildlife and Fisheries Sciences
Agricultural Communications
Agricultural Experiment Station
Animal Disease Research & Diagnostic Lab
Cooperative Extension Service
4-H
Water Resources Institute

Degrees Offered

Associate of Arts
Bachelor of Science in Agriculture
Bachelor of Science in Biological Science
Master of Science*
Doctor of Philosophy*

* Graduate degrees are offered in collaboration with the Graduate School. For details, see the Graduate Bulletin.

Accreditations/Reviews

American Association of Veterinary Laboratory Diagnosticians (AAVLD)
American Society of Agricultural Engineering (ASAE)
Cooperative State Research Service (CSRS)

Programs

Most students in the College of Agriculture and Biological Sciences will be required to take basic core courses. The greater share of these courses should be taken during the first and second years of college.

Freshmen may enter these curricula without specifying a major. You, however, should make your major and option choice by the last semester of the sophomore year. The purposes, objectives, and requirements of various majors and options are outlined in the discussions under the various departments. If at any time you desire a change in major and/or option, you should report to the Director of Academic Programs for your adviser reassignment.

You must complete a minimum of 25 semester credit hours in courses numbered 300 or above to qualify for the B.S. degree. Math 224-225 Calculus I-II may be counted as five credits toward the total.

At the discretion of various departments a minimum of 24 semester credit hours shall constitute a major; 16 credits a minor.

The core curricula which follow include the overall college and university requirements. You should make every effort to complete these requirements as early as possible in the four-year program.

Agriculture and Biological Science Curricula

Major Field	Curriculum	Department Administering
Agricultural Business	Agriculture	Economics
Agricultural Economics	Agriculture	Economics
Agricultural Education	Agriculture	Director of Academic Programs
Agricultural Journalism	Agriculture	Director of Academic Programs
Agricultural Systems Technology	Agriculture	Ag Engineering
Agronomy	Agriculture	Plant Science
Animal Science	Agriculture	Animal & Range Sciences
Biology	Biological Science	Biology & Microbiology
Dairy Manufacturing	Agriculture	Dairy Science
Dairy Production	Agriculture	Dairy Science
Environmental Management	Biological Science	Biology & Microbiology
General Agriculture	Agriculture	Director of Academic Programs
Horticulture	Agriculture	Horticulture, Forestry, Landscape and Parks
Landscape Design	Agriculture	Horticulture, Forestry, Landscape and Parks
Microbiology	Biological Science	Biology & Microbiology
Park Management	Agriculture	Horticulture, Forestry, Landscape and Parks
Pre-Veterinary Science		Veterinary Science
Range Science	Agriculture	Animal & Range Sciences
Wildlife & Fisheries Sciences	Biological Science	Wildlife & Fisheries Sciences

Agriculture and Biological Science Curricula

Core Curriculum in Agriculture

Leading to the Bachelor of Science degree

Course	Credits
Wel 100, Skills for Healthy Living and Lab	2
Communications (total 11 cr)	
Engl 101 & 301, Composition	6
SpCm 101, Fundamentals of Speech	3
Communications elective†	2
Social Science (Total 9 cr.)	
Econ 201, Macroeconomics Principles **or**	
Econ 202, Microeconomics Principles	3
Soc 100, Introduction to Sociology	3
Social Science Elective*	3
Humanities electives*	6
Science & Mathematics (total 17 cr)**	
Chemistry, excluding Chem 101	4
Math 102, College Algebra, **or**	
Math 113, Algebra & Trigonometry	3 or 5
Physics, excluding Phys 185	4
Biological Science*	3
Science and/or Math electives§	1-3
Group 1 Courses in Ag (See list following)	12
Departmental and Option Requirements & General electives	71
Total Hours for Graduation	128

†Communications elective to be selected from the following:
Engl 379, Technical Communication
MCom 210, Newswriting and Reporting
MCom 313, Publicity Methods
MCom 315, Magazine Writing and Production
MCom 331, Television Production
SpCm 201, Interpersonal Communication
SpCm 315, Public Speaking
SpCm 334, Discussion

* See approved listing, page 29

**6 credits must be taken from approved sequential course listing.

§ Most department curricula will have specific requirements in this area, but for those which do not, the courses should be selected from the fields of Biology, Botany, Chemistry, Entomology, Geology, Mathematics, Microbiology, Physics, Plant Pathology, Zoology and Wildlife and Fisheries Sciences (Ornithology, WL 363 and Ichthyology, WL 367). Courses in Group I which are of a basic nature, PS 305, PS 223, cannot be counted toward this requirement unless they are over and above the 12 credit minimum for Group I courses.

Group I Courses in Agriculture

A minimum of 12 credits from courses listed below must be selected and should be completed during the first two years. Some departments

require all or specific courses, while others leave the selection entirely to the student and the adviser.

Course	Credits
AgEc 271, Farm & Ranch Management	4
AgEc 354, Agricultural Marketing & Prices	3
AS 101, Introduction to Animal Science	3
AS 241, Meat: Production to Consumption	3
AST 202, Agricultural Mechanics	2
AST 213, Agricultural, Industrial & Outdoor Power	3
AST 262, Environmental Safety and Society	2
AST 333, Soil & Water Mechanics	3
AST 342, Electricity for Farm & Home	3
DS 130, Introduction to Dairy Science	3
DS 231, Dairy Foods	3
Ho 111, General Horticulture	3
La 261, Landscape Design I	3
PR 101, Parks and Society	3
PS 103, Crop Production	3
* PS 213, Soils	3
PS 223, Principles of Plant Pathology	3
PS 307, Insect Pest Management **or** PS 305, General Entomology	3
Rang 205, Introduction to Range Management	3
WL 110, Environmental Conservation	2

In addition to the basic program as outlined above, three options are possible under the core in Agriculture. These options are Business, Science, and Production.

Business Option

For students who plan to enter any of the business phases of agriculture, i.e., sales, administration, public relations, technical advances, etc. Those interested in farming or ranching might also consider this option since these activities are becoming significant business enterprises. **Students selecting this option will complete the general requirements listed in the College Core for Agriculture plus the following requirements to complete their work for a Bachelor of Science degree.** The more specific requirements are listed under the appropriate option in each departmental curriculum.

Course	Credits
Acct 210, Principles of Accounting I	3
BAdm 360, Organization and Management	3
Econ 201, Macroeconomics Principles	3
Econ 202, Microeconomics Principles	3
Business electives*	12

*The business electives must be chosen from the following courses:
- Acct 211, Principles of Accounting II
- AgEc 354, Agricultural Marketing & Prices
- BAdm 310, Business Finance
- BAdm 350, Legal Environment of Business and Contracts
- BAdm 351, Business Law I
- BAdm 380, Personal Finance
- Econ 330, Money and Banking
- Econ 370, Marketing
- Econ 476, Marketing Research
- Stat 341, Statistical Methods I

Science Option

The student who pursues a strong emphasis in the physical and biological sciences will be more able to cope satisfactorily with rapidly occurring scientific advances. This option will also place you in a good position to do graduate work in most agricultural fields. Students majoring in this option will complete the general requirements listed in the College Core in Agriculture plus the following additional requirements. The more specific requirements are listed under the appropriate option for each departmental curriculum.

Mathematics, Chem or Physics	15
Biological Science* see approved listing	9

* Courses must be selected from at least 2 of the following areas: Biology, Botany, Entomology, Microbiology, Plant Pathology, Wildlife and Fisheries Sciences, and Zoology.

Production or Technical Option

The student who plans to return to the farm, do extension work, or serve as a fieldperson for breed associations and crop improvement associations will find this the logical option. This option also serves the student well who plans to enter any of the areas of production, such as dairy herd supervisor, greenhouse operator or into the various federal and state agencies upon graduation. No further courses beyond the General Core for Agriculture are required by the college. The more specific requirements beyond the core are listed under the appropriate option in each departmental curriculum.

Core Curriculum in Biological Science

Leading to the Bachelor of Science degree

Course	Credits
Wel 100, Skills for Healthy Living and Lab	2
Communications (total 11 cr.)	
Engl 101 & 301, Composition	6
SpCm 101, Fundamentals of Speech	3
Communications elective†	2 or 3
Social Science (total 9 cr.)	
Econ 201, Macroeconomics Principles **or** Econ 202, Microeconomics Principles	3
Soc 100, Introduction to Sociology	3
Social Science elective*	3
Humanities electives*	6
Biological Science (total 12-13 cr)	
Required:	
Bio 101, Biology Survey I **or** Bio 151, General Biology I	3 or 4
Bio 103, Biology Survey II **or** Bio 153, General Biology II	3 or 4
Select two courses from the following:	
Bio 311, Principles of Ecology	3
Bio 343, Cell Biology	3
Bio 371, Genetics	3
Micr 231, General Microbiology	4
Other Science & Mathematics	21-22
Chemistry, excluding Chem 101	12
Math 113 **or** Math 102 and Math 120 **or** Math 123 **or** Math 222	5-6
Physics, excluding Phys 185	4
Departmental Requirements & General electives	65-67
Total Hours toward Graduation	128

†Communications Elective to be selected from the following:
- Engl 379, Technical Communication
- MCom 210, Newswriting and Reporting
- MCom 313, Publicity Methods
- MCom 315, Magazine Writing and Production
- MCom 331, Television Production
- SpCm 201, Interpersonal Communication
- SpCm 315, Public Speaking
- SpCm 334, Discussion

*See approved listing page 28, 29

Activities

Nationally known agricultural fraternities for men, Alpha Gamma Rho and Farmhouse, and for women, Ceres, are organized on campus and provide living accommodations. During the first semester of the sophomore year, students with outstanding scholarship, leadership, and character may be initiated into Alpha Zeta, Sigma Alpha, and Beta Beta Beta honor societies. Gamma Sigma Delta, an agricultural honor society for seniors with high academic ability, also has an SDSU chapter.

The largest extracurricular activity involving students in the College of Agriculture and Biological Sciences, with participation open to all university students, is the Little International. A two-day function patterned after the International Livestock Exposition in Chicago, Little I is held each year during late winter or early spring. Much experience is gained by students in planning, producing, and managing this event.

Most departments in the College of Agriculture and Biological Sciences have one or more student organizations. You are encouraged to become involved with at least one of these organizations, especially that which is most closely associated with your major field.

Arts and Science

Herbert E. Cheever, Jr., Dean
Allen Branum, Assistant Dean
NHE 251, 605-688-6619
Box 2275A, Brookings, SD 57007-0094

Introduction

The College of Arts and Science serves two significant functions within the University. It provides instruction in the university core requirement for a liberal education as well as education in specific disciplines.

A liberal education gives students the means to test ideas, beliefs, and facts. It exposes them to a variety of academic disciplines that will broaden and deepen their perspectives and enable them to continue the learning process as educated citizens. Students study the ways of thinking and expression that are intrinsic to the arts, humanities, social sciences, and natural sciences. Through this, students are educated in the scientific method, critical thinking, analysis, synthesis, and cogent expression. They are helped to develop intellectual skills, humanistic understanding, and aesthetic appreciation. Such an education increases the usefulness of career planning and specialization by laying a foundation for lifelong values.

The fifteen departments in the College of Arts and Science offer major and/or minor programs leading to one of three undergraduate degrees. In addition, five departments in other colleges offer majors and/or minors in programs administered through the College of Arts and Science.

Departments

Aerospace Studies
Chemistry and Biochemistry
Communication Studies and Theatre
English
Foreign Languages
Geography
Health, Physical Education, and Recreation
History
Journalism and Mass Communication
Military Science
Music
Philosophy and Religion
Political Science
Psychology
Visual Arts

Degrees Offered

Bachelor of Arts
Bachelor of Music Education
Bachelor of Science
Master of Arts*
Master of Science*
Doctor of Philosophy*

*Graduate degrees are offered in collaboration with the Graduate School. For details, see the Graduate Bulletin.

Accreditations

American Chemical Society (ACS)
Accrediting Council on Education in Journalism and Mass Communication (ACEJMC)
National Athletic Training Association (NATA)
National Association of Schools of Music (NASM)

Programs

General Degree Requirements

Below are listed the general requirements for each of the three degrees offered within the college.

Bachelor of Science

Engl 101, Freshman Composition 3
Engl 301, Advanced Composition 3
Wel 100, Skills for Healthy Living and Lab 2
SpCm 101, Fundamentals of Speech 3
Mathematics Core Requirement 3
Humanities (from approved university list, p. 28; see Additional Requirements on next page) 9
Natural Science (from approved university list including two courses in sequence, list on p. 29)
Biological Sciences 6
Physical Sciences 8
Social Sciences (from approved university list, p. 29; see Additional Requirements on next page) 12

Bachelor of Arts

Engl 101, Freshman Composition 3
Engl 301, Advanced Composition 3
Wel 100, Skills for Healthy Living and Lab 2
SpCm 101, Fundamentals of Speech 3
Mathematics Core Requirement 3
Modern Language* (201, 202 in one language) 6-14
Humanities (from approved university list p. 28 from discipline other than a foreign language) 6
Natural Sciences (from approved university list including two courses in sequence, list on p. 29) 8
Social Sciences (from approved university list, p. 29; see Additional Requirements on next page) 12

* International students whose native language is not English may substitute14 credits in "American Culture" courses for the foreign language requirement.These courses in the humanities and social sciences are in addition to the normal B.A. requirements. Students must visit with the Assistant Dean of the College of Arts and Science for permission to follow this option.

Bachelor of Music Education

Engl 101, Freshman Composition 3
Engl 301, Advanced Composition 3
Hist 368, History of the American Indians **or**
Anth 421, Indians of North America 3
Wel 100, Skills for Healthy Living and Lab 2
Psyc 101, General Psychology 3
SpCm 101, Fundamentals of Speech 3
Mathematics Core Requirement 3
Humanities (from approved university list p. 28; 8 hours of Foreign Language recommended; 5 hours must be in discipline(s) other than music) 11
Natural Science (from approved university list including two courses in sequence, list on p. 29) 8
Social Sciences (from approved university list, p. 29) 3

Secondary Education Courses

Students planning to teach at the high school level should start taking professional education courses during their sophomore year. Students must apply for admission to the supervisor of student teaching before being admitted to the education sequence. (See College of Education and Counseling for further details.)

Additional Requirements

All general university requirements must be met to qualify for the bachelor's degrees in the College of Arts and Science. In addition, the following special requirements and rules have been established for all graduates of the College of Arts and Science:

1. The requirements of one of the College of Arts and Science departmental majors must be met. Specific requirements are listed under each department. Courses taken in the major may be used to fulfill university core requirements if the department does not state otherwise.
2. 40 semester credits must be upper division (300 and above).
3. Six credits must be taken in the area of International Studies. These courses may duplicate humanities or social science core courses. The list of courses that count toward the International Studies requirement are listed below.
4. No more than 6 credits in one discipline may be counted toward the humanities or social science core requirements for any College of Arts and Science degree.

The following courses fulfill the International Studies Requirement (#3 above)

Students may fulfill their university core and international studies requirements with the same course. Courses marked with an asterisk (*) are also part of the university core.

International Studies/Humanities

ArtH 100*	Art and Design Appreciation
ArtH 211*	Survey of World Art and Architecture
ArtH 212*	Western Traditions in Art and Architecture
Danc 240*	Multicultural Dance Activities
Engl 211*	World Literature I
Engl 212*	World Literature II
Engl 221*-222*	English Literature I & II
EurS 300*	Topics in European Culture
FL	All courses except FL 420
Fren	All courses
Germ	All courses
Span	All courses
Russ	All courses
Japn	All courses
Chin	All courses
Hist 121*-122*	History of Western Civilization
Hist 322*	Greece and Rome
LAAS	All courses
Mus 230*	Music Literature and History III
Mus 231*	Music Literature and History IV
Phil 423	Political Philosophy
Phil 424	Modern Political Philosophy
Rel 351*	World Religions I
Rel 352*	World Religions II

International Studies/Social Sciences

Anth 310*	Cultural Anthropology
Econ 404	History of Economic Thought
Econ 405	Comparative Economic Systems
Econ 440	Economics of the International Sector
Econ 460	Economic Development
EurS 301*	Topics in European Society
Geog 200*	Introduction to Human Geography
Geog 210*	World Regional Geography
Geog 313	Geography of Latin America
Geog 314	Geography of the Former USSR
Geog 315	Geography of Europe
Geog 316	Geography of Asia
Geog 317	Geography of Africa
Hist 325	Medieval History
Hist 342	English History since 1688
Hist 345	History of Russia
Hist 418	History of Latin America
Hist 447	Modern Germany
PolS 165*	Political Ideologies
PolS 253*	Current World Problems
PolS 341	European Democratic Governments
PolS 343	Russian Politics
PolS 345	Canada
PolS 347	Latin American Politics
PolS 350	International Relations
PolS 446	China and Asian Politics

Activities

A variety of activities, including many extracurricular activities, are administered within the College of Arts and Science.

Dramatics and Forensics. The Communication, Studies and Theatre Department supervises a forensics program in debate, extempore speaking, oral interpretation, and oratory. State University Theatre presents a program of major and experimental productions each year. During the summer a season of plays in repertory are given by the Prairie Repertory Theater in Madison and Brookings.

Music Groups. The Music Department sponsors a variety of vocal and instrumental groups. Membership is by audition, arranged with the appropriate director, and is open to all University students regardless of major. *Credit can be awarded for participation.*

Choral: Concert Choir, Statesmen (Men's Chorus) University Women's Choir, Opera Workshop, and Madrigal.

Instrumental: Civic/University Symphony Orchestra, Marching Band (The "Pride of the Dakotas"), Pep Bands, Symphonic Band, Concert Band, Jazz Ensembles and various Percussion, Woodwind & Brass small ensembles.

The Ritz Art Gallery. The Ritz Gallery sponsors an annual program of professional and student exhibitions, including the Juried Student Exhibition which is open to all SDSU students.

Education and Counseling

Darrell Jensen, Dean
Wen 108, 605-688-4321
Box 507, Brookings, SD 57007

Introduction

The College of Education and Counseling offers programs leading to initial certification, continuing growth, and professional development for teachers, administrators, and counselors. The College designs and teaches its courses to promote student construction and generation of knowledge that will be useful to them in their lives and in their professional world.

Governance Structure

The College of Education and Counseling is the governance unit within SDSU that is primarily responsible for the preparation of teachers and other professional education personnel. All professional education programs are organized, unified, coordinated, monitored, and governed by the unit. The Dean of the College of Education and Counseling, who also serves as Director of Teacher Education, reports directly to the Vice President for Academic Affairs and is officially recognized as having decision-making responsibility and authority for the overall administration and operation of the unit. In this governance, the Dean is assisted by three departments and the Teacher Education Faculty which consists of SDSU faculty across campus who teach professional education courses.

Mission

The mission of the College of Education and Counseling is to help its students construct knowledge, skills, and attitudes fundamental to becoming competent and developing professionals in a pluralistic and democratic society.

The Constructivist Framework

Faculty from the College of Education and Counseling have established Constructivism as a unifying framework. Constructivism holds that:

- Knowledge is constructed. Individuals and groups construct their understandings of the world about them.
- Learning is an active process of constructing knowledge. A learner's past knowledge and experiences strongly influence the construction of new knowledge.
- Teaching well demands learner-centered instruction compatible with the learning process. Students need active involvement with ideas so they can construct "generative" knowledge useful throughout life.

Objectives

1. Prepare students to teach in middle and secondary schools.
2. Provide for the continuing growth of teachers, school administrators, counselors, and other school service personnel through summer school sessions and off-campus courses.
3. Provide course work at the graduate level designed for school administrators, counselors, classroom teachers, specialized school workers, and related occupations.
4. Cooperate with the South Dakota Division of Education in public school curriculum revision, in-service education, and educational research.
5. Cooperate with professional education, administration, and counseling organizations in advancing the welfare of education in the state.
6. Organize and conduct conferences and workshops for the improvement of education, administration, and counseling in South Dakota.
7. Provide consultant services to schools and agencies of the state.

Preparation for Teaching

Individuals considering a career in education should have personal attributes and interpersonal skills appropriate for working with people. It is also essential that you have an adequate general education background, usually attained in the first two years of college, along with a specialized background gained through at least one major in the subject you expect to teach.

In addition, you should consider taking coursework in subjects outside of your major. Because of the nature of the curricula in small and medium sized high schools, a more general preparation of teachers is desirable. Since teachers may expect to teach in more than one area of specialization, additional coursework, along with the major, can enhance their preparation.

For example, in science, teachers should plan their preparation for all typical subjects taught in science in middle or secondary schools, rather than in just one specific science area such as biology or chemistry. In social studies, teachers should plan their preparations for various areas in social studies rather than just one special area such as history or sociology. It is also advisable for teachers to acquire expertise in directing one or several extra-curricular activities.

It is important that you see your education advisors early in order to plan the necessary coursework.

Departments

Counseling and Human Resource Development
Educational Leadership
Undergraduate Teacher Education

Degrees Offered

Bachelor of Science in Education
Master of Education*
Master of Science*

* Graduate degrees are offered in collaboration with the Graduate School. For details, see the Graduate Bulletin.

Teacher preparation is also available at the baccalaureate level. The degree is earned in a subject matter discipline with teacher education as second field.

Accreditations

National Council for the Accreditation of Teacher Education Programs (NCATE)
Council for Accreditation of Counseling and Related Educational Programs (CACREP)
South Dakota Division of Education

Programs

The College of Education and Counseling's chief undergraduate purpose is teacher education in the following areas: Agriculture, Art, Biology, Chemistry, Computer Science, Economics, English, Family and Consumer Sciences, Journalism, Foreign Language – German and Spanish, Geography, Health and Physical Education, Coaching, History, Mathematics, Music – Instrumental and Vocal, Physics, Political Science, Psychology, Sociology, Speech, and Vocational Technical Education.

The Graduate Programs in Education are designed to provide professional preparation beyond the Bachelor's degree. The programs include the following options:

1. M.Ed. - Vocational Technical Education (being phased out as separate major)
2. M.Ed. - Curriculum and Instruction
3. M.Ed. - Educational Administration
4. M.S. - Counseling and Human Resource Development

For further information consult the graduate bulletin.

For a statement of specific requirements for the different administrator's certificates, the student should write the South Dakota Division of Education or consult with the Dean of the College of Education and Counseling.

SDSU provides agricultural education teacher training that meets the requirements of the State Board of Education. Graduates are certified as vocational educators.

Admission to Teacher Education

The coursework for teacher education is divided into three professional semesters. In addition, once one has finished the professional sequence, he or she must be recommended for certification to teach in South Dakota. The requirements for each are as follows:

Admittance into Professional Semester I:

In order to register for the two courses of Professional Semester I, a student must be at least a sophomore either at the beginning or end of the semester in which he or she is taking the Professional Semester I courses.

Admittance into Professional Semester II:

Students admitted into Professional Semester II are considered members of the Teacher Education Program and are classified as "Education Students." In order to achieve this status, a student must have:

1. achieved a sophomore status (32 credit hours) at the University,
2. completed Professional Semester I with grades of "C" or better and be recommended by PSI faculty,
3. an overall GPA of 2.5 or higher,
4. completed Psyc 101 or Soc 100,
5. met competency requirements:
   English: a grade of "C" or above in Freshman Composition or credit by examination (or a national percentile ranking of 50 or above on the ACT Assessment "English Usage")
   Math: a grade of "C" or above in Math 102 or a higher level math course or credit by examination (or a national percentile rating of 50 or above on the ACT Assessment "Mathematics Usage")
   Speech: A grade of "C" or above in SpCm 101, Fundamentals of Speech or credit by examination,
6. completed an application for Admission to Teacher Education which includes appropriate biographical information, **and**
7. a current transcript on file in the Education Office.

Admittance into Professional Semester III:

Education students will be permitted to register for the courses of Professional Semester III if they have:

1. achieved senior standing at the University,
2. been admitted to the Teacher Education program and successfully completed all standard requirements therein (or alternatives decided by the Admissions and Scholastic Standards Committee),
3. successfully completed all prerequisite coursework for the professional education program, including special methods courses* in one's major field, the Indian Studies requirement, and the computer requirement,
4. have the following minimum GPA's:
   a. Education courses 2.6
   b. Courses in the major 2.6
   c. Overall Cumulative 2.5
   or
   completed all competency plans and/or other activities prescribed by the Admissions and Scholastic Standards Committee,
5. recommendations on file in the Education Office from both the major advisor and the content methods instructor (these recommendations must include the student's GPA in their major),
6. met with the "Supervisor of Field Experiences" before October 1 (for those student teaching in Spring) or February 1 (for those student teaching in Fall) and completed an Application for Student Teaching (Rather than wait for these deadlines, it is advisable to complete this application at least the semester before Professional Semester III.), **and**
7. non-probationary status.

*See major department section for special methods courses.

Recommendation for Certification

In order to be recommended for certification, a student must have:

1. an approved bachelor's degree,
2. receive satisfactory student teaching recommendations from both the cooperating teacher(s) and university supervisor,
3. maintained the following minimum GPA's:
   a. Education courses 2.6
   b. Courses in the major 2.6
   c. Overall cumulative 2.5
   or
   completed all competency plans and/or other activities prescribed by the Admissions and Scholastic Standards Committee,
4. taken the required exit exam(s), **and**
5. applied for certification through the Certification Officer in the College of Education and Counseling.

Education Curriculum for Teachers of Academic Subjects

Professional Semester I

(Sophomore or Junior Year)	**F**	**S**
EdFn 375, Human Relations	3	or 3
SeEd 287, Practicum/Professional Laboratory Experience	2	or 2
*Psyc 101,General Psychology **or**	2	or 2
*Soc 100, Introduction to Sociology	3	or 3

Professional Semester II

(Junior or Senior)	**F**	**S**
EdFn 365, Integrating Computers into the Curriculum	2	or 2
EPsy 302, Educational Psychology	2	or 2
SeEd 314, Supervised Clinical/Field Experience	1	or 1
SeEd 450, The Teaching of Reading	3	or 3
Hist 368, History of the American Indians, **or**		
Anth 421, Indians of North America	3	or 3
Special Methods (depending on student's major)	3	or 3
Electives:		
EPsy 303, The Exceptional Child	3	
EdFn 338, Foundations of American Education	3	or 3

Professional Semester III

(Senior Year)	**F**	**S**
SeEd 400, Curriculum & Instruction in Secondary Schools	3	or 3
SeEd 410, Social Foundations, Management, and Law	2	or 2
SeEd 420, Teaching Special Needs Students	1	or 1
SeEd 488, Supervised Teaching Internship	10	or 10

* Psyc 101 or Soc 100 is a prerequisite to education courses but does not count as education credit for the teaching certificate. In order to complete the Education Curriculum as outlined above, the prospective teacher should take Psyc 101 or Soc 100 in the freshman or sophomore year.

Teaching Certificates

Teaching certificates in South Dakota are issued by the South Dakota Division of Education. The secondary certificate qualifies the holder to teach subjects in secondary and middle school/junior high grades, and in some cases elementary grades. The certificate states the subjects or subject groups in which the individual may teach.

Placement Service

Placement for graduates and former students of the university who are prepared to teach is provided by the Placement Service. The Placement Service also serves local school officials by helping them contact qualified teachers. There is an enrollment fee.

Engineering

Duane E. Sander, Dean
Virgil G. Ellerbruch, Assistant Dean
CEH 201, 605-688-4161
Box 2219, Brookings, SD 57007-0096

Introduction

The College of Engineering offers a variety of courses with a faculty characterized by high academic attainment and significant accomplishments in engineering practice, science, and technology. Undergraduate professional programs are offered leading to baccalaureate degrees in Agricultural Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Engineering Physics, Computer Science, Electronics Engineering Technology, Construction Management, and Manufacturing Engineering Technology. In addition to the undergraduate degree programs, course selections are available from the broad offering of undergraduate courses for specializations in each program. Graduate programs are available in engineering, the sciences, mathematics and industrial management.

Goals for Science Engineering and Technology

The college programs endeavor to develop the ability to apply logical thought and practical actions to the identification, description, and solution of problems. If you are a mature student who aspires to contribute to the solution of society's problems, you are invited to consider the wide range of engineering, science, and technology programs.

The Students

Students in the College of Engineering are interested in solving problems through logical and creative design. They possess an interest in having things work, enjoy topics in mathematics, technology and the sciences, and they have a strong desire to help improve the standard of living for all people.

Academic Advising

Each student in the College of Engineering works closely with an academic advisor to develop the proper course of study for a chosen field and corresponding curriculum. The advisor assists in course selection, program plans, choosing elective courses, discussing employment opportunities, evaluation of transfer credits and general student questions regarding the profession. The advisor is a student's most important resource during progression to graduation.

Graduates of the Engineering College

Engineering college graduates are professionals sought after by firms throughout the region, nation, and world. They hold positions in areas of design, manufacturing, technical sales, as well as management at all levels, from project managers to executive officers. Our graduates are also successful in graduate schools and the professions of law and medicine. Many also seek and attain professional registration, certification and other recognition throughout the United States.

Departments/Units

Agricultural Engineering
Civil and Environmental Engineering
Computer Science
Electrical Engineering
General Engineering (Electronics Engineering Technology, Construction Management, Manufacturing Engineering Technology)
Mathematics and Statistics
Mechanical Engineering
Physics
Engineering and Environmental Research Center
Northern Great Plains Water Resources Research Center

Degrees Offered

Bachelor of Science
Bachelor of Science in Technology
Master of Science*
Doctor of Philosophy*

*Graduate degrees are offered in collaboration with the Graduate School. For details, see the Graduate Bulletin.

Accreditations

Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET)

Programs

The College of Engineering offers the following degrees: Bachelor of Science in Agricultural Engineering, Civil Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Engineering Physics; Bachlor of Science in Technology in Construction Management, Electronics Engineering Technology, and Manufacturing Engineering Technology; Bachelor of Science in Arts and Science with majors in Physics and Mathematics; Master of Science in Engineering and Master of Science in Industrial Management; the Doctor of Philosophy in Atmospheric, Environmental, and Water Resources (cooperative with South Dakota School of Mines and Technology); and the Doctor of Philosophy in Agricultural Engineering (cooperatively with Iowa State University).

Family and Consumer Sciences

Laurie Stenberg Nichols, Dean
NHE 249, 605-688-6181
Box 2275A, Brookings, SD 57007-0097

Introduction

The College of Family and Consumer Sciences prepares people for a variety of professional roles which are interdisciplinary in nature. Some majors within the College are directly related to the family and its traditional functions, such as human development and family studies. With these majors, graduates are primarily prepared for careers in social service, community or government agencies, or business. Other majors are derived from functions that were traditionally performed by the family but now are often carried out by business and industry. Hotel, restaurant and institution management, apparel merchandising and interior design are examples of these majors. General programs in the College of Family and Consumer Sciences prepare graduates for employment in formal and non-formal education, and community service.

The College of Family and Consumer Sciences works within the structure of the University's goals to:

1. prepare professionals to enter the field of Family and Consumer Sciences as generalists or as specialists in areas of food, shelter, clothing and human development.
2. contribute to the general education of all students at South Dakota State University.
3. provide services to families, non-professional and professional groups throughout South Dakota.
4. perform research to benefit families and further the economy of the state.
5. provide a viable graduate program that leads to a Master of Science degree in Family and Consumer Sciences with concentrations in Human Development, Consumer and Family Sciences, or Nutrition and Food Science.

Departments

Apparel Merchandising and Interior Design
Human Development, Consumer and Family Sciences
Nutrition and Food Science

Degrees Offered

Bachelor of Science
Master of Science*

* Graduate degrees are offered in collaboration with the Graduate School. For details, see the Graduate Bulletin.

Accreditations

American Dietetic Association (ADA)
American Association of Family and Consumer Sciences (AAFCS)
National Association for Education of Young Children (NAEYC)
National Council for Accreditation of Teacher Education (NCATE)

Programs

All programs in Family and Consumer Sciences focus on the interactions of family and their environment: 1) the study of the inter-relationships of food, shelter, clothing and interpersonal relations as they affect the individual and the family; and 2) the interaction of the family with other social systems and with the physical environment. All students in family and consumer sciences complete 7 credits of core courses which provide content and experiences for understanding these inter-relationships and interactions.

The College is organized into three departments offering 8 majors and several options.

Family and Consumer Sciences Curricula

Department	Major Field	Options
Apparel Merchandising and Interior Design	Apparel Merchandising Interior Design	
Human Development, Consumer and Family Sciences	Human Development and Family Studies	Preprofessional Individual and Family Services
	Family and Consumer Sciences Education	
	Consumer Affairs	
	Early Childhood Education	Cooperative Elementary Education Certification – BHSU, DSU
Nutrition and Food Science	Nutrition and Food Science	Dietetics Food Science
	Hotel, Restaurant and Institution Management	

Curriculum

Students enrolled in the College of Family and Consumer Sciences must meet the University Core requirements and the College of Family and Consumer Sciences Core requirements to qualify for the Bachelor of Science degree. Students must also successfully complete at least 32 hours at SDSU with a minimum of 20 credit hours of junior and senior (300-400) level courses.

In addition, each major area of study has specific required courses pertinent to the respective major area.

Minor changes occurring in programs are reflected in program guide sheets issued once a year. Entering students must meet the program requirements for graduation listed on the guide sheets, which will reflect the curriculum changes subsequent to the printing of this catalog.

Exploratory courses for those interested in specific majors offered through the College of Family and Consumer Sciences are:

AM 121, Apparel in Popular Culture
CA 130, Coping Skills for Consumers
HDCF, 141 Individual and the Family
HDCF, 327 Human Development and Personality I:Childhood
ID 211, Design in the American Home
ID 221, Introduction to Interiors and Housing
NFS 111, Food and People
NFS 171, Introduction to the Hospitality Industry
NFS 221, Survey of Nutrition

Minors

Minors can be earned in each of the three departments in the college. The minors are Nutrition, Interior Design, Consumer Affairs, Apparel Merchandising, and Human Development, Child and Family Studies. Combining one of these minors with a major in one of the other departments in the college or with majors in other colleges at SDSU can strengthen preparation and employment opportunities. Also, an interdisciplinary minor in Gerontology, the study of the elderly, is available.

Experiential Education

Most of the majors in the College of Family and Consumer Sciences provide opportunities to become familiar with the world of work as related to the major. Field experiences, practicums, and internships are available.

Graduate Program in Family and Consumer Sciences

Those pursuing the MS degree in Family and Consumer Sciences with a concentration in any one of the subject matter areas are enrolled in the Graduate School. The program of work is planned with a faculty adviser from the area of concentration. Specific requirements are outlined in the Graduate School Bulletin obtained from the Dean of the Graduate School, South Dakota State University, Box 2201 Brookings, South Dakota, 57007-1998.

General Registration

Gail Dobbs Tidemann, Acting Dean
MeC 123, 605-688-4153
Box 511, Brookings, SD 57007-0298

Introduction

Students enrolling in the College of General Registration have elected to explore their abilities, interests and educational alternatives before declaring a major. Through General Registration, a student will receive assistance that helps them make wise major/career choices. Most undeclared major students who enroll in General Registration will transfer to a degree granting college before they reach sophomore status. Pre-professional General Registration students usually transfer to degree programs in their sophomore year and maintain their pre-professional status as a secondary designation.

Departments/Units

The College of General Registration does not have a departmental administrative structure. Student service programs are organized and delivered with the following programmatic emphasis: Academic Development, Career Development, and Employment Development.

Degrees Offered

The College of General Registration does not offer a degree program, it is designed for undeclared pre-majors, pre-professional students and those who simply want to take a variety of courses.

Accreditations

The College of General Registration activities are covered by the institutional accreditation through the North Central Association.

Programs

Undeclared Majors

General Registration allows you to begin college work without declaring a major.

If you enroll under this classification you are assisted in planning a basic college program and are encouraged to explore various fields of study. Academic advisers help you explore your interests, aptitudes and abilities. The College of General Registration offers a one credit course titled "CHRD 101, Academic and Career Exploration" which assists with career decision making strategies. New undeclared freshmen at SDSU are encouraged to enroll in this course.

A suggested freshman year schedule follows. You would work with your academic adviser to plan a program to meet your own interests and needs. General Registration enrollment is normally for the freshman year. In order to gain acceptance to a degree granting college students should maintain at least a "C" grade average.

Suggested Undeclared Major Program

Freshman Year	F		S
CHRD 101, Academic and Career Exploration	1	or	1
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra (or prescribed math course)	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
Wel 100, Skills for Healthy Living and Lab	2	or	2
Humanities	3	or	3
Social Sciences	3		3
Biological or Physical Science	3-4		3-4
Career Exploration and Interest Area Courses	3		3

Pre-Professional

SDSU credits are generally accepted by all professional schools if satisfactory grades are maintained and courses meet appropriate program requirements.

If you wish to qualify for admission to the professional schools of medicine, dentistry, optometry, law or others that require pre-professional education, you may wish to start in the College of General Registration. While enrolled in General Registration, students are able to consider various majors, either as possibilities for later degree objectives or as a back-up major choice in the event that plans to pursue professional school admission should be altered.

Requirements for admission to professional schools vary. Assistance will be given to assure that students meet the course requirements of the professional school(s) they select. Consult the catalog of the professional institution you plan to attend for adjustments in these programs. Nearly all of the professional school exams are now administered on campus.

Pre-Chiropractic

Adviser: Ms. Katherine Erdman

Candidates for admission to chiropractic colleges accredited by the Council on Chiropractic Education are required to have a thorough grounding in the basic sciences – biology, chemistry, physics – as well as a general education in the humanities and social sciences.

You must complete at least 60 undergraduate credits to be considered for admission to chiropractic college. Approximately half of those accepted have baccalaureate degrees. Pre-professional training and academic standing of the applicants must meet the standards of the school selected.

A suggested minimum requirements curriculum includes:

Freshman Year	F	S
Chem 112-114, General Chemistry I-II	4	4
Engl 101, Freshman Composition and SpCm 101, Fundamentals of Speech	3	3
Math 102, College Algebra and Math 120, Trigonometry; or Math 113, Algebra and Trigonometry and Math 123, Calculus I	3-5	3-5
Wel 100, Skills for Healthy Living and Lab	2	or 2
Social Science and Humanities	6	8

Sophomore Year	F	S
Bio 151-153, General Biology I-II	3	3
*Chem 326-328, Organic Chemistry	4	4
Phys 111-113, Introduction to Physics I-II	4	4
Psyc 101, General Psychology	3	
*Electives	2-3	5-6

* (Course requirements for your major and chiropractic college of your choice.) Complete junior composition, Engl 301, in the sophomore year if you plan to apply to chiropractic colleges after completing 60 credits. Other course recommendations for electives or for the junior and senior year include:
Acct 210, Principles of Accounting I
Bio 343, Cell Biology
Bio 371, Genetics
NFS 321, Human Nutrition
SpCm 201, Interpersonal Communication
Zool 221, Anatomy
Zool 325, Mammalian Physiology
Additional courses in chemistry.
A course in vertebrate anatomy is also highly recommended.

Pre-Dental

Adviser: Dr. William Jensen

Candidates for admission to dental schools usually have a rigorous undergraduate preparation. Subjects developing scientific curiosity and knowledge, such as chemistry, physics, biology and mathematics, should be taken, as well as those that develop understanding of human relations and general social awareness.

Dental schools in the U.S. require three years of college education, and most prefer baccalaureate degree candidates. The Council on Dental Education supports the trend in admission policies which encourages the acquisition of a baccalaureate degree prior to dental school enrollment.

There are basic pre-dental education subjects that must be completed prior to gaining admission to a dental school. Since dental schools vary as to the required pre-dental education subjects, it is recommended that the pre-dental student consult two or three dental college catalogs to determine specific entrance requirements. Many dental school catalogs are available in The Career and Academic Planning Center. If you specify a pre-dental program choice you will be assigned to a pre-dental adviser who will help secure additional information on the requirements for admission to a dental school of your choice.

Admission to dental college is selective. You should prepare to meet the requirements of two or three colleges of your choice. Above average grades are required in pre-dental courses. Students who fail to maintain a B average should be prepared to make alternate career choices.

Requirements for admission to all accredited schools of dentistry include credit for one full year of English, biology, physics, general chemistry, and organic chemistry. These are minimum basic requirements.

The outlined program for pre-dental students is intended to serve as a guideline to meet the requirements of most of the dental colleges in the U.S. Variations in the program may be arranged with the pre-dental adviser to meet the requirements of a particular school of the student's choice.

Freshman Year	**F**	**S**
Chem 112-114, General Chemistry I-II	4	4
Engl 101, Freshman Composition **and** SpCm 101, Fundamentals of Speech	3	3
Math 102, College Algebra and Math 120, Trigonometry; **or** Math 113, Algebra and Trigonometry and Math 123, Calculus I	3-5	3-5
Wel 100, Skills for Healthy Living and Lab	2	or 2
Social Science Electives	3	5
Humanities Electives	3	or 3

Sophomore Year	**F**	**S**
Bio 151-153, General Biology I-II	3	3
Chem 326-328, Organic Chemistry	4	4
Phys 111-113, Introduction to Physics I-II	4	4
Psyc 101, General Psychology	3	3
Electives	2-3	2-3

Junior Year and/or Senior Year

Plan courses according to your SDSU College and major requirements and the dental college catalog of your choice. Enroll in English 301 in Junior year to complete English requirements.

Pre-Law

Adviser: Dr. Robert Burns

The formal academic training for law includes, with few exceptions, four years as an undergraduate leading to a bachelor's degree and three years in law school. Entering students who are undecided as to major choice and desire to prepare for law school may enroll in the College of General Registration. If you enroll under this classification you are assisted by a Pre-Law adviser in planning your courses of study. Entering students who have chosen a major and desire also to prepare for law school enroll in the college at SDSU that offers this particular major. They may request pre-law as an emphasis and be assigned to a pre-law adviser who will assist them in planning course schedules.

The pre-law student should be involved in an undergraduate program which is intellectually challenging and which requires rigorous academic discipline. No specific subjects are prescribed for law school admission. You may select any undergraduate major available at SDSU. Law schools welcome and encourage a variety of educational backgrounds among their students. Breadth and intellectual maturity are more important than particular subject matter. However, law schools do recommend that the pre-law curriculum be carefully selected.

A reasonable exposure to such subjects as political science, history, literature, English composition, economics, sociology, and philosophy will provide a good background for the full appreciation of the law. An important skill in law school is writing ability so undergraduate courses that develop this skill should be stressed. Electives such as drama and theatre arts, debate, creative writing, and speech can help in sharpening those skills needed by a member of the legal profession. Finally, the discipline used in the study of science will help prepare the student for the rigors of the law curriculum. Moreover, a basic knowledge of the physical and biological sciences will often help in the cases the lawyer pleads. Many law schools expect the student to have completed at least one accounting course.

The attorney must be a well-rounded individual with knowledge in more than law. Understanding the basic psychology of people and the philosophy behind the law, and to use the logic necessary to present a case are important.

All law schools require the Law School Admissions Test, and most pre-law students take it during the undergraduate senior year. It is a nationwide, half-day test of general aptitude for undertaking law studies and for writing ability. The Pre-Law adviser has application forms and sample tests. The adviser also has general information on law schools and an extensive file of law school catalogs is available in the Career and Academic Planning Center.

Pre-Medicine

Advisers: Dr. John Grove, Dr. Michael Hildreth, Ms. JoAnn Willgohs, Dr. Charles McMullen

Your adviser will have knowledge of requirements for all medical schools in the U.S. Pre-medicine students are encouraged to prepare to meet the entrance requirement for several medical schools of their choice.

The pre-med advisers can assist you in course selection, choosing a major, preparing for the Medical College Admission Test (MCAT), and in the application process as handled by the American Medical College Application Service (AMCAS).

Students preparing for medical careers should recognize the desirability of broad education and the need for a basic understanding of the natural sciences, including mathematics, chemistry, biology, and physics. Prospective students seeking admission to a school of medicine should recognize that highly developed communication skills as well as a basic understanding of the social sciences and the humanities is necessary.

No particular major is required of students desiring to apply to medical school. No area of study is given preference in the selection process. The college or university selected for undergraduate study should be based on the strength of the undergraduate program and the advising system.

The curriculum outlined below is designed to be compatible with many different majors at South Dakota State University. It includes the following typical medical school admission requirements: one year each of biology and physics with laboratory; mathematics, preferably including a course in calculus; two years of chemistry with laboratory including one year of general chemistry and one year of organic chemistry or a combination of organic and biochemistry; communications (English, literature, speech); social sciences and humanities as needed to complete the baccalaureate degree.

Freshman Year	**F**	**S**
Bio 151-153, General Biology I-II	3	3
Chem 112-114, General Chemistry I-II	4	4
Engl 101, Freshman Composition **and**		

SpCm 101, Fundamentals of Speech 3 3
Math 102, College Algebra, Math 120, Trigonometry, **or**
Math 113, Algebra and Trigonometry,
Math 222, Calculus for Non-Math Majors 3-5 3-5
Wel 100, Skills for Healthy Living and Lab .....2 or 2
Electives 0-2 0-2

Sophomore Year	**F**	**S**
Phys 111-113, Introduction to Physics I-II	4	4
Requirements for Major and Electives; Humanities, Social Sciences, Biological Sciences	12	12

Junior Year	**F**	**S**
Chem 326-328, Organic Chemistry **or** Chem 120, Elementary Organic Chemistry and Chem 361, Biochemistry	4	4
Engl 301, Advanced Composition	3	
Electives and Major Requirements	9	12

Senior Year
Complete Major Requirements

Students interested in pursuing a Physician Assistant (PA) program may complete their first two years of study at SDSU. PAs work wherever physicians and health care organizations employ them in every conceivable specialty and practice setting. In South Dakota most PAs provide primary medical care and many practice in small, rural communities.

Required prerequisites include 64 semester hours of academic work at an accredited college or university with a minimum cumulative GPA of 2.0. Recommended courses:

General Biology:	8 hours
General Chemistry:	10 hours
Human Anatomy:	3 hours
Human Physiology:	3 hours

General psychology, organic chemistry, and biochemistry are additional courses students are encouraged to complete. Contact any of the pre-medicine advisers or the CAP Center for additional information about physician assistant programs.

Pre-Mortuary

Adviser: Mr. Mark Binkley

To meet the requirements as a mortician, funeral directors need specialized training. All states require those who embalm to be licensed. This field may require up to four years of course study of which at least one, or possibly two years, may be taken at this university. Also necessary is specialized training in an accredited school of mortuary science, and an apprenticeship in an approved funeral home. The curriculum listed below may be altered to meet your needs, depending on the licensure requirements of the chosen state and the school of mortuary science you plan to attend. There are about 20 accredited mortuary colleges in the United States.

The diversity of funeral service makes it possible to successfully use nearly any academic major as a background. Leaders of the funeral service field are rapidly recognizing the need for educating the total person. Because the funeral director's work is a people-centered activity, you must draw upon the knowledge of sociology, psychology, as well as scientific fields, and the artistic areas which the technical needs of the profession require.

Students planning to be licensed in South Dakota must complete 60 semester credits and specific courses. Listed below is a suggested program for the freshman and sophomore years.

Freshman Year	**F**	**S**
Bio 151, General Biology I	3	
Chem 108-120 or 112-114, General Chemistry I-II	4	4
Engl 101, Freshman Composition **and** SpCm 101, Fundamentals of Speech	3	3
Micr 231, General Microbiology		4
Psyc 101, General Psychology	3	or 3
Soc 100, Introduction to Sociology	3	or 3
Wel 100, Skills for Healthy Living and Lab	2	or 2
Electives	3	or 3

Sophomore Year	**F**	**S**
Acct 210-211, Principles of Accounting I-II	3	3
Econ 201, Macroeconomics Principles	3	
Engl 301, Advanced Composition		3
Math 102, College Algebra **or** Math 113, Algebra and Trigonometry	3-5	3-5
Zool 221, Anatomy	3	
Zool 325, Mammalian Physiology		4
Electives (from Art, Music, Humanities, Theatre Arts, Literature)	3-4	3-4

Pre-Optometry

Adviser: Dr. Ronald Utecht

There are 12 American colleges of optometry accredited by the Council of Optometric Education of the American Optometric Association. Students usually have completed three years of college work, and about 60 percent of all students entering professional schools of optometry have completed their work for the bachelor's degree. You are encouraged to do this if at all possible.

The prospective optometric student should begin as early as possible to acquire an education in the fundamental sciences with the proper selection of pre-professional courses. You may transfer from pre-optometry to the professional college spending at least three to four years in the optometric school or college.

The average GPA for successful applicants is now 3.0 (B average) or above for most colleges of optometry. Required courses include physics, mathematics, English, biological science, comparative anatomy, chemistry and psychology. The program outlined below will meet the general requirements of most professional schools of optometry and provide a good background for the Optometry College Admissions Test. Certain optometry colleges may also require more credits in the humanities and social sciences.

Most of the accredited colleges of optometry, now require an Optometry College Admission Test, prepared and given by the Psychological Corporation at least three times each year. Your Pre-Optometry adviser can give you information on the Optometry College Admission Test, when it is given, and assist you in making the necessary application.

Students graduating from SDSU with above average grades and optometry test scores have been very competitive in the Admissions process.

Freshman Year	**F**	**S**
Bio 151-153, General Biology I-II	3	3
Chem 106-120 or 112-114, General Chemistry I-II	4	4
Engl 101, Freshman Composition **and** SpCm 101, Fundamentals of Speech	3	3
Math 102, College Algebra; Math 120, Trigonometry; **or** Math 113, Algebra & Trigonometry; **or** Math 222, Calculus for Non-Math Majors; **or** Math 123, Calculus I	3-5	3-5
Psyc 101, General Psychology	3	
Wel 100, Skills for Healthy Living and Lab	2	or 2
Zool 221, Anatomy		3
Humanities Elective	3-4	3-4

Sophomore Year	**F**	**S**
Chem 120, Elementary Organic Chemistry **or** Chem 326-328, Organic Chemistry	3-4	3-4
Phys 111-113, Introduction to Physics I-II **or** Phys 211-213, University Physics I-II	4-5	4-5
Engl 301, Advanced Composition		3
Stat 341, Statistical Methods I		3
Electives chosen from: Bio 371, Genetics; Chem 361, Biochemistry; HSc 120, Community Health; Micr 231, General Microbiology; Phil 100, Introduction to Philosophy; PolS 100 or 101, American Government; SpCm 201, Interpersonal Communication; Soc 100, Introduction to Sociology	4-6	4-6

Junior-Senior Year
Complete requirements for your major.

Graduate School

Christopher P. Sword, Dean
Ad 130, 605-688-4181
Box 2201, Brookings, SD 57007-1998

Introduction

SDSU granted its first Master's degree in 1891. In 1957 the Graduate School was established. The Graduate Faculty is composed of the President, Vice President for Academic Affairs, Vice President for Administration, Graduate Dean, academic deans, heads of departments in which graduate courses are given and other faculty members chosen on the basis of their background and experience. These faculty members teach graduate level courses and serve as advisers to graduate students or on advisory examining committees.

The Graduate School is committed to providing an atmosphere for qualified students to obtain rigorous advanced education in a variety of fields in preparation for service and leadership in their professions and society. It also promotes scholarly pursuits and scientific research for the advancement of knowledge within a climate of freedom of inquiry.

Graduate Credit for Seniors

A senior within 15 credits of completing the undergraduate curriculum with a grade point average of 2.5 or a junior-senior grade point average of 3.0 may receive credit for graduate courses numbered 500-699 in addition to the courses necessary to complete undergraduate work. Courses in the 700 and 800 series are not open to undergraduate students. Course load may not exceed 18 credits. Courses must be designated for graduate credit at the time of registration. Forms requesting permission to register for these courses are available at the Graduate School office and must be filed prior to taking the course. Permission to take courses for graduate credit while a senior does not constitute admission to the Graduate School. Such courses may be used toward a graduate degree but are not useable toward an undergraduate degree.

Admission to the Graduate School

For information regarding admission to the Graduate School, departments offering graduate instruction, graduate courses available, as well as information on graduate fellowships and assistantships, write the Dean of the Graduate School, South Dakota State University, Box 2201, Brookings, SD 57007-1998, for the latest Graduate Bulletin or call the Graduate School Office (605) 688-4181.

Departments

The Graduate School operates as one unit.

Degrees Offered

The Master of Science, Master of Arts, Master of Science Teaching, and Master of Education degrees are offered in approximately 30 majors. The Doctor of Philosophy is offered in Agronomy; Animal Science; Atmospheric, Environmental, and Water Resources (cooperative with South Dakota School of Mines and Technology); Biological Sciences; Chemistry; and Sociology. A cooperative Ph.D. program with Iowa State University is available in Agricultural Engineering. (Note: The Master of Science Teaching degree is being discontinued July 1, 1996, and no new students will be admitted.)

Accreditations

None specific to the Graduate School. Individual programs may be accredited within their disciplines.

Programs

See the separate Graduate Bulletin. This may be obtained by writing to the Graduate School, South Dakota State University, Box 2201, Brookings, SD 57007-1998, or by calling (605) 688-4181.

Nursing

Roberta K. Olson, Dean
NHE 255, 605-688-5178
Box 2275, Brookings, SD 57007-0098

Introduction

The College of Nursing has the broad goal of improving health care and the overall quality of life in the state, the region and the nation. It strives to reach this goal through the education of health care professionals, through provision of expertise and consultative service to the health care system of the state and through research to impact the health and well being of individuals, families, and communities.

Non-majors are encouraged to select courses in the College of Nursing. Courses contributing to general education include: Nurs 201, Nurs 422, and all Health Science courses.

Departments

Graduate Nursing
Research and Special Services
Undergraduate Nursing
West River Nursing

Degrees Offered

Bachelor of Science
Master of Science*

*Graduate degrees are offered in collaboration with the Graduate School. For details, see the Graduate Bulletin.

Accreditations

South Dakota Board of Nursing (approval)
National League for Nursing

Programs

Through the College of Nursing, students can earn a Bachelor of Science or a Master of Science degree with a major in Nursing. Graduates of the undergraduate program have a broad and basic preparation for professional nursing practice. They are qualified for first level positions in hospitals, community health agencies, industry, Indian Health Service, military, and other institutions where professional nurses are employed. Graduates are prepared to assume professional responsibility for promotion of health and prevention of illness. They assume responsibility for the guidance of nursing personnel and work cooperatively with other health care providers. They have the foundation for advanced study in nursing or specialization at the graduate level.

Both the undergraduate and graduate nursing programs at SDSU are approved by the South Dakota Board of Nursing and are accredited by the National League for Nursing. The College is a member agency in the National League for Nursing Council of Baccalaureate and Higher Degree Programs, American Association of Colleges of Nursing, and the Midwest Alliance in Nursing.

Candidates for graduation in the basic curriculum are eligible to write the National Council Licensure Examination-RN (NCLEX-RN) for licensure as registered nurses. Licensure as a registered nurse (RN) is required by law in every state in order to practice professional nursing.

Bachelor of Science Degree in Nursing

Two types of undergraduate curricula leading to the Bachelor of Science with a major in Nursing are offered – one for basic students and one for RN's who are academically prepared at the associate degree or diploma level and now seek a bachelor's degree. The program includes university core curriculum, major support courses in communication and the social, physical, and biological sciences, and nursing major courses. Graduates of the basic program in nursing are eligible to write the National Council Licensure Examination to become registered nurses. They are prepared to practice in both hospital and non-hospital settings and have the foundation for advanced study in nursing. Graduates of the RN Upward Mobility program are already registered nurses and are prepared to expand their practice in the areas of community health, health promotion and leadership and also have the foundation for advanced study in nursing.

Master of Science Degree in Nursing

Graduate programs in adult or parent-child nursing lead to a Master of Science degree in Nursing. The graduate program in nursing consists of advanced theoretical and clinical study in nursing and advanced work in selected supportive fields. It also provides role options in teaching of nursing, in patient care management, and in advanced clinical practice (clinical nurse specialist and nurse practitioner). A gerontological emphasis is also offered.

Health Science Minor

The Health Science minor provides experience in health knowledge, health services, and healthful environment to undergraduate students from various disciplines. Students have the option of earning a minor in health science as detailed under Health Science course offerings.

Pharmacy

Danny L. Lattin, Dean
Pha 125, 605-688-6197
Box 2202C, Brookings, SD 57007-0099

Introduction

The College of Pharmacy offers a six year course of study leading to a Doctor of Pharmacy (Pharm.D.) degree. As one of the health professions, pharmacy is vitally concerned with public health and safety. The goal of the College of Pharmacy is to prepare competent Pharm.D. graduates with effective primary care skills which center around the pharmacist's role in ensuring the rational use of medications and related devices to provide optimal therapeutic outcomes for their patients, and to inspire students to be life-long learners who express a caring professional attitude and seek to be agents of change within the profession. As the needs of society change, the problems of providing pharmaceutical care also change. Therefore, pharmacy students must not only be provided with sound scientific and professional training, but also be given opportunity to gain as much liberal education as possible to more adequately understand the society they serve.

Graduates with a Doctor of Pharmacy degree are eligible to apply for licensure in any state. Licensure as a pharmacist requires graduation with an entry level professional degree from an accredited pharmacy program, a certified period of supervised internship experience and successful completion of examinations administered by the Board of Pharmacy of the individual state. These requirements vary slightly from state to state. Students interested in practicing in a particular state should contact the Board of Pharmacy of that state for information concerning requirements.

Departments

Pharmaceutical Sciences
Clinical Pharmacy

Degrees Offered

B.S. in Pharmaceutical Sciences
Doctor of Pharmacy (Pharm.D.)

Accreditations

American Council on Pharmaceutical Education (ACPE)

Programs

Doctor of Pharmacy (Pharm.D.)

The College of Pharmacy offers a six year course of study leading to an entry level Doctor of Pharmacy (Pharm.D.) degree. The Pharm.D. degree is a professional degree which enables our graduates to pursue diverse career opportunities and ensures that their pharmacy education prepares them for future changes in the profession. It is an exciting opportunity for students who want to make a significant contribution to the health care needs of our society.

Preparation for the Major

In high school the student should take an academic curriculum in preparation for entrance to college. A sound basic education in science and mathematics courses is an essential part of preparation for the study of pharmacy. Good written and verbal communication skills are important.

Students planning to transfer from another college or university should consult with the College of Pharmacy early in their academic careers to plan course work that will transfer to the College of Pharmacy.

Curriculum (six year)

The curriculum is divided into a 2-year pre-pharmacy and a 4-year Professional Program phase. The pre-pharmacy courses provide a solid knowledge base and ability to use critical thought processes in the biological and physical sciences.

The four years of the Professional Program incorporate a solid foundation of pharmaceutical science courses as well as a comprehensive sequence of therapeutics and professional practice courses. Students earn a B.S. in Pharmaceutical Sciences degree after successful completion of the first two years of the Professional Program. The application of drug knowledge, basic science, and critical thinking to resolve problems of drug distribution and patient care are emphasized throughout the curriculum. Finally, students have an opportunity to apply knowledge to pharmacy practice situations in a 44-week series of clerkships in a variety of patient care settings which include patient care areas of hospitals, nursing homes, community pharmacies, hospital pharmacies, Indian Health Service facilities and clinic pharmacies.

Application Process

All students seeking admission to the 4-year Professional Program leading to the Doctor of Pharmacy degree must submit an application for the Professional Program. Applications are available from the College of Pharmacy. The deadline for applying for admission for the Fall Semester is February 1. Limitations in the size of the physical facilities, the number of faculty and the number of clinical sites make it necessary to limit the class size in the Professional Programs. Selection will be competitive and based upon several factors including pre-pharmacy course work, ACT scores, written and oral communication skills, letters of recommendation, residency status and other factors. Any student who anticipates successful completion of the pre-pharmacy mathematics, science and communication requirements prior to Fall Semester is eligible to apply. Notification of acceptance into the Professional Program is made during the Spring Semester. Students

admitted to the Professional Program must submit a non-refundable Pharmacy Major Fee to secure their position for the Fall Semester.

College of Pharmacy Regulations

Students in the College of Pharmacy are governed by the regulations which apply to all students at SDSU but are also governed by requirements established by the College. These requirements are presented in detail in the Pharmacy Student Handbook and include:

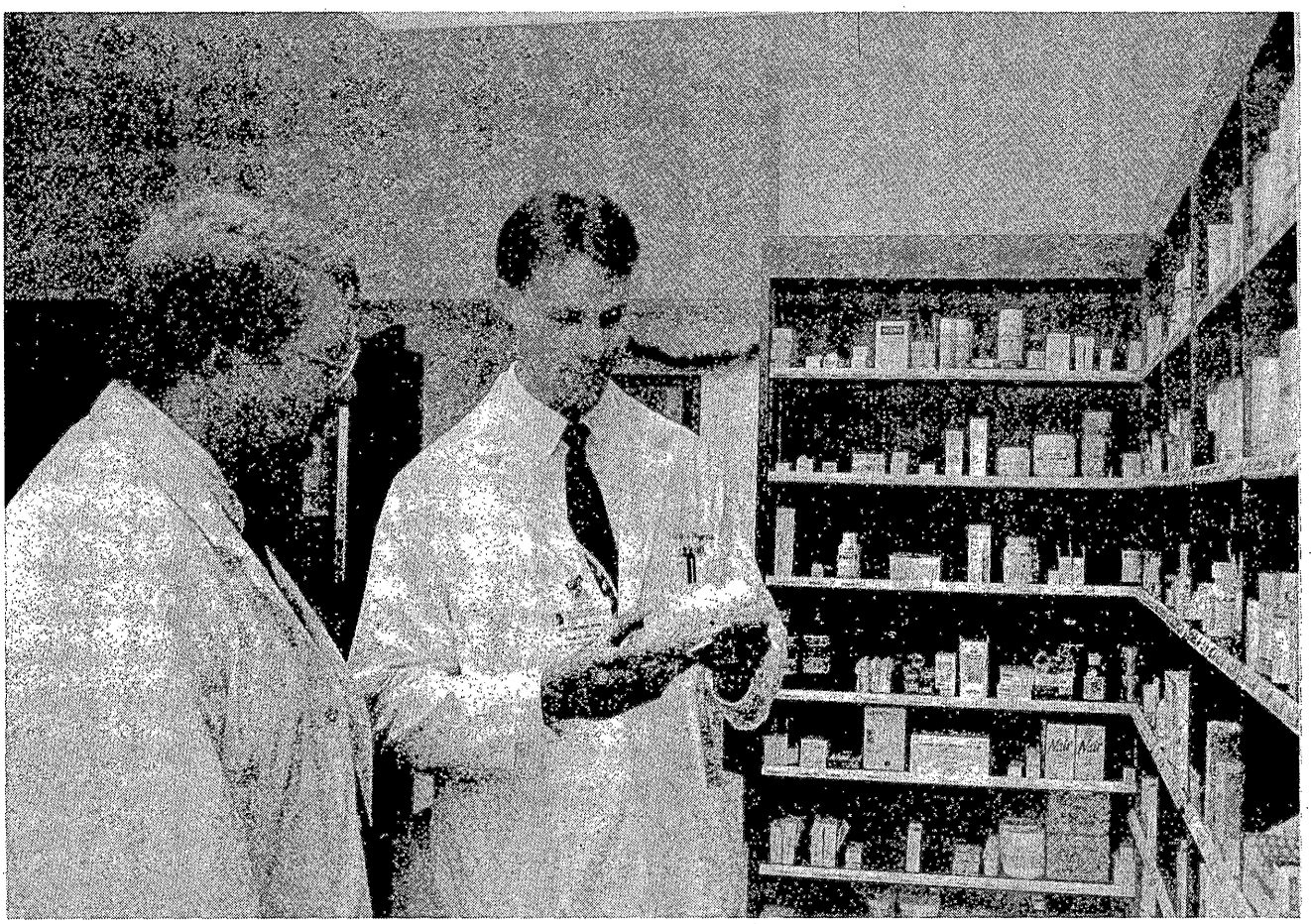
1. A student must earn at least two grade points for each credit hour in pharmacy courses to qualify for graduation.
2. A student will be placed on pharmacy probation when the student's pharmacy GPA (Pha prefix courses) for a semester falls below 2.0. Each subsequent semester while on pharmacy probation the student must earn a pharmacy GPA of at least 2.0 or the student will be placed on refused status. The student will be on probation for a minimum of one semester while taking pharmacy courses (Pha prefix) and will remain on pharmacy probation until the student's cumulative pharmacy GPA is 2.0 or greater.
3. If a student repeats a pharmacy course, both grades will appear on the student's record and be used to calculate the cumulative pharmacy GPA.
4. Grades earned in Pha prefix courses taken at other colleges/schools of pharmacy cannot be used to calculate pharmacy probation or refused status.
5. Students enrolled in the professional program may transfer a maximum of six credits of Pha prefix courses.
6. Students must receive a grade of "C" or better to meet the requirement of each clerkship.

Career Opportunities

Demand for pharmacists is high, and SDSU students enjoy an excellent placement rate. There is a diverse range of career opportunities in pharmacy. These include community pharmacy, hospital pharmacy, clinical pharmacy, pharmaceutical sales, military pharmacy, clinical and laboratory research, positions in federal, state, and local government, professional association work, and many other specialized areas. Additional training or advanced degrees are usually necessary to teach or to conduct research. Students interested in these areas should discuss their plans with an academic adviser.

Professional Organizations

Membership in the Academy of Students of Pharmacy is open to all students in the College. Kappa Psi and Kappa Epsilon are pharmacy fraternities for men and women, respectively. Rho Chi and Phi Lambda Sigma are scholastic and leadership organizations. The major goals of these organizations are to provide a better appreciation of the scope and aims of the profession and to develop leadership potential.



Department and Program Descriptions

Aerospace Studies (Air)

Kevin Graber
Department of Aerospace Studies
DePuy Military Hall 004
605-688-6106

Faculty

Lieutenant Colonel Graber, Professor of Aerospace Studies, Head; Assistant Professors, Major Richards, Captain Darnell

Programs

The Air Force Reserve Officer's Training Corps (AFROTC) program is conducted by the Department of Aerospace Studies. The purpose of this program is to enable qualified undergraduate and graduate students to become commissioned officers in the US Air Force. The learning experiences received will be of long range value in either a military or civilian career. Upon graduation and completion of the AFROTC curriculum the student is commissioned a Second Lieutenant, incurs a four-year active-duty service commitment, and enters the Air Force.

The following programs are open to qualified male and female full-time students.

Four Year Program

Designed for students completing a four-year college degree; however, it is easily modified to accommodate students with 3 to 5 years of academic studies remaining before graduation. Consists of: four semesters of General Military Courses (freshman and sophomore years), a four week Field Training Unit, and four semesters of Professional Officer Courses (junior and senior years).

Two Year Program

Designed primarily for transfer and graduate students with 2 years of academic studies remaining before graduation. However, other students who did not participate in Air Force ROTC during Freshman and Sophomore years may also participate. The two-year student must contact the Aerospace Studies Department early in the Spring Semester before entering the program to allow time for selection, medical examination and scheduling for Field Training during the summer. Successful completion of the Field Training Unit is mandatory before entering the two-year program. The program consists of: a six week Field Training session, and four semesters of Professional Officer Courses.

Field Training. Summer Field Training Units (FTUs) are conducted at operational Air Force bases and give the cadets an in-depth look at Air Force life and activities without incurring a commitment. It also gives the Air Force ROTC instructors a look at the students outside the university environment before they are accepted in the Professional Officer Course. Both the 4-week and the 6-week FTU include cadet orientation, junior officer training, survival training indoctrination, physical conditioning, career orientation, small arms familiarization, and a look at the organization and functions of an Air Force base. At the 6-week FTU, the additional two weeks are used to complete the course material and leadership laboratory training missed by not participating in the General Military Courses on campus. Students are provided transportation. At camp they receive free room, food, medical care, and $18.50 pay per day.

Financial Assistance

All AFROTC cadets who are South Dakota residents and who are not on an Air Force scholarship receive a 50% tuition reduction for four semesters of their junior and senior years.

Scholarships. Qualified students can compete for 3-year, 2-year, and 1-year scholarships, which cover full tuition, books, laboratory expenses, incidental fees and $150 per month tax free subsistence allowance. Scholarship competitions are also held at intermediate times to fill vacancies in the nationwide scholarship program. Awards are based upon officer potential. Applicants are nominated on the basis of: Air Force Officer Qualifying Test Scores, ACT or SAT college aptitude scores, academic major, grade point average, and personal evaluation by the Professor of Aerospace Studies.

Final selection is made by Air Force ROTC Headquarters.

NOTE: High school students should contact their high school counselor or any Air Force Recruiter for a 4-year AFROTC Scholarship Application Request form, to be completed following the junior year or early in the fall of the senior year.

- Air Force ROTC courses are tuition free.
- Military uniforms, textbooks and equipment are furnished for all AFROTC classes.
- Cadets enrolled in the Professional Officer Course receive the same $150 per month tax free subsistence allowance that scholarship students receive.

Agricultural Business

(See Economics)

Agricultural Economics

(See Economics)

Agricultural Engineering (AE)

Ralph Alcock
Department of Agricultural Engineering
Agricultural Engineering 107
605-688-5141

Faculty

Professor Alcock, Head; Professors Chu, DeBoer, Hellickson, Ullery, Werner; Professors Emeriti Durland, Lytle, Moe, Myers, Pahl, Wiersma; Associate Professors Adelaine, Anderson; Assistant Professors Bender, Bischoff, Humburg, Julson, Kelley, Pohl, Schipull, Stange

Programs

Agricultural Engineering is the science of engineering applied to the facilities and processes of agriculture and related industries. You are given foundation courses in mathematics, physics, and chemistry with engineering emphasis in a wide variety of technical areas: natural resource management, irrigation, drainage, water resources development, machine dynamics and design, machine vision, agricultural power, electrical power utilization, processing of biological materials, environmental control for livestock, control and disposal of agricultural wastes, agricultural structures, computers, and

instrumentation. Courses are also offered in the fields of meteorology, climatology, and micro-climatology to engineers and students in other colleges who are interested.

To earn the Bachelor of Science Degree in Agricultural Engineering a student must have an average grade of C or better in courses taken and required in the Agricultural Engineering Department.

Experiential Education Programs are available in the department. Arrangements may be made for credit under Course Numbers 494, 495, 496 Cooperative Education, Internship and Field Experience.

For Ag Systems Technology courses and curriculum, as offered by the Agricultural Engineering Department, see Agricultural Systems Technology for full description. For Master of Science and Ph.D. work, see the Graduate Bulletin. Graduate level courses will be taught as listed and on demand.

Agricultural Extension (AgEx)

John E. Burton, Jr.
Extension Program Coordinator
Agricultural Hall 130
605-688-5132

Programs

The Cooperative Extension Service is the off-campus educational function of the College of Agriculture and Biological Sciences. The Service extends the SDSU campus to every community and the advantages of higher education to all people. Through its Extension Agents, and supporting statewide Specialists, the Cooperative Extension Service disseminates the findings of research and encourages the application of knowledge to solution of problems encountered in everyday living.

SDSU does not offer a major in Agricultural Extension; however, students can prepare for a career in Agricultural Extension by completing any major in the B.S. in Agriculture degree with appropriate selection of courses from electives.

Agricultural Journalism

(See Journalism and Mass Communication)

Agricultural Systems Technology (AST)

Ralph Alcock
Department of Agricultural Engineering
Agricultural Engineering 107
605-688-5141

Faculty

Professor Alcock, Head; Professors Chu, DeBoer, Hellickson, Ullery, Werner; Professors Emeriti Durland, Lytle, Moe, Pahl, Wiersma; Associate Professors Adelaine, Anderson; Assistant Professors Bender, Bischoff, Humburg, Julson, Kelley, Pohl, Schipull, Stange

Programs

Agricultural Systems Technology is a four-year major developed around the General Agriculture core curriculum. It is designed to give broad training in the agricultural sciences and the technologies appropriate to agriculture and its associated industries. This major prepares you for careers in industries that support agriculture, such as technical sales, electric utilities in rural areas, distribution of commodities, work with federal agencies such as the Natural Resources Conservation Service, agricultural loan officers, food processing, and vocational agriculture teaching. Cooperative Education and Industry Cooperative Programs are available in the department. Arrangements may be made for some credit under AST 494-495-496, Cooperative Education/ Internship/Field Experience.

Agronomy

(See Plant Science)

American Indian Studies Program

Donna Hess
Department of Rural Sociology
Scobey Hall 216
605-688-4892

An inter-college program of American Indian culture studies. Course work in various departments of the University provides a broad base for understanding the past, present, and possible futures of American Indian people. The program recognizes the historical and contemporary significance of American Indian experiences. Study of these experiences promotes understanding of the pluralist nature of the U.S. and responds to the growing need for multicultural sensitivity and awareness.

Students desiring more information or interested in minoring in the program should consult with the coordinator no later than the beginning of the junior year.

Animal and Range Sciences (AS, Rang)

James Males
Department of Animal and Range Sciences
Animal Science Complex 103A
605-688-5166

Faculty

Professor Males, Head; Distinguished Professor Costello; Distinguished Professors Emeriti Briggs, Wahlstrom; Professors Gartner, Gee, J. Johnson, Larson, Libal, Marshall, Pritchard, Romans, Slyter; Professors Emeriti Bailey, Carlson, Dearborn, Dinkel, Embry, Kamstra, Kohler, Kortan, Lewis, Luther, McCarty, Minyard, Morgan, O'Connell, Plumart; Associate Professors Birkelo, Boggs, Held, Insley, P. Johnson, McFarland, Miller, Pruitt, Thaler; Associate Professors Emeriti Bonzer, Bush, McCone; Assistant Professors Kronberg, Zalesky; Instructor Bruns; Adjunct Professors Sieg,

Programs

The department offers instruction leading to the Bachelor of Science degree with majors in Animal Science or Range Science. The curricula are designed to prepare students for careers in livestock production, related agriculture business enterprises, farming and ranching, natural resource management on both private and public lands, or graduate study. Students are encouraged to supplement their class and laboratory instruction with internships and extracurricular activities.

Animal Science Major. Majors receive instruction in animal breeding, feeding and nutrition, management, selection and evaluation, marketing, meats, and wool. Courses pertain to beef cattle, horses, sheep, and swine. Students choose one of two emphases: (a) Business and Production, or (b) Science. The applications of various disciplines to the breeding, feeding, management, and marketing of livestock and livestock products are stressed. Emphasis is placed on developing an understanding of the basic principles of genetics, nutrition, physiology, range, and meats as they affect production and management of livestock.

Range Science Major. The Range Science program offers a diverse curriculum which prepares students for careers in the management of rangelands, the nation's largest natural resource. Both the practical and theoretical aspects of rangeland management are stressed, with emphasis placed on livestock grazing, forage production, ecology, soil conservation, wildlife habitat, watershed values, and outdoor recreation. Each student selects one of three options which allows specialization in a major area of the field: (a) Technical, (b) Science, or (c) Business.

Apparel Merchandising and Interior Design (AM, ID)

Sandra Evers
Department of Apparel Merchandising and Interior Design
Nursing-Home Economics 229
605-688-5196

Faculty

Professor Evers, Head; Professors Emeriti Kamstra, Lund, Semeniuk, Stoflet, Sivers, Yost; Associate Professors Lopez, Manikowske; Assistant Professors Isham, Lyons, Swedlund; Instructor Nussbaumer.

Programs

The department offers instruction leading to a Bachelor of Science degree with majors in Apparel Merchandising (AM) and Interior Design (ID).

Some courses are offered alternate years while others are offered once a year. Work experience is recommended before the Professional Practicum. To enroll in the Professional Practicum (AM 497 and ID 497) a student must have 90 semester credits and a 2.2 GPA. A double major in both majors requires careful and early planning. Consult your adviser for assistance and current information.

Apparel Merchandising (AM)

Courses in apparel merchandising provide knowledge applicable to careers in the fashion industry including production, wholesaling and retailing, and for consumer acquisition and use of apparel and household textiles. The cultural and scientific aspects of apparel and textiles are examined with emphasis on aesthetic, economic, historical, sociological, and psychological factors.

Fashion Institute of Technology

The Apparel Merchandising and Interior Design Department is affiliated with the Fashion Institute of Technology (FIT) in New York City. Students may enroll in a 1-2 semester "visiting scholar" program at FIT. The emphasis can be in Fashion Design, Fashion Buying and Merchandising, or several others. FIT courses transfer into SDSU and substitute for program requirements if approved prior to taking them. Upon graduation from SDSU the student receives the associate degree from FIT. Upper division status and a minimum 2.5 GPA (on 4.0 scale) is required for FIT consideration. Planning should begin in the sophomore year. See AMID Department Head for further information.

Minor in Apparel Merchandising

Sixteen credit hours are required for a minor in Apparel Merchandising. Plan your minor with an AM adviser early in your program.

Interior Design (ID)

The curriculum in interior design prepares students to enter the profession of residential and commercial design through course work in technical, material, historical, cultural and aesthetic aspects of design with studios emphasizing the design problem-solving process. A 280 hour practicum is a program requirement.

Minor in Interior Design

Seventeen credit hours are required for a minor in Interior Design. Plan your minor with an ID adviser early in your program.

Army ROTC

(See Military Science)

Art

(See Visual Arts)

Athletic Coaching Certification

Jason Liles
Department of Health, Physical Education and Recreation
Physical Education Center 251
605-688-5026

Some states, among them South Dakota, Iowa, and Minnesota, have specific requirements for athletic coaching certification in public schools. Students interested in seeking certification for coaching should consult with the Coaching Certification Coordinator in the Department of HPER to verify the specific requirements for each state.

Aviation Education (Avia)

Jim Behnken
College of Education and Counseling
Wenona Hall 108B
605-688-6291

Programs/Curriculum

Aviation Education at South Dakota State University offers both traditional classroom instruction and individual flight training courses which can meet a wide variety of aviation goals. The 200 level aviation courses are specifically designed to be an introduction to the world of flying for the beginning aviator. These courses can be used to earn the Federal Aviation Administration (FAA) Student, Recreational, and/or Private Pilot Certification, or simply to learn more about the skills and knowledge required of a pilot. For those students interested in flying for more than enjoyment purposes, 300 level aviation courses continue the education and training process to a professional level. Completion of these courses gives students the ability to utilize aircraft as a reliable business tool, or they can be used to begin a career as a professional pilot. As with all aviation course offerings, the 300 level courses are taught by FAA Certified Flight Instructors allowing individuals to earn FAA Commercial, Flight Instructor, and Airline Transport Pilot Certification, along with Single-engine Land, Multi-engine Land, and Instrument Pilot Ratings. In addition, flight exams are conducted by an FAA designated pilot examiner on staff at SDSU. Those completing the commercial pilot and instrument rating qualify for the Aviation Minor offered by the Aviation Education program. This Aviation Minor allows for a great deal of flexibility in creating an education curriculum that meets the needs and desires of each student as an individual. Instructor consent is required for registration in flight courses, and special fees are assessed for the cost of aircraft operations.

Biology (Bio)

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 306
605-688-6141

Faculty

Professor McMullen, Head; Professors Granholm, J. Haertel, L. Haertel, Hutcheson, Kayongo-Male, Larson, Peterson, Sword, Westby, Whalen; Professors Emeriti Baker, Chen, Hartwig, Hugghins, Morgan, Myers, Pengra, Semeniuk, Taylor; Associate Professors Bleakley, Cheesbrough, Gibbons, Hildreth, Hurley, Reese, Sutton; Associate Professor Emeritus Morrill; Assistant Professors Dieter, Duvall, Erickson, Gibson, Troelstrup; Adjunct/Joint faculty Benfield (Vet.Sci.), Chase (Vet.Sci.), Collins (PS), Diggins (Augustana), Evenson (Chem.), Fennell (HFLP), Francis (Vet.Sci.), Franklin (DS), German (WRI), Henning (DS), Jackson (NGIRL-USDA), Johnson (PS), McFarland (ARS), Myers (Flandreau), Reidel (NGIRL-USDA), Sieg (USFS), Tieszen (Augustana), West (Chem.), Woodson (NGIRL-USDA).

Programs

The Biology and Microbiology Department offers curricula leading to the Bachelor's degree with a major in **Biology**. The undergraduate Biology major has two different programs from which to choose: The curriculum in Biological Sciences, College of Agriculture and Biological Sciences; or the curriculum in Arts and Science. The two programs are identical except for the individual college's requirements. Students majoring in Biology will select among four areas of emphasis depending upon their particular interest and needs: (1) Biology, (2) Botany, (3) Zoology, and (4) Pre-professional. A minimum GPA of 2.0 must be maintained in the major and chemistry courses.

The **Biology emphasis** prepares a student to work in a large variety of areas of the biological sciences.

The **Botany emphasis** concentrates on the scientific study of plants. The graduate with an emphasis in Botany is qualified for professions in plant research and industry.

The **Zoology emphasis** highlights the scientific study of animal life. Zoology provides the basis for many related disciplines such as medicine and health sciences, veterinary science, and oceanography.

The **Pre-professional emphasis** is designed for students planning on admission into professional, health science programs.

Botany (Bot)

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 306
605-688-6141

The Department of Biology and Microbiology offers a Biology major with an emphasis in Botany. The **Botany emphasis** concentrates on the scientific study of plants. The graduate with an emphasis in Botany is qualified for professions in plant research and industry. Graduates wishing to pursue a career in a specialized area of Botany are encouraged to consider an advanced degree program. Above all, the Botany emphasis is designed to provide the student with a thorough understanding and appreciation of the Green World around us. See Biology Requirements section for curriculum.

Business Area Studies

Ardelle Lundeen
Department of Economics
Scobey Hall 136
605-688-4141

There are numerous courses particularly useful as adjuncts to majors in agribusiness; agricultural economics; agricultural systems technology; agronomy; animal science; apparel merchandising; dairy manufacturing; dairy production; economics; horticulture; hotel, restaurant, and institution management; interior design; park management; printing management; pharmacy; range science; and various engineering majors. See the listing of courses in Requirements section of this bulletin.

Chemistry (Chem)

Laurence I. Peterson
Department of Chemistry and Biochemistry
Shepard Hall 121
605-688-5151

Including the areas of Biochemistry and Clinical Laboratory Technology (MEDT) also known as Medical Technology

Faculty

Professor Peterson, Head; Professors Evenson, Fitzgerald, Gehrke, Grove, Hecht, Hilderbrand, Houglum, Jensen, Kayongo-Male, Lewis, Matthees, Palmer, Rue, Spinar, West; Professors Emeriti Emerick, Halverson, Johnson, Klug, McRoberts, Olson, Wadsworth, Webster, Whitehead; Associate Professors McFarland, Rice, Sellers, Thiex, Utecht; Assistant Professors Elbert, Majerle, Shore; Instructor Pravecek.

Programs

The Chemistry department is approved by the American Chemical Society for training professional chemists. Graduates are certified to the American Chemical Society as being eligible for full membership following two years of graduate work or other experience in chemistry.

Department courses serve three general purposes. First, since chemistry is so closely related to other fields of study, a number of courses are offered to provide sufficient chemical background to meet professional needs. Second, a minor can be obtained by students wanting more extensive chemistry without majoring in chemistry. Third, you can major in chemistry by choosing one of the following curricula. Note: No grade below "C" in chemistry courses will be accepted toward a major in chemistry or biochemistry.

Chemistry

The American Chemical Society approved curriculum is intended for students planning to pursue graduate work in chemistry or for positions in research, industrial or governmental laboratories. The department also offers a B.S. degree program for persons wishing to emphasize applications of chemistry to agriculture, business, quality control, environmental regulation, education or preparation for professional schools of medicine, dentistry or optometry. Those considering teaching should consult with the College of Education and Counseling by their sophomore year. SeEd 416 Strategies in Science Teaching is a requirement to be certified to teach high school chemistry.

Minor in Chemistry

A minor in chemistry is offered for students wanting extensive chemistry course work without majoring in chemistry. A graduation ratio of 2.0 in chemistry courses is required. At least 50% of chemistry courses applied toward a minor must be completed at SDSU.

Graduate Study

The Department of Chemistry and Biochemistry offers instruction leading to the Master of Science and Doctor of Philosophy degrees in Chemistry and the Master of Science Teaching in Chemistry. See Graduate Catalog or contact the Department for details.

Clinical Laboratory Technology (MEDT) also known as **Medical Technology**
Professor J. A. Grove, Coordinator

Medical Directors of Affiliated Schools of Medical Technology: **Qalbani A. Ali,** M.D., Marian Health Center, Sioux City, IA; **John Barlow,** M.D., Rapid City Regional Hospital, Rapid City, SD; **Bruce Hyde,** M.D., St. Paul Ramsey Medical Center, St. Paul, MN; **David W. Ohrt,** M.D., Sioux Valley Hospital. Sioux Falls, SD; **Gene N. Herbek,** M.D., St. Luke's Medical Center, Sioux City, IA.
Program Directors/Education Coordinators of Affiliated Schools of Medical Technology: **Marilyn Barnett,** MT(ASCP), Sioux Valley Hospital, Sioux Falls, SD; **Etta Bassinger,** MT(ASCP), St. Luke's-Midland Regional Medical Center, Aberdeen, SD; **Consoline Brugler,** MT(ASCP), St. Paul Ramsey Medical Center, St. Paul, MN; **Sharon Collier,** MT(ASCP), St. Luke's Medical Center, Sioux City, IA; **Pam Keiffer,** MT(ASCP), Rapid City Regional Hospital, Rapid City, SD; **Amy Kapanka,** MT(ASCP), Marian Health Center, Sioux City, IA.

The medical technologist is an indispensable member of the modern health team. He or she makes use of hundreds of scientific procedures devised to disclose the subtle changes that diseases produce in the body. By studying cells under the microscope, analyzing the chemical composition of body fluids and secretions, he or she can pinpoint clues to illness that might not be detected any other way. Conclusive evidence for the presence of disease as well as monitoring the success of treatment depends on laboratory findings. The medical technologist also needs to be competent in areas such as personnel and resource management, administration, teaching and research.

Clinical Laboratory Technology at SDSU

The university offers the first three years of education experience that provides scientific background in chemistry and the biological sciences required for entrance into the clinical training program. The professional internship program, usually 12 months long, at an approved hospital laboratory school, qualifies a student for the Bachelor of Science degree. The Clinical training can be obtained at the affiliated hospitals listed above or at other approved schools. Internships are awarded on the basis of academic performance, recommendations and interviews. A minimum 2.50 GPA is recommended by most hospitals. SDSU cannot guarantee every student an intern position. The university has affiliation agreements with the hospitals listed above to assist you in finding an internship.

Civil and Environmental Engineering (CEE)

Dwayne Rollag
Department of Civil and Environmental Engineering
Crothers Engineering Hall 118
605-688-5427

Faculty

Professor Rollag, Head; Professors Hassoun, Koepsell, Selim, Sigl; Professors Emeriti Dornbush, Larson; Associate Professors DeBoer, Johnson (adjunct), Kennedy, Schaefer, Tiltrum, Ting; Assistant Professors Reid, Tracy, Van Lent

Programs

Civil Engineering includes the location, design, construction, operation and maintenance of railroads, highways, airports, buildings, bridges, dams, water supply and distribution systems, waste water collection systems and treatment plants, irrigation and drainage systems, river and harbor improvements and many other facilities essential in modern life.

The course is planned to give you a foundation in the exact sciences – mathematics, physics, and chemistry; a thorough training in the technical phases of Civil Engineering – surveying, hydraulics, materials and the design principles; training in computer programming and the principles of communication – graphic, spoken and written; and an introduction to the social-humanistic area to prepare the graduates for positions of broad responsibility. Students are encouraged to purchase their own microcomputer by the time they achieve junior standing.

Certain electives are provided to give you a chance to broaden your education in the social humanistic area and to provide some technical specialization. The 16 credits of non-technical, and 5 credits of technical electives must be approved by the department head. Humanistic and social science electives must be chosen to satisfy the University Core and the more rigorous EAC/ABET requirements. To gain "in-depth" exposure in the socio-humanistic area, students must take at least two courses in the same subject area. The Civil and Environmental Engineering Department office will provide you with several social science-humanities plans of study from which you may select or you may prepare your own plan. The plan you adopt must be approved by your adviser.

To earn the B.S. degree in Civil Engineering you must have an average grade of C or better in courses taken in engineering mechanics (EM) and civil and environmental engineering (CEE).

The department will assist those interested to arrange cooperative work-study programs, after the freshman year, with consulting and testing firms, governmental agencies and industry. Credit may be obtained for the work experiences by prior arrangement, by registering for CEE 494 Cooperative Education, CEE 495 Internship or CEE 496 Field Experience. These credits will not apply toward the B.S. degree in civil engineering but will be part of your academic record.

Clinical Laboratory Technology

(See Chemistry)

Clinical Pharmacy

Brian Kaatz
Department of Clinical Pharmacy
Pharmacy 136
605-688-6197

Faculty

Professor Kaatz, Head; Professor Powers; Associate Professors Farver, Fiechtner, Fischer, Mort; Assistant Professors Clem, Farnsworth, Hedge, Heins, McCoy, Menke, Messerschmidt, Price; Instructor Hendricks.

Programs

The Department provides classroom and clerkship instruction for the last two years of the Doctor of Pharmacy (Pharm.D.) degree program and also contributes classroom instruction for the pharmaceutical sciences phase of the Pharm.D. degree. Faculty are located at various practice sites which provides students the opportunity for diverse learning experiences. See the College of Pharmacy section of this catalog for admission requirements to the Pharm.D. Professional Program.

Communication Studies and Theatre (CST)

Michael Schliessmann
Department of Communication Studies and Theatre
Pugsley Center 115
605-688-6131

Faculty

Professor Schliessmann, Head; Professors Emeriti Denton, Hoogestraat, Meyer, Stine, Widvey; Professors Ferguson, Johnson, Jorgensen; Assistant Professors Ackman, Haleta, Hefling, Lampson, Peterson, Tallmon, Wheeler; Instructor Roybal.

Programs

A student may major or minor in Communication Studies and Theatre, elect courses for self improvement, take courses to meet humanities requirements, or participate in speech activities. The major may choose any of the following options: General Communication (GCom); Radio, Television, and Film (RTVF); Speech Communication (SpCm); Speech Education (SpEd); or Theatre (Thea).

Advanced Placement in Speech

All students are required to take Speech (SpCm) 101 for graduation; however, those with previous training and experience in speech may apply to the department to take an advanced course in Speech and earn credit for 101 concurrently. The disposition of the application for advanced placement rests with the departmental administrator. Application must be made by the end of the third semester or prior to the fourth semester of residence.

Co-curricular Activities

Theatre

Professor Johnson, Director of Theatre

Several major, experimental and student productions each year. You may be cast in or assist with a production. University credit may be earned. Summer theatre also offers graduate and undergraduate credit through Prairie Repertory Theatre.

Forensics

Professor Hefling, Director of Forensics

Opportunities are provided for participation in SDSU's nationally recognized intercollegiate Forensics program. Local, regional, and national participation is sponsored. Activities include debate, public speaking, and oral interpretation in contests, workshops, and public performances. Any regularly enrolled undergraduate student is eligible to participate. University credit may be earned regardless of major.

Radio, Television, and Film

Professor Jorgensen, Supervisor

Opportunities are provided to perform and assist in production in broadcast facilities. University credit may be earned.

Speech-Language-Hearing Clinic

Professor Lampson, Supervisor

Clinical speech, language, and hearing services are available under the supervision of American Speech-Language-Hearing Association certified personnel.

Computer Science (CSc)

Gerald Bergum
Department of Computer Science
Administration Building 133C
605-688-5719

Faculty

Professor Bergum, Head; Associate Professor Emeritus Lundberg; Associate Professor Salehnia; Assistant Professors Cong, Shin; Instructors Hamer, Krebsbach.

Programs

The Department is structured to serve the students in three ways:

1. To provide educational opportunities so that all students on campus can receive educational literacy in computers.
2. The department offers a Bachelor of Science degree in Computer Science as well as a degree for Secondary Computer Science teachers. A Certificate Program in Microcomputer Applications sponsored by the department can be obtained through Capital University Center, Pierre. Students interested in the Computer Science degree will be accepted into the Department as pre-computer science majors. Only those students who have a 2.75 GPA following 30 credits of acceptable coursework will be considered for acceptance into the degree program.

   Formal application is required for acceptance into the major. Application forms for admission into the program can be picked up at the Department. Failure to meet the application deadline of November 1, or March 1, may disqualify you from enrollment in Computer Science degree courses.

   Computer Science majors must earn at least a "C" in all computer courses. Applied electives should be chosen so as to provide the student with a strong background for students planning on graduate study or careers in business, industry or teaching at the Secondary level. The choice of such courses should be discussed with the major adviser.

   Fulfillment of the GPA requirement for admission into Computer Science does not assure admission. Applicants, when necessary, will be selected competitively. Total enrollment in the major may vary but will be no more than 35 per graduating class. Enrollment will depend on availability of faculty and funding with the selection made from among those students best qualified for a career in computer science. Students interested in the Certificate Program in Microcomputer Applications should visit with the Director of Academic Affairs Outreach on the SDSU campus or with the Director of the Certificate Program in Microcomputer Applications at Capital University Center in Pierre.
3. For those students who need more support courses, a Computer Science minor is offered. The minor requires three programming courses which permit the students to match their Computer Science education with their major area. A grade of "C" or better is required in all minor coursework and a formal application for a Computer Science minor must be filed with the Computer Science Department 2 semesters before graduation. Failure to meet the deadline may disqualify you from getting a minor.

Counseling and Human Resource Development

Richard Roberts
Department of Counseling and Human Resource Development
Wenona Hall 115
605-688-4190

Faculty

Associate Professor Roberts, Head; Associate Professor Muxen; Assistant Professors Austin (WRGC), Baumberger, Harper, Hopponen, Schoen, Wilson.

Programs

The department offers an M.S. in Counseling and Human Resource Development. Three (3) options are available to earn the M.S. degree in CHRD, all requiring a minimum of 48 credit hours and the successful completion of both written and oral comprehensive examinations. See the Graduate Bulletin for descriptions of available options.

Emphasis

There is a set of core courses that you are required to take. These courses constitute the basic essentials that are required of everyone who enters the counseling profession. In addition to the core, additional courses are required for the three (3) areas of emphasis currently available in CHRD. They are counseling in a School Setting, counseling in an Agency Setting, and counseling in a Student Personnel Services Setting.

Criminal Justice (CJus)

James Satterlee
Department of Rural Sociology
Scobey Hall 224
605-688-4132

This inter-college program administered by the Department of Sociology is available to students majoring in any field at SDSU. The purposes of this program are 1) to provide new qualified personnel for all segments of the Criminal Justice system; and 2) to help improve the competence and professional status of existing Criminal Justice personnel.

To enter the minor in CJus a student must have a cumulative GPA of at least 2.2 and take a total of 18 credit hours from courses offered in CJus and others available in Sociology, Political Science or Wildlife/Fisheries. Nine of these 18 hours consist of 3 required courses (CJus 201, 335, and Soc 351). The remaining 9 hours may be selected from the list of CJus electives (below). An internship (Soc 495) is strongly recommended as an addition to these hours (See Sociology Internship Coordinator one semester in advance of field placement).

Students desiring more information or interested in minoring in Criminal Justice should consult with the coordinator of the program no later than the beginning of their junior year.

Dairy Manufacturing

(See Dairy Science)

Dairy Production

(See Dairy Science)

Dairy Science (DS)

John Parsons
Department of Dairy Science
Dairy-Microbiology 109A
605-688-4116

Faculty

Professor Parsons, Head; Professors Baer, Schingoethe; Professors Emeriti Baker, Spurgeon; Associate Professors Cassel, Henning, Mistry; Assistant Professors Brouk, Franklin, Jayarao; Instructors Baldwin, Stegeman

Programs

Dairy Science students may choose a major in Dairy Manufacturing or Dairy Production. Under the curriculum in agriculture, each of the majors offers a general technical program, with several electives. In addition, an option in Science, Business or Ag Education is available with either of the majors. Faculty welcome the opportunity to discuss these options and job opportunities with students.

A well-equipped dairy processing plant and sales room make it possible for you to obtain practical experience while learning the principles of dairy processing. Several students work part-time in the processing plant and earn part of their university expenses. The dairy research and production unit houses a herd of 400 Holstein and Brown Swiss cattle and is a research center in feeding, breeding, and managing a dairy herd. Equally important, it is the site for basic student training in dairy cattle evaluation and other aspects of dairy farming. The milk produced is processed as milk, ice cream, butter or cheese and used in campus eating facilities. Like the processing plant, the research and production unit offers opportunities for students to work part-time and gain practical experience while earning money for expenses. Leadership opportunities are available through participation in the Dairy Science Club, Dairy Cattle Judging, and Dairy Products Evaluation Teams.

Economics (Econ)

Ardelle Lundeen
Department of Economics
Scobey Hall 136
605-688-4141

Faculty

Professor Lundeen, Head; Professors Dobbs, Gilbert, Janssen, Kamps, Kim, Lamberton, Lyons, Murra, O'Brien, Peterson, Pflueger, Shane, Taylor; Professors Emeriti Aanderud, Allen, Anderson, Benning, Greenbaum, Hsia, Johnson, Kohlmeyer, Thompson; Associate Professors Adamson, Beutler, Feuz, Franklin, Sondey; Associate Professors Emeriti Felberg, Kelsey, Sogn; Assistant Professors Cumber, Fausti, Qasmi; Instructors Danielson, Ellingson, Fredrickson, Gustafson, Rasmussen.

Programs

The objectives of the curricula taught in the Department of Economics are to:

1) present the general economic principles necessary to understand the complexities of the economic and business world;

2) train the student to apply economic concepts and techniques for decision-making in fields such as agricultural business, agricultural economics, economics, and business; and,

3) provide a foundation for graduate work in economics, agricultural economics, business administration, management, finance, law and other related areas of study.

The Department of Economics offers majors leading to a Bachelor of Science Degree in either Agricultural Business or Agricultural Economics from the College of Agriculture and Biological Sciences. The Department also offers a major in Economics leading to a Bachelor of Science Degree from the College of Arts and Science. Within the Economics Major, a student can choose an option in Business Economics.

The following minors are available through the Department of Economics: Accounting, Agricultural Business, Agricultural Marketing, and Economics.

The programs provide students with a background to pursue careers in farm and ranch management, agricultural finance, agribusiness, banking, business finance, business management, sales and marketing, government service and related fields.

Entry Requirement

Formal application is required for admission into one of the departmental programs. To be admitted, the student must have completed at least 48 semester credits toward graduation, have a cumulative grade point average of at least 2.1 for all courses taken, and have earned at least a 2.1 grade point average for the following courses: Econ 201, Econ 202, Acct 210, Engl 101, and Math 222 (or Math 123).

Preparation for Graduate Study

Successful completion of graduate study in economics, quantitative methods, operations research, marketing, and finance usually requires an undergraduate plan of study containing additional mathematics courses.

Courses in the Department of Economics are offered in the following areas: Accounting (Acct), Agricultural Economics (AgEc), Business Administration (BAdm), and Economics (Econ). See the Course Descriptions section of this bulletin.

Educational Leadership

R.L. Erion
Department of Educational Leadership
Wenona Hall 107
605-688-4369

Faculty

Professor Erion, Acting Head; Professors Edeburn, Hanson, Kluckman, Lingren, Marshall, Widvey; Associate Professors Johnson, Romereim-Holmes; Assistant Professor Amiotte.

Programs

Master of Education (M.Ed.)

Requirements for Masters programs can be completed at either the campus in Brookings or at the West River Graduate Center on the Ellsworth Air Force Base. Many of the courses are also offered through the SDSU Sioux Falls program.

Curriculum and Instruction (C&I)

This major is appropriate for K-12 classroom teachers, recreation program staff, adult and community educators, Cooperative Extension Service personnel, and junior and 4-year college instructors.

Within the major, the following emphases are available: Vocational Technical Education, Adult and Higher Education, Computer Education, Content Areas (English, mathematics, social studies, etc.), Diversity in the Classroom, Gifted Education, Middle School Education, and Reading Education. The department also offers an M.Ed. in Curriculum and Instruction in Sioux Falls in cooperation with the University of South Dakota, Dakota State University, and Black Hills State University.

Educational Administration (EdAd)

This major is designed to provide the basic professional preparation for those who expect to become qualified administrators in schools where certification is required, and for other institutions, businesses, industries and service-oriented agencies where an administrative program is of value. The South Dakota Board of Education requires four years of teaching experience for administrator certification.

Within the Educational Administration major, the following emphases are presently available: Elementary Administration, Secondary Administration, and Adult and Higher Education.

Electrical Engineering (EE)

Lewis Brown
Department of Electrical Engineering
Harding Hall 201
605-688-4526

Faculty

Associate Professor Brown, Acting Head; Professors Ellerbruch, Finch, Miron, Sander; Professors Emeriti Dracy, Knabach, Storry; Associate Professor Helder; Associate Professors Emeriti Bruce, Moore, Petersen; Assistant Professors A. Andrawis, M. Andrawis, Galipeau, Hietpas, Kornbaum.

Programs

Realizing that each person is an individual, the degree program is arranged to include 30 credits of elective courses. This elective flexibility allows you to pick a technical and non-technical course program that best suits your abilities, needs and interests.

Electrical Engineers play a significant role in the development and application of new technologies, and SDSU has prepared many electrical engineering graduates who now have exciting careers in both engineering design and research and development (R&D). Besides solving problems in energy supply and demand, electrical engineers play key roles in solving our technology problems in such areas as biomedical engineering, communications, computers, industrial control systems, and robotics.

A 2-semester sequence taken in the senior year, Senior Design I-II, places every student on a design team which then designs, builds, tests, and demonstrates a significant design project. The design projects are solicited from industry and provide students with valuable real world team design experience.

Academic and Graduation Requirements

Students will be admitted into junior level EE courses only after they have completed EE 220, 221, 222, and 223 with minimum grades of "C." Students will not be permitted to enroll in subsequent courses for which either EE 220 or EE 221 is a prerequisite until the above requirement has been met. A graduation ratio of 2.0 or better is required for all Electrical Engineering courses taken.

The non-technical (17), technical (13), and required (106) credits comprise the 136 credit degree. You have flexibility in choosing when elective courses are taken.

Humanistic and social science non-technical electives must be chosen to satisfy the University Core. The humanistic and social science electives must include in-depth course work to meet the rigorous EAC/ABET requirements. Six humanities credits from at least two areas and nine social sciences credits from at least two areas must be taken for graduation. An additional two credits must be taken for a total of 17. The Electrical Engineering Department will provide you with an approved list of courses that shows how the depth requirement can be met with a two course sequence where one course is the prerequisite for the second higher level course.

The 13 required technical electives must satisfy the following requirements:

1. Three credits must be taken from 300 level or higher math or basic science courses and must 1) be selected from an approved Electrical Engineering Department course list, 2) support a coherent technical program, and 3) be approved by the Electrical Engineering Department.
2. At least 10 credits must be from Electrical Engineering courses, including at least 6 credits from 400 level.

Electronics Engineering Technology (ET)

(See General Engineering)

Engineering Graphics (EG)

(See General Engineering)

Engineering Mechanics (EM)

(See General Engineering)

Engineering Physics

(See Physics)

Engineering Shops (ES)

(See General Engineering)

English (Engl)

George West
Department of English
Scobey Hall 014
605-688-5191

Faculty

Professor West, Head; Distinguished Professor Woodard; Professors Brandt, Duggan, Evans, Kildahl, Taylor, Williams; Professors Emeriti Alexander, Brown, Foreman, Marken, Witherington, Yarbrough; Associate Professors Danker, Flynn, Ryder; Assistant Professors Donovan, Haug, Keller, Marie-Peterson, O'Connor; Instructor Brown.

Programs

Courses in the English Department are divided into two areas: English (Engl) and Linguistics (Ling); see the Course Descriptions section of this bulletin. The English Department offers instruction in clear thinking and expression; in the history and use of language; in literature (British, American, World, Native American, Women's, Ethnic, etc.); in literary criticism; and in technical communications. An English major prepares students for teaching careers; for writing and editorial work; for professional schools of law, business, theology, library science, and social work; and for any endeavor in which facility in the use of language is essential.

Students may major or minor in English. The English Major leads to a Bachelor of Arts (B.A.) degree in one of two programs: **Option A: English major, 39 credits in courses prefixed Engl and Ling** (not counting Engl 101, 301, and non "Honors" 210); **Option B: English Education major, 36 credits in courses prefixed Engl and Ling** (not counting Engl 101, 301, and non "Honors" 210) together with the courses required by the College of Education. Option B students must register with the College of Education and Counseling before beginning Education courses, usually in the sophomore year.

English majors in both options must take Hist 121 and 122, as well as foreign language courses required for the B.A. Minimum college and university requirements are given in the appropriate sections of this bulletin and are incorporated in the curriculum plans listed in the Requirements Section. Advisors assist students to ensure that all department, college, and university requirements are met.

The English Minor. The English minor requires 20 credits in English (not counting Engl 101 and 301), of which 9 hours must be in British literature, and 6 hours in American literature. Minors must also take one of the following courses: Engl 379, 383, Ling 203, 425, 420, 443 ,452.

The Master of Arts (M.A.) Degree. The Department offers the Master of Arts in English. For details consult the Graduate Bulletin.

Entomology (Ent)

(See Plant Science)

Environmental Management (EnvM)

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 306
605-688-6141

Faculty

Professor McMullen, Head; Professors Granholm, J. Haertel, L. Haertel, Hutcheson, Kayongo-Male, Larson, Peterson, Sword, Westby, Whalen; Professors Emeriti Baker, Chen, Hartwig, Hugghins, Morgan, Myers, Pengra, Semeniuk, Taylor; Associate Professors Bleakley, Cheesbrough, Gibbons, Hildreth, Hurley, Reese, Sutton; Associate Professor Emeritus Morrill; Assistant Professors Dieter, Duvall, Erickson, Gibson, Troelstrup; Adjunct/Joint faculty Benfield (Vet.Sci.), Chase (Vet.Sci.), Collins (PS), Diggins (Augustana), Evenson (Chem.), Fennell (HFLP), Francis (Vet.Sci.), Franklin (DS), German (WRI), Henning (DS), Jackson (NGIRL-USDA), Johnson (PS), McFarland (ARS), Myers (Flandreau), Reidel (NGIRL-USDA), Sieg (USFS), Tieszen (Augustana), West (Chem.), Woodson (NGIRL-USDA).

Program

The Environmental Management Major is designed to prepare students for careers in government, industry, consulting and graduate study in environmental science or management. Students receive a strong background of core courses in biology, chemistry, environmental science, geology, mathematics, physics, soils, and statistics. During the sophomore year, students participate in discussions with working professionals. These discussions serve to guide students toward a particular area of environmental science. Students work closely with their advisor to design a program of study leading toward a particular career objective. A broad selection of elective courses provides flexibility for development of specialization within a particular focus area. A senior seminar and capstone course in integrated natural resource management provide work related experience for graduating senior students. Students are strongly encouraged to cultivate working relationship with prospective employers throughout their program. A minimum GPA of 2.0 must be maintained in the major and chemistry courses.

European Studies Program (EurS)

Gordon Tolle
Department of Political Science
Scobey Hall 304
605-688-4912

A faculty committee appointed from many related disciplines advises the Coordinator.

European studies combines the insights of many disciplines as they are focused on Europe. These disciplines include language and literature, history, art history, philosophy, music, sociology, economics, political science, geography, health science, education, family studies, business and public administration. The topics for the two core courses, Topics in European Culture and Topics in European Society, will vary.

The benefits of this interdisciplinary program are as follows. **Cultural Understanding:** European Studies provides students with an opportunity to develop greater understanding of the European cultures which have had a great influence on American culture and on the entire world. **Social Awareness:** Appreciation of the character of various European countries as well as insight into alternative social arrangements comes through examination of the social institutions and policies of other "developed" or "first world" countries. **Careers/Personal Life:** Students whose career interests focus on Europe through jobs such as trade and commerce, tourism, primary and secondary teaching, positions in multi-national firms and various international agencies will find the European Studies Program provides an introduction to many cultural and social facets of countries where they may later work, tour, live, or study. **Travel:** Background information about European countries, their languages, history, and people, prepares students for travel on the continent.

Students are required to take courses in both humanities and social sciences. Many of the courses in the program can be used to satisfy the university core requirements (e.g., French 101 fulfills part of a language requirement. EurS 301 fulfills part of the social science requirement.). In addition, students may use up to a maximum of eight credits from their majors. The students must take the interdisciplinary topics courses: EurS 300, Topics in European Culture, and/or EurS 301, Topics in European Society (6 credits).

While it is not a requirement, living and studying in Europe may also be used to earn some credits.

To enroll in this program, contact the coordinator, Dr. Gordon Tolle, Political Science, phone 605-688-4912. Upon completion of the program and graduation , a notation will be entered on your transcript.

Family and Consumer Sciences

(See Human Development, Consumer and Family Sciences)

Family and Consumer Sciences Education

(See Human Development, Consumer and Family Sciences)

Food and Biological Materials Engineering

Ralph Alcock
Department of Agricultural Engineering
Agricultural Engineering 105
605-688-5141

Faculty

Professor Alcock, Head; Professors Chu, DeBoer, Hellickson, Ullery, Werner; Professors Emeriti Durland, Lytle, Moe, Pahl, Wiersma; Associate Professors Adelaine, Anderson; Assistant Professors Bender, Bischoff, Humburg, Julson, Kelley, Pohl, Schipull, Stange

Programs

Food and Biological Materials Engineering is a unique educational option in Agricultural Engineering that provides students with an exceptional opportunity to serve the food and fiber processing industry. The processing of biological materials adds value to agricultural commodities and provides additional capacity for economic growth in the region. Graduates will have the capability to design, install and maintain the new technology that is used in the food and fiber industry.

Students are given foundation courses in mathematics, physics, chemistry and microbiology. Additional course work stresses communication skills, engineering mechanics, food science and engineering design. This program of study will prepare you for entry-level positions with fruit and vegetable processors, grain millers and bakers, beverage companies, oil processors, chemical companies, pharmaceutical companies and meat processors. Food and Biological Materials Engineering offers an outstanding career opportunity to the student who has an interest in the biological and physical sciences.

Foreign Language Business-Economics Specialization

Karen Cárdenas
Department of Foreign Languages
Nursing-Home Economics 121
605-688-5101

This specialization is designed for language majors who plan careers in international business. Students who wish to pursue this specialization are encouraged to indicate this fact to their adviser as early as possible. They are required to submit a letter of intent to the Departments of Economics and Foreign Languages no less than three months prior to the date of graduation.

Foreign Languages (FL)

Karen Cárdenas
Department of Foreign Languages
Nursing-Home Economics 121
605-688-5101

Faculty

Professor Cárdenas, Head; Regental Professor Emeritus/Dean Emeritus Barnes; Distinguished Professor Emerita Redhead; Professor Emeritus Bates; Professors Baker, Beattie, Richter, Sunde; Associate Professor Emeritus Iden; Assistant Professor Yudin; Instructors Horning, Johnson, Stocke, Torres; Adjunct Instructor Green.

Programs

The Department of Foreign Languages provides proficiency-oriented instruction in second languages, literatures, civilizations and cultures. The department offers the Bachelor of Arts degree with majors in German and Spanish. It also offers minors in French, German, and Spanish. Students seeking to fulfill the 14-hour Bachelor of Arts requirement in foreign languages (101, 102, 201, 201) may do so in any one of five languages: French, German, Lakota, Russian, or Spanish.

Students entering the university with a background in foreign languages are strongly encouraged to request a copy of the department's placement policy. Students who are prepared to take courses beyond 101 (up to 311) may apply to receive credit for all previous courses. Even if the student's career goals do not center on a foreign language, a strong background in a language may make a second major or a minor feasible.

The faculty of the Department of Foreign Languages works with students to determine the program of study which will best prepare them for the career they have chosen. The department encourages students to investigate programs in other academic areas which will complete or enhance their preparation for a specific career. Such programs include, but are not limited to: Economics (see the requirements for the Foreign Language Business-Economics Specialization), Education (see "Education Curriculum for Teachers of Academic Subjects"), European Studies (see European Studies), and Latin American Area Studies (see Latin American Area Studies). Students are also encouraged to plan a summer/semester experience travelling and/or studying abroad.

Additional information on the department's programs is found elsewhere in this Bulletin. The department also has placement information as well as specific information on all of its programs available in the main office of the Department of Foreign Languages.

French

(See Foreign Languages)

General Agriculture

Eugene Arnold
College of Agriculture and Biological Sciences
Agricultural Hall 156
605-688-5133

Programs

The General Agriculture curriculum is designed for the student undecided as to a major field of study within the area of agriculture and for the individual planning to return to the farm or ranch after college. A large number of free electives are available allowing you to search for a major or take courses in the different disciplines needed to manage a production unit. Two options are included in this curriculum: a two-year Associate of Arts degree and a four-year Bachelor of Science degree.

The **two-year program** is designed for the student who does not find it advisable or possible to enter a regular four-year college program. A typical student in this situation could be one who desires some education but not necessarily four years before returning to the farm or ranch.

All major field of concentration courses must be from departments within the College of Agriculture and Biological Sciences and be related to agriculture. All courses in the major field of concentration need not be in one department, although this may be a possibility. Consult your adviser when selecting major field of concentration courses. These courses should relate to your career interests.

General electives may be selected from any area. Electives are offered so students may develop special talents or interests in General Agriculture. The choices of courses are left to the student, providing the selections made are consistent with the academic standards of the University and of the College of Agriculture and Biological Sciences.

The **B.S. program** consists of approximately one-fourth agriculture; one-fourth basic science; one-fourth social science, communications, and humanities; and one-fourth elective subjects. When qualifying for a Bachelor of Science degree a student may, through a choice of electives, complete courses in business, prepare for graduate study, or enroll in special areas of study such as plant and/or animal science.

General Engineering (GE)

Jerry Sorensen
Department of General Engineering
Wenona Hall 310
605-688-6417

Faculty

Professor Sorensen, Acting Head; Professors Emeriti Heusinkveld, Skubic, H. Svec, Wakeman; Assistant Professor Kreyger; Instructors J. Froehlich, Garry, Peters, Sternhagen, R. Svec, M. Tolle; Lecturer Mahmood.

Programs

The General Engineering Department offers courses in introductory engineering topics, interdisciplinary engineering topics, and technical laboratory experiences. In addition, the degree Bachelor of Science in Technology (BST) is offered in Electronics Engineering Technology (EET), Construction Management (CM), and Manufacturing Engineering Technology (MET). The number of credits required to satisfy the BST degree is 128.

The Master of Science in Industrial Management (MSIM) degree is offered by the Department of General Engineering and coordinated through the College of Engineering and other colleges on the SDSU campus. (See the Graduate Bulletin for more information.)

General Engineering (GE)

Through academic advising, the department provides to the students who are undecided in their choice of a specific engineering or technology discipline, an opportunity to consider many options while taking the fundamental courses required in most technical majors. Guidance is also provided for those students who are not pursuing professional engineering degree programs but wish to establish a fundamental understanding in a technical area.

Construction Management (CM)

The Bachelor of Science in Technology Degree with a major in Construction Management prepares graduates for employment in the construction industry to manage technical construction projects and middle management process as well as providing the diversity of a baccalaureate degree. The construction management technologist must be well versed in engineering practice, construction processes, and management skills. (Information Sheet available from Department)

Engineering Graphics (EG)

The Engineering and Architectural Graphics courses are provided to satisfy the visualization and graphics communication requirements of the accredited engineering departments in the College of Engineering.

Engineering Mechanics (EM)

Course objectives in Engineering Mechanics are to develop an educational background by a thorough understanding of basic subjects common to various branches of engineering. Courses are designed to emphasize basic theory and to present applications in different areas of engineering.

Engineering Shop (ES)

Courses in Engineering Shops concentrate on the various industrial processes closely associated with practical engineering principles. Working with machine tools and other equipment the student will acquire an understanding of properties of materials and various treatments of materials for specific operations and purposes.

Facilities for computer aided manufacturing (CAM), computer integrated manufacturing (CIM), computer numerical control (CNC), and computer aided design and drafting (CADD) and for research are also provided for metal processing and for construction of experimental equipment for other university departments.

Electronics Engineering Technology (ET)

The Bachelor of Science in Technology program with a major in Electronics Engineering Technology prepares graduates for employment in business and industry with an in-depth competence in Electronics Technology as well as providing the diversity of a baccalaureate degree.

An Electronics Engineering Technologist serves to support the engineer in a manner requiring application of both theoretical knowledge and related technical skills. Working with information supplied by the engineer, the engineering technologist builds prototype models, troubleshoots, modifies, and supervises production of electronic products. (Information Sheet available from Department)

Manufacturing Engineering Technology (MET)

The Bachelor of Science in Technology program with a major in Manufacturing Engineering Technology prepares graduates for employment in the manufacturing industry with in-depth competencies in manufacturing engineering applications, manufacturing equipment and processes, and manufacturing management.

Within the breadth of the four year degree program, strong communication skills, quality management, and continuous improvement along with liberal studies and computer applications will permeate all aspects of the curriculum. The marriage of theory and application will be the cornerstone of such categories of study as Production Design, Manufacturing Materials, Processes, Systems, Automation, Controls, Productivity and Quality.

General Studies

Allen Branum
College of Arts and Science
Nursing-Home Economics 251
605-688-6619

Programs

The General Studies major is designed for students who have a personal and/or a professional goal that cannot be met by an established major on campus. In addition to completing the core requirements of the College of Arts and Science, the student must complete 40 credits of courses which accomplish the attainment of the uniquely defined goal. These 40 credits should be from two or more disciplines and should include both lower and upper division courses. A Plan of Study form must be completed identifying the personal and/or professional goal, the courses to be taken, and an explanation of how the courses contribute to the goal. This form must be approved by the student's advisor and the Assistant Dean of the College of Arts and Science. The General Studies major can be obtained with a Bachelor of Science degree.

Genetics

Eugene Arnold
College of Agriculture and Biological Sciences
Agricultural Hall 156
605-688-5133

Though there is no separate instructional department, a student wishing to specialize in Genetics can obtain an excellent program by selecting the following courses:

AS 332, Principles of Animal Breeding 4
Bio 343, Cell Biology 3
Bio 371, Genetics 3
Bio 372, Genetics Laboratory 1
Bio 453-553, Advanced Genetics 3
Bio 462-562, Procaryotic-Eucaryotic Molecular Biology I 2
Bio 463-563, Procaryotic-Eucaryotic Molecular Biology I Lab 2
Bio 464-564, Procaryotic-Eucaryotic Molecular Biology II 2
Bio 465-565, Procaryotic-Eucaryotic Molecular Biology II Lab 2
Micr 436, Molecular & Microbial Genetics 4
Micr 492-592, Advances in Microbiology: Gene Engineering 2
PS 383, Principles of Crop Improvement 3

Geographic Information Systems

(See Geography)

Geography (Geog)

Roger Sandness
Department of Geography
Scobey Hall 232
605-688-4511

Faculty

Professor Sandness, Head; Distinguished Professor C. Gritzner; Professors, Hogan, Opheim; Associate Professor Berg, J. Gritzner, Napton; Assistant Professors Gab, Samuelson; Adjunct Faculty Bliss.

Programs

Geography is the science that studies the distribution of both physical and human features of the Earth's surface. Geographers seek to describe, relate and explain the natural and cultural phenomena that distinguish places around the world. Geographers focus upon "where" and "why" questions concerning the global environment. The process of change and an examination of how humans modify the Earth is a continual emphasis.

The Department of Geography provides coursework leading to the Bachelor of Science degree. The major requires 35 credit hours which includes Geog 131, 132, 200, 382, a Regional course, and 18 credits of upper division credit. In addition to the standard degree programs, there are two options available in the Geography Major: Technical Geography–Science and Environmental Planning and Management The Technical Geography–Science Option stresses research techniques and is oriented toward future employment in governmental, industrial,

military, or planning positions. The Environmental Planning and Management Option is designed to prepare students for careers in governmental, industrial, managerial, recreational areas, and commercial corporations. Minors in Geography and Geographic Information Systems are also offered by the Department.

German

(See Foreign Languages)

Gerontology

Cindy Schmiege
Department of Human Development, Consumer and Family Sciences
Nursing-Home Economics 369
605-688-6418

Minors in Gerontology are available at the undergraduate and graduate levels. Contact the Coordinator of Gerontology, College of Family and Consumer Sciences, for further information on these minors.

Health, Physical Education and Recreation (HPER)

Fred Oien
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-5625

Faculty

Professor Oien, Head; Professor Booher; Professors Emeriti Crabbs, Forsyth, Huether, Robinson, Williamson; Associate Professor Hacker; Assistant Professors Erickson, Finn, Haensel, Sandness; Instructors Bohn, Daly, Ekeland, Etter, Gdowski, Hauschild-Mork, Henderson, Janicki, Liles, Margenthaler, Nagy, Neiber, Russow, Skemp, Stiegelmeier, Underwood, Wilson; Lecturer Byrne; Adjunct Professors Ramsey, Reynen

Programs

Professional Preparation in Health, Physical Education and Recreation

Three undergraduate majors are offered within the department. These include Athletic Training, HPER (Teaching and Fitness/Wellness emphases), and Public Recreation. Three undergraduate minors are offered including Health Education, Physical Education, and Public Recreation. Additional programs include Pre-Physical Therapy, Pre-Occupational Therapy, Athletic Coaching Concentration, and Elementary Physical Education Concentration. At the time of publication, a major in Health Promotion was undergoing final review by the Board of Regents. Pending approval, this major will replace the emphasis in Fitness/Wellness within the HPER major. Interested students should contact the Fitness/Wellness Coordinator for information on this major.

The Department of Health, Physical Education and Recreation offers courses leading to a Master of Science in HPER. See Graduate School Bulletin for details.

WEL 100 - Skills for Healthy Living

WEL 100 is a university core requirement. This two credit requirement consists of one hour of lecture and two hours of lab each week. WEL 100 is an interdisciplinary survey of topics pertaining to health and physical activity. Lecture topics cover a wide variety of health-oriented information. Laboratories are experiential in nature and will apply the theories and concepts presented in the lectures. Students must register for a WEL 101-119 section when registering for WEL 100.

PE 100 - Fitness and Lifetime Activities

Two credits of fitness and lifetime activities may be taken as electives. The courses are designed to develop intellectual inquiry as to the need of physical activity and to present the opportunity to learn skills in carry-over activities promoting physical, social and emotional well being. No activities may be repeated. Examples include: Aerobics, Archery, Camping Skills, Dance, Fishing, Golf, Racquetball, Swimming, Tennis, Volleyball, and Weight Training.

Course Cross Referencing

The department cross references some courses with other consenting departments within the university. Students may use the prefix they desire.

Health Science (HSc)

Roberta Olson
College of Nursing
Nursing-Home Economics 255
605-688-5178

A Health Science minor is available for students who wish to gain knowledge in the areas of health, health care programs, health education, epidemiology, and occupational health.

History (Hist)

Rodney Bell
Department of History
Scobey Hall 322
605-688-4311

Faculty

Professor Bell, Head; Professors Crain, Funchion, Miller, Sweeney; Professor Emerita Volstorff; Assistant Professors Berg, Brooks, Hart.

Programs

The goals and objectives of the history program are to:
--preserve, communicate, and interpret the human past;
--prepare students for careers in history and related fields;
--promote historical knowledge through research and other scholarly endeavors;
--provide courses in history that meet the general education needs of the University community;
--encourage the social, intellectual, and ethical growth of students;
--foster multi-cultural awareness among students and others;
--serve the university and society through history related activities.

The courses offered by the Department of History are intended to prepare majors for careers in teaching, government, and service oriented occupations, and to provide a necessary background for graduate work or other specialized training.

Degrees

Majors may choose either the Bachelor of Arts or the Bachelor of Science degree. The requirements in either program are 33 credits of Hist prefixed courses, which must include 121, 122, 151, 152, and 380.

The Department also offers a History Minor. See the Major and Minor Requirements section of this bulletin.

Core Curriculum

In addition to departmental requirements, a student must complete the University and College of Arts and Science core curriculum appropriate to his or her degree. See separate sections of this bulletin for these requirements.

Teaching Option

Majors who intend to teach in the secondary schools must enroll in the teacher preparation program; for details, contact the College of Education and Counseling.

Honors Program (HON)

Allen Branum
College of Arts and Science
Nursing-Home Economics 251
605-688-6619

Faculty

Allen Branum and Nels Granholm, Co-Directors; Honors Program Committee Members: Al Bender, Micky Flynn, Michael Johnson, John O'Brien, Gail Dobbs Tidemann.

Program

Graduation with "Honors Program Distinction" is earned by completing the requirements listed in the curriculum plan given below. It is a set of courses and independent study that will provide students with the opportunity to develop their unique personal potential for excellence. Qualified students are encouraged to participate in the Honors Program by taking selected courses whether or not full completion of the program is an objective.

Purpose of the Honors Program

1. To promote excellence in scholarship.
2. To promote intellectual self-reliance, self motivation, initiative, and creativity.
3. To develop the unique personal potential of highly capable individual students.
4. To enable students to develop in-depth understanding of the human experience through interdisciplinary study and independent investigation.

Participation in the Honors Program is to be included within a student's regular program of study in a chosen major. Most Honors courses will fulfill selected general education core requirements for the bachelor's degree. Students completing the Honors Program will graduate with special Honors Program Distinction, an honor recorded on the student's transcript.

Enrollment Requirements for Honors Courses

Qualified students may enroll in Honors Courses (Departmental Honors Courses or Honors Colloquia) without making formal application to the Honors Program Committee. To qualify for enrollment in an Honors Course, a student must have a cumulative GPA of 3.0 or higher. Students entering as freshmen must rank in the upper 10% of their graduating class or have a score on the composite ACT or combined SAT at the 90th percentile.

Application for Honors Program Distinction

Students wishing to graduate with Honors Program Distinction must submit an application to the Honors Program committee. This should be done during the junior year. The application must outline the student's proposed Honors independent study project. The application should be approved by the Honors Program Committee before the student registers for the independent study.

Graduation with Honors Program Distinction

To graduate with Honors Program Distinction, a student must have a cumulative GPA of 3.25 or higher as of the beginning of the semester of graduation. A minimum of 25 credits of honors coursework is required including Hist 121 and 122, Phil 100, at least one Honors Colloquium, and at least 3 credits of Honors Independent Study.

Honors Courses

Courses in the Honors Program are divided into three categories as follows:

1. **Departmental Honors Courses.** Departmental Honors Courses are departmental courses or special sections of departmental courses that have received approval for the Honors course designation. Many will fulfill general education core requirements.
2. **Honors Colloquia.** The Honors Colloquia are semester-long interdisciplinary seminars with reading lists, lectures, discussions, examinations, and/or papers. The colloquia may be used to satisfy core requirement electives for the bachelor's degree and may be taken in any sequence. Each colloquium may be repeated once as the topic and reading lists change. Honors Program students are encouraged to take more than the one colloquium required.
3. **Honors Independent Study.** In the junior year, Honors Program students should propose their independent study projects. This proposal is submitted as part of the application to graduate with Honors Program Distinction. The project shall be evaluated by a three-member committee consisting of one member from the Honors Program Committee and at least one of the remaining members from the area of study. The student will work out in conference with the evaluation committee a program related to his or her particular intellectual interests and professional goals. An undergraduate thesis, oral or written examinations, demonstrations, performances, publications, etc., may provide the basis for evaluation.

Horticulture, Forestry, Landscape and Parks (Ho, La, PR)

Peter Schaefer
Department of Horticulture, Forestry, Landscape, and Parks
Northern Plains Biostress Laboratory 201A
605-688-5136

Faculty

Professor Schaefer, Head; Professor Johnson; Professors Emeriti Collins, Johnson, Martin, Peterson, Prashar; Associate Professors Graper, Stubbles; Assistant Professors Ball, Fennell, Gilbertson, Harbage, Maca; Instructors Evers, Healy.

Programs

The department offers instruction leading to the Bachelor of Science in Agriculture degree with majors in Horticulture, Landscape Design, and Park Management. Courses are offered in Horticulture (Ho), Landscape Design (La), and Park Management (PR). See the Course Descriptions section of this bulletin.

Horticulture (Ho)

The Horticulture major is designed to prepare students for careers in nursery production, landscape and turf maintenance, garden center operation or greenhouse production, or for entry into research and graduate study in horticulture. Greenhouse facilities and extensive field plots in woody and herbaceous ornamentals, fruit and vegetables provide students with the opportunity to experience all aspects of plant production and management.

Students interested in crop management and production technologies of greenhouse, nursery, turf, fruit or vegetable crops can tailor their program of studies using the Production Emphasis curriculum. Students interested in pursuing careers in managing nurseries, landscape maintenance, garden center or greenhouse businesses should follow the Business Option curriculum. Students interested in graduate study should follow the Science Option curriculum.

Landscape Design (La)

Landscape design is the art of design, planning, and management of outdoor spaces for human use and habitation. Cultural and scientific knowledge are applied to the use and arrangement of natural and manmade elements with concern for resource conservation, stewardship and the environment. Graduates work in a wide variety of areas in the landscape industry, as designers and planners in public and private practice, and as environmental designers and managers.

Park Management (PR)

The curriculum in Park Management is designed to prepare students for professional positions in parks and outdoor recreation. Employment opportunities exist with federal, state, county, and municipal parks and recreation agencies and with private recreation and tourism enterprises. A 2.0 GPA or better is required to transfer into the curriculum and to graduate in park management.

Hotel, Restaurant, and Institution Management

(See Nutrition and Food Science)

Human Development and Family Studies (HDFS)

(See Human Development, Consumer and Family Sciences)

Human Development, Consumer and Family Sciences (CA, HDCF, FCS, FCSE)

Mary Kay Helling
Department of Human Development, Consumer and Family Sciences
Nursing-Home Economics 369
605-688-6418

Faculty

Assistant Professor Helling, Head; Professors Aamot, Stenberg Nichols; Professors Emeriti Gilbert, Kranzler, Richardson; Associate Professors Enevoldson, Gilkerson, Good, Kluckman, Olson, Tidemann; Assistant Professors Bell, Branum, Farris, Godfrey, Kurtz, Oscarson, Russell, Schmiege; Instructor Penor Ceglian.

Programs

The Department offers majors in Consumer Affairs, Early Childhood Education, Family and Consumer Sciences Education, and Human Development and Family Studies. Early Childhood Education students may also enroll in the Cooperative Program in Elementary Education with Black Hills State University or Dakota State University. Minimum college and university requirements are given in the appropriate sections of this bulletin and are incorporated into curriculum plans for each major. Advisors assist students in personalizing their curriculum plans and ensuring all requirements are met.

Consumer Affairs Major

Students develop abilities in management, planning, organizing, problem solving, and communication. Graduates work for business, government, and nonprofit organizations. Students develop a program focus in both Family and Consumer Sciences and business and/or media. Students participate in a practicum experience in a business or organization compatible with their career goals.

Early Childhood Education Major

The ECE major is designed for students interested in working with young children and their families in early childhood education settings such as day care, preschool, public schools, Head Start and related programs. Students may also elect to participate in the Cooperative Elementary Program. This area of study requires a major in Early Childhood Education at SDSU and an additional 2-3 semesters of Elementary Education certification course work at BHSU or DSU.

Family and Consumer Sciences Education Major

Graduates meet certification requirements to teach Vocational Family and Consumer Sciences. They develop abilities in management, planning, communication and organization, leading to careers in education, teaching, Cooperative Extension, business, government and community services.

Human Development and Family Studies Major

The major focuses on human development, behavior, and relationships throughout the lifespan. Course work, observation, and practical experience offer students the knowledge, skills, and experiences necessary for careers in individual and family service settings, child focused human services, and/or continued course work in graduate school.

Minors

Minors are available in Gerontology, Consumer Affairs, and Human Development, Child and Family Studies.

Interior Design (ID)

(See Apparel Merchandising and Interior Design)

Journalism and Mass Communication (MCom, Prtg)

Richard Lee
Department of Journalism and Mass Communication
Printing and Journalism 209
605-688-4171

Faculty

Professor Lee, Head; Professor Olson; Professor Emeritus Markland; Associate Professors Lucchesi, Perpich; Associate Professors Emeriti Cline, Laird, Wentzy; Assistant Professors Getz, Giago, Lundgren, Paulson; Instructor Klock.

Programs

The four-year journalism program awards either a bachelor of arts or bachelor of science degree. Students select one of the following sequences within journalism – advertising, broadcast journalism, or news-editorial.

The department cooperates with the College of Agriculture and Biological Sciences to offer a four-year bachelor of science degree in agricultural journalism.

The department offers a four-year bachelor of science degree in printing management.

Journalism (MCom)

The department is accredited by the national accrediting body of journalism and mass communication, the Accrediting Council on Education in Journalism and Mass Communications. It is one of 103 schools of journalism so accredited. The department has been accredited continuously since accrediting began in 1948. The department subscribes to the accrediting body's philosophy of one-quarter of the student's work in journalism and three-quarters of the student's work in liberal arts courses. Journalism students take a minimum of 30 credit hours in journalism, but may take no more than 36 credit hours without extending the 128-hour requirement for graduation. Journalism students must have a "C" or better in Freshman Composition; must have a graduation average of 2.5 in journalism courses; and must have grades of "C" or better in all major courses.

News-Editorial Sequence. Students who want to be reporters or editors for newspapers, magazines, wire services or who want to work in public relations or government information agencies usually take this sequence.

Broadcast Journalism Sequence. Students who want to work in news in radio and television take this sequence.

Advertising Sequence. Students who want to work in newspaper, broadcast, or magazine advertising sales or production or who want to work in advertising agencies or with advertising departments take this sequence.

Agricultural Journalism. Students may major in both agriculture and journalism thus preparing themselves for careers in many areas that draw upon mass communication skills and a knowledge of agriculture. Those careers include reporting and editing for agriculture magazines and newspapers, for agriculture sections of general newspapers, for public relations or advertising in agribusiness, and for farm broadcast.

Minor in Journalism. Available for students majoring in other fields. Courses required are newswriting and reporting, and other journalism courses to total 16 credits.

Graduate Work in Journalism. An M.S. degree is offered. (See the Graduate School Bulletin for details.)

Facilities. The Newswriting Lab has 15 Macintosh work-stations for reporting classes. The editing and advertising lab has ten Macintosh LCIII terminals in a network that receives the Associated Press wire news and has a photo scanner and supporting software. The photographic darkroom has ten individual darkrooms for film, a central printing room with new Besler enlargers, and digital photo capabilities. Broadcast facilities include an off-air studio, portable video cameras and recorders, an SVHS video editing system.

Printing Management (Prtg)

The major in printing management is currently inactive, and no new students may begin this program. Whether the major will be available in the future is under review.

Lakota (Lak)

(See Foreign Languages)

Landscape Design

(See Horticulture, Forestry, Landscape, and Parks)

Latin American Area Studies Program (LAAS)

Allen Branum
College of Arts and Science
Nursing-Home Economics 251
605-688-6619

Program

The student may cross college and department lines to pursue, with the study of Spanish, a coordinated study of the geographical, cultural, socio-economic and political life of Latin American countries. The program is primarily vocational. The curriculum is tailored for those desiring a Latin American background in conjunction with a disciplinary specialization in fields such as history, economics, political science, geography, anthropology, Spanish American literature and sociology, or in one of the professional colleges. As a result the student will normally carry a major in a particular discipline such as Food and Nutrition or Agronomy together with the LAAS program. This program provides preparation for additional vocational opportunities in Agriculture, Home Economics, Nursing, Foreign Service, Peace Corps, international business and numerous positions with government, the United Nations and private corporations involved with or in Latin America. It should also facilitate improved communication and understanding between the peoples of these countries and the U.S. Courses should be integrated with the student's vocational major. The student should see a faculty adviser and the coordinator of the program.

Mathematics and Statistics (Math, Stat)

Kenneth Yocom
Department of Mathematics and Statistics
Harding Hall 101
605-688-6196

Faculty

Mathematics: Professor Yocom, Head; Professors Bennett, Bryn, Kemp, Lacher, Monahan, Nielsen, Vandever; Professors Emeriti Kranzler, Nelson, Trapp; Associate Professors Anderson, Ayers, Broschat, Clever, Kindermann, Schmidt; Assistant Professors Roe, Struck; Instructor C. Larson; Lecturers Gnirk, B. Larson.

Statistics: Professors Bryn, Evenson, Gilbert, Kim, Lacher, Monahan, Nielsen, Vandever, Wicks; Associate Professors Adamson, Kindermann; Assistant Professors Fausti, Roe, Struck; Instructor Ellingson.

Programs

Mathematics Major (B.S.)

The department offers the Bachelor of Science in Mathematics through the College of Arts and Science. These major programs provide rigorous preparation for the technically oriented student, the prospective mathematics teacher, or the student preparing for graduate school.

Beginning with Math 123, the B.S. program requires 39 of the 128 total credits required for graduation. Mathematics majors must earn at least a "C" in Math 123 and all succeeding mathematics courses.

To complete a degree in mathematics, the student must complete the requirements of the Department, the College, and the University. Most of these requirements are incorporated into the curriculum plans found in the section on Major and Minor Requirements, but students should read the Arts and Science requirements for the B.S. degree and consult with their advisor who will assist in planning a curriculum and help ensure that all graduation requirements are met.

Teacher Education in Mathematics

Students interested in teaching mathematics at the secondary/middle school level should contact the College of Education and Counseling prior to their junior year to obtain the teacher education requirements. The mathematics requirements for teacher certification are given in the section on Major and Minor Requirements.

Minor

The minor in mathematics consists of 23 credits as outlined in the section on Major and Minor Requirements.

Statistics

Statistics courses are offered at the undergraduate and graduate levels to provide SDSU students with the knowledge of statistics necessary in their various fields of study.

Math Placement

All entering students, except for those with transfer credit in a college mathematics course, must take the mathematics placement test. Credit may be earned in Math 102 or 113 through sufficiently high scores on the placement tests.

Mechanical Engineering (ME)

Don Froehlich
Department of Mechanical Engineering
Crothers Engineering Hall 210
605-688-5426

Faculty

Professor Froehlich, Head; Professors Ghazi, Hamidzadeh, Moutsoglou; Professors Emeriti Christianson, Knofczynski, Paradise, Sandfort; Associate Professor Remund; Assistant Professors Bassett, Delfanian; Instructors Nielsen, Twedt, Wilcoxon

Programs

Mechanical Engineers have a remarkable range of career directions from which they can choose. They can work in research, development, design, testing, manufacturing, operations and maintenance, marketing and sales, or in management and administration. They can work in industry, business, government or in educational institutions. They can also work with other professions such as law and medicine. Mechanical Engineers are employed in almost all industries including automotive, chemical, aircraft/aerospace, power, petroleum, computer, machinery (industrial, farm, office), plastics, electronic, textile, pharmaceutical, paper products, utilities, and many others. Their work takes them to many parts of the world; they can probe the depths of the oceans or explore outer space as astronauts.

Mechanical Engineering is an exciting profession which offers breadth, flexibility and individuality to those who want challenge and satisfaction rather than just a job. Mechanical Engineers are also concerned with the needs of people and society. They deal with the physical aspects of human life applying their knowledge toward making life better and toward the solution of socio-humanistic problems. Mechanical Engineers are concerned, involved, and want to accomplish a better world.

The curriculum is made up of five categories or kinds of courses. These are: Basic Sciences, Engineering Sciences, Design, Communications, and Socio-Humanistic. The Basic Sciences of mathematics, physics and chemistry provide the foundation for all engineering and technical courses. The Engineering Sciences are: solid mechanics, fluid mechanics, thermodynamics, heat transfer, systems and controls, materials, electrical fields and others. These courses are analytical in nature and use mathematical modeling to represent engineering problems. In the Design category, the student is introduced to the systems approach of solving problems where ideas, imagination, modeling and analysis are joined together to create a new component or a new product. Communications courses include English, graphics and computer languages. Courses from the Socio-Humanistic areas are also required in our curriculum. Some of these are: sociology, history, psychology, economics, religion and others. These courses provide a rounded education which will enable Mechanical Engineers to understand their culture and society.

In the senior year, opportunity is given for specialization in various technical-option areas according to the student's interest and abilities. These include aerospace engineering, thermal engineering, industrial engineering, machine design, nuclear engineering, and environmental engineering. Elective courses are provided to allow this flexibility in the curriculum. Technical electives must be approved by the department head, and must total at least 11 credits, including one elective design course.

A minimum 16 credits of Humanities and Social Sciences are required. Of the 16, a minimum of 6 credits have to be Humanities where credits are from at least two different disciplines or departments. Of the 16, a minimum of 9 credits have to be Social Sciences. Within the group of courses taken toward the Humanities and Social Sciences requirement, at least 2 courses, where one is an advanced course, need to be from the same discipline to insure in-depth study. The approved courses and restrictions are listed in the Humanities and Social Sciences sections under the Graduation Requirements in this catalog. The laboratory program supports and supplements the classroom lectures with experimental work. Here, students learn to perform tests, collect and analyze data, compare with theory and arrive at conclusions. Also students develop a report writing capability which will be very valuable to them in their future careers.

The department will help interested students arrange cooperative work/study programs with industry. Credit may be obtained for these work experiences, by prior arrangement with the appropriate faculty member and department head, and by registering for ME 494, 495, or 496. These credits, upon approval, may fulfill part of the technical-elective requirements.

In addition to the Graduation Requirements and Academic Performance Requirements specified in this catalog, the following grade requirements must be met to earn a Bachelor of Science Degree in Mechanical Engineering: a combined average of "C" or better in the Mechanical Engineering courses; a combined average of "C" or better in the Mathematics courses; a minimum grade of "C" in each of the following courses: Math 123, Math 224, Phys 211, ME 311, ME 312 and all EM designated courses. Students will not be permitted to enroll in ME 312 or EM 331 unless they have earned a minimum grade of "C" in ME 311. Students must follow course prerequisite requirements.

To make the transition easier for high school students interested in a career in Mechanical Engineering, the following guidelines are suggested: study as much mathematics as available, including calculus (if possible), one year of physics, one year of chemistry and four years of English.

Medical Technology

(See Chemistry)

Microbiology (Micr)

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 306
605-688-6141

Faculty

Professor McMullen, Head; Professors Granholm, J. Haertel, L. Haertel, Hutcheson, Kayongo-Male, Larson, Peterson, Sword, Westby, Whalen; Professors Emeriti Baker, Chen, Hartwig, Hugghins, Morgan, Myers, Pengra, Semeniuk, Taylor; Associate Professors Bleakley, Cheesbrough, Gibbons, Hildreth, Hurley, Reese, Sutton; Associate Professor Emeritus Morrill; Assistant Professors Duvall, Erickson, Gibson, Troelstrup; Adjunct/Joint faculty Benfield (Vet.Sci.), Chase (Vet.Sci.), Collins (PS), Diggins (Augustana), Evenson (Chem.), Fennell (HFLP), Francis (Vet.Sci.), Franklin (DS), German (WRI), Henning (DS), Jackson (NGIRL-USDA), Johnson (PS), McFarland (ARS), Myers (Flandreau), Reidel (NGIRL-USDA), Sieg (USFS), Tieszen (Augustana), West (Chem.), Woodson (NGIRL-USDA).

Program

The curriculum is designed to provide basic knowledge in the sciences as well as a liberal arts education. The faculty will acquaint you with specialties such as environmental, food, soil, and medical microbiology as well as immunology. Two curricula in Microbiology are available through the Department. A Bachelor of Science in Biological Science, major in Microbiology is offered in the College of Agriculture and Biological Sciences. A Bachelor of Science with a major in Microbiology is also available in the College of Arts and Science.

Graduates are equipped for technical work in a variety of jobs such as in diagnostic and research laboratories, public health, food industry, pharmaceutical companies, etc. With the recommended electives the graduate is prepared to enter graduate school to pursue a Master's or Doctor's degree.

Many students select a second major in either Clinical Laboratory Technology, Chemistry, or Biology. A microbiology major is often taken along with the pre-professional programs of Medicine, Dentistry, and Veterinary Science. The goal is to provide a sound but varied educational experience with a specialty in Microbiology.

A minimum GPA of 2.0 must be maintained for the required credits in microbiology and the required credits in chemistry.

Military Science (Mil) (Army ROTC)

Jan Griesenbrock
Department of Military Science
DePuy Military Hall 200
605-688-6151

Faculty

Lieutenant Colonel Griesenbrock, Professor of Military Science, Head; Professor Emeritus Adams; Assistant Professors of Military Science Major Garza, Captain Carlson, Captain Crews; Master Sergeant Vanzandt; Sergeant First Class Prouty.

Programs

The Department of Military Science offers instruction and practical experience in leadership and management, the development of selected military skills and problem solving techniques, the role of the Army in modern society, the customs and traditions of the Army, marksmanship, military law, administration and professional ethics. Military Science training prepares qualified students seeking a baccalaureate degree to serve as commissioned officers in the active Army, the Army National Guard or the Army Reserve.

The department has three on-campus officer training programs: 1) the four-year program consisting of the basic course for freshmen and sophomores followed by the advanced course for juniors and seniors; 2) a three-year program where the basic course is compressed into the sophomore year followed by the advanced course; and 3) a two-year program. The first entry point is where placement credit is allowed for the basic course to qualified veterans and members of the Army National Guard and the Army Reserve. A second entry point is available to students who desire to be paid for the equivalent of the basic course by attending the ROTC Basic Camp in the summer prior to their junior year. By enrolling in the basic course or its equivalent substitute, students **do not make any commitment to the U.S. Army unless they are scholarship recipients.** Tuition is not charged for ROTC courses. All necessary ROTC textbooks, uniforms and other essential materials are furnished to the student at no cost. Fifty percent tuition credit for Advanced Course non-scholarship cadets is available.

To be eligible for commissioning, all cadets must have completed courses in the following areas: English, Human Behavior, Computer Literacy, Math Logic, and Hist 365. Contact the department for a list of approved courses.

Requirements for Advanced Course

All those enrolling in the Advanced Course must:

1. Have completed the Basic Course or its equivalent.
2. Be a U.S. citizen.
3. Be physically qualified under standards prescribed by the Department of the Army.
4. Have an academic cumulative grade point average of 2.0 or higher.
5. Complete a University offered Military History course prior to graduation.
6. Have two years of academic work remaining for a degree.
7. Sign a written agreement.

Army ROTC Scholarships

Qualified students can compete for 4-year and 3-year scholarships which cover full tuition, laboratory and instructional fees, University student fees (less tickets for athletic events), transcript, cap and gown, diploma, and selected graduation fees. 3-year and 2-year scholarship interviews are conducted during the spring semester in the Military Science Department on campus. A flat rate book and supplies payment and $150 a month subsistence allowance are provided each semester. Scholarship competition (4-year scholarship) is conducted by the Department of the Army in the fall for University bound high school students. Applications are available in Room 200, DePuy Military Hall. NOTE: High school students should contact their high school counselor for 4-year scholarship application forms, to be completed following the junior year or early in the fall of the senior year. If your counselor does not have the forms, contact the Department of Military Science, SDSU, Brookings, SD 57007 or call (605) 605-688-6151.

Optional Army Schooling Available to Qualified Cadets

1. Airborne training at Fort Benning, Georgia for 3 weeks
2. Air Assault training for 10 days
3. Cadet Troop Leader Training at selected Army posts with an active Army or Reserve component unit for 2 to 3 weeks
4. Northern Warfare training at Fort Greely, Alaska for 3 weeks
5. Nursing Advanced Camp at selected Army hospitals for 4 weeks

Minor in Military Science

A minor in Military Science is available for those who complete 12 credits offered and who enroll and complete Mil 494 Internship. This minor is compatible to fields of major studies.

Music Education

(See Music)

Music Merchandising

(See Music)

Music (Mus)

Corliss Johnson
Department of Music
Lincoln Music Hall 204
605-688-5187

Faculty

Professor Johnson, Head; Professors Emeriti Hatfield, Royer, Walker; Professors Canaan, Colson, McKinney, Piersel; Associate Professors H. Berberian, Lis, Spencer, Vensand; Assistant Professors A. Berberian, Crowe, Kravchak; Instructors Coull, Jamsa.

Programs

The Music Department offers three degree options: Bachelor of Arts, Music Major; Bachelor of Science, Music Merchandising Major; and Bachelor of Music Education.

Bachelor of Arts - Music Major (B.A.)

This program is recommended for those whose intellectual temperament is more suited to a liberal arts program rather than the professional degrees of Bachelor of Music Education or Bachelor of Science-Music Merchandising. It provides a background for those wishing to prepare for degrees that require extended work in graduate school.

Bachelor of Science - Music Merchandising (B.S.)

This program is recommended for those with a strong background in music who wish to pursue careers in one or more of the many aspects of the music industry. The B.S.-M.M. degree enables students to continue developing their musical skills along with in-depth study in Economics, Communications, Advertising, and Computer Science. The course work for this degree culminates in an on-site internship in a music business setting.

Bachelor of Music Education (B.M.E.)

This program is recommended for students wishing to become certified to teach elementary and secondary school music. An emphasis in choral or instrumental teaching may be elected, or, by adding appropriate hours, students may prepare in both areas. Those preparing in both areas must complete both choral and instrumental music education sequences, including both sets of pedagogies.

Music Minor

The Music Minor is for students wishing to undertake an in-depth study of music without majoring in it. The program requires twenty-two hours of specialized course work plus major ensemble participation.

General Student Information

Students not wishing to major or minor in music are welcome to participate in music ensembles, applied lessons, music appreciation classes, and in some music literature and history offerings. See course listings for details, requirements, and prerequisites.

Music Requirements: (All music majors)

1. Admission as a music major in any of the music degree programs requires the successful completion of an audition in the student's major area of applied instruction.
2. Music majors in all degree programs must choose one area of applied instruction in which to specialize. Further, students must meet the applied proficiency standards of the department in that area. To that end, students must:
   a. successfully complete a jury examination each semester.
   b. apply for and be granted approval to advance to upper level applied study (300-400 levels).
   c. complete a minimum of 6 hours of upper level (300-400) applied study.
3. Piano proficiency is required of all majors. B.A. and B.M.E. students must meet the requirement by successfully completing a piano proficiency examination. Music Merchandising majors must successfully pass two semesters of class or private piano instruction. See the Student Handbook for more specifics.
4. Fretted instrument proficiency is required of Music Education students. Proficiency may be met by successfully passing the guitar proficiency examination or by completing all requirements of the guitar class. **Note: Piano and fretted instrument proficiencies must be passed before the senior recital may be scheduled.**
5. Voice or instrumental proficiency is required of all keyboard majors.
6. Ensemble Requirements:
   a. All music majors must participate in at least one major ensemble each semester they are enrolled as a regular university student (Internship and Student Teaching semesters excepted). See the Student Handbook for more details.
   b. Participation in small ensembles is strongly encouraged for all majors and minors.
7. A minimum of four pedagogy courses is required for students in the B.M.E. program. Students may wish to take six pedagogy courses to achieve a stronger preparation for teaching. See the Student Handbook for options.
8. Recommendations for enrolling in student teaching will be issued by the Music Education Coordinator following an interview with the student and his or her adviser.
9. Recommendations for music merchandising students wishing to enroll for the Internship experience must be issued by the Music Merchandising Coordinator.
10. A senior recital is required of all music majors.
11. Majors and minors must enroll for Recital Attendance (Mus 195) each semester they are enrolled for applied music lessons. Specifics for this and all other music requirements are delineated in the Student Handbook. Music majors should refer to it regularly.

Natural Resource Studies

Eugene Arnold
College of Agriculture and Biological Sciences
Agricultural Hall 156
605-688-5133

The earth's ability to support life is possible through efficient utilization of natural resources such as soil, water and air. Likewise, the earth's ability to sustain these resources will depend on specialists who protect and conserve these resources. If you have an interest in natural resource management, the outdoors, and the environment, you may want to consider a career in the natural resources.

South Dakota State University offers eight majors related to the broad area of natural resources. A major in any one of these areas provides the science background needed to plan and implement natural resource management practices essential to maintain and enhance South Dakota's, the nation's, and the world's natural resources.

The programs in the natural resources area include: Agricultural Engineering, Agricultural Systems Technology, Agronomy, Environmental Management, Landscape Design, Park Management, Range Science, and Wildlife and Fisheries Sciences. These programs are based on a combination of sciences, so that students have a broad perspective of natural resource management in addition to other specializations employers require. SDSU also offers courses in other areas that support the natural resource programs. The Economics Department, for example, offers courses in resource economics.

Nursing (Nurs)

Roberta Olson
College of Nursing
Nursing-Home Economics 255
605-688-5178

Faculty

Distinguished Professor Hegge; Professors Heater, Hofland, Olson, C. Peterson; Professors Emeriti Blazey, Hanson, Holter, G. Johnson, J. Nelson, E. Peterson; Associate Professors Carson, Goddard, McBreen, Moriarty, Mylant, Sorenson; Assistant Professors Brady, Brooks, Chappell, Foland, Gehrke, Iken, Jensen, Joffer, Powers, Scott; Instructors Becker, Benedict, Birch, Boysen, Burggraff, Buus-Frank, Calhoon, Carlson, Chell, Dieter, Fahrenwald, Greear, C. Hanson, Harris, Hennes, Hesson, Hobbs, Kellar, Kirby, Laird, Leary, Lefferts, Maassen, Mammenga, Manson, Matt, Maurer, Melcher, Peterson-Lund, Reeve, Schardin, Sharp, Talley, Tschetter, Voss, C. Williams, S. Williams, Winterboer.

Pre-Nursing and Nursing Major

Any student eligible for regular admission to SDSU and who desires to enroll in the College of Nursing and Department of Undergraduate Nursing is accepted into pre-nursing and has an advisor from the College of Nursing. During the semester in which students are completing their final pre-nursing required courses, they apply for admission to the nursing major.

The College of Nursing offers two types of programs for students wishing to complete a nursing major. The basic program is designed to meet the educational needs of persons who are not registered nurses, and the RN Upward Mobility program is designed as a degree completion program for registered nurses who have completed academic diploma or associate degree nursing programs.

Admission to the Nursing Major

Basic students are admitted to the nursing major both fall and spring semesters on the Brookings campus, and the spring semester only at Rapid City. Students wishing to enter the nursing major are required to submit an application for admission to the major.

Students may apply to only one program site at a time. Total enrollment in the major may vary, depending upon available clinical facilities, qualified faculty and funds, with the selection made from among those best qualified for the study and practice of nursing.

Applications to the major are available through Nursing Student Services at the site for which the student is applying. Deadline for applications for the basic program for spring is the third Friday of October, or the third Friday of February to enter fall semester. The deadlines for applications for the RN Upward Mobility program may vary. Students should contact the site coordinator at the site in which they want to begin classes, by April 1 for students wishing to begin the major in summer/fall and by October 1 for students wishing to begin the major in spring. Failure to submit a completed application by the deadline may automatically disqualify the applicant from being considered for enrollment in the nursing major courses for the coming semester.

To be considered for admission, students must have a "C" grade or above in all completed required nursing major support courses. Fulfillment of course requirements does not ensure admission. Students are selected competitively based on the total applicant pool. Specific information on criteria for selection may be obtained from the Student Services Coordinator at the student's program site.

Students preparing for or seeking additional education in the field of professional nursing must demonstrate a stable personality and the ability to meet the demands of the professional nurse role. For admission to and progression in the nursing major courses, the student must meet Technical Standards for the nursing major. These standards are in the areas of general abilities, observational ability, communication, motor ability, intellectual-conceptual ability, and behavioral/social attributes. The Technical Standards document is available through the Student Services Coordinators.

Transfer students who have begun and not completed a nursing program in another college or university must submit a letter indicating the reason for transfer. Three letters of recommendation must also be submitted; one from the dean/ director and two from faculty members.

Requirements for Continuation in the Nursing Major

Satisfactory completion of all nursing major and required support courses must be accomplished for entrance into the second and subsequent semesters of the major courses. If students drop out of a course or fail to progress as planned in the major for any reason, there is no guarantee that there will be a place for them in another semester due to the necessity to limit size of clinical classes.

After acceptance into the major, students failing to obtain a grade of "C" or above in each required course will need the recommendation of the undergraduate Admissions and Scholastic Standards sub-committee before being allowed to continue. Required nursing support courses and nursing major courses may be repeated only once to raise an unsatisfactory grade. If a student does not satisfactorily complete the course the second time, he or she will not be allowed to continue in the College.

All undergraduate and graduate nursing students are expected to adhere to the principles of the *American Nurses Association Code with Interpretive Statements (1985)*. The *Code for Nurses* communicates a standard of professional behavior expected throughout the total program and in each individual nursing course. Therefore, in addition to dismissal for academic failure, the faculty and administration of the Departments of Undergraduate Nursing and of Advanced Studies reserve the right to dismiss any student enrolled in either the undergraduate or graduate program for unethical, dishonest, illegal, or other conduct that is inconsistent with the Code for Professional Nurses.

Nutrition and Food Science (NFS)

Marilyn Swanson
Department of Nutrition and Food Science
Nursing-Home Economics 443
605-688-5161

Faculty

Professor Swanson, Head; Professor M. Crews; Professors Emeriti Colburn, Deethardt, Guild, Shank, Wills; Associate Professors Krishnan, Rose; Assistant Professors Chipman, G. Crews, Fields, Wang; Instructors Henzlik, Howard, Pitts; Lecturer Richardson.

Programs

The Department offers the Bachelor of Science degree with majors in Hotel, Restaurant and Institution Management and Nutrition and Food Science (Dietetics and Food Science Options); and a minor in Nutrition.

Hotel, Restaurant and Institution Management

The Hotel, Restaurant and Institution Management program provides a firm foundation in both lodging and food service operational management supported by a strong background in business and economics. On-the-job work experience for practicum credit strengthens the academic program.

Students will be prepared for management careers in hotels, motels, restaurants, private clubs, airlines, and food services in various industrial, health care and school facilities. Students with up to two years general education credits will usually find that most of their credits will transfer into this program.

Nutrition and Food Science – Dietetics Option

Dietetics offers a wide variety of jobs in hospitals, nursing homes, public health agencies, industries, schools, universities, the armed services, and state, national and international organizations. Governmental regulations require the services of dietitians in federally supported programs. The consulting services of a dietitian are often sought by architects and hospital administrators in planning and equipping food preparation and services facilities.

A dietitian must have a good background in the basic and behavioral sciences to apply the science of nutrition to the care of people, sick or well.

The dietitian is essential to the total care of the patient in a healthcare facility, giving nutritional guidance and instruction that will continue on an outpatient basis. Dietitians also work in clinical research units. The role of the dietitian is changing with changes in health care and has become more involved in preventive health care and in community nutrition programs as an integral part of total health care.

Through the program in dietetics, students develop understanding and competency in food, nutrition, and management of a dietary department. The curriculum is approved by the American Dietetic Association (ADA). Completion of an internship at one of approximately 155 sites in the U.S. or other ADA approved experience qualifies the student to take the registration exam.

Students interested in earning a degree in the Nutrition and Food Science major (Dietetics Option) will be accepted into the Nutrition and Food Science Department as pre-majors and assigned a departmental advisor. Formal application is required for admission into the dietetic program. Application forms are available from the Nutrition and Food Science Department. To be admitted into the dietetic program, the student must have completed and received grades for at least 45 semester credits toward graduation, have a cumulative grade point average of at least 2.5 for all courses taken, and have earned at least a 2.0 grade point average in two required chemistry courses.

Nutrition and Food Science – Food Science Option

The option in Food Science prepares students for professional positions in the food processing industry or for graduate study in food science. The program of study is firmly based upon chemistry and the biological sciences.

Students find employment as entry level professionals in the food industry and various federal and state regulatory agencies. Industrial positions may involve quality assurance and new product development.

Students with a strong background in the basic sciences during the first two years in college may transfer into the program with minimal credit loss.

What is Food Science/Food Technology? Food Science is the discipline in which the biological and physical sciences and engineering are used to study the nature of foods, the causes of their deterioration, and the principles underlying food preservation. Food Technology is the application of science to the selection, preservation, processing, packaging, distribution and use of safe, nutritious and wholesome food.

(Pre-) Occupational Therapy

Jim Booher
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-5824

The occupational therapy program is a pre-professional curriculum whereby all the necessary prerequisites can be completed in preparation for applying to a school of occupational therapy. The department provides counseling service to assist each student. A strong undergraduate academic record is important.

Most schools of occupational therapy offer a bachelor's degree while some offer a master's degree. Students must complete a certain number of required courses before applying to a professional occupational therapy program.

Park Management

(See Horticulture, Forestry, Landscape, and Parks)

Pest Management

(See Plant Science)

Pharmacy (Pha)

(See College of Pharmacy)

Pharmaceutical Sciences

Gary Chappell
Department of Pharmaceutical Sciences
Shepard Hall 309
605-688-6198

Faculty

Professor Chappell, Head; Professors Billow, Dwivedi, Houglum, Lattin; Associate Professors Singh, Smar; Assistant Professors Aparasu, Guan, Helgeland, Kamath, Sathe, VanRiper.

Programs

The Department provides a firm foundation in the pharmaceutical sciences leading to the Doctor of Pharmacy (Pharm.D.) degree. Satisfactory completion of the pharmaceutical sciences portion of the Pharm.D. curriculum is confirmed through the awarding of a B.S. in Pharmaceutical Sciences degree. See the College of Pharmacy section of this catalog for admission requirements for the Pharm.D. Professional Program.

Philosophy and Religion (Phil, Rel)

Robert Burns
Department of Philosophy and Religion
Scobey Hall 308
605-688-4909

Faculty

Distinguished Professor Burns, Head; Professor Nelson; Associate Professors Bahr, Glass; Assistant Professor Bielfeldt.

Programs

Philosophy may be characterized as one's attempt to find a meaningful perspective from which to view oneself, one's world and one's place in that world. Students from any major may profit from philosophy.

The academic study of religion involves the use of critical and interpretative skills in examining the vast range of ideas, practices, and writings that are reflected in religion. Present course work is designed to enrich the student's perspectives and introduce some of the important features of philosophy and religion.

A minor in Philosophy is available in either the B.A. or B.S. program. The minor requires 16 credit hours of philosophy, including Phil 100. Of these 16 hours, 6 must be in upper division courses.

A minor in Religion may be pursued in either the B.A. or the B.S. program. Completion of the minor requires 15 credit hours of religion.

Pre-ministerial students are advised to explore the pre-professional offerings. Contact the department. Students enrolled in the professional colleges may benefit from the Department's professional ethics course offering.

(Pre-) Physical Therapy

Jim Booher
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-5824

The physical therapy program is a pre-professional curriculum whereby all the necessary prerequisites can be completed in preparation for applying to a school of physical therapy. The department provides counseling service to assist each student in developing a plan best suited to his or her needs. Acceptance by physical therapy schools is on a competitive basis, therefore, a strong undergraduate academic record is essential.

Most schools of physical therapy now offer a master's degree program. The remaining schools continue to offer a bachelor' degree while in the process of changing to a master's degree. Students must have a basic science background and complete a certain number of required courses before applying to either type of professional physical therapy program.

Physics (Phys)

Warren Hein
Department of Physics
Crothers Engineering Hall 310A
605-688-5428

Faculty

Professor W. Hein, Head; Professors Leisure, Quist, Rauber; Professors Emeriti Duffey, Graetzer, Miller, Parker, Williams; Associate Professors Browning, Kitterman, Schiller; Assistant Professors Aaron, T. Hein

Programs

Two main objectives are considered in the organization of course work in the department: 1) that the basic courses meet the needs of students in the various colleges of the university who need basic physics; and 2) that the selection of advanced courses makes it possible to follow one of the curricula which specialize in engineering and the science of physics. The department is well-supplied with laboratory and lecture-demonstration equipment and other facilities in support of these objectives.

The curriculum in Engineering/Professional Physics, administered in the College of Engineering, is built around a strong core of physics courses complemented by courses from engineering departments and consists of three tracks. Two Engineering Physics tracks are designed to give students the ability to apply new research developments to pressing problems of society. Students interested in industrial employment should consider one of these tracks. Students can choose either the mechanical engineering track or the electrical engineering track as their emphasis. The difference between these two tracks is that required and elective courses either emphasize the mechanical aspects or the electrical aspects of the physics-engineering relationship. A graduate with this background may enter employment immediately as an Engineer or continue graduate work in a field such as Nuclear Engineering, Electrical Engineering, Mechanical Engineering, or Aerospace Engineering.

The Professional Physics track is a third track parallel to the two Engineering Physics tracks described above. A student can switch from the Professional Physics track to either of the Engineering Physics tracks at any time prior to his or her fifth semester. Alternatively, a student could switch from one of the Engineering Physics tracks to the Professional Physics curriculum as late as his or her sixth semester with minimum inconvenience. The required and elective courses in this curriculum lead to a strong physics major suitable for preparation for graduate school and eventually a position in professional physics.

A second curriculum leads to a B.S. degree with a physics major in the College of Arts and Science. This program is arranged so that, with the proper choice of electives, a student may emphasize training for one of several careers. One option leaves 33 hours of electives, giving maximum flexibility. For instance, a student pursuing meteorology as a career should choose elective courses in climatology, geography, and computer science. A student pursuing a career in medical physics should choose elective courses in physiology, anatomy, microbiology, and electronics. A complete listing of elective courses for various technical careers is available in the Physics Department office. A second option includes all professional education courses that are required to enter secondary teaching education.

To be eligible for graduation with a major in physics, a student must have a 2.0 average or above for all physics courses. An average of 2.0 or above must also be obtained for the three courses: Phys 211-213 (or Phys 111-113) and Phys 331. Any deviations from departmental requirements must be approved by the Head of the Physics Department.

Planning (Plan)

Roger Sandness
Department of Geography
Scobey Hall 232
605-688-4511

Planning is an essential part of most private and public activities. It is a process that can be learned and applied to increase effectiveness in decision making and operations.

The Minor in Planning (Master's Degree Level) and teaching Planning courses are governed by a Coordinating Committee appointed by and responsible to the Vice President for Academic Affairs.

Plant Pathology

(See Plant Science)

Plant Science (PS)

Dale Gallenberg
Department of Plant Science
Agricultural Hall 219
605-688-5121

Faculty

Associate Professor Gallenberg, Head; Distinguished Professor Wrage; Professors Arnold, Beck, Boe, Carlson, Cholick, P. Evenson, Hall, Kohl, Malo, Reeves, Schumacher, Smolik, Wicks; Professors Emeriti Bonnemann, Brage, Buchenau, Carson, Colburn, Derscheid, Dybing, Fine, Gardner, Horton, Kantack, Kenefick, Kinch, Mankin, McDaniel, Moore, Semeniuk, Shank, Shubeck, Walstrom, Wells, Westin, White, Williamson, Wood; Associate Professors Bleakley, Carter, Chase, S. Clay, Fuller, Gelderman, Gerwing, Kephart, Pollmann, Rickerl, Stymiest,

Sutton, Woodard; Assistant Professors Berg, D. Clay, Collins, Doolittle, Grady, Haley, Jin, Johnson, Langham, McLeod, Rudd, Scott, Turnipseed.

Courtesy Appointments. The following staff members are employed outside the Plant Science Department but work cooperatively with Department staff and carry an adjunct professor appointment in the department: (Biology/Microbiology) Reese; (Chemistry) D. Evenson; (HFLP) Schaefer; (Biogenetics Inc.) Kahler; (GAEA, Inc.) Butler; (North Central Soil and Water Conservation Research Laboratory, Morris, MN-USDA/ARS) Lindstrom, Olness, Westgate; (Northern Grain Insect Research Laboratory-USDA/ARS) Chandler, Ellsbury, Hammack, Jackson, Kieckhefer, Pikul, Riedell, Woodson; (P.P.I.) Fixen; (University of Minnesota-Morris) Lemme; (USDA/ARS, Soil & Water Cons. Soc.) Moldenhauer.

Programs

The primary goal of the department is to prepare people for leadership in business, government, and farming enterprises related to crop production, insect control, plant disease control, pest management, and soil management. In addition, you can prepare for graduate study leading to a career in research, teaching, or extension.

Graduates with training in plant science are sought by agri-business, private foundations, and federal and state agencies for employment in domestic and international agriculture. Plant Science, with its variety of disciplines, provides an excellent background for independent pursuits in farming or ranching.

The Department offers instruction leading to the Bachelor of Science Degree with a major in Agronomy. Three areas of emphasis are offered in the major: 1) Business, 2) Production, and 3) Science.

The choice of an area of emphasis need not be made until the sophomore or junior year. This enables you to become familiar with the broad field of plant science and, through consultation with faculty and advisers, to develop a program that can satisfy your needs.

The Department is equipped with modern classroom, laboratory, greenhouse, and field plot facilities. Numerous opportunities are available for part-time employment, scholarships, and work-study programs. The Agronomy and Conservation Club offers opportunities for fellowship, leadership, and career planning. The Department has three nationally recognized judging teams in crops, soils, and weeds.

Graduate study opportunities may lead to Master of Science or Doctor of Philosophy degrees.

Agronomy Major

Provides broad training in the plant sciences and in crop production technology. The integrated program is designed to provide the students with an understanding and knowledge base in crops, soils, weeds, entomology, plant pathology, and the interaction of production systems. This major is recommended for students interested in either agricultural production or the agribusiness areas of crops and soils. Individuals can prepare for careers in farming or ranching; for work with private industry producing agricultural products, such as pesticides and fertilizers; for processing grain or hybrid seed; and for work with government agencies, such as the Cooperative Extension Service, Farmers Home Administration, and Natural Resources Conservation Service.

Political Science (PolS)

Robert Burns
Department of Political Science
Scobey Hall 308
605-688-4909

Faculty

Distinguished Professor Burns, Head; Professors Cheever, Tolle; Professor Emeritus Hendrickson; Associate Professor Emerita Schwab; Assistant Professor Lonowski.

Programs

Political science courses are designed to achieve the following objectives: convey the values and traditions of our democratic governmental institutions and processes and encourage students to assert their talents in preserving and nurturing those values and traditions through participation in the body politic; promote global awareness and understanding; engender critical thinking and a high proficiency in communication skills; serve the other social sciences as a cognate field; provide the student majoring in political science with foundation and advanced courses in the many sub-disciplines of political science which, in turn, will contribute to the student's intellectual growth and occupational pursuits.

Political Science Major

Political science majors may work toward either a Bachelor of Arts or a Bachelor of Science degree. All are required to take 36 hours in political science including PolS 100 or 101 and at least 21 upper division credits (300 level and above). PolS 210 is required for all majors who take the education block (see below). Finally, 6 hours in Political Science comparative government and/or international courses, either upper division or lower division, are required. Students who complete Math 123 or Math 222 may apply a total of 6 credits from CSc 312, Stat 341, Soc 309, and Soc 310 toward the 36 credit hours required for the political science major. You are encouraged to select at least one upper division course in each of the following fields within the major: American Government and Politics, Public Administration, Public Law, Comparative Government, and International Relations or Political Theory. Students must meet the University and College of Arts and Science requirements.

Teaching Emphasis

If you are preparing to teach secondary school, take education block prerequisite courses in the sophomore and junior years. You must consult with the Dean of the College of Education and Counseling prior to your junior year. Set aside one semester for the education block and off-campus teaching assignment during your senior year.

Pre-law Emphasis

Law schools require a bachelor's degree for entrance. Although a particular major is not specified, Political Science is a common choice because of its flexibility.

Public Administration Emphasis

Students interested in working in government at the local, state, or national level should plan to take several courses related to public administration and American politics. Students are encouraged to take the practicum or an internship with a government agency.

Criminal Justice Emphasis

Consult advisers for minor requirements.

General Political Science Emphasis

You may choose to take a very flexible program in Political Science. Such a program might be designed to lead to graduate work in Political Science, or employment in business, journalism, planning, or the international area.

Research/Graduate School Emphasis

Students wishing to pursue graduate studies in political science or careers in political opinion research should consider the research oriented alternative courses which may be applied toward the major.

Printing (Prtg)

(See Journalism and Mass Communication)

Psychology (Psyc)

Kenneth Hillner
Department of Psychology
Scobey Hall 338
605-688-4322

Faculty

Professor Hillner, Head; Professors Branum, Burke; Associate Professor Norris; Assistant Professors Phelps, Woldt.

Programs

The Department offers a Bachelor of Science degree with a major in Psychology. Within the Psychology major, students may pursue a preprofessional curriculum, an applied curriculum, a teaching option (preparation for secondary school teaching), or a psychological services option.

The minimum departmental requirement for a psychology degree (applied curriculum) is 30 credits prefixed Psyc which include 101 or 102, 302 (or course in research methodologies), and 490. Minimum college and university requirements are given in the appropriate sections of this bulletin and are incorporated in the curriculum plans listed below. Advisors assist students to personalize curriculum plans and ensure that all requirements are met.

Psychology Major, Preprofessional Curriculum

The preprofessional curriculum is for those students who intend to become fully qualified psychologists. It is designed to provide preparation for continued training in psychology at the graduate level. It establishes a strong foundation in principles of psychology, techniques for analyzing behavior, historical findings, and theoretical approaches.

Psychology Major, Applied Curriculum

The applied curriculum is intended for those to whom an education in psychology will provide a foundation of knowledge of the principles of behavior that may be applied to any career or occupation that requires working with people. Flexibility is maximized to meet individual student needs.

Psychology Major, Teaching Option

The teaching option in psychology prepares students to qualify for certification to teach in secondary schools. Students pursuing this option should contact the College of Education and Counseling and the Department Teaching Coordinator before their junior year to obtain complete teacher education information and guidance.

Psychology Major, Psychological Services Option

The Psychological Services option is designed for those persons interested in working as diagnostic and therapeutic aides in clinical facilities. The program for this option includes familiarization with standard tests and techniques of therapy, as well as a supervised senior internship at a treatment facility.

Minor

The minor in Psychology consists of the following courses: Psyc 101 or 102, 202, 409, and 6 or 7 additional credits of 300-400 level courses for a total of 16 credits.

Public Recreation

Linda Sandness
Department of Health, Physical Education and Recreation
Physical Education Center 251
605-688-6163

The Public Recreation major is excellent for those seeking to work in agencies such as YMCA/YWCA's, municipal recreation, therapeutic recreation in clinical as well as community settings, and business.

Range Science (Rang)

(See Animal and Range Sciences)

Religion (Rel)

(See Philosophy and Religion)

Reserve Officer Training Program

(See Aerospace Studies, Military Science)

Restaurant Management

(See Nutrition and Food Science)

Rural Sociology (Soc, Anth)

James Satterlee
Department of Rural Sociology
Scobey Hall 224
605-688-4132

Faculty

Professor Satterlee, Head; Professors Faltemier, Hess, Kayongo-Male, Mendelsohn, Stover, R. Wagner; Professor Emeritus Sauer; Associate Professors Arwood, Grant; Assistant Professors DuBois; Instructor Awald.

Programs

The courses offered by the department have been organized with three definite objectives in mind: a sequence for those who may wish to earn an undergraduate major or minor in sociology; basic service courses that will be of interest and practical help to students in any college; and courses to fulfill requirements of a Master's degree or Doctor of Philosophy degree in Sociology. (Students interested in Graduate Program - see University Graduate Bulletin and department graduate guide.)

The department offers the BS in Arts and Science with a major in Sociology. The BA in Arts and Science with a major in Sociology was under review at the time of this publication. Contact the department office or the Dean of Arts and Science for information on availability of this degree program. An undergraduate may select from any of the following options in the Arts and Science curriculum. Each student is assigned to an adviser based on choice of option. Majors will be furnished with a department undergraduate handbook outlining specific requirements and recommended courses in each option.

1. **General Sociology Option.** Incoming freshmen and transfer student majors will be assigned to this option. After taking courses in specialized areas, accomplishing a cumulative grade point average of at least 2.2, and working with General Sociology Option Advisers, students may select any of the following options. Those desiring to gain a broad orientation to all areas of Sociology with anticipation of other career interests or graduate school may remain in this option.

2. **Teaching Option.** Prepares for entrance into junior or senior high level teaching. These students in consultation with departmental Teaching Option Adviser and the College of Education and Counseling

plan their program to accomplish other teaching minors to maximize employment opportunities. One semester is set aside for a teaching-block and off-campus teaching assignment. (Minimum GPA of 2.2)

3. **Social Work Option.** The department cooperates with the Department of Social Behavior at USD, to offer an accredited degree in Social Work for those seeking a specialized career in private or public social welfare. Students need to work closely with the Coordinator of Social Work. They need to select this option early in their sophomore year to complete all requirements. The final portion of the program is completed at USD. Students seeking more general social service type careers should select the Human Services Option. (Minimum GPA of 2.2)

4. **Human Services Option.** Designed for those interested in "working with people" in a variety of social service type agencies. Students are encouraged to take social work, criminal justice, and child development type courses and complete an internship placement in a social service agency. This option differs from the Social Work Option in that students are working toward a BA or BS degree in Sociology; whereas those in the Social Work Option are seeking a BA or BS in Social Work. (Minimum GPA of 2.2)

5. **Criminal Justice Option.** Students seeking careers in probation, parole, court services, pre-law, private security, or general law enforcement should select this option. Those selecting this option will be working toward a BA or BS in General Sociology with a minor in Criminal Justice. Both are offered by the Department of Sociology. Students will be expected to work closely with their adviser within the department to fulfill the necessary requirements of the program. (See CJus for Minor requirements.) (Minimum GPA of 2.2)

6. **Personnel Services Option.** Those students seeking careers in business, related to human resources in public and private agencies and businesses, are encouraged to select this option. Academic programs are individually tailored with the Personnel Option Coordinator in areas such as employee relations, conflict management, labor relations, aptitude testing, and Affirmative Action. Supportive coursework in economics, guidance, accounting and psychology are incorporated in this option. (Minimum GPA of 2.2)

Minor

Includes Soc 100, and 15 additional (Soc or Anth) credits. Six credits must be numbered 300 or above. (Recommended that students declare minor prior to junior year. Register with department.)

Students should plan their schedules to take lower level courses (100-200) in their freshman and sophomore years and upper level (300-400) during their junior and senior years. Students anticipating graduate school should enroll in Stat 341, Statistical Methods I; Phil 331, Philosophy of Science; and Engl 379, Technical Communications, as a part of their general electives.

Students must accomplish a total of 40 hours of upper level courses (300 or above).

Russian (Russ)

(See Foreign Languages)

Sociology (Soc)

(See Rural Sociology)

Soils

(See Plant Science)

Spanish

(See Foreign Languages)

Speech

(See Communication Studies and Theatre)

Statistics (Stat)

(See Mathematics and Statistics)

Teacher Education, Undergraduate

Paul Theobald
Department of Undergraduate Teacher Education
Wenona Hall 104
605-688-4376

Faculty

Associate Professor Theobald, Head; Professors Moeller, Steinley; Associate Professor Penrod; Assistant Professors Barnes, Krumm, Reisetter, Rogers.

Programs

Middle-level and Secondary Teacher Education

The Department of Undergraduate Teacher Education offers a professional education program that leads to teacher certification for middle-level and secondary positions in a wide variety of majors and minors. For more information about this program, see the section on the College of Education and Counseling in this bulletin.

K-12 Teacher Education

The teacher education program leads to K-12 certification in the following fields: physical education, art, music, and foreign languages. For more information about this program see the section on the College of Education and Counseling in this bulletin.

Agricultural Education (AgEd)

The Undergraduate Teacher Education Department provides professional education courses for the agricultural education major offered through the College of Agriculture and Biological Sciences. Students preparing to teach agriculture in public schools will complete all of the required core courses in that college. Besides the agricultural education major, students receive supportive instruction in technical agriculture, basic sciences, and communication skills. The professional education requirement is 36 semester credits in education including student teaching in an agricultural education position. The student teaching portion of the professional education curriculum is completed in designated agricultural education departments in high schools in South Dakota, western Minnesota, and northwest Iowa.

Students enrolled in this curriculum must file an application with the Agricultural Education Office prior to enrolling in professional education courses. Admission to such courses is based on the following minimum qualifications: a GPA of 2.5 and a 2.6 GPA in major courses for admission to education courses and student teaching. Membership and participation in the Agricultural Education Club are strongly encouraged. Since there are many courses in common with Agricultural Extension, some students may desire to complete the requirements of both curriculums in order to qualify for employment in extension and teaching.

Vocational Technical Education

The Bachelor of Science in Vocational Technical Education prepares students to teach in either high school, multi-district, or postsecondary vocational programs. People who have completed a technical specialty at one of the area's technical schools or have occupational experience are eligible for this program. To attain certification, students must meet the certification requirements of the State Department of Education and Cultural Affairs.

The majority of students enrolling in this program are currently teaching technical education but do not hold a baccalaureate degree. Classes are offered through a combination of delivery methods, including on-campus, off-campus, and via the Rural Development Telecommunications Network (RDTN).

Textiles, Clothing and Interior Design

(see Apparel Merchandising and Interior Design)

Veterinary Science (Vet)

John Thomson
Department of Veterinary Science
Animal Disease Research 105
605-688-5172

Faculty

Professor Thomson, Head; Professors Benfield, Francis, Johnson, D. Nelson, Zeman; Associate Professors Hildreth, Hurley, Miskimins, Neiger, Yaeger; Assistant Professors Chase, Christopher-Hennings, Epperson, Erickson, Holler, Leslie-Steen, E. Nelson; Instructor Stotz.

Programs

The Veterinary Science Department provides advising services for students in the pre-veterinary medicine curriculum and offers courses in the biomedical sciences for undergraduate and graduate majors in related sciences. The department also offers several graduate research assistantship positions in microbiology, virology, and molecular biology for students majoring in other departments. Graduate training is supported by active research programs in diseases of food-producing animals.

South Dakota does not have a professional College of Veterinary Medicine. A pre-veterinary medicine curriculum is offered which allows students to obtain prerequisites for application to Colleges of Veterinary Medicine in other states. Students may meet requirements in two or three years of pre-veterinary study. Many students complete a major for the Bachelor of Science Degree before entering the professional curriculum of Veterinary Medicine.

Entrance into the professional curriculum in a College of Veterinary Medicine rests with the individual applicant, and is based upon many factors including their academic record and experience. The applicant should be aware of the difficulties involved in being accepted to a College of Veterinary Medicine. Keen competition should be anticipated.

Visual Arts (Art)

Norman Gambill
Department of Visual Arts
Solberg Hall 104C
605-688-4103

Faculty

Professor Gambill, Head; Professors Edie (Emeritus), Morgan, Spinar, Steele; Associate Professors French, Kruse; Assistant Professors Nowosielski, Wallace.

Programs

Art Department courses are designed to provide students with studio and lecture experiences in art regardless of their major. For students wishing to pursue careers as artists, art educators, or designers, our programs offer the background for careers after graduation or further advanced study. **A minor in Visual Arts consists of 24 credit hours.**

Students may pursue a Visual Arts degree with concentrations in Art Education, Graphic Design, or Fine Arts--painting/printmaking, sculpture/ceramics, and general art. To complete a program, the art major must meet the University and College of Arts and Science requirements, a 30-hour Visual Arts Core, plus 24 or more additional hours in their chosen area. The art major presents to the faculty examples of his or her work in a Progress Review and also a Senior Review that involves either an exhibition or a portfolio presentation.

The 30-hour Visual Arts Core. Basic studio courses of 18 hours should be completed during the freshman and sophomore years: Art 111, 112, 121, 123, 212 or ArtD 255, and Art 222. This Core also includes 12 hours of art history: ArtH 211, 212, plus 6 hours of art history electives.

Art Education (B.A. or B.S.)

Prepares the student to be certified to teach art programs in the public schools of South Dakota (K-12). Our Department cooperates with the College of Education's Undergraduate Teacher Education program to provide the degree requirements.

Graphic Design (B.A. or B.S.)

Emphasizes the applied study of art and technology. Students develop a portfolio in preparing for professional experience in graphic design or further graduate study. Areas of design study may include but are not limited to logo designs, computer graphics, publication design, illustration, advertising design, and poster design.

Fine Arts – Painting/Printmaking (B.A. or B.S.)

Introduction to both painting and printmaking through a variety of traditional and contemporary approaches. Students choose to complete one of the advanced four-semester sequences, including either Painting or Printmaking IV, and at least two semesters of the complementary area. Students are prepared for future careers as artists, educators, and for graduate studies.

Fine Arts – Ceramics/Sculpture (B.A. or B.S.)

Introduction to both ceramics and sculpture through a variety of traditional and contemporary approaches. Students choose to complete one of the advanced four-semester sequences, including either Ceramics or Sculpture IV, and at least two semesters of the complementary area. Students are prepared for future careers as artists, educators, and for graduate studies.

Fine Arts – General Art (B.A. or B.S.)

Designed for the student desiring a double major or a major-with-

minors in other departments in the university. It also accommodates the student who wishes to develop a self-directed program in various emphasis areas in the Department as well as the option of additional elective credits.

Requirements for Art Minor: 24 cr

To include 6 credits in art history.

The Ritz Gallery

Art and design works by students, faculty, and visiting artists/designers are exhibited throughout the year in The Ritz Gallery.

Water Management

(See Plant Science)

Weed Science

(See Plant Science)

Wildlife and Fisheries Sciences (WL)

Charles Scalet
Department of Wildlife and Fisheries Sciences
Northern Plains Biostress Laboratory 138C
605-688-6121

Faculty

Professor Scalet, Head; Professors Berry, Flake, Higgins, Linder (Emeritus), Willis; Associate Professors Duffy (Adjunct), Hamilton (Adjunct), Hubbard, Severson (Adjunct), Uresk (Adjunct); Assistant Professors Brown, Brundige (Adjunct), Gigliotti (Adjunct), Jenks, Keenlyne (Adjunct), Rumble (Adjunct).

Programs

The Department offers the Bachelor of Science, Master of Science, and Doctor of Philosophy degrees. No minors are offered. A student who plans on a career in research should complete an advanced degree. Each student is assigned an academic advisor in the Department to assist with curriculum planning. Students can, with our undergraduate curriculum, meet the academic requirements for certification by both the American Fisheries Society and The Wildlife Society. Requirements for the undergraduate degree are provided in the appropriate section of this bulletin.

Wildlife and Fisheries Sciences Major (B.S.)

This degree is intended to educate students in preparation for entry-level positions with state and federal agencies, private companies, and for the pursuit of higher academic degrees. It is our goal to prepare students pursuing this degree with basic technical expertise concerning the biota, habitat, and human dimensions aspects of wildlife and fisheries resources. In addition, because this degree is one that is also directed at producing well-rounded citizens, subjects such as communications, social sciences, humanities, mathematics and statistics, chemistry, physics, and wellness are also addressed.

Wildlife and Fisheries Sciences Major (M.S.)

This degree is intended to educate students for management-level positions with state and federal agencies, private companies, and for the pursuit of higher academic degrees. It is our goal to build on the foundation that students obtain during their undergraduate education, primarily directing them into some more specific area of wildlife or fisheries. By using specifically identified coursework areas and mentoring we strive to assist students in developing their intellectual capabilities in working with natural resources and people. In addition, each student must propose and conduct an original scientific investigation.

Biological Sciences (Wildlife and Fisheries Sciences) (Ph.D.)

This degree is intended to educate students for upper-level management and administrative positions with state and federal agencies, and private companies. It is also intended to prepare students in the teaching, research, and service component responsibilities needed for faculty positions with universities and colleges. By building on the educational foundation that students obtained from bachelors and masters degree work, we endeavor to raise them to a higher intellectual plateau. While coursework is involved, this is primarily a research and mentoring educational experience. This degree requires original thought and research contributions, synthesis and development of information, and contributions to the world and its resources. We strive to help these students become more operationally and conceptually creative.

Women's Studies (WmSt)

Virginia Norris
Department of Psychology
Scobey Hall 325
605-688-4322

Program

An interdisciplinary program enabling the student to select courses dealing directly or indirectly with women, including the development of feminism, women's changing roles in the family, religion, the labor force, and politics. The minor is particularly useful for students expecting to work with women in social work, counseling, nursing, business, or education. 18 hours with a "C" or better in each course are required for the minor. The Women's Studies Coordinator assists students to personalize their curriculum plans.

Zoology (Zool) Minor

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 306
605-688-6141

Requirements for Zoology Minor: 16 cr

The minor in Zoology consists of Bio 101 or 151, and additional courses with a Zool prefix for a total of at least 16 credits. Two courses must be at the 300 level or above.

Extended Programs

Summer Term

Edward P. Hogan
Assistant Vice President for Academic Affairs
Box 2201, Brookings, SD 57007-2098

SDSU offers a wide range of courses and degree programs during the summer months as well as numerous special workshops, short courses, evening offerings, and non-credit programs. Summer programming is offered May through August and is characterized by innovation and responsiveness to your needs. Classes are comfortably sized and time is available for individual attention from the faculty member. Participants need not be regularly matriculated at SDSU but may be admitted as special students through completion of one short form.

For further information and to receive the schedule of offerings, contact the Academic Affairs Office, Ad 230, (605) 688-5193.

Outreach Programming

Edward P. Hogan
Assistant Vice President for Academic Affairs
Box 2201, Brookings, SD 57007-2098

South Dakota State University has a long tradition of, and responsibility for, delivering a variety of outreach efforts to locations across the state, region, and world. These include educational services to the Sioux Falls Center for Public Higher Education, the West River Graduate Center at Ellsworth Air Force Base in Rapid City, the Capital University Center in Pierre (CUC), Nursing Upward Mobility, and numerous other distance education classes, workshops, and services.

Outreach Programming provides coordinative support for off-campus educational programs and as such serves as a conduit for the University's service mission to citizens of South Dakota, the region and world. Outreach Programming is designed to deliver both state and self support education through on site or distance education credit courses, non-credit conferences, short courses, and workshops.

Credit Programs. Academic standards and policies governing off-campus and telecommunicated courses are identical to the on-campus instructional program. Hence, credit course offerings, instruction and academic standards are the responsibilities of the Vice President for Academic Affairs, deans of the colleges, and department heads. There are outreach locations throughout South Dakota where credit courses are presented each semester. Additional locations are added as need and enrollment indicate. Ask for a copy of the current Showcase for details and locations.

Sioux Falls Center for Public Higher Education, see SDSU Sioux Falls Programs on the next page.

Capital University Center in Pierre was established by the people of Central South Dakota in 1982 to provide opportunities in higher education for the people of the region. In 1983, CUC and South Dakota State University entered into an agreement to enhance educational opportunities for residents of Central South Dakota through the offering of courses designed to transfer to degree-granting institutions of higher education. SDSU now offers at CUC the Bachelor of Science degree with majors in General Studies and Nursing, and the Master of Science degree in Industrial Management.

The **West River Graduate Center** at Ellsworth Air Force Base in Rapid City provides graduate level opportunities through the College of Education and Counseling. The College offers Master of Education and Master of Science programs in Education and Counseling at Ellsworth Air Force Base. These programs serve the military personnel as well as teachers, administrators, and counselors in Western South Dakota.

The **Nursing Upward Mobility Program** deepens, enhances, and enriches the knowledge and capabilities of registered nurses across the state and region who are already licensed. This program is designed to enable the registered nurse to provide more comprehensive nursing care, assist in the prevention of disease, promote health care practices, and expand knowledge and skills necessary for leadership roles in nursing.

The Nursing Upward Mobility program leading to the Bachelor of Science degree is offered for registered nurses desiring to upgrade their associate degrees or diplomas. The program is offered at Brookings and Sioux Falls and alternates at various other sites across the state including Aberdeen, Huron, Mitchell, Pine Ridge, and Pierre. The Master of Science in Nursing is also offered cyclically to various off-campus sites as programming allows. Please contact the Dean of Nursing at (605) 688-5178 for information on nursing programs.

Distance Education offerings include an array of classes and programs directed to specific educational needs of SDSU's off-campus students. These offerings include classes and degree work offered via the Rural Development Telecommunications Network, dual credit satellite courses to high schools, videotape, and a variety of internship, clinical and related experiences. Special credit and non-credit classes are also offered to assist agriculture and industry with the upgrading of skill levels. The Cattleman's Satellite Course is a good example. This non-credit program was offered to over 2,500 participants in the United States and Canada. Special offerings in cooperation with the missions of the Tribal Colleges also occur.

Conferences and Institutes. The University encourages involvement of its faculty and professional staff with groups sharing common interests and expertise. Individuals and groups interested in holding conferences or meetings at the University should contact Conferences and Institutes. This office provides services ranging from simple logistics either on campus or at other locations throughout South Dakota, to program planning, staffing, financing, and evaluation.

Consulting and technical assistance to organizations is another contribution of the University to the social and economic development of the state. Conferences and Institutes will be happy to assist in matching needs with expertise within the University upon request.

For further information and copies of publications, either for credit programming or conferences and institutes, please contact the Outreach Programming Office, Ad 315, South Dakota State University, Box 2201, Brookings, SD 57007-2098, (605) 688-4431.

Evening College

Edward P. Hogan
Assistant Vice President for Academic Affairs
Box 2201, Brookings, SD 57007-2098

South Dakota State University established Evening College for part-time, non-traditional students. Evening College offers college credit courses and programs that are provided at times that are convenient for working adults. All courses taught in the Evening College are the same with regard to course number and content as those taught in the regular day courses.

More information on Evening College may be obtained through the Academic Affairs Office, Ad 230, South Dakota State University, Box 2201, Brookings, SD 57007-2098, (605) 688-5193.

SDSU Sioux Falls Programs

David C. Hilderbrand, Director
Bergeland Center Third Floor
132 South Dakota Avenue
Sioux Falls, SD 57102

South Dakota State University, through the South Dakota Board of Regents Center for Public Higher Education, provides college course work and degree programs in Sioux Falls. The Center for Public Higher Education is designed to serve the needs of non-traditional students in the Sioux Falls area. Most courses taught through the Center are taught after 5:00 p.m. or on weekends. The course content, number and contact hours are the same as when the identical course is taught on campus in the regular day program. However, a typical three credit course will meet for three hours one night per week rather than one hour three days per week. Course work is offered during the fall, spring, and summer terms.

The majors offered in Sioux Falls include engineering, family and consumer sciences, general studies, nursing, and electronics engineering technology at the undergraduate level. Master's degrees are offered in industrial management, education, geography, and nursing. In addition, approximately one-half of the credits required for the master's degree in counseling may be taken in Sioux Falls.

Students in all majors may complete their general education core in Sioux Falls.

For more information about these programs contact: SDSU Sioux Falls Programs, Bergeland Center Third Floor, 132 South Dakota Avenue, Sioux Falls, SD 57102, or call (605) 367-5641.

Major and Minor Requirements

All authorized majors and minors are listed here in alphabetical order. A contact person, his or her campus address, and phone number is included with each major or minor. The curriculum plans shown are examples only. A student should work out a personalized plan with his or her adviser.

Accounting (Acct) Minor

Ardelle Lundeen
Department of Economics
Scobey Hall 136
605-688-4141

Requirements for Accounting Minor: 21 cr

Acct 210, Principles of Accounting I	3
Acct 211, Principles of Accounting II	3
Acct 310, Intermediate Accounting I	3
Acct 311, Intermediate Accounting II	3
Acct 320, Cost Accounting	3
Acct 430, Income Tax Accounting	3
Econ 201, Macroeconomics Principles **or** Econ 202, Microeconomics Principles	3

Aerospace Studies (Air) Minor

Kevin Graber
Department of Aerospace Studies
DePuy Military Hall 004
605-688-6106

Requirements for Aerospace Studies Minor: 16 cr

A minor in Aerospace Studies requires 16 semester hours, including all AFROTC courses and Field Training.

Air 101, Aerospace Studies 100	1
Air 102, Aerospace Studies 100	1
Air 201, Aerospace Studies 200	1
Air 202, Aerospace Studies 200	1
Air 301, Aerospace Studies 300	3
Air 302, Aerospace Studies 300	3
Air 401, Aerospace Studies 400	3
Air 402, Aerospace Studies 400	3

Agricultural Business Major and Minor

Ardelle Lundeen
Department of Economics
Scobey Hall 136
605-688-4141

Requirements for Agricultural Business Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
Chem 106, Chemistry Survey **or** Chem 112, General Chemistry I[1]			4
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3		
Soc 100, Introduction to Sociology	3		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Biological Science Elective[1,2]	3		
Group I Elective[3]			3
General Electives	3		4

Sophomore Year	**F**	**S**
Acct 210, Principles of Accounting I	3	
Acct 211, Principles of Accounting II		3
AgEc 271, Farm and Ranch Management	4	
Econ 201, Macroeconomics Principles	3	
Econ 202, Microeconomics Principles		3
Econ 330, Money and Banking		3
Math 222, Calculus for Non-Math Majors **or** Math 123, Calculus I		5
Humanities Elective[2]	3	
Group I Elective[3]		2
General Electives	4	

Junior Year	**F**	**S**
AgEc 354, Agricultural Marketing & Prices		3
AgEc 478, Agricultural Finance	3	
BAdm 350, Legal Environment of Business & Contracts		3
CSc 312, Advanced Microcomputer Applications	3	
Econ 301, Intermediate Microeconomics	3	
Econ 302, Intermediate Macroeconomics		3
Engl 301, Advanced Composition	3	
Engl 379, Technical Communications		3
Stat 341, Statistical Methods I		3
Natural Science Elective (sequence course)[1]	3-4	
General Elective	1-2	

Senior Year	**F**	**S**
AgEc 479, Agricultural Policy		3
BAdm 324, Operations Research	4	
BAdm 360, Organization and Management		3
Two additional courses prefixed AgEc	3	3
Communications Elective[4]	2-3	
Electives in Acct, AgEc, BAdm, or Econ	3	3
Humanities Elective[2]	3	
General Electives	0-1	4

[1]All students must complete two science courses from the same sequence, as identified in the list on page 42.

[2]From approved list on page 42.

[3]Group I electives are listed on pages 41-42.

[4]Communications elective must be chosen from SpCm 201, Interpersonal Communications; SpCm 281, Forensic Activities, plus three additional hours of written communications; SpCm 315, Public Speaking; or SpCm 334, Discussion.

Requirements for Agricultural Business Minor: 21-22 cr

Econ 201, Macroeconomics Principles	3
Econ 202, Microeconomics Principles	3
Two of the following:	6-7
Acct 210, Principles of Accounting I (3)	
AgEc 271, Farm and Ranch Management (4)	
AgEc 354, Agricultural Marketing and Prices (3)	

BAdm 310, Business Finance (3)
BAdm 350, Legal Environment of Business & Contracts (3)
BAdm 360, Organization and Management (3)
Econ 370, Marketing (3)
Nine additional credit hours of courses prefixed AgEc, numbered 300 or above 9

Agricultural Economics (AgEc) Major

Ardelle Lundeen
Department of Economics
Scobey Hall 136
605-688-4141

Requirements for Agricultural Economics Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
Chem 106, Chemistry Survey **or**			
Chem 112, General Chemistry I[1]			4
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3		
Soc 100, Introduction to Sociology	3		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Humanities Elective[2]	3		
Biological Science elective[1,2]	3		
Group I Elective[3]			3
General Electives			4

Sophomore Year	**F**	**S**
Acct 210, Principles of Accounting I	3	
Acct 211, Principles of Accounting II		3
AgEc 271, Farm and Ranch Management	4	
Econ 201, Macroeconomics Principles	3	
Econ 202, Microeconomics Principles		3
Econ 330, Money and Banking		3
Math 222, Calculus for Non-Math Majors **or**		
Math 123, Calculus I		5
Humanities Elective[2]		3
Group I Elective[3]	2	
General Electives	4	

Junior Year	**F**	**S**
AgEc 354, Agricultural Marketing & Prices		3
AgEc 478, Agricultural Finance	3	
CSc 312, Advanced Microcomputer Applications	3	
Econ 301, Intermediate Microeconomics	3	
Econ 302, Intermediate Macroeconomics		3
Econ 433, Public Finance		3
Engl 301, Advanced Composition	3	
Engl 379, Technical Communications		3
Stat 341, Statistical Methods I		3
Natural Science Elective (sequence course)[1, 2]	3-4	
General Elective	1-2	

Senior Year	**F**	**S**
AgEc 421, Production Economics		3
AgEc 479, Agricultural Policy		3
Econ 405, Comparative Economic Systems; **or**		
Econ 404, History of Economic Thought; **or**		
Hist 377, Economic History of the U.S.		3
Econ 423, Statistics II	3	
Econ 428, Mathematical Economics	3	
Communications Elective[4]	2-3	
General Electives	7-8	7

[1]All students must complete two science courses from the same sequence, as identified in the list on page 41.
[2]From approved list on page 42.
[3]Group I electives are listed on pages 41-42
[4]Communications elective must be chosen from SpCm 201, Interpersonal Communications; SpCm 281, Forensic Activities, plus three additional hours of written communications; SpCm 315, Public Speaking; or SpCm 334, Discussion..

Agricultural Education (AgEd) Major

Clark Hanson
Department of Undergraduate Teacher Education
Wenona Hall 211
605-688-4379

Requirements for Agricultural Education Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
AS 101, Introduction to Animal Science			3
AST 202, Agricultural Mechanics	2		
Bio 101, Biology Survey I **and**			
Bio 103, Biology Survey II **and**			
Geog 131, Physical Geography I; (10 cr)			
OR			
Bio 101, Biology Survey I **and**			
Geog 131, Physical Geography I **and**			
Geog 132, Physical Geography II (11 cr)	3-7		3-7
Engl 101, Freshman Composition	3		
Math 102, College Algebra	3		
PS 103, Crop Production			3
Soc 100, Introduction to Sociology	3		
SpCm 101, Fundamentals of Speech			3
WEL 100, Skills for Healthy Living & Lab	2	or	2

Sophomore Year	**F**	**S**
VTE 287, Practicum in Vocational Education	1	
AS 241, Meat: Production to Consumption		3
AS 285, Livestock Evaluation & Marketing	4	
Chem 106, Chemistry Survey	4	
Econ 201, Macroeconomics Principles **or**		
Econ 202, Microeconomics Principles		3
EdFn 375, Human Relations	3	
ES 131, Welding		2
Ho 111, General Horticulture		3
Phys 101, Survey of Physics		4
PS 213, Soils	3	
VTE 405, Philosophy of Vocational Technical		
Education	2	
WL 210, Environmental Conservation **or**		
WL 120, Introduction to Wildlife & Fisheries		
Management		2

Junior Year	**F**	**S**
AgEc 271, Farm and Ranch Management	4	
AgEd 404, Program Planning in Agricultural Education		4
Anth 421, Indians of North America **or**		
Hist 368, History of the American Indians	3	
AST 342, Electricity for Farm and Home	3	

EdFn 365, Integrating Computers into the Curriculum	2
Engl 301, Advanced Composition	3
EPsy 302, Educational Psychology	2
SeEd 314, Supervised Clinical/Field Experience	1
SeEd 450, Teaching of Reading	3
Agricultural Systems Technology Elective	3
Humanities Elective (suggest NFS 111, Food and People, 3 cr)	3

Senior Year	**F**	**S**
AgEd 434, Special Methods in Agricultural Education	3	
AgEd 454, Teaching Agricultural Mechanics	2	
AgEd 475, Supervised Teaching Internship	10	
AgEd 495/496, Internship/Field Experience		2
Humanities Elective		3
Communication Elective (see College of ABS)		2
Approved Electives (not AST)		9

Agricultural Engineering (AE) Major

Ralph Alcock
Department of Agricultural Engineering
Agricultural Engineering 107
605-688-5141

Requirements for Agricultural Engineering Major
Bachelor of Science in Agricultural Engineering
(Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology)

Freshman Year	**F**	**S**
AE 122, Introduction to Agricultural and Biological Engineering	2	
Bio 101, Biology Survey I **or** Micr 231, General Microbiology **or** PS 213, Soils		3-4
Chem 112, General Chemistry I	4	
Chem 114, General Chemistry II **or** Chem 120, Elementary Organic Chemistry		3
EG 121, Engineering Design Graphics I **and** EG 122, Engineering Design Graphics II	1	1
Engl 101, Freshman Composition **and** SpCm 101, Fundamentals of Speech	3	3
GE 101, Introduction to Engineering and Technology		2
Math 123, Calculus I **and** Math 224, Calculus II	5	4
WEL 100, Skills for Healthy Living & Lab	2	

Sophomore Year	**F**	**S**
AE 343, Engineering Properties of Biological Materials	3	
AE 372, Microcomputer Applications in Agricultural Engineering		2
CSc 218, Introduction to C/C++/UNIX for Engineers	3	
EG 123, Computer Aided Design & Graphics	1	
EM 221, Statics	3	
EM 222, Dynamics		3
Math 225, Calculus III	3	
Math 321, Differential Equations		3
Phys 211, University Physics I **and** Phys 213, University Physics II	4	4
†Electives		3

Junior Year	**F**	**S**
AE 314, Ag Power & Machines	4	
AE 324, Ag Structures and Indoor Environment		4
EE 305, Basic Electrical Engineering I	3	
EM 321, Mechanics of Materials	3	
EM 331, Fluid Mechanics		3
Engl 379, Technical Communications*		3
ME 314, Thermodynamics	3	
†Electives	3	6

Senior Year	**F**	**S**
AE 411, Design Project	2	
AE 422, Design Project		2
AE 434, Soil & Water Engineering	4	
AE 444, Unit Operations of Biological Materials Processing		4
AE 463, Applied Instrumentation	3	
AE 490, Seminar & Inspection Trip	1	
Math 373, Introduction to Numerical Analysis **or** Math 331, Advanced Engineering Math **or** Math 381, Mathematical Statistics **or** Stat 341, Statistical Methods I	3-4	
†Electives	3	10

*You must receive a "C" or better in Engl 379.
†Elective courses permit the student to concentrate on the applied technical area of his or her particular interest, and to provide for further cultural growth and education in the humanities/social sciences area.
Accordingly, the elective program for each student must be approved by his/her adviser. This will include at least 9 credit hours of technical electives of which at least 5 credits are 300 or above level courses in the College of Engineering. In addition, the student's program must include at least 16 social science/ humanities credits. The social science/humanities credits must include at least 6 credits of humanities from at least two disciplines and at least 9 semester hours of social science credits from at least two disciplines. At least one social science/humanities course must be taken at the advanced level.

Technical Electives:
Electives in all options:

AE 353, Physical Climatology & Meteorology	3
AE 492, Special Problems in AE	1-3
AE 493, Special Topics	1-4
AE 494, 495, 496, Cooperative Education/ Internship/Field Experience	1-6
All 500 level courses listed in Agricultural Engineering	
Bio 103, Biology Survey II	3
CSc 314, Assembly Language	3
CSc 316, PL/1 Programming	3
CSc 426, Computer Architecture & Organization	3
CSc 493, Special Topics in Computer Science	1-3
EE 422, Engineering Economy*	2
Math 331, Advanced Engineering Math	3
PS 213, Soils **or**	3
CEE 446, Geotechnical Engineering	4
Stat 341, Statistical Methods I **or**	3
Math 381, Mathematical Statistics	4

Structures & Environment

CEE 353, Structural Theory	2
CEE 446, Geotechnical Engineering	4
CEE 455, Steel Design	3
CEE 456, Concrete Theory & Design	3
CEE 475, Engineering Administration*	3
ME 411, Environmental Engineering	3
ME 415, Heat Transfer	3
ME 419, Heating and Air Conditioning Design	3
ME 451, Automatic Controls	3

***Technical elective credit not given for both CEE 475 & EE 422.**

Power and Machinery

ME 321, Fundamentals of Machine Design	3

ME 322, Vibrations	3
ME 341, Metallurgy	3
ME 362, Industrial Engineering	3
ME 412, Internal Combustion Engines	3
ME 415, Heat Transfer	3
ME 421, Design of Machine Elements	3
ME 428, Machine Design--Case Studies	3
PS 362, Environmental Soil Management	3

Water Resources Engineering

CEE 106, Elementary Surveying	3
CEE 327, Water Supply Engineering	4
CEE 333, Hydrology	3
CEE 433, Hydraulic Engineering	3
CEE 446, Geotechnical Engineering	4
PS 213, Soils	3
PS 483, Irrigation—Crop & Soil Practices	3

Requirements for Agricultural Engineering Major – Food and Biological Materials Engineering Option
Bachelor of Science in Agricultural Engineering

Freshman Year	**F**	**S**
AE 122, Introduction to Agricultural and Biological Engineering	2	
Chem 112 & 120, General Chemistry I **and** Elementary Organic Chemistry	4	3
EG 121 & 122, Engineering Design Graphics I & II	1	1
Engl 101, Freshman Composition **and** SpCm 101 Fundamentals of Speech	3	3
GE 101, Introduction to Engineering and Technology		2
Math 123 & 224, Calculus I & II	5	4
Micr 231, General Microbiology		4
WEL 100, Skills for Healthy Living and Lab	2	
Sophomore Year	**F**	**S**
AE 343, Engineering Properties of Biological Materials	3	
AE 372, Microcomputer Applications in AE		2
CSc 218, Intro to C/C++/UNIX for Engineers	3	
EG 123, Computer Aided Design & Graphics	1	
EM 221, Statics	3	
EM 222, Dynamics		3
Math 225, Calculus III	3	
Math 321, Differential Equations		3
Phys 211 & 213, University Physics I & II	4	4
Electives†		6
Junior Year	**F**	**S**
Chem 361, Biochemistry		4
EE 305, Basic Electrical Engineering I	3	
EM 321, Mechanics of Materials	3	
EM 331, Fluid Mechanics		3
Engl 379, Technical Communications*		3
ME 314, Thermodynamics	3	
Micr 311, Food Microbiology	4	
NFS 351, Principles of Food Processing		3
Electives†	4	4
Senior Year	**F**	**S**
AE 411, Design Project	2	
AE 422, Design Project		2
AE 444, Unit Operations of Biological Materials Processing		4
AE 463, Applied Instrumentation	3	
AE 490, Seminar	1	
NFS 360, Food Chemistry		4
Electives†	9	7

* You must receive a "C" or better in Engl 379.

† Elective courses permit the student to concentrate on the applied technical area of his or her particular interest, and to provide for further cultural growth and education in the humanities/social sciences area.

Accordingly, the elective program for each student must be approved by his/her adviser. This will include at least 9 credit hours of technical electives of which at least 5 credits are 300 or above level courses in the College of Engineering. In addition, the student's program must include at least 16 social science/ humanities credits. The social science/humanities credits must include at least 6 credits of humanities from at least two disciplines and at least 9 semester hours of social science credits from at least two disciplines. At least one social science/humanities course must be taken at the advanced level.

Suggested Technical Elective Courses

The technical electives must be approved by the student's advisor. 14 credit hours are required of which 9 must be from 300 level or above courses in the College of Engineering, and choose an additional 5 credits from the following suggested list:

AE 314, Ag Power & Machines	4
AE 324, Ag Structures and Indoor Environment	4
AE 353, Physical Climatology & Meteorology	3
AE 434, Soil & Water Engineering	4
AS 341, Fresh Meat Operations	3
AS 345, Processed Meat Technology	3
AST 443, Food Process and Engineering Fundamentals	3
AST 463, Agricultural Waste Management.	3
BAdm 360, Organization and Management	4
Bio 101, Biology Survey I	3
Bio 103, Biology Survey II	3
CEE 423, Waste Water Engineering	3
CEE 424, Industrial Waste Management.	2
Chem 380, Environmental Chemistry	4
DS 221, Technical Control of Dairy Products	3
DS 321, Dairy Product Processing I	5
DS 322, Dairy Product Processing II	5
Math 381, Mathematical Statistics	3
ME 421, Design of Machine Elements	3
Micr 310, Environmental Microbiology	4
NFS 341, Advanced Food Science	4
PS 312, Grain & Seed Processing	2
Stat 341, Statistical Methods I	3

Environmental Management

Environmental systems engineering focuses on environmentally compatible design and management practices for natural resource systems. Design concepts that have application to all rural environmental settings and "open spaces" in the urban environment are emphasized. Additionally, students obtain an understanding of environmental, biological, and engineering sciences and a proficiency in computer and instrumentation technologies. Graduates will have the qualifications to make contributions to the management of natural resource systems. Contact the Agricultural Engineering Department for course listing.

Agricultural Extension (AgEx)

John E. Burton, Jr.
Extension Program Coordinator
Agricultural Hall 130
605-688-5132

Requirements for Agricultural Extension Major
Bachelor of Science in Agriculture

This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Agricultural Journalism Major

Richard Lee
Department of Journalism and Mass Communication
Printing and Journalism 209
605-688-4171

Requirements for Agricultural Journalism Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
Bio 101, Biology Survey I **and**			
Bio 103, Biology Survey II	3		3
Chem 106, Chemistry Survey	4		
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra **or**			
Math 120, Trigonometry	3	or	3
Phys 101, Survey of Physics **or**			
Phys 111, Introduction to Physics I **or**			
Phys 211, University Physics I			4
Soc 100, Introduction to Sociology			3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Agri Group I (see College of ABS listing)	3		3

Sophomore Year	**F**		**S**
Econ 201, Macroeconomics Principles	3	or	3
MCom 160, Basic Photography	2	or	2
MCom 210, Newswriting and Reporting	3	or	3
MCom 213, Journalism Typography	2	or	2
SpCm 101, Fundamentals of Speech	3	or	3
Second in Sequence of physics, chemistry or bio	3-4	or	3-4
Agri Group I Electives	3	or	3
Humanities Core	3	or	3
Social Science Core	3	or	3

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
MCom 310, Newspaper Editing	2	or	2
MCom 311, Editing Lab (concurrent with 310)	1	or	1
MCom 332, Radio News Reporting **and/or**	3	or	3
MCom 315, Magazine Writing and Editing **and/or**	3		
MCom 410, Advanced Reporting			3
MCom 370, Principles of Advertising	3	or	3
Humanities Core	3		
Social Science Core	3	or	3
Agriculture Electives	3		3
MCom Electives			6

Senior Year	**F**		**S**
MCom 414, Mass Communication Law	3		
MCom 495, Internship (summer)	2	or	2
Agriculture Electives	3		6
MCom Electives	3		3
Social Science Electives (upper division)	3		3
Electives	3		5

30 hours are required for the major, but no more than 36 hours are allowed. Ag-journalism students must have 25 credit hours of upper division courses. All requirements of the College of Agriculture and Biological Sciences curriculum must be completed. Students must take a minimum of 12 credit hours from Group I courses in agriculture and a minimum of 12 additional hours in agriculture.

Agricultural Marketing Minor

Ardelle Lundeen
Department of Economics
Scobey Hall 136
605-688-4141

Requirements for Agricultural Marketing Minor: 21 cr

AgEc 354, Agricultural Marketing & Prices	3
AgEc 454, Economics of Grain & Livestock Marketing	3
BAdm 360, Organization and Management	3
Econ 202, Microeconomics Principles	3
Econ 370, Marketing	3
Two of the following:	6
AgEc 352, Agricultural Law (3)	
AgEc 479, Agricultural Policy (3)	
AS 285, Livestock Evaluation and Marketing (3)	
BAdm 474, Principles of Selling (3)	
Econ 476, Marketing Research (3)	
Econ 440, Economics of the International Sector (3)	

Agricultural Systems Technology (AST) Major and Minor

Ralph Alcock
Department of Agricultural Engineering
Agricultural Engineering 107
605-688-5141

Requirements for Agricultural Systems Technology Major
Bachelor of Science in Agriculture

Freshman Year	**F**	**S**
AST 202, Agricultural Mechanics	2	
Chem 106, Chemistry Survey **or**		
Chem 112, General Chemistry I		4
CSc 105, Introduction to Computers	3	
Engl 101, Freshman Composition	3	
ES 131, Welding **or**		
ES 121, Machine Shop		2
Math 102, College Algebra **and**		
Math 120, Trigonometry; **or**		
Math 113, College Algebra & Trigonometry	5-6	
Soc 100, Introduction to Sociology		3
SpCm 101, Fundamentals of Speech		3
WEL 100, Skills for Healthy Living & Lab		2
Biological Science Electives†		3
Group I Elective	3	

Sophomore Year	**F**	**S**
Acct 210, Principles of Accounting I		3
AST 213, Agricultural, Industrial, & Outdoor Power	3	
Econ 201, Macroeconomics Principles		3
EG 121, Engineering Design Graphics	1	
EG 123, Computer Aided Design & Graphics		1
Phys 111, Introduction to Physics I **and**		
Phys 113, Introduction to Physics II	4	4
PS 213, Soils		3
Chemistry Elective (Chem 114 or 120)	3	
Group I Electives*	3	3
Social Science Elective‡	3	

Junior Year	**F**	**S**
AST 313, Farm Machinery & Hydraulics		3
AST 333, Soil & Water Mechanics		3
AST 342, Electricity for Farm and Home	3	
BAdm 310, Business Finance	3	
Engl 301, Advanced Composition**		3
Option Courses	6	3
Humanities Elective‡	3	
Communication Elective**		2

Senior Year	F	S
AE 353, Physical Climatology & Meteorology		3
AE 490, Seminar	1	
AST 423, Farm Building Mechanization		3
AST 443, Food Process and Engineering Fundamentals	3	
AST 463, Agricultural Waste Management	3	
BAdm 350, Legal Environment of Business & Contracts	3	
Technical Elective***	3	
Elective		3-4
Option Courses	3	3
Humanities Elective‡		3

†Courses must be selected from the following areas: Botany, Biology, Entomology-Zoology, Plant Science, Microbiology.
*Students majoring in Agricultural Systems Technology may not use Agricultural Systems Technology courses to satisfy the Group I requirements. Group I requirements include Plant Science 213 plus 9 additional credits from Group I.
‡See University Core Requirements.
**See College of Agriculture and Biological Sciences Core Curriculum Requirements. "C" grade required in Engl 301.
***Technical electives must be selected from the approved list provided.

The AST major requires a minimum of 15 semester credits from one of the following options: Business, Processing, Production, or Environmental Systems. The elective program must be planned with the adviser and approved by the department head.

Business Option	
AgEc 271, Farm & Ranch Management	4
AST 303, Design Management Experience	3
BAdm 360, Organization and Management	3
Econ 202, Microeconomics Principles	3
Econ 330, Money and Banking	3
Stat 341, Statistical Methods I, or equivalent	3
Business Elective	3

Processing Option	
AS 241, Meat: Production to Consumption	3
AS 341, Fresh Meat Operations	3
DS 321, Dairy Product Processing I	5
DS 421, Dairy Plant Management	3
Micr 231, General Microbiology	4
Micr 311, Food Microbiology	3
NFS 341, Advanced Food Science	4
PS 312, Grain & Seed Production & Processing	2
Processing Elective	3

Production Option	
Ag Production Electives	3
Animal Science Electives	9
Horticulture Electives	6
Plant Science Electives	9

Environmental Systems Technology Option	
Bio 311, Principles of Ecology	3
Chem 380, Environmental Chemistry	4
Micr 231, General Microbiology	3
PS 243, Geology	3
PS 375, Water Quality in Agriculture	3
WL 110, Environmental Conservation	2
Environmental Systems Technology Elective	3

Technical Electives	
AE 372, Microcomputer Applications in Agricultural Engineering	2
AST 262, Environmental Safety and Society	2
AST 492, Special Problems	1-3
AST 494 or 495 or 496, Cooperative Education/ Internship/Field Experience	1-3
BAdm 310, Business Finance	3
BAdm 380, Personal Finance	3
Any 300 or higher level course in Animal and Range Sciences, Plant Science; excluding Group 1 courses	3

Requirements for Agricultural Systems Technology Minor: 17 cr	
AST 202, Agricultural Mechanics	2
AST 213, Agricultural, Industrial & Outdoor Power	3
AST 333, Soil & Water Mechanics	3
AST 342, Electricity for Farm & Home	3
plus 6 hours from the following:	
AST 262, Environmental Safety & Society	2
AST 273, Microcomputer Applications in Agriculture	3
AST 313, Farm Machinery & Hydraulics	3
AST 423, Farm Building Mechanization	3
AST 443, Food Process and Engineering Fundamentals	3
AST 463, Agricultural Waste Management	3
AST 492, Special Problems	1-3

Agronomy Major and Minor

Dale Gallenberg
Department of Plant Science
Agricultural Hall 219
605-688-5121

Requirements for Agronomy Major
Bachelor of Science in Agriculture

Freshman Year	F		S
Bio 151, General Biology I	4		
Bio 153, General Biology II or Bot 201, General Botany		3or	4
Engl 101, Freshman Composition	3		
PS 101, Opportunities in Plant Science	1		
PS 103, Crop Production	3		
Soc 100, Introduction to Sociology			3
SpCm 101, Fundamentals of Speech			3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Emphasis and Elective Courses**	4		5

Sophomore Year	F		S
AST 273, Microcomputer Applications in Agriculture or CSc 105, Introduction to Computers	3		
Chem 120, Elementary Organic Chemistry			4
Econ 201, Macroeconomics Principles or Econ 202, Microeconomics Principles	3		
PS 213, Soils			3
PS 223, Principles of Plant Pathology	3		
Humanities Electives*	3		3
Social Science Elective*			3
Emphasis and Elective Courses**	4		3

Junior Year	F		S
Bio 371, Genetics or PS 383, Principles of Crop Improvement	3		
Bot 327, Plant Physiology	4		
Engl 301, Advanced Composition	3		
Micr 231, General Microbiology			4
PS 243, Geology			3
PS 305, General Entomology or PS 307, Insect Pest Management	3	or	3
PS 323, Soil Fertility and Fertilizers			3
PS 494, Cooperative Education/Internship in Plant Science			1

Emphasis and Elective Courses**	3or6	2or5

Senior Year	**F**	**S**
Engl 379, Technical Communications		3
PS 343, Weed Science	3	
PS 375, Water Quality in Agriculture **or** PS 446, Agroecology		3
PS 490, Undergraduate Seminar	1	or 1
Stat 341, Statistical Methods I	3	
Emphasis and Elective Courses**	6-7	9-12

* See approved list under Graduation Requirements in this bulletin.
** See selected emphasis.

Business Emphasis:

ABS 475, Integrated Natural Resource Management	3
Acct 210, Principles of Accounting I	3
AgEc 354, Agricultural Marketing and Prices **or** AS 285, Livestock Evaluation and Marketing	3 or 4
BAdm 360, Organization and Management	3
Chem 106, Chemistry Survey **or** Chem 112, General Chemistry I	4
Math 102, College Algebra **or** Math 113, College Algebra & Trigonometry **or** Math 120, Trigonometry	3 or 5
Phys 101, Survey of Physics **or** Phys 111, Introduction to Physics I	4
Business Electives (see list below)	6
Plant Science Electives (at least one course from each of 3 areas on list***)	10
Unrestricted Electives	1-5

*** See production emphasis for list of approved courses in crops, plant protection, and soils areas.

Business Electives

Acct 211, Principles of Accounting II	3
Acct 320, Cost Accounting	3
AgEc 271, Farm & Ranch Management	4
AgEc 352, Agricultural Law	3
+AgEc 354, Agricultural Marketing and Prices	3
+AgEc/PS 373, Rural Real Estate Appraisal	3
AgEc 421, Production Economics	3
AgEc 454, Economics of Grain and Livestock Marketing	3
AgEc 478, Agricultural Finance	3
AgEc 479, Agricultural Policy	3
+AS 285, Livestock Evaluation & Marketing	4
BAdm 310, Business Finance	3
BAdm 350, Legal Environment of Business & Contracts	3
BAdm 351, Business Law I	3
BAdm 380, Personal Finance	3
BAdm 450, Principles of Selling	3
+Econ 201, Macroeconomics Principles	3
+Econ 202, Microeconomics Principles	3
Econ 330, Money and Banking	3
Econ 476, Marketing Research	3

+Courses in Business electives cannot be used to meet other Agronomy major or emphasis requirements.

Production Emphasis:

ABS 475, Integrated Natural Resource Management	3
AgEc 354, Agricultural Marketing and Prices **or** AS 285, Livestock Evaluation and Marketing	3 or 4
Chem 106, Chemistry Survey **or** Chem 112, General Chemistry I	4
Math 102, College Algebra **or** Math 113, College Algebra & Trigonometry **or** Math 120, Trigonometry	3 or 5
Phys 101, Survey of Physics **or** Phys 111, Introduction to Physics I	4
Plant Science Electives (at least one course from each of 3 areas listed below***)	13
Unrestricted Electives	10-14

***Plant Science Electives

Crops Courses	Plant Protection Courses	Soils/Environmental Protection Courses
PS 303, Seed Technology	+PS 305, General Entomology	PS 244, Geology Lab
PS 308, Grain Grading	+PS 307, Insect Pest Management	PS 310, Soil Geography & Land Use Interpretation
PS 312, Grain & Seed Production & Processing	PS 333, Diseases of Field Crops	PS 362, Environmental Soil Management
PS 313, Forage Crops & Pasture Management	PS 334, Diseases of Horticultural Crops	PS 373, Rural Real Estate Appraisal
+PS 383, Principles of Crop Improvement	PS 415, Mycology	+PS 375, Water Quality in Agriculture
PS 433, World Crop & Soil Resources	PS 420, Biological Control of Arthropods	PS 412, Soil Chemistry
PS 453, Advanced Genetics	PS 431, Applied Insect Ecology	PS 421, Soil Microbiology
PS 462, Procaryotic-Eucaryotic Molecular Biology I		+PS 446, Agroecology
PS 463, Procaryotic-Eucaryotic Molecular Biology I Lab		PS 483, Irrigation--Crop & Soil Practices
PS 464, Procaryotic Eucaryotic Molecular Biology II		
PS 465, Procaryotic Eucaryotic Molecular Biology II Lab		

+ Courses in Plant Science electives cannot be used to meet other Agronomy major or emphasis requirements.

Science Emphasis:

Chem 112, General Chemistry I **and** Chem 114, General Chemistry II	8
Chem 232, Analytical Chemistry I **or** Chem 361, Biochemistry	4
Math 113, College Algebra & Trigonometry, **or** Math 102, College Algebra **and** Math 120, Trigonometry	5 or 6
Math 123, Calculus I **or** Math 222, Calculus for Non-Math Majors	5
Phys 111, Introduction to Physics I **and** Phys 113, Introduction to Physics II	8
Area of Specialization (Crop Science, Entomology, Plant Pathology, Soil Science, or Weed Science)*	13
Unrestricted Electives	2-4

* Courses are to have PS prefix or ABS 475 and are not to include courses used to fulfill the Biological Science core of the major. Maximum of 3 credits from PS 492.

Requirements for Agronomy Minor: 16 cr.

PS 103, Crop Production	3
PS 213, Soils	3
PS 223, Principles of Plant Pathology	3
PS 490, Undergraduate Seminar	1
Plant Science Electives (must have PS prefix)	6

American Indian Studies Minor

Donna Hess
Department of Rural Sociology
Scobey Hall 216
605-688-4892

Requirements for American Indian Studies Minor: 20 cr
Required courses for the minor:

Anth 421, Indians of North America **or** Hist 368, History of the American Indians	3
Engl 351, American Indian Literature of the Past	3
Lak 101, Introductory Lakota I	4

10 credits chosen from the following elective courses:

Anth 310, Cultural Anthropology	3
Anth 410, North American Ethnology	3
Anth 421, Indians of North America	3
Engl 256, Literature of the American West	3
Engl 352, American Indian Literature of the Present	3
Geog 219, Geography of South Dakota	3
Geog 467, Geography of the American Indians	3
Hist 362, History of the American West	3
Hist 368, History of the American Indians	3
Lak 102, Introductory Lakota II	4
Lak 201, Intermediate Lakota I	3
Lak 202, Intermediate Lakota II	3
Phil 100, Introduction to Philosophy	4
PolS 310, Tribal Government and Politics	3
Rel 238, Native American Religions	3
Soc 350, Ethnic and Racial Groups	3

Other courses will be added as they are approved by the American Indian Studies Committee.

Animal Science (AS) Major and Minor

James Males
Department of Animal and Range Sciences
Animal Science Complex 103A
605-688-5166

Requirements for Animal Science Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
AS 100, Opportunities in Animal Science	1		
AS 101, Introduction to Animal Science	3		
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II	3		3
Engl 101, Freshman Composition	3	or	3
Soc 100, Introduction to Sociology			3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Emphasis and elective courses	6		6

Sophomore Year	**F**		**S**
AS 233, Applied Animal Nutrition			4
AS 241, Meat: Production to Consumption	3		
Bio 371, Genetics	3		
Econ 201, Macroeconomics Principles	3		
Emphasis and elective courses	7		10
Social Science Elective			3

Junior Year	**F**		**S**
AS 332, Principles of Animal Breeding	4		
AS 323, Advanced Animal Nutrition	3	or	3
AS 390, Animal Science Junior Seminar	1	or	1
Engl 301, Advanced Composition			3
Engl 379, Technical Communications **or** MCom 313, Publicity Methods	3	or	2
Humanities electives	3		3
Emphasis and elective courses	2-9		4-10

Senior Year	**F**		**S**
AS 433, Livestock Reproduction	3		
AS 490, Animal Science Senior Seminar	1	or	1

AS Production Courses (See emphases)		
Emphasis and elective courses	12	16

Business and Production Emphasis

AS 285, Livestock Evaluation and Marketing	4
Chem 106, Chemistry Survey	4
Chem 120, Elementary Organic Chemistry	4
Math 102, College Algebra **or** Math 113, College Algebra and Trigonometry	3 or 5
Phys 101, Survey of Physics **or** Phys 111, Introduction to Physics I **or** Phys 211, University Physics I	4
Vet 223, Anatomy and Physiology of Livestock	4
Animal Science Production Courses. Select two from: AS 365, 474, 477, or 478	6
Acct 210, Principles of Accounting I	3
BAdm 360, Organization and Management	3
Econ 202, Microeconomics Principles	3
Group I Electives	6
Business Electives	12
Select from the following:	
Acct 211, Principles of Accounting II	3
AgEc 271, Farm and Ranch Management	4
AgEc 352, Agricultural Law	3
AgEc 354, Agricultural Marketing and Prices	3
AgEc 421, Production Economics	3
AgEc 454, Economics of Grain and Livestock Marketing	3
AgEc 478, Ag Finance	3
AgEc 479, Agricultural Policy	3
BAdm 310, Business Finance	3
BAdm 334, Small Business Management	3
BAdm 350, Legal Environment of Business and Contracts	3
BAdm 351, Business Law I	3
BAdm 360, Organization and Management	3
BAdm 380, Personal Finance	3
Econ 330, Money and Banking	3
Econ 370, Marketing	3
Stat 341, Statistical Methods I	3
General Electives	12-15

Science Emphasis

Chem 112-114, General Chemistry I-II	8
Chem 120, Elementary Organic Chemistry	4
Chem 361, Biochemistry	4
Math 102, College Algebra **or** Math 113, College Algebra and Trigonometry	3 or 5
Math 222, Calculus for Non-Math Majors	5
Micr 231, General Microbiology	4
Phys 111-113, Introduction to Physics I-II **or** Phys 211-213, University Physics I-II	8
Zool 221, Anatomy & Zool 325, Mammalian Physiology **or** Vet 223, Anatomy and Physiology of Livestock	4 or 7
AS Production Courses. Select two from: AS 365, 474, 477, 478 (one must be 474, 477, or 478)	6
Group I Electives	6
General Electives	6-15

Requirements for Animal Science Minor: 19 cr

AS 101, Introduction to Animal Science	3
AS 233, Applied Animal Nutrition	4
AS 285, Livestock Evaluation and Marketing	4

one of the following courses:

AS 323, Advanced Animal Nutrition	3
AS 332, Principles of Animal Breeding	4
AS 433, Livestock Reproduction	3

two of the following courses (one must be 474, 477 or 478)

AS 241, Meat: Production to Consumption	3
AS 365, Horse Production	3
AS 474, Beef Cattle Production	3
AS 477, Sheep and Wool Production	3
AS 478, Swine Production	3

Apparel Merchandising (AM) Major and Minor

Sandra Evers
Department of Apparel Merchandising and Interior Design
Nursing-Home Economics 229
605-688-5196

Requirements for Apparel Merchandising Major
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
AM 121, Apparel in Popular Culture	2		
Art 121, Design I			3
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
Math 102, College Algebra	3	or	3
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
General Education Elective	5	or	5
Natural Science	4	or	4

Sophomore Year	**F**		**S**
AM 235, Apparel Manufacturing	3		
AM 242, Textiles	3	or	3
AM 335, Introduction to the Sewing Trade			2
AM 352, History of Costume in Western Civilization			3
CSc 105, Introduction to Computers	3		
Econ 201, Macroeconomics Principles	3		
Hist 121, History of Western Civilization to 1650 **or** Hist 122, History of Western Civilization since 1650	3		
ID 221, Introduction to Interiors & Housing	3	or	3
ID 222, Lab in Interiors & Housing	1	or	1
Art History/Studio Elective			3
Econ/BAdm Elective			3
General Education Elective	3	or	3
Natural Science	4	or	4

Junior Year	**F**		**S**
AM 315, Apparel Design	3		
AM 335, Introduction to the Sewing Trade			2
AM 352, History of Costume in Western Civilization **or** AM 453, Socio-Psychological Aspects of Clothing			3
AM 363, Fashion Economics			3
Engl 301, Advanced Composition	3	or	3
HDCF 241, Family Relations	3	or	3
AM Elective	2-3	or	2-3
Art History/Studio Elective	3		
Econ/BAdm Elective	3	or	3
College of Family and Consumer Sciences Electives	2	or	3

Senior Year	**F**		**S**
AM 373, Retailing (1/2 sem)	3		
AM 453, Socio-Psychological Aspects of Clothing **or** AM 352, History of Costume in Western Civilization			3
AM 473, Merchandise Planning & Control			3
AM 487, Pre-Practicum in Apparel Merchandising (1/2 sem)	1		
AM 493, Current Topics (optional)	2-3		
AM 497, Professional Practicum (1/2 semester)	7		
FCS 401, Professional Perspectives			2
AM Electives **or** Electives			3-6
Econ/BAdm Elective			3

Additional electives to total 128 credits

Requirements for Apparel Merchandising Minor: 16 cr

AM 121, Apparel in Popular Culture **or** AM 242, Textiles	2-3
AM 363, Fashion Economics	3
Apparel Merchandising Electives	10-11

Art Major and Minor

Norman Gambill
Department of Visual Arts
Solberg Hall 104C
605-688-4103

Art history courses can be used for the Core's humanities sequence, but Visual Arts students are required to take at least three hours in humanities outside the Department. Foreign Languages are required for the B.A.

Requirements for Art Major – Education
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
ArtH 100, Art and Design Appreciation	3	or	3
Engl 101, Freshman Composition	3	or	3
Soc 100, Introduction to Sociology **or** Psyc 101, General Psychology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Foreign Language (BA only)	4		4
Biological Science Elective (BS only)	3	or	3
Mathematics Core Requirement	3		
Visual Arts Core	6		6

Sophomore Year	**F**		**S**
EdFn 375, Human Relations	3	or	3
SeEd 287, Practicum and Professional Lab	2	or	2
Art History	3	or	3
Foreign Language (BA only)	3		3
Biological Science Elective (BS only)	3	or	3
Natural Science Electives (BA only)	4		4
Physical Science Electives (BS only)	4		4
Social Science Elective	3	or	3
Visual Arts Core	3		3
Electives	3	or	3

Junior Year	**F**		**S**
ArtE 415, Methods of Teaching Art in Public Schools	3	or	3

Art 251, Ceramics I–Beginning Level	3		
EdFn 365, Integrating Computers into the Curriculum	2	or	2
Engl 301, Advanced Composition	3		
EPsy 302, Educational Psychology	2	or	2
Hist 368, History of the American Indians **or** Anth 421, Indians of North America	3	or	3
SeEd 314, Supervised Clinical/Field Experience	1	or	1
SeEd 450, Teaching of Reading	3	or	3
Social Science Elective	3	or	3
Art History	3	or	3
Electives (BS only)	6		2
Electives (BA only)	3	or	3

Senior Year	**F**		**S**
Art 241, Sculpture I–Beginning Level			3
SeEd 400, Curriculum and Instruction in Secondary Schools	3		
SeEd 410, Social Foundations, Management and Law	2		
SeEd 420, Teaching Special Needs Students	1		
SeEd 488, Supervised Teaching Internship	10		
Art History			3
Art Electives			6
Humanities Elective (non-Art course)(BS only)			3

Requirements for Art Major – Graphic Design
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
ArtH 100, Art and Design Appreciation	3	or	3
Engl 101, Freshman Composition	3	or	3
MCom 160, Basic Photography			2
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Foreign Language (BA only)	4		4
Biological Science Elective (BS only)	3	or	3
Mathematics Core Requirement	3		
Visual Arts Core	6		6
Electives	3	or	3

Sophomore Year	**F**		**S**
ArtD 251, Graphic Design I	3		
ArtD 255, Introduction to Computer Graphics (art core)	3	or	3
ArtD 350, Graphic Design II			3
Prtg 111, Basic Presswork	3		
Art History	3	or	3
Foreign Language (BA only)	3		3
Biological Science Elective (BS only)	3	or	3
Humanities Elective (non-Art course)(BS only)	3	or	3
Natural Science Electives (BA only)	4		4
Physical Science Elective (BS only)	4		4
Visual Arts Core	3	or	3
Electives (BS only)	3	or	3

Junior Year	**F**		**S**
ArtD 351, Graphic Design III			3
ArtD 355, Computer Graphics II	3		
Art 497, Internship (art elective)	3	or	3
Engl 301, Advanced Composition	3		
Prtg 315, Advanced Presswork			3
Art History	3	or	3
Social Science Electives	3		3
Electives (BA only)	6		2
Electives (BS only)	3		3

Senior Year	**F**		**S**
ArtD 450, Graphic Design IV	3		
ArtD 465, Advertising Design (art elective)			3
Art History	3	or	3
Social Science Elective	3		3
Art Elective	1	or	1
Electives (BA only)	6		3
Electives (BS only)	6		7

Requirements for Art Major – Fine Arts (Painting/Printmaking)
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
ArtH 100, Art and Design Appreciation	3	or	3
Engl 101, Freshman Composition	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Foreign Language (BA only)	4		4
Biological Science Elective (BS only)	3	or	3
Mathematics Core Requirement	3		
Visual Arts Core	6		6
Electives (BS only)	3		3

Sophomore Year	**F**		**S**
Art 231, Painting I--Beginning Level **or** Art 281, Printmaking I--Beginning Level	3	or	3
Art History	3	or	3
Foreign Language (BA only)	3		3
Biological Science Elective (BS only)	3	or	3
Humanities Elective (non-Art course)(BS only)	3	or	3
Natural Science Elective (BA only)	4		4
Physical Science Elective (BS only)	4		4
Social Science Elective (BA only)	3	or	3
Social Science Elective (BS only)	3		3
Visual Arts Core	3		3
Electives	3	or	3

Junior Year	**F**		**S**
Art 232, Painting II--Intermediate Level **or** Art 381, Printmaking II--Intermediate Level	3	or	3
Art 332, Painting III--Intermediate Level **or** Art 382, Printmaking III--Intermediate Level	3		3
Engl 301, Advanced Composition	3		
Art History	3	or	3
Art Electives	3		3
Social Science Elective (BA only)	3		3
Social Science Elective (BS only)	3	or	3
Electives	6		3

Senior Year	**F**		**S**
Art 431, Painting IV--Advanced Level **or** Art 481, Printmaking IV--Advanced Level	3		3
Art History	3	or	3
Art Electives	3		3
Social Science Elective (BA only)	3		
Social Science Elective (BS only)	3	or	3
Electives (BA only)	3		5
Electives (BS only)	5		2

(Majors must take 18 credit hours of Painting and Printmaking courses)

Requirements for Art Major – Fine Arts (Ceramics/Sculpture)
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Art 251, Ceramics I--Beginning Level **or** Art 241, Sculpture I--Beginning Level	3	or	3
ArtH 100, Art and Design Appreciation	3	or	3
Engl 101, Freshman Composition	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2

Foreign Language (BA only)	4		4
Biological Science Elective (BS only)	3	or	3
Mathematics Core Requirement	3		
Visual Arts Core	3		3
Visual Arts Core (3-D Design)	3		

Sophomore Year	**F**		**S**
Art 351, Ceramics II--Intermediate Level **or** Art 341, Sculpture II--Intermediate Level	3	or	3
Art History	3	or	3
Foreign Language (BA only)	3		3
Biological Science Elective (BS only)	3	or	3
Humanities Elective (non-Art course)(BS only)	3	or	3
Natural Science Elective (BA only)	4		4
Physical Science Elective (BS only)	4		4
Social Science Elective	3	or	3
Visual Arts Core	3		3
Electives (BA only)	3	or	3
Electives (BS only)	3		3

Junior Year	**F**		**S**
Art 352, Ceramics III--Intermediate Level **or** Art 342, Sculpture III--Intermediate Level	3		3
Engl 301, Advanced Composition	3		
Art History	3	or	3
Art Electives	3		3
Social Science Elective	3		3
Visual Arts Core	3	or	3
Electives (BA only)	3		3
Electives (BS only)	6		3

Senior Year	**F**		**S**
Art 451, Ceramics IV--Advanced Level **or** Art 441, Sculpture IV--Advanced Level	3		3
Art History	3	or	3
Art Electives	3		3
Social Science Elective	3		
Electives (BA only)	6		5
Electives (BS only)	6		4

(Majors must take 18 credit hours of Ceramics and Sculpture courses)

Requirements for Art Major – Fine Arts (General)
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
ArtH 100, Art and Design Appreciation	3	or	3
Engl 101, Freshman Composition	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Foreign Language (BA only)	4		4
Biological Science Elective (BS only)	3	or	3
Mathematics Core Requirement	3		
Visual Arts Core	6		6
Electives	3	or	3

Sophomore Year	**F**		**S**
Art History	3	or	3
Foreign Language (BA only)	3		3
Biological Science Elective (BS only)	3	or	3
Humanities Elective (non-Art course)(BS only)	3	or	3
Natural Science Elective (BA only)	4		4
Physical Science Elective (BS only)	4		4
Social Science Elective	3	or	3
Visual Arts Core	3		3
Electives	3		3

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3		
Art History	3	or	3
Art Electives	3		3
ArtD/Art Electives	3		3
Social Science Elective	3		3
Electives (BA only)	3		2
Electives (BS only)	6		3

Senior Year	**F**		**S**
Art History	3	or	3
Art Electives	3		6
ArtD/Art Electives	3	or	3
Social Science Elective	3		
Electives (BA only)	6		6
Electives (BS only)	6		7

Requirements for Art Minor: 24 cr
To include 6 credits in art history.

Athletic Training (AT) Major

Jim Booher
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-5824

There are two options available in the Athletic Training Major:

Athletic Training Major - Non-Clinical Experience. The non-clinical experience major is designed for students in a pre-professional curriculum. This major requires the athletic training coursework with the exception that students cannot participate in the clinical experience portion of the curriculum. Students completing the Athletic Training Major - Non-Clinical Experience are not eligible to work as an athletic trainer or take the national certifying examination.

Athletic Training Major - Clinical Experience. This major is one of 90 approved athletic training curriculums. It is designed to prepare students to become athletic trainers and take the national certifying examination. Courses required for completion of this major are listed in the Major and Minor Requirements section of this bulletin. In addition to these courses, students must complete a minimum of 800 hours of clinical experience under the supervision of clinical instructors.

Application for admittance into the athletic training major can begin during a student's sophomore year and upon completion of AT 164 and Zool 221. The number of students accepted into the program each semester is based upon the availability of clinical opportunities. Students are encouraged to supplement their education with an additional area of study to become more marketable.

Requirements for Athletic Training Major
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
AT 164, Introduction to Athletic Training	2	or	2
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II	3		3
Engl 101, Freshman Composition	3	or	3
Hlth 120, Community Health **or** Hlth 212, Contemporary Health Problems	2	or	2
Math 102, College Algebra	3	or	3
Psyc 101, General Psychology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Zool 221, Anatomy	3	or	3

Sophomore Year	F		S
NFS 221, Survey of Nutrition	3	or	3
Chemistry and/or Physics	4		4
Humanities and Social Science Core			

Junior Year	F	S
AT 361, Athletic Training Techniques I	3	
AT 362, Athletic Training Techniques II		3
AT 371, Athletic Training Clinical Experience I	2	
AT 372, Athletic Training Clinical Experience II		2
AT 454, Athletic Injury Assessment	3	
Engl 301, Advanced Composition	3 or	3
PE 350, Exercise Physiology	3 or	3
PE 353, Biomechanics	3 or	3
PT/Hlth 250, First Aid **or**		
Hlth 364, Emergency Medical Technician	2 or	4

Summer School	
AT 471, Fall Football Clinical Experience	1

Senior Year	F	S
AT 363, Athletic Training Techniques III,	3	
AT 364, Athletic Training Techniques IV		3
AT 373, Athletic Training Clinical Experience III	2	
AT 374, Athletic Training Clinical Experience IV		2
AT 464, Therapeutic Modalities in Athletic Training		2
AT 474, Rehabilitation of Athletic Injuries	2	
AT 490, Senior Seminar in Athletic Training		2
Zool 325, Mammalian Physiology	4 or	4

Aviation (Avia) Minor

Jim Behnken
College of Education and Counseling
Wenona Hall 108B
605-688-6291

Requirements for Aviation Minor: 21 cr

Sophomore Year	F	S
Avia 270, Introduction to Aviation	3	
Avia 272, Introduction to Flight I	2	
Avia 273, Introduction to Flight II		2

Junior Year	F	S
Avia 370, Complex Aircraft Systems and Operations	3	
Avia 371, Instrument Aircraft Operations		3
Avia 372, Advanced Flight Training	2	2
Phys 111, Introduction to Physics I (recommended)	4	
Geog 337, Atmospheric Sciences **or**		
AE 353, Physical Climatology and Meteorology		
(either recommended)		3

Senior Year	F	S
Avia 372, Advanced Flight Training	2	2

Biochemistry Major

Laurence Peterson
Department of Chemistry and Biochemistry
Shepard Hall 121
605-688-5151

Requirements for Biochemistry Major
Bachelor of Science in Arts and Science

This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Biology (Bio) Major and Minor

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 306
605-688-6141

Requirements for Biology Major
Bachelor of Science in Arts and Science

Freshman Year	F	S
Bio 151, 153, General Biology I-II	4	4
Chem 112, 114, General Chemistry I-II	4	4
Engl 101, Freshman Composition	3	
Math 113, Algebra & Trigonometry **or**		
Math 102, College Algebra **and**		
Math 120, Trigonometry		5
SpCm 101, Fundamentals of Speech		3
WEL 100, Skills for Healthy Living & Lab	2	
Social Science (approved list: two areas)	3	

Sophomore Year	F	S
Bio 290, Undergraduate Seminar	1	
Chem 326 & 328, Organic Chemistry **or**		
Chem 120, Elementary Organic Chemistry &		
Chemistry elective (Recommend Chem 361)	4	4
Micr 231, General Microbiology		4
†Humanities elective (approved list: two areas)	4	
Social Science Elective (approved list: two areas)		3
Emphasis and *Elective courses	7	5

Junior Year	F	S
Bio 371, Genetics	3	
Engl 301, Advanced Composition	3	
Phys 111-113, Introduction to Physics I-II	4	4
Humanities Elective (approved list: two areas)		5
Social Science Electives (approved list: two areas)	3	
Emphasis and *Elective courses	3	7

Senior Year	F	S
Bio 490, Senior Seminar	1	
Communications Elective (recommend Engl 379)	3	
Social Science Elective (approved list: two areas)	3	
Emphasis and *Elective courses	9	16

* The College of Arts and Science requires that at least 40 semester credits of the 128 total for graduation be upper division (300 and above). If a student plans to teach Biology with this curriculum, see the Undergraduate Teacher Education program and consult with the Dean of Education and Counseling.

† The College of Arts and Science requires two courses which concentrate on the humanities and social science aspects of an international area. These courses may be used to partially satisfy the social science and humanities requirements. (See International Studies list.)

Requirements for Biology Major
Bachelor of Science in Biological Science

Freshman Year	F	S
Bio 151, 153, General Biology I-II	4	4
Chem 112, 114, General Chemistry I-II	4	4
Engl 101, Freshman Composition	3	
Math 113, Algebra & Trigonometry **or**		
Math 102, College Algebra **and**		
Math 120, Trigonometry	5	
SpCm 101, Fundamentals of Speech		3
WEL 100, Skills for Healthy Living & Lab		2
Emphasis & *Elective courses		3

Sophomore Year	F	S
Bio 290, Undergraduate Seminar	1	
Chem 326 & 328, Organic Chemistry **or**		
Chem 120, Elementary Organic Chemistry &		
Chemistry elective (Recommend Chem 361)	4	4

Econ 201, Macroeconomics Principles		3
Micr 231, General Microbiology	4	
Soc 100, Introduction to Sociology		3
Social Science Elective (approved list)	3	
Emphasis and *Elective courses	4	6

Junior Year	**F**	**S**
Bio 371, Genetics	3	
Engl 301, Advanced Composition		3
Phys 111-113, Introduction to Physics I-II	4	4
Humanities Electives (approved list)	3	3
Emphasis and *Elective courses	6	6

Senior Year	**F**	**S**
Bio 490, Senior Seminar	1	
Communications Elective (recommend Engl 379)	3	
Emphasis and *Elective courses	13	16

* The College of Agriculture and Biological Sciences requires that at least 25 semester credits of the 128 total for graduation be upper division (300 and above). If you plan to teach Biology with this curriculum, see the Undergraduate Teacher Education program and consult with the Dean of Education and Counseling.

Biology Emphasis:
At least **two** (2) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 200, Biological Diversity	4
Bot 201, General Botany	3
Bot 301, Plant Systematics	4
Bot 305, Agrostology	3
Bot 415, Plant Ecology	4
Bot 421, Plant Anatomy	3

At least **two** (2) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 445, Histological Techniques	3
Zool 221, Anatomy	3
Zool 355, Mammalogy	3
Zool 357, Invertebrate Zoology	4
Zool 365, Vertebrate Zoology	4
Zool 441, Vertebrate Histology	4
Zool 467, General Parasitology	3

At least **four** (4) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 311, Principles of Ecology	3
Bio 343, Cell Biology	3
Bio 353, Introduction to Oceanography	3
Bio 373, Evolution	3
Bot 327, Plant Physiology	4
Micr 422, Immunology	4
Micr 436, Molecular and Microbial Genetics	4
Zool 301, Animal Behavior	3
Zool 325, Mammalian Physiology	4
Zool 383, Embryology	4

Biological Science Electives – Additional courses needed to total 28 hours can be any Bio, Bot, Zool, WL, or Micr prefixed courses (with the exception of Seminars)

Botany Emphasis:
At least **four** (4) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 200, Biological Diversity	4
Bot 201, General Botany	3
Bot 301, Plant Systematics	4
Bot 305, Agrostology	3
Bot 327, Plant Physiology	4
Bot 415, Plant Ecology	4
Bot 421, Plant Anatomy	3

At least **two** (2) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 445, Histological Techniques	3
Zool 221, Anatomy	3
Zool 355, Mammalogy	3
Zool 357, Invertebrate Zoology	4
Zool 365, Vertebrate Zoology	4
Zool 441, Vertebrate Histology	4
Zool 467, General Parasitology	3

At least **two** (2) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 311, Principles of Ecology	3
Bio 343, Cell Biology	3
Bio 353, Introduction to Oceanography	3
Bio 373, Evolution	3
Micr 422, Immunology	4
Micr 436, Molecular and Microbial Genetics	4
Zool 301, Animal Behavior	3
Zool 325, Mammalian Physiology	4
Zool 383, Embryology	4

Biological Science Electives – Any Bio, Bot, PS, Zool, WL, or Micr prefixed courses (with the exception of Seminars)

Zoology Emphasis:
At least **two** (2) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 200, Biological Diversity	4
Bot 201, General Botany	3
Bot 301, Plant Systematics	4
Bot 305, Agrostology	3
Bot 415, Plant Ecology	4
Bot 421, Plant Anatomy	3

At least **four** (4) courses from the following list are required; additional courses from this list may be taken as electives:

Zool 221, Anatomy	3
Zool 301, Animal Behavior	3
Zool 325, Mammalian Physiology	4
Zool 355, Mammalogy	3
Zool 357, Invertebrate Zoology	4
Zool 365, Vertebrate Zoology	4
Zool 383, Embryology	4
Zool 441, Vertebrate Histology	4
Zool 467, General Parasitology	3

At least **two** (2) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 311, Principles of Ecology	3
Bio 445, Histological Techniques	3
Bot 327, Plant Physiology	4
Bio 343, Cell Biology	3
Bio 353, Introduction to Oceanography	3

Bio 373, Evolution 3
Micr 422, Immunology 4
Micr 436, Molecular and Microbial Genetics 4

Biological Science Electives — Any Bio, Bot, PS, Zool, WL, or Micr prefixed courses (with the exception of Seminars)

Pre-professional Emphasis:
Three years + Professional school track: Students who are admitted into a professional school after only 3 years of undergraduate study may request to graduate from SDSU with a B.S. degree in Biological Science with a major in Biology. This program requires the successful completion of 96 credits at the undergraduate level. At least 32 of these 96 credits must be completed at SDSU. At least 20 of the 32 credits completed at SDSU must be at the 300 or above level. The student must complete all the college and university general education requirements. The student must complete at least 16 credits at SDSU in courses prefixed Bio, Bot, Micr, Vet, or Zool. These credits can fulfill a portion of the 32 credit residency requirement. In this program, the courses listed below are not required but are recommended to complete the 96 credit requirement.

Four year track: Students entering the regular 4-year program in Biology will complete the following requirements for the Pre-professional Emphasis:

At least **four** (4) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 200, Biological Diversity 4
Bio 415, Mycology 3
HSc 440, Epidemiology 3
Micr 323, Medical Microbiology (can substitute Vet 403) 4
Micr 425, Pathogenesis 3
Micr 424, Virology 4
Zool 467, General Parasitology 3

At least **four** (4) courses from the following list are required; additional courses from this list may be taken as electives:

Bio 343, Cell Biology 3
Bio 383, Bioethics 4
Micr 422, Immunology 4
Zool 221, Anatomy* 3
Zool 325, Mammalian Physiology* 4
Zool 383, Embryology 4
Zool 441, Vertebrate Histology 4

Recommended general electives, but not restricted to:

Chem 361, Biochemistry (if taken Chem 326-328) 4
Hlth 364, Emergency Medical Technician 4
HSc 120, Community Health 2
Math 222, Calculus for Non-Math Majors 5
Psyc 101, General Psychology (can use as Social Science elective) 3
SpCm 201, Interpersonal Communication 3
Stat 341, Statistical Methods I 3

* For Pre-veterinary Students: You may substitute Vet 223 for Zool 325. However, if Vet 223 is taken, you cannot then use Zool 221 as one of your 4 courses from this block.

Requirements for Biology Minor: 16 cr
The minor in Biology consists of Bio 101 or 151 and additional credit hours in the Biology/Microbiology Department for a total of at least 16 credits. Two courses must be at the 300 level or above.

Botany (Bot) Minor

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 304
605-688-6141

Requirements for Botany Minor: 16cr
The minor in Botany consists of Bio 101 or 151, Bot 201, and additional courses with a Bot prefix for a total of at least 16 credits. Two courses must be at the 300 level or above.

Business Area Studies

Ardelle Lundeen
Department of Economics
Scobey Hall 136
605-688-4141

The following group of business related courses represents offerings from all academic departments (or in cooperation with other institutions) of interest to majors in the various business related curricula of the university.

Accounting
Acct 210, Principles of Accounting I 3(3,0) FS
Acct 211, Principles of Accounting II 3(3,0) FS
Acct 310, Intermediate Accounting I 3(3,0) F
Acct 311, Intermediate Accounting II 3(3,0) S
Acct 320, Cost Accounting 3(3,0) S
Acct 430, Income Tax Accounting 3(3,0) F

Agricultural Economics
AgEc, 271 Farm & Ranch Management 4(3,2) FS
AgEc, 352 Agricultural Law 3(3,0) F
AgEc, 354 Agricultural Marketing and Prices 3(3,0) F even years, S
AgEc, 373/PS 373 Rural Real Estate Appraisal 3(2,2) F
AgEc, 454 Economics of Grain and Livestock Marketing 3(3,0) F
AgEc, 478 Agricultural Finance 3(2,2) F

Business Administration
BAdm 310, Business Finance 3(3,0) FS
BAdm 324, Operations Research 4(4,0) FS
BAdm 334, Small Business Management 3(3,0) F
BAdm 350, Legal Environment of Business and Contracts 3(3,0) FS
BAdm 351, Business Law I 3(3,0) F
BAdm 360, Organization and Management 3(3,0) FS
BAdm 380, Personal Finance 3(3,0) S
BAdm 416, Commercial Bank Management 3(3,0) S AY
BAdm 482, Business Policy and Strategy 3(3,0)FS
BAdm 483 Seminar in Business Consulting 3(3,0) FS
BAdm 474, Principles of Selling 3(3,0) F

Computer Science
CSc 330, COBOL Programming 3(3,0) FSSu

Economics
Econ 370, Marketing 3(3,0) FS
Econ 467, Labor, Law and Economics 3(3,0) S
Econ 453, Risk Management — Personal and Business 3(3,0)
Econ 476, Marketing Research 3(3,0)

Geography
Geog 454, Industrial and Commercial Site Selection (3,0) FS

Mathematics
Math 241, Mathematics of Finance 3(3,0) S

Mass Communications
MCom 313, Publicity Methods 2(2,0) FSSu
MCom 370, Principles of Advertising 3(3,0) F

Political Science
PolS 428, Personnel and Budgetary Administration 3(3,0) S

Printing
Prtg 314, Sales, Promotion and Marketing 3(3,0) FS

Psychology
Psyc 331, Business and Industrial Psychology 3(3,0) F

Speech
SpCm 201, Interpersonal Communication 3(3,0) S
SpCm 315, Public Speaking 3(3,0) FS

Apparel Merchandising and Interior Design
AM/ID 373, Retailing 3(3,0) S

Chemistry (Chem) Major and Minor

Laurence Peterson
Department of Chemistry and Biochemistry
Shepard Hall 121
605-688-5151

Requirements for Chemistry Major
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Chem 101, Introduction to Chemical Sciences	1		
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			4
Engl 101, Freshman Composition	3	or	3
Math 123, Calculus I* **or**			
Math 222, Calculus for Non-Math Major	5	or	5
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Biological Science	3		3
Humanities and Social Science Core**	0-3		0-3

Sophomore Year	**F**		**S**
Chem 326, Organic Chemistry	4		
Chem 328, Organic Chemistry			4
Phys 111, Introduction to Physics I	4		
Phys 113, Introduction to Physics II			4
Humanities and Social Science Core**	3-6	or	3-6
Electives***	3-6	or	3-6

Junior Year	**F**		**S**
Chem 232, Analytical Chemistry I	4		
Chem 342-344, Physical Chemistry	5		
Engl 301, Advanced Composition	3	or	3
Humanities and Social Science Core**	3-6	or	3-6
Electives***	3-6	or	3-6

Senior Year	**F**		**S**
Humanities and Social Science Core**	0-10	or	0-10
Electives***	6-16	or	6-16

* Math 224, Calculus II is recommended as an elective.
** 9 credits of Humanities and 12 credits of Social Sciences are required. At least 6 of these must be International Studies. See College of Arts and Science requirements.
*** Electives must include at least 8 credits of Chemistry selected from Chem 344, 352, 361, 380, 382, 434, 461.

Suggested courses for those interested in associated careers in:

Allied Health
Bio 101; Zool 221, 325, 467; Micr 231, 422; Chem 361, 382, 434; Stat 341

Biological Sciences
Chem 361, 461; Biological Science upper division, 9 credits; Bio 101

Education
Chem 352, 361, 380; Education Requirements

Environmental
Chem 361, 380, 434; Micr 310; Bot 415; Bio 311; Geog 337

Quality Control
Chem 352, 361, 434; Stat 341

Requirements for Chemistry Major – ACS Certified
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Chem 101, Introduction to Chemical Sciences			1
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			4
Engl 101, Freshman Composition	3	or	3
Math 123, Calculus I	5		
Math 224, Calculus II			4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Humanities, Social Science, & Biological Science Core*	3	or	3

Sophomore Year	**F**		**S**
Chem 232, Analytical Chemistry I	4		
Chem 326, Organic Chemistry	4		
Chem 328, Organic Chemistry			4
Computer Science Course	3	or	3
Math Elective	3		
Phys 211, University Physics I	4		
Phys 213, University Physics II			4
Humanities, Social Science, & Biological Science Core*	0-3	or	0-5

Junior Year	**F**		**S**
Chem 352, Inorganic Chemistry	4		
Chem 342, Physical Chemistry	5		
Chem 344, Physical Chemistry			5
Engl 301, Advanced Composition	3	or	3
Humanities, Social Science, and Biological Science Core*	4		8

Senior Year	**F**		**S**
Chem 434, Instrumental Analysis			4
Chem 492, Special Problems	1-4	or	1-4
Advanced Physics Elective	3	or	3
Advanced Chemistry Elective	3	or	3
Humanities, Social Science, and Biological Science Core*	1-6	or	0-2
Electives	0-8	or	0-5

* 9 credits of Humanities and 12 credits of Social Sciences are required. At least 6 of these must be International Studies. See College of Arts and Science requirements. The University core requires 6 credits of Biological Science.

Requirements for Chemistry Minor: 16 cr

Chem 112, General Chemistry I	4
Chem 114, General Chemistry II	4
Chem 120, Elementary Organic Chemistry	4
Chem 232, Analytical Chemistry I **or** Chem 361, Biochemistry	4

Civil Engineering (CEE) Major

Dwayne Rollag
Department of Civil and Environmental Engineering
Crothers Engineering Hall 118
605-688-5427

Requirements for Civil Engineering Major
Bachelor of Science in Civil Engineering
(Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology)

Freshman Year	**F**	**S**
CEE 106, Elementary Surveying		3
Chem 112, General Chemistry I	4	
Chem 114, General Chemistry II **or** Chem 120, Elementary Organic Chemistry		3
EG 121-122, Engineering Design Graphics I-II	1	1
Engl 101, Freshman Composition **and** SpCm 101, Fundamentals of Speech	3	3
GE 101, Introduction to Engineering and Technology	2	
Math 123-224, Calculus I-II	5	4
WEL 100, Skills for Healthy Living & Lab		2

Sophomore Year	**F**	**S**
CEE 208, Engineering Surveys	3	
CEE 216, Materials		3
CSc 213, Introduction to Programming with FORTRAN	3	
EG 123, Computer Aided Design & Graphics	1	
EM 221, Statics	3	
EM 222, Dynamics		3
Math 225, Calculus III	3	
Math 321, Differential Equations		3
Phys 211-213, University Physics I-II	4	4
Electives		3

Junior Year	**F**	**S**
CEE 311, Structural Materials Lab	1	
CEE 327, Water Supply Engineering		3
CEE 336, Engineering Geology		3
CEE 353, Structural Theory		3
CEE 363, Transportation Engineering		3
CEE 490, Seminar	0	
EE 305, Basic Electrical Engineering I		3
EM 321, Mechanics of Materials	3	
EM 331, Fluid Mechanics	3	
Engl 301, Advanced Composition **or** Engl 379, Technical Communications	3	
Math 381, Mathematical Statistics **or** Stat 341, Statistical Methods I	3	
ME 314, Thermodynamics	3	
Elective	2	3

Senior Year	**F**	**S**
CEE 331, Fluid Mechanics Lab	1	
CEE 423, Wastewater Engineering	3	
CEE 433, Hydraulic Engineering	3	
CEE 446, Geotechnical Engineering	4	
CEE 455, Steel Design	3	
CEE 456, Concrete Theory and Design		3
CEE 464, Senior Design Project I	1	
CEE 465, Senior Design Project II		2
CEE 475, Engineering Administration		3
Electives	3	10

Total hours required for graduation	**136**
Electives	**21**

Technical Electives	**Credits**
CEE 304, Land Surveying	3
CEE 306, Photo Interpretation and Photogrammetry	3
CEE 333, Hydrology	3
CEE 457, Indeterminate Structural Analysis	3
CEE 458, Design of Timber Structures	2
CEE 467, Highway Engineering	3
CEE 473, Construction Engineering	3
CEE 474, Construction Methods and Equipment	3
CEE 483, Municipal Engineering	3
CEE 492, Special Problems	1-3
CEE 493, Special Topics	1-3
CEE 411, Bituminous Materials	3
CEE 424, Industrial Waste Treatment	2
CEE 427, Environmental Engineering Instrumentation	3
CEE 428, Solid Waste Engineering and Management	3
CEE 435, Water Resources Engineering	3
CEE 436, Foundation Engineering	3
CEE 447, Advanced Soils Engineering	3
CEE 452, Prestressed Concrete	3
CEE 444, Precast Concrete Structures	3
CEE 443, Matrix Analysis of Structures	3
CEE 459, Advanced Structural Mechanics	3

Clinical Laboratory Technology (MEDT) Major

Laurence Peterson
Department of Chemistry and Biochemistry
Shepard Hall 121
605-688-5151

Requirements for Clinical Laboratory Technology Major
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Bio 101, Biology Survey I	3		
Chem 101, Introduction to Chemical Sciences			1
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			4
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra **or** Math 113, Algebra & Trigonometry	3-5	or	3-5
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Zool 221, Anatomy			3
Humanities or Social Science Core*	3-5		3-5

Sophomore Year	**F**		**S**
Chem 120, Elementary Organic Chemistry	4		
Chem 361, Biochemistry			4
Micr 231, General Microbiology	4	or	4
Zool 467, General Parasitology	3		

Communications Elective**	2-3	or	2-3
Humanities and Social Science Core**	3	or	6-8

Junior Year	F		S
Chem 232, Analytical Chemistry I	4		
Chem 330, Applied Chemical Instrumentation			4
Chem 382, Techniques in Clinical Laboratory Technology			3
Engl 301, Advanced Composition	3	or	3
Micr 422, Immunology	4		
Micr 323-324, Medical Microbiology and Lab			4
Zool 325, Mammalian Physiology	4	or	4
MedT 487, Internship Orientation			1
Humanities and Social Science Core*	0-6	or	0-6
Electives***	3-4	or	1-3

Senior Year

Twelve months of training in a hospital school of Medical Technology approved by the Committee on Allied Health Education and Accreditation of the American Medical Association for which 40 semester credits will be granted. Ninety-eight (98) credit hours must be earned at SDSU prior to the internship.

* 9 credits of Humanities and 12 credits of Social Sciences are required. At least 6 of these must be International Studies. See College of Arts and Science requirements.

** SpCm 201 Interpersonal Communications, GCom 345 Organizational Communications, or SpCm 334 Discussion.

*** Students are encouraged to select one course from the following: Phys 101 Survey of Physics, Stat 341 Statistical Methods I, Acct 210 Principles of Accounting I.

Communication Studies and Theatre (CST) Major and Minor

Michael Schliessmann
Department of Communication Studies and Theatre
Pugsley Center 115
605-688-6131

Requirements for Communication Studies and Theatre Major – DCom Option
Bachelor of Arts or Bachelor of Science in Arts and Science

This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Requirements for Communication Studies and Theatre Major – GCom Option
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Foreign Language (BA only)	4		4
Math 102, College Algebra	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Biological Science Core** (BS only)	3		3
Humanities Core*	3	or	3
Social Science Core	3	or	3
CST Electives	3		3

Sophomore Year	F		S
Foreign Language (BA only)	3		3
Humanities Core*	3	or	3
Natural Science Core (sequence) (BA only)	4		4
Physical Science Core** (BS only)	4		4
Social Science Core	3	or	3
CST Electives	3		3

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Humanities Core* (BS only)	3	or	3
Social Science Core	3	or	3
CST Electives	6		6

Senior Year	F		S
CST Electives	6		6

* From 2 disciplines other than Communication Studies and Theatre courses.
** Science sequence required in one area.

Requirements for Communication Studies and Theatre Major – RTVF Option
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Foreign Language (BA only)	4		4
Math 102, College Algebra	3	or	3
RTVF 130, Introduction to Radio & TV	3		
RTVF 144, Radio, Television & Film Activities	1	or	1
RTVF 160, Introduction to Film (or RTVF 360)	3		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Biological Science Core** (BS only)	3		3
Humanities Core*	3	or	3
Social Science Core	3	or	3
CST Electives	3	or	3

Sophomore Year	F		S
Foreign Language (BA only)	3		3
RTVF 330, Writing for Radio & TV (AY-even)			2
RTVF 331, Television Production	3	or	3
RTVF 344, Radio, Television & Film Activities	1	or	1
Humanities Core*	3	or	3
Natural Science Core (sequence) (BA only)	4		4
Physical Science Core** (BS only)	4		4
Social Science Core	3	or	3
CST Electives	3	or	3

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
RTVF 332, Radio News Reporting **or** RTVF 333, TV News Reporting	3	or	3
RTVF 344, Radio, Television & Film Activities	1	or	1
RTVF 360, Film Narrative (or RTVF 160)			3
SpCm 334, Discussion	3	or	3
Humanities Core* (BS only)	3	or	3
Social Science Core	3	or	3
CST Electives	3	or	3

Senior Year	F		S
GCom 345, Organizational Communication	3		
RTVF 335, Broadcast Programming **or** Thea 397, Theatre Arts Management (AY)			3
RTVF 344, Radio, Television & Film Activities	1	or	1
RTVF 431, Advanced Television Production (AY-odd)			3
CST Electives	3	or	3

* From 2 disciplines other than Communication Studies and Theatre courses.
** Science sequence required in one area.

Requirements for Communication Studies and Theatre Major – SpCm Option
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Foreign Language (BA only)	4		4

Math 102, College Algebra	3	or	3
RTVF 130, Introduction to Radio & Television	3		
SpCm 101, Fundamentals of Speech	3	or	3
SpCm 281, Forensic Activities	1	or	1
Thea 100, Introduction to Theatre	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Biological Science Core** (BS only)	3		3
Humanities Core*	3	or	3
Social Science Core	3	or	3
CST Electives	3	or	3

Sophomore Year	**F**		**S**
Foreign Language (BA only)	3		3
GCom 211, Phonetics			3
SpCm 201, Interpersonal Communication			3
SpCm 315, Public Speaking	3	or	3
SpCm 340, Oral Interpretation	3	or	3
Humanities Core*	3	or	3
Natural Science Core (sequence) (BA only)	4		4
Physical Science Core** (BS only)	4		4
Social Science Core	3	or	3
CST Electives	3	or	3

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
GCom 345, Organizational Communication	3		
SpCm 322, Argumentation and Debate (AY)			3
SpCm 334, Discussion	3	or	3
Humanities Core* (BS only)	3	or	3
Social Science Core	3	or	3
CST Electives	3	or	3

Senior Year	**F**		**S**
CST Electives	3	or	3

* From 2 disciplines other than Communication Studies and Theatre courses.
** Science sequence required in one area.

Requirements for Communication Studies and Theatre Major – SpEd Option
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
DCom 131, Introduction to Communication Disorders	3	or	3
Engl 101, Freshman Composition	3	or	3
Foreign Language (BA only)	4		4
Math 102, College Algebra	3	or	3
RTVF 130, Introduction to Radio & TV	3		
SpCm 101, Fundamentals of Speech	3	or	3
Thea 131, Acting	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Biological Science Core** (BS only)	3		3
Humanities Core*	3	or	3
Social Science Core	3	or	3
CST Electives	3	or	3

Sophomore Year	**F**		**S**
Foreign Language (BA only)	3		3
SpCm 201, Interpersonal Communication			3
SpCm 210, Individual Contest Events (AY)	2		
Thea 241, Stagecraft	3	or	3
Physical Science Core** (BS only)	4		4
Humanities Core*	3	or	3
Natural Science Core (sequence) (BA only)	4		4
Social Science Core	3	or	3
CST Electives	3	or	3

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
SpCm 322, Argumentation and Debate (AY)			3
SpCm 340, Oral Interpretation	3	or	3
Humanities Core* (BS only)	3	or	3
Social Science Core	3	or	3
CST Electives	3	or	3

Senior Year	**F**		**S**
SpCm 375, Teaching of Speech (AY)	3		
Thea 351, Directing **or**			
Thea 355, Children's Theatre (AY)	3	or	3
CST Electives	3	or	3

* From 2 disciplines other than Communication Studies and Theatre courses.
** Science sequence required in one area.

Prospective classroom teachers must also complete courses required of all secondary school teachers. Students who plan to teach in the secondary schools should consult with the College of Education and Counseling before their sophomore year.

Requirements for Communication Studies and Theatre Major – Thea Option
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Foreign Language (BA only)	4		4
Math 102, College Algebra	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
Thea 100, Introduction to Theatre	3	or	3
Thea 131, Acting	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Biological Science Core** (BS only)	3		3
Humanities Core*	3	or	3
Social Science Core	3	or	3
CST Electives	3	or	3

Sophomore Year	**F**		**S**
Foreign Language (BA only)	3		3
Thea 241, Stagecraft	3	or	3
Thea 243, Makeup for the Stage	2		
Humanities Core*	3	or	3
Natural Science Core (sequence) (BA only)	4		4
Physical Science Core**(BS only)	4		4
Social Science Core	3	or	3
CST Electives	3	or	3

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Thea 351, Directing	3		
Humanities Core* (BS only)	3	or	3
Social Science Core	3	or	3
CST Electives	3	or	3

Senior Year	**F**		**S**
Thea 397, Theatre Arts Management **or**			
Thea 445, Lighting for Stage & TV (AY)	3		
Thea 490, Summer Theatre (Su Only – 5 credits)			
CST Electives	3	or	3

* From 2 disciplines other than Communication Studies and Theatre courses.
** Science sequence required in one area.

Requirements for Communication Studies and Theatre Minor: 20 cr (Theatre Option, 19 cr)

20 (or 19) semester credits including SpCm 101, approved by the department head. Not more than 8 credits chosen from activity courses (RTVF 144-445, SpCm 281, Thea 135, 145, 195, and 490) may be counted.

Computer Science (CSc) Major and Minor

Gerald Bergum
Department of Computer Science
Administration Building 133C
605-688-5719

Requirements for Computer Science Major
Bachelor of Science in Computer Science

Freshman Year	**F**		**S**
CSc 150, Computer Science I	3		
CSc 250, Computer Science II			3
Engl 101, Freshman Composition	3	or	3
Math 123, Calculus I	5		
Math 224, Calculus II			4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2		
Electives			3
Social Science Electives	3		3

Sophomore Year	**F**	**S**
CSc 241, Computer Logic	3	
CSc 285, Data Structures	3	
CSc 290, Programming Languages		3
CSc 314, Assembly Language		3
Math 215, Matrix Algebra	2	
Math 253, Elementary Logic and Set Theory	3	
Math 345, Topics in Discrete Mathematics		2
Applied Electives***		4
Humanities Electives	3	3
Social Science Electives	3	

Junior Year	**F**	**S**
CSc 303, Introduction to Ethical Issues in Computer Science	2	
CSc 328, Introduction to Automata Theory	3	
CSc 354, Introduction to Systems Programming	3	
CSc 428, Compiler Construction		3
Engl 301, Advanced Composition**		3
Math 373, Introduction to Numerical Analysis	3	
Stat 341, Statistical Methods I*		3
Applied Electives		3
Electives	1	
Natural Science Electives	4	4

Senior Year	**F**	**S**
CSc 426, Computer Architecture & Organization		3
CSc 484, Database Management Systems	3	
CSc 456, Operating Systems	3	
CSc 470, Software Engineering		3
Applied Electives	3	6
Electives	8	3

Curriculum for Secondary Computer Science Teaching

Freshman Year	**F**		**S**
CSc 150, Computer Science I	3		
CSc 250, Computer Science II			3
Engl 101, Freshman Composition	3	or	3
Math 123, Calculus I	5		
Math 224, Calculus II			4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2		
Natural Science Electives	4		4
Social Science Electives			3

Sophomore Year	**F**	**S**
CSc 241, Computer Logic	3	
CSc 285, Data Structures	3	
CSc 290, Programming Languages		3
CSc 314, Assembly Language		3
EdFn 375, Human Relations		3
Math 215, Matrix Algebra	2	
Math 253, Elementary Logic and Set Theory	3	
Math 345, Topics in Discrete Mathematics		2
Psyc 101, General Psychology	3	
SeEd 287, Practicum & Professional Lab		2
Humanities Electives	3	3

Junior Year	**F**	**S**
CSc 328, Introduction to Automata Theory	3	
CSc 354, Introduction to Systems Programming	3	
CSc 456, Operating Systems	3	
CSc 480, Methods for Teaching Computer Science		3
EdFn 365, Integrating Computers into the Curriculum	2	
Engl 301, Advanced Composition**		3
EPsy 302, Educational Psychology		2
Hist 368, History of the American Indians **or** Anth 421, Indians of North America		3
Math 373, Introduction to Numerical Analysis	3	
SeEd 314, Supervised Clinical/Field Experience	1	
SeEd 420, Teaching Special Needs Students		1
SeEd 450, Teaching of Reading		3

Senior Year	**F**	**S**
CSc 426, Computer Architecture & Organization		3
CSc 428, Compiler Construction		3
CSc 470, Software Engineering		3
SeEd 400, Curriculum & Instruction in Secondary Schools	3	
SeEd 410, Social Foundations, Management & Law	2	
SeEd 488, Supervised Teaching Internship	10	
Stat 341, Statistical Methods I*		3
Electives		4

* May substitute Math 381.
** May substitute Engl 379.
*** Courses numbered 300 or above chosen from your support field of study with at least nine credits from Computer Science courses numbered 300 or higher. Must have permission of major adviser.

Requirements for Computer Science Minor: 21 cr

CSc 150, Computer Science I	3
CSc 250, Computer Science II	3
CSc 285, Data Structures	3
Applied Electives*	12

* 3 credits from one's discipline may be used subject to approval by advisor and department head.

Construction Management (CM) Major

Jerry Sorensen
Department of General Engineering
Wenona Hall 310
605-688-6417

Requirements for Construction Management Major
Bachelor of Science in Technology

Freshman Year	**F**	**S**
Acct 210, Principles of Accounting I	3	
Acct 211, Principles of Accounting II		3

Chem 106, Chemistry Survey	4		
CSc 312, Advanced Microcomputer Applications			3
EG 121, Engineering Design Graphics I			1
Engl 101, Freshman Composition	3	or	3
GE 101, Introduction to Engineering & Technology	2		
Math 113, College Algebra & Trigonometry	5		
Math 222, Calculus for Non-Math Majors			5
SpCm 101, Fundamentals of Speech	3	or	3

Sophomore Year	**F**		**S**
CEE 106, Elementary Surveying	3		
CEE 211, Materials of Construction	2		
CM 232, Microcomputers in Construction	2		
EG 122, Engineering Design Graphics II	1		
EG 123, Computer Aided Design and Graphics			1
EM 223, Engineering Mechanics			3
ES 131, Welding			2
Phys 111, Introduction to Physics I	4		
Phys 112, Introduction to Physics II			4
WEL 100, Skills for Healthy Living & Lab	2		
Humanities	3		
Social Science			3
Free Elective			3

Junior Year	**F**		**S**
CEE 208, Engineering Surveys	3		
CEE 336, Engineering Geology	3		
CM 321, Strength of Materials	3		
CM 332, Building Systems	2		
CM 333, Practical Hydrology and Hydraulics			3
CM 352, Cost Estimating Techniques			2
CM 353, Structural Theory for Technologists			3
Engl 379, Technical Communications	3		
GE 231, Technology and Society			3
Social Science			3
Free Elective	3		
Technical Electives*			3

Senior Year	**F**		**S**
BAdm 360, Organization and Management	3		
BAdm 350, Legal Environment of Business and Contracts	3		
CEE 473, Construction Engineering			3
CEE 474, Construction Methods and Equipment	3		
CEE 475, Engineering Administration			3
CM 400, Risk/Loss Control in Construction	3		
GE 443, Project Management			2
Humanities			3
Technical Electives*	3		3

* Any applicable College of Engineering 300 or above designated course may be taken as a Technical Elective course (prerequisites must be met on all courses).

Consumer Affairs (CA) Major and Minor

Mary Kay Helling
Department of Human Development, Consumer and Family Sciences
Nursing-Home Economics 369
605-688-6418

Requirements for Consumer Affairs Major
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2	or	2
Math 102, College Algebra	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living & Lab	2	or	2
College of Family and Consumer Sciences Elective			3
General Education Elective	3		
Humanities Elective			3
Natural Science Electives	4		4
Social Science Elective	3		

Sophomore Year	**F**		**S**
CA 241, Management in Family and Personal Living*	3		
Econ 201, Macroeconomics Principles	3	or	3
Business Electives	3		3
College of Family and Consumer Sciences Electives	4		3
General Education Elective	2	or	2
Humanities Elective	3		
Electives	3		6

Junior Year	**F**		**S**
BAdm 350, Legal Environment of Business & Contracts	3	or	3
BAdm 360, Organization and Management	3	or	3
CA 340, Work, Time,and Energy Decisions*			3
CA 361, Household Technology*			2
CA 381, Social Skills in the Business Environment	2	or	2
CA 391, Consumers and the Market	3	or	3
Engl 301, Advanced Composition	3	or	3
FCSE 421, Experiences in Adult Education*			2
HDCF 241, Family Relations	3		
Business Electives	3		3
College of Family and Consumer Sciences Elective	3		

Senior Year	**F**		**S**
CA 371, Issues in Consumer Affairs*	2		
CA 412, Preparation for Consumer Affairs Practicum*			3
CA 442, Family Resource Management Lab*	3		
CA 487, Orientation to Consumer Affairs Internship*	1		
FCS 401, Professional Perspectives	2		
FCS 495, Internship*			10
College of Family and Consumer Sciences Electives	3		
Electives	5		

* These courses are only offered once a year. Deviations from the established program schedule can extend the time required to complete the program.

Must have 2.5 GPA and "C" or higher as described on program guidesheet to be eligible for graduation.

Requirements for Consumer Affairs Minor: 16 cr

CA 241, Management in Family and Personal Living*	3
CA 371, Issues in Consumer Affairs*	2
CA 391, Consumers and the Market	3
FCSE 421, Experiences in Adult Education*	2

In addition, at least 6 credits must be taken from the following:

CA 130, Coping Skills for Consumers*	2
CA 340, Work, Time and Energy Decisions*	3
CA 361, Household Technology*	2
CA 442, Family Resource Management Lab	3
CA 493, Current Topics	3

* These courses are only offered once a year. Deviations from the established program schedule can extend the time required to complete the program.

Counseling and Human Resource Development (CHRD)

Richard Roberts
Department of Counseling and Human Resource Development
Wenona Hall 115
605-688-4190

See Graduate Bulletin for requirements.

Criminal Justice (CJus) Minor

James Satterlee
Department of Sociology
Scobey Hall 224
605-688-4132

Requirements for Criminal Justice Minor: 18 cr*

CJus 201, Introduction to Criminal Justice 3
CJus 335, Criminal Prosecution and Defense 3
Soc 351, Criminology** (P, Soc 100) 3

9 hours from:
CJus 203, Police and Community Relations.....3
CJus 331, Civil Rights and Liberties (P, PolS 100 or 101) 3
CJus 333, Fundamentals of Criminal Procedure 3
CJus 334, Criminal Law 3
CJus 336, Juvenile Justice.....3
CJus 416, Problems in Criminal Justice (P, Consent) 3
Soc 325, Domestic Violence**.....3
Soc 354, Victimology** 3
Soc 451, Juvenile Delinquency**.....3
Soc 452, Sociology of Corrections** 3
Soc 460, Advanced Criminology** (P, Soc 351).....3
Soc 480, Sociology of Law** 3
Soc 501, Social Deviance** (P, 100 or Consent).....3
WL 420, Wildlife Law & Enforcement (P, Jr. Standing) 3

* Must have a cumulative GPA of 2.2 to enter the program.
** May not be used for both a Sociology Major or Minor and a Criminal Justice Minor.

Curriculum and Instruction

R.L. Erion
Department of Educational Leadership
Wenona Hall 107
605-688-4369

See Graduate Bulletin for requirements.

Dairy Manufacturing Major

John Parsons
Department of Dairy Science
Dairy-Microbiology 109A
605-688-4116

Requirements for Dairy Manufacturing Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
Chem 106, Chemistry Survey **or** Chem 112, General Chemistry I	4		
DS 130, Introduction to Dairy Science	3	or	3
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra **or** Math 113, College Algebra & Trigonometry			3-5
Soc 100, Introduction to Sociology			3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Group I Electives	3		6
Electives	2		

Sophomore Year	**F**	**S**
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II	3	3
Chem 120, Elementary Organic Chemistry	4	
DS 202, Dairy Products Judging		1
Econ 201, Macroeconomics Principles	3	
Micr 231, General Microbiology		4
Humanities Electives	3	
Social Science Elective	3	
Electives		8

Junior and Senior Years	**F**	**S**
Acct 210, Principles of Accounting I		3
AST 443, Food Process & Engineering Fundamentals	3	
CSc 105, Introduction to Computers **or** CSc 150, Computer Science I		3
DS 221, Technical Control of Dairy Products I **and** DS 422, Technical Control of Dairy Products II	3	4
DS 301, Dairy Microbiology		3
DS 321, Dairy Product Processing I **and** DS 322 Dairy Product Processing II	5	5
DS 421, Dairy Plant Management	3	
DS 490, Dairy Seminar	1	
DS 496, Field Experience	3	
Econ 467, Labor, Law & Econ		3
Engl 301, Advanced Composition		3
Micr 311, Food Microbiology	4	
Phys 101, Survey of Physics **or** Phys 111, Introduction to Physics I **or** Phys 211, University Physics I	4	
Communications Elective†		2
Economics or Business Administration Elective	3	or 3
Humanities Electives		3
Electives	3	3

Requirements for Dairy Manufacturing Major
Bachelor of Science in Biological Science
This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Dairy Production Major

John Parsons
Department of Dairy Science
Dairy-Microbiology 109A
605-688-4116

Requirements for Dairy Production Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
Chem 106, Chemistry Survey **or** Chem 112, General Chemistry I			4
DS 130, Introduction to Dairy Science	3	or	3

DS 212, Dairy Cattle Evaluation 2
Engl 101, Freshman Composition .....3 or 3
Math 102, College Algebra **or**
Math 113, College Algebra & Trigonometry 3-5
PS 103, Crop Production 3
Soc 100, Introduction to Sociology 3
SpCm 101, Fundamentals of Speech .....3 or 3
WEL 100, Skills for Healthy Living and Lab 2
Humanities Electives 3 3

Sophomore Year	**F**		**S**
AS 233, Applied Animal Nutrition	4		
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II	3		3
Chem 120, Elementary Organic Chemistry	4		
DS 202, Dairy Products Judging			1
Econ 201, Macroeconomics Principles	3		
Micr 231, General Microbiology			4
Phys 101, Survey of Physics **or** Phys 111, Introduction to Physics I **or** Phys 211, University Physics I			4
PS 213, Soils	3		
Social Science Elective			3

Junior & Senior Years	**F**		**S**
AgEc 271, Farm & Ranch Management			4
AS 323, Advanced Animal Nutrition			3
AS 332, Principles of Animal Breeding			4
AS 433, Livestock Reproduction	3		
Bio 371, Genetics	3		
CSc 105, Introduction to Computers **or** CSc 150, Computer Science I	3		
DS 301, Dairy Microbiology			3
DS 411, Dairy Breeds & Breeding			2
DS 412, Dairy Farm Management	3		
DS 413, Physiology of Lactation			3
DS 432, Dairy Cattle Feeding			3
DS 490, Dairy Seminar	1		
DS 496, Field Experience	3		
Engl 301, Advanced Composition	3		
Vet 223, Anatomy & Physiology of Livestock			4
Communications Elective†	2		
Electives	9		8

† Communication elective to be selected from: Engl 379; MCom 210, 313, 315, 331; SpCm 315, 334.

The following options have been approved for the curricula in Agriculture. Students may use elective credits in the major to fulfill requirements for the option.

Business Option

Acct 210, Principles of Accounting I 3
BAdm 360, Organization and Management 3
Econ 202, Microeconomics Principles 3

Plus 12 hours to be chosen from:

Acct 211, Principles of Accounting II 3
AgEc 354, Agricultural Marketing & Prices 3
BAdm 310, Business Finance 3
BAdm 380, Personal Finance 3
Econ 330, Money & Banking 3
Econ 370, Marketing.....3
Econ 476, Marketing Research.....3
Stat 341, Statistical Methods I, or equivalent 3

Science Option

Chemistry, Mathematics and/or Physics.....11

Biological Science to be selected from the following areas:

Botany, Entomology-Zoology or Plant Pathology 2

Early Childhood Education Major

Mary Kay Helling
Department of Human Development, Consumer and Family Sciences
Nursing-Home Economics 369
605-688-6418

Requirements for Early Childhood Education Major
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
HDCF 141, Individual and the Family	2		
HDCF 293, Current Topics: Early Experience	1		
HDCF 327, Human Development and Personality I: Childhood	3	or	3
Math 102, College Algebra	3	or	3
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Electives	3	or	3
Natural Science Sequence Courses	3-4	or	3-4

Sophomore Year	**F**		**S**
CSc 105, Introduction to Computers	3	or	3
DCom 131, Introduction to Communication Disorders	3	or	3
HDCF 241, Family Relations	3	or	3
HDCF 328, Experience in Human Relations	3	or	3
HDCF 371, Infants and Toddlers: Developmentally Appropriate Practices			3
Hlth 250, First Aid			2
NFS 221, Survey of Nutrition	3	or	3
Humanities Electives	3	or	3
Electives	7	or	7

Junior Year	**F**		**S**
EdFn 375, Human Relations	3	or	3
Engl 301, Advanced Composition	3	or	3
HDCF 312, Human Development and Personality II: Adolescence	3		
HDCF 313, Human Development and Personality III: The Middle and Later Years	2	or	2
HDCF 341, Family Dynamics	3	or	3
HDCF 361, Materials and Techniques in Creative Expression*	4	or	4
HDCF 362, Planning and Methodology for Preschool Programs*	4	or	4
HDCF 364, Parent Education*	3	or	3
HDCF 487, Orientation to Child and Family Services Practicum#			1

Senior Year	**F**		**S**
FCS 401, Professional Perspectives	2	or	2
HDCF 414, Research Applications in HDCFS	3	or	3

HDCF 465, Introduction to Developmental Assessment of Young Children* ..... 3 or 3
HDCF 472, Student Teaching in Preschool Programs ..... 8 or 8
HDCF 455, Administration and Supervision in Early Childhood Settings 3
HDCF 466, Early Childhood Special Education I ..... 3 or 3
HDCF 497, Practicum in Child and Family Services (or SS) ..... 8-12 or 8-12
Electives ..... 0-5 or 0-5

* Taken concurrently.
# To be taken semester before HDCF 497, Practicum.
A pre-graduate check is required 1 semester before graduation semester.
At beginning of graduation semester, a graduation application must be completed.

A grade of "D" on courses in the major cannot be counted and course must be repeated. Any required course with a department/program prefix is considered a course in the major.

A grade of "C" or better is required in Psyc 101, Soc 100, Engl 101, SpCm 101.

Requirements for Early Childhood Education Major
Cooperative Program with Black Hills State University
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
Bio 101, Biology Survey I	3	or	3
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
HDCF 141, Individual and the Family	2	or	2
HDCF 293, Current Topics: Early Experience	1	or	1
HDCF 327, Human Development and Personality I: Childhood			3
Hist 151, U.S. History to 1877 **or** Hist 152, U.S. History since 1877	3	or	3
Math 102, College Algebra	3	or	3
Phys 101, Survey of Physics **or** Chem 106, Chemistry Survey			4
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
Art 121, Design I	3	or	3
Engl 312, Juvenile Literature	3		
Geog 131, Physical Geography I	4	or	4
Geog 200, Introduction to Human Geography **or** Geog 210, World Regional Geography	3	or	3
HDCF 241, Family Relations	3	or	3
HDCF 312, Human Development and Personality II: Adolescence	3		
HDCF 313, Human Development and Personality III: The Middle and Later Years	2	or	2
HDCF 328, Experience in Human Relations	3	or	3
Hlth 250, First Aid	2	or	2
Math 140, Survey of Mathematics			3
Mus 351, Music Education I: Elementary Music Concepts	2		
PE 360, Methods of Elementary School PE			2
PolS 100, American Government	3	or	3
Sequence Science Course	3		

Junior Year	**F**		**S**
Anth 421, Indians of North America	3	or	3
EdFn 338, Foundations of American Education	2	or	2
EdFn 375, Human Relations	3	or	3
Engl 301, Advanced Composition	3	or	3
EPsy 302, Educational Psychology	2		
EPsy 303, The Exceptional Child	3	or	3
HDCF 361, Materials and Techniques in Creative Expression*	4	or	4
HDCF 362, Planning and Methodology for Preschool Programs*	4	or	4
HDCF 364, Parent Education*	3	or	3
HDCF 414, Research Applications in HDCFS	3		

Senior Year	**F**	**S**
FCS 401, Professional Perspectives	2	
HDCF 455, Administration and Supervision in Early Childhood Settings	3	
HDCF 465, Introduction to Developmental Assessment of Young Children*	3	
HDCF 472, Student Teaching in Preschool Programs*	8	

Courses taken at BHSU to meet state elementary education certification will require at least 2 additional semesters. Enroll in HDCF 400 (0 cr) while at BHSU.

* Taken concurrently.
A pre-graduate check is required 1 semester before going to BHSU.
At beginning of graduation semester, a graduation application from SDSU must be completed.

A grade of "D" on courses in the major cannot be counted and course must be repeated. Any required course with a department/program prefix is considered a course in the major.

Students are required to have an overall GPA of 2.5 and have a "C" or better in Math 102, Engl 101, SpCm 101.

Students must meet all requirements for admission to Teacher Education Program at BHSU and SDSU. Students must successfully complete the PPST Exam.

Requirements for Early Childhood Education Major
Cooperative Program with Dakota State University
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
Bio 101, Biology Survey I	3		
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
Geog 131, Physical Geography I	4	or	4
HDCF 141, Individual and the Family	2	or	2
HDCF 293, Current Topics: Early Experience	1	or	1
HDCF 327, Human Development and Personality I: Childhood			3
Hist 151, U.S. History to 1877	3	or	3
Math 102, College Algebra	3	or	3
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
Engl 312, Juvenile Literature	3		
HDCF 241, Family Relations	3	or	3
HDCF 328, Experience in Human Relations	3	or	3
HDCF 312, Human Development and Personality II: Adolescence	3	or	3
Hist 152, U.S. History since 1877	3	or	3
Hlth 250, First Aid	2	or	2
Math 140, Survey of Mathematics	3	or	3
Mus 351, Music Education I: Elementary Music Concepts	2		
PE 360, Methods of Elementary School PE	2	or	2
PolS 100, American Government	3	or	3
Humanities Elective	3	or	3
Sequence Science Course	3/4	or	3/4

Junior Year	F		S
Anth 421, Indians of North America	3	or	3
Bio 103, Biology Survey II	3	or	3
EdFn 338, Foundations of American Education			2
EdFn 375, Human Relations	3	or	3
Engl 301, Advanced Composition	3	or	3
EPsy 302, Educational Psychology	2		
EPsy 303, The Exceptional Child	3	or	3
FCS 401, Professional Perspectives	2		
HDCF 313, Human Development and Personality III: The Middle and Later Years	2	or	2
HDCF 361, Materials and Techniques in Creative Expression*	4	or	4
HDCF 362, Planning and Methodology for Preschool Programs*	4	or	4
HDCF 364, Parent Education*	3	or	3

Senior Year	F	S
HDCF 414, Research Applications in HDCFS	3	
HDCF 455, Administration and Supervision in Early Childhood Settings	3	
HDCF 465, Introduction to Developmental Assessment of Young Children*	3	
HDCF 472, Student Teaching in Preschool Programs*	8	

Courses taken at DSU to meet state elementary education certification will require at least 3 additional semesters. Enroll in HDCF 400 (0 cr) while at DSU.

* Taken concurrently.

A pre-graduate check is required 1 semester before going to DSU.

At beginning of graduation semester, a graduation application from SDSU must be completed.

DSU requires at least a grade of "C" in Algebra and a 2.3 cumulative in English, Speech, Ed Psyc, and Algebra.

An overall cumulative GPA of 2.5 is also required.

A grade of "D" on courses in the major cannot be counted and course must be repeated. Any required course with a department/program prefix is considered a course in the major.

Students must meet all requirements for admission to Teacher Education Program at DSU and SDSU.

Economics (Econ) Major and Minor

Ardelle Lundeen
Department of Economics
Scobey Hall 136
605-688-4141

Requirements for Economics Major
Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Biological Science Electives (sequence courses)[1,2]	3		3
Social Science Elective[1]			3
General Electives	6		6

Sophomore Year	F	S
Acct 210, Principles of Accounting I	3	
Acct 211, Principles of Accounting II		3
CSc 312, Advanced Microcomputer Applications		3
Econ 201, Macroeconomics Principles	3	
Econ 202, Microeconomics Principles		3
Econ 330, Money and Banking		3
Math 222, Calculus for Non-Math Majors **or** Math 123, Calculus I	5	
Humanities Elective[1]	3	
Physical Science Elective[1,2]		3-4
General Electives	2-3	

Junior Year	F	S
Econ 301, Intermediate Microeconomics	3	
Econ 302, Intermediate Macroeconomics		3
Econ 433, Public Finance		3
Engl 301, Advanced Composition	3	
Engl 379, Technical Communications		3
Stat 341, Statistical Methods I	3	
*Option courses and general electives	7	7

Senior Year	F	S
Econ 405, Comparative Economic Systems; **or** Econ 404, History of Economic Thought; **or** Hist 377, Economic History of the U.S.	3	
Econ 423, Statistics II	3	
Econ 428, Mathematical Economics	3	
Communications Elective[3]	2-3	
Electives in Acct, AgEc, BAdm, or Econ	3	6
Humanities Electives[1]		6
Social Science Elective[1]		3
*Option courses and general electives	1-2	1

* Students can take a **Business Economics option** within the Economics major. The courses listed below would become the "Option courses."

Junior Year	
BAdm 310, Business Finance	3
BAdm 350, Legal Environment of Business & Contracts	3
BAdm 360, Organization and Management	3
Econ 370, Marketing	3

Senior Year	
BAdm 324, Operations Research	4
BAdm 482, Business Policy and Strategy	3

Three of the option courses can be substituted for:

Econ 423, Statistics II	3
Econ 428, Mathematical Economics	3
One of the electives in Acct, AgEc, BAdm, or Econ	3

[1] From approved list. Six hours of International Studies must be included in Humanities and/or Social Science electives.

[2] All students must complete two science courses from the same sequence, as identified in the list on page 29.

[3] Communications electives must be chosen from SpCm 201, Interpersonal Communications; SpCm 281, Forensic Activities, plus three additional hours of written communications; SpCm 315, Public Speaking; or SpCm 334, Discussion.

Requirements for Economics Major
Bachelor of Arts in Arts and Science

At the time of publication, availability of this degree program was under review by the Board of Regents. If interested in this degree program, contact the Dean of Arts and Science at 605-688-6619.

Requirements for Economics Minor: 21-24 cr	
Econ 201, Macroeconomics Principles	3
Econ 202, Microeconomics Principles	3
Econ 301, Intermediate Microeconomics, **or** Econ 302, Intermediate Macroeconomics	3

Two courses selected from courses prefixed AgEc or Econ	6-7
Two of the following:	6-8
Math 381, Mathematical Statistics (4) **or** Stat 341, Statistical Methods I (3) **or** Courses prefixed Acct, AgEc, BAdm, or Econ (3-4)	

International Studies: For the international option in agriculture, refer to page 129. A Foreign Language/Business-Economics specialization is available for all students majoring in Agricultural Business, Agricultural Economics or Economics or minoring in Economics. The specialization requires a minimum of twenty credit hours from the following courses in addition to the specified courses in the major or minor.

Core Courses	
Two courses in any one language	8
FL 134, Foreign Cultures (topical)	3
Span 383, Business Spanish or French or German Counterpart	2-3
	13
An additional seven credit hours chosen from approved list. See any Economics Department adviser for approved courses	7
	20

Business Area Studies. Students preparing for various positions in management and business should consult the list of courses under BUSINESS AREA STUDIES. Many of the courses listed there are offered by departments other than the Department of Economics and are of more specific interest to students in majors outside this department.

Educational Administration

R.L. Erion
Department of Educational Leadership
Wenona Hall 107
605-688-4369

See Graduate Bulletin for requirements.

Electrical Engineering (EE) Major

Lewis Brown
Department of Electrical Engineering
Harding Hall 201
605-688-4526

Requirements for Electrical Engineering Major
Bachelor of Science in Electrical Engineering
(Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology)

Freshman Year	**F**	**S**
Chem 112, General Chemistry I **and** Chem 114, General Chemistry II	4	3
EG 121, Engineering Design Graphics I	1	
EG 123, Computer Aided Design and Graphics		1
Engl 101, Freshman Composition **and** SpCm 101, Fundamentals of Speech	3	3
GE 101, Introduction to Engineering and Technology	2	
Math 123, Calculus I **and** Math 224, Calculus II	5	4
Phys 211, University Physics I		4
WEL 100, Skills for Healthy Living and Lab		2
Electives	x	x

Sophomore Year	**F**	**S**
CSc 218, Introduction to C/C++/UNIX for Engineers	3	
EE 220, Circuits I **and** EE 221, Circuits II	3	3
EE 222, Circuits Laboratory I **and** EE 223, Circuits Laboratory II	1	1
EE 265, Electric Materials		2
EM 223, Engineering Mechanics		3
Math 225, Calculus III		3
Math 321, Differential Equations	3	
ME 314, Thermodynamics **or** Phys 341, Thermodynamics and Statistical Mechanics		3
Phys 213, University Physics II	4	
Electives	x	x

Junior Year	**F**	**S**
EE 310, Probabilistic Methods in Electrical Engineering	3	
EE 316, Signals and Systems I **and** EE 317, Signals and Systems II	3	3
EE 320, Electronics I **and** EE 321, Electronics II	3	3
EE 322, Electronics Laboratory I **and** EE 323, Electronics Laboratory II	1	1
EE 345, Digital Systems		3
EE 346, Digital Systems Laboratory		1
EE 360, Electronic Devices		3
EE 385, Electromagnetics	3	
EE 386, Electromagnetics Laboratory	1	
Engl 379, Technical Communications	3	
Electives	x	x

Senior Year	**F**	**S**
EE 422, Engineering Economy	2	
EE 430, Energy Conversion	3	
EE 434, Energy Conversion Laboratory	1	
EE 447, Microprocessor Systems	3	
EE 448, Microprocessor Systems Laboratory	1	
EE 464, Senior Design I	2	
EE 465, Senior Design II		2
Electives	x	x

You should select technical electives to complement employment goals. Following are some suggested areas and supporting courses.

Biomedical Engineering	
EE 410, Passive and Active Filters	3
EE 450, Biomedical Signal Processing	3
EE 452, Biomedical Systems Analysis	2
EE 454, Biomedical Instrumentation and Electrical Safety	3
Zool 221, Anatomy	3
Zool 325, Mammalian Physiology	4

Communications & Advanced Electronics	
EE 420, Electronics III	3
EE 470, Communications Engineering	3

EE 410, Passive and Active Filters 3
EE 424, RF Electronics 3
EE 570, Digital Communication Systems 3
EE 471, Optical Fiber Communications 3
Math 381, Mathematical Statistics 4

Computers-Digital Hardware
EE 420, Electronics III 3
EE 547, Advanced Microprocessor System Design 3
Math 571, Numerical Analysis 3

Electronic Materials and Devices
Chem 340, Elementary Physical Chemistry 3
EE 493, Microelectronic Device Fabrication Lab 1
EE 493, Microelectronics Packaging 3
EE 493, Dielectrics and Piezo/Ferroelectric Materials 3
EE 493, Sensors, Theory, and Applications 3
Phys 331, Introduction to Modern Physics 3
Phys 439, Physics of the Solid State 3

Image Processing
EE 470, Communications Engineering 3
EE 475, Digital Image Processing 3
EE 493, Image Processing 3
EE 493, Data and Image Compression 3
Math 381, Mathematical Statistics 4
Math 571, Numerical Analysis 3
Phys 361, Optics 3

Power Systems
Chem 380, Environmental Chemistry 4
EE 431, Power Systems 3
EE 432, Advanced Power Systems 3
EE 435, Seminar in Power Systems 1
EE 470, Communications Engineering 3
EE 493, Power Engineering 3
EE 433, Computer Analysis of Power Systems 3
Math 381, Mathematical Statistics 4
ME 362 , Industrial Engineering 3
Phys 331, Introduction to Modern Physics 3

Cooperative Education Program
Students have the opportunity to work in industry and receive technical elective credit for the experience through EE 494. A formal work plan must be approved by the Department prior to the work experience.

Electronics Engineering Technology (ET) Major

Jerry Sorensen
Department of General Engineering
Wenona Hall 310
605-688-6417

Requirements for Electronics Engineering Technology Major
Bachelor of Science in Technology

Freshman Year	**F**		**S**
EG 121, Engineering Design Graphics I	1	or	1
Engl 101, Freshman Composition	3	or	3
ET 112, DC and AC Concepts	5		
ET 113, DC and AC Concepts Lab	2		
ET 120, Circuits			5
ET 121, Circuits Lab			2
GE 101, Introduction to Engineering and Technology	2		
Math 113, College Algebra & Trigonometry*	5		
Math 123, Calculus I	5	or	5
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
CSc 150, Computer Science I	3	or	3
EG 123, Computer Aided Design & Graphics	1	or	1
ET 210, Logic & Digital Circuits	4		
ET 211, Logic & Digital Circuits Lab	2		
ET 220, Radio Systems	3		
ET 254, Microprocessor I			2
ET 255, Microprocessor I Lab			1
GE 231, Technology and Society	3	or	3
Math 224, Calculus II	4	or	4
Phys 111, Introduction to Physics I	4		
Phys 113, Introduction to Physics II			4

Junior Year	**F**		**S**
Engl 379, Technical Communications	3	or	3
ET 302, Discrete & Integrated Devices	4		
ET 334, Microprocessor II	2		
ET 335, Microprocessor II Lab	1		
ET 340, Techniques of Servicing			2
ET 380, Prototype Techniques			3
ET 384, Industrial & Computer Control Circuits			4
ET 385, Industrial & Computer Control Circuits Lab			2
Economics Elective	3	or	3
Humanities Elective	3	or	3
Psychology Elective	3	or	3
Technical Elective	3	or	3

Senior Year	**F**		**S**
BAdm 360, Organization and Management	3	or	3
ET 430, Video Systems I	3		
ET 431, Video Systems I Lab	2		
ET 440, Video Systems II			3
ET 441, Video Systems II Lab			2
-OR-			
ET 450, Communication Circuits & Systems I	3		
ET 451, Communication Circuits & Systems I Lab	2		
ET 460, Communication Circuits & Systems II			3
ET 461, Communication Circuits & Systems II Lab			2
-OR-			
ET 470, Electronic Computer Systems I	3		
ET 471, Electronic Computer Systems I Lab	2		
ET 480, Electronic Computer Systems II			3
ET 481, Electronic Computer Systems II Lab			2
Humanities Elective	3	or	3
Technical Elective	3	or	3
Technical Elective	3	or	3
Non-technical Elective	3	or	3
Non-technical Elective	4	or	4

* Courses need not include these numbers; however, minimum math requirements must include one year of Calculus.

Engineering Physics Major

Warren Hein
Department of Physics
Crothers Engineering Hall 310A
605-688-5428

Requirements for Engineering Physics Major – Electrical Engineering Track
Bachelor of Science in Engineering Physics

Freshman Year	**F**		**S**
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			3
EG 121, Engineering Design Graphics I	1		
EG 123, Computer Aided Design and Graphics			1
Engl 101, Freshman Composition	3	or	3
GE 101, Introduction to Engineering and Technology	2	or	2
Math 123, Calculus I	5		
Math 224, Calculus II			4
Phys 211, University Physics I			4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
CSc 213, Introduction to Programming with FORTRAN **or** CSc 218, Introduction to C/C++/UNIX for Engineers	3	or	3
EE 220, Circuits I	3		
EE 221, Circuits II			3
EE 222, Circuits I Laboratory	1		
EE 223, Circuits II Laboratory			1
Math 225, Calculus III	3		
Math 321, Differential Equations			3
Phys 213, University Physics II	4		
Phys 331, Introduction to Modern Physics			3
Non-technical Electives*	8		

Junior Year	**F**		**S**
EE 320, Electronics I	3		
EE 321, Electronics II			3
EE 322, Electronics Laboratory I	1		
EE 323, Electronics Laboratory II			1
Engl 301, Advanced Composition **or** Engl 379, Technical Communications	3	or	3
Math 331, Advanced Engineering Mathematics **or** Math 327, Calculus of Several Variables	3		
Phys 312, Measurement Theory and Experiment Design	2		
Phys 314, Advanced Laboratory I			1
Phys 341, Thermodynamics & Statistical Mechanics	3		
Phys 351, Classical Mechanics			3
Phys 361, Optics	3		
Technical Electives**	6		

Senior Year	**F**		**S**
Phys 412, Advanced Lab II			1
Phys 421, Electromagnetism			3
Phys 435, Introduction to Nuclear Engineering **or** Phys 439, Physics of the Solid State	3	or	3
Phys 464, Senior Design I	1		
Phys 465, Senior Design II			2
Phys 471, Quantum Mechanics I	3		
Phys 490, Physics Colloquium	1	or	1
Non-technical Electives*	8		
Technical Electives**	10		

* Humanistic and social science non-technical electives must be chosen to satisfy the University Core. The humanistic and social science electives must include in-depth course work to meet the rigorous EAC/ABET requirements. Six humanities credits from at least two areas and nine social science credits from two areas must be taken for graduation. An additional one credit must be taken for a total of sixteen. A list of approved core courses that shows how the depth requirement can be met is available in the Physics Department office.

** Technical electives will be selected with the assistance of the student's advisor from courses offered by the Electrical Engineering, Physics, Computer Science, Chemistry, Biology, and Mathematics Departments. Technical electives must be chosen so that the design component is at least five hours and the engineering science component is at least five hours to meet EAC/ABET requirements. A complete list of departmentally approved technical electives is available in the Physics Department office. Any departures from this list must be approved by the Head of the Physics Department.

Requirements for Engineering Physics Major – Mechanical Engineering Track
Bachelor of Science in Engineering Physics

Freshman Year	**F**		**S**
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			3
EG 121, Engineering Design Graphics I	1		
EG 122, Engineering Design Graphics II			1
Engl 101, Freshman Composition	3	or	3
GE 101, Introduction to Engineering and Technology	2		
Math 123, Calculus I	5		
Math 224, Calculus II			4
Phys 211, University Physics I			4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
CSc 213, Introduction to Programming with FORTRAN **or** CSc 218, Introduction to C/C++/UNIX for Engineers	3	or	3
EE 220, Circuits I	3		
EE 221, Circuits II			3
EE 222, Circuits I Laboratory	1		
EE 223, Circuits II Laboratory			1
EM 221, Statics	3		
ES 225, Industrial Machine Tool Applications			1
Math 225, Calculus III	3		
Math 321, Differential Equations			3
ME 240, Fundamentals of Mechanical Design			3
Phys 213, University Physics II	4		
Phys 331, Introduction to Modern Physics			3
Non-technical Electives*			1

Junior Year	**F**		**S**
EM 331, Fluid Mechanics			3
Engl 301, Advanced Composition **or** Engl 379, Technical Communications	3	or	3
Math 331, Advanced Engineering Mathematics **or** Math 327, Calculus of Several Variables	3		
Phys 312, Measurement Theory and Experiment Design	2		
Phys 314, Advanced Laboratory I			1
Phys 341, Thermodynamics and Statistical Mechanics	3		
Phys 351, Classical Mechanics			3
Phys 361, Optics	3		
Non-technical Electives*	8		
Technical Electives**	3		

Senior Year	**F**		**S**
Phys 412, Advanced Lab II			1
Phys 421, Electromagnetism			3
Phys 435, Introduction to Nuclear Engineering **or** Phys 439, Physics of the Solid State			3
Phys 464, Senior Design I	1		

Phys 465, Senior Design II		2
Phys 471, Quantum Mechanics I	3	
Phys 490, Physics Colloquium	1 or	1
Non-technical Electives*	7	
Technical Electives**	11	

* Humanistic and social science non-technical electives must be chosen to satisfy the University Core. The humanistic and social science electives must include in-depth course work to meet the rigorous EAC/ABET requirements. Six humanities credits from at least two areas and nine social science credits from two areas must be taken for graduation. An additional one credit must be taken for a total of sixteen. A list of approved core courses that shows how the depth requirement can be met is available in the Physics Department office.

** Technical electives will be selected with the assistance of the student's advisor from courses offered by the Mechanical Engineering, Physics, Computer Science, Chemistry, Biology, and Mathematics Departments. Technical electives must be chosen so that the design component is at least five hours and the engineering science component is at least six hours to meet EAC/ABET requirements. A complete list of departmentally approved technical electives is available in the Physics Department office. Any departures from this list must be approved by the Head of the Physics Department.

Requirements for Engineering Physics Major – Professional Physics Track
Bachelor of Science in Engineering Physics

Freshman Year	**F**		**S**
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			3
EG 121, Engineering Design Graphics I	1		
EG 122, Engineering Design Graphics II **or** EG 123, Computer Aided Design & Graphics			1
Engl 101, Freshman Composition	3	or	3
GE 101, Introduction to Engineering and Technology	2	or	2
Math 123, Calculus I	5		
Math 224, Calculus II			4
Phys 211, University Physics I			4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
CSc 213, Introduction to Programming with FORTRAN **or** CSc 218, Introduction to C/C++/UNIX for Engineers	3	or	3
EE 220, Circuits I	3		
EE 221, Circuits II			3
EE 222, Circuits I Laboratory	1		
EE 223, Circuits II Laboratory			1
Math 225, Calculus III	3		
Math 321, Differential Equations			3
Phys 213, University Physics II	4		
Phys 331, Introduction to Modern Physics			3
Non-technical Electives*	8		

Junior Year	**F**		**S**
Engl 301, Advanced Composition or Engl 379, Technical Communications	3	or	3
Math 331, Advanced Engineering Mathematics **or** Math 327, Calculus of Several Variables	3		
Phys 312, Measurement Theory and Experiment Design	2		
Phys 314, Advanced Laboratory I			1
Phys 341, Thermodynamics and Statistical Mechanics	3		
Phys 351, Classical Mechanics			3
Phys 361, Optics	3		
Non-technical Electives*	5		
Technical Electives**	9		

Senior Year	**F**		**S**
Phys 412, Advanced Lab II			1
Phys 421, Electromagnetism			3
Phys 439, Physics of the Solid State			3
Phys 471, Quantum Mechanics I	3		
Phys 473, Quantum Mechanics II			3
Phys 490, Physics Colloquium	1	or	1
Phys 433, Nuclear and Elementary Particle Physics	3		
Technical Electives**	15		

* Non-technical electives are provided to strengthen cultural growth and education in the humanistic and social science areas. At least fifteen credits must be selected from the approved list found under Graduation Requirements in this bulletin and should be logical and purposeful selections.

** Technical electives will be selected with the assistance of the student's advisor from courses offered by the Biology, Chemistry, Computer Science, Electrical Engineering, Mathematics, Mechanical Engineering, and Physics Departments. A complete list of allowed electives is available in the Physics Department office. Any departure from this list must be approved by the Head of the Physics Department.

English (Engl) Major and Minor

George West
Department of English
Scobey Hall 014
605-688-5191

Requirements for English Major – Option A
Bachelor of Arts in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Hist 121, History of Western Civilization to 1650 **and** Hist 122, History of Western Civilization since 1650	3		3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Foreign Language	4		4
Natural Science Core (sequence courses)	4		4
Social Science Core	3	or	3

Sophomore Year	**F**		**S**
Engl 221, English Literature I **and** Engl 222, English Literature II	3		3
English or American Literature Courses	3		3
Foreign Language	3		3
Math Core	3	or	3
Social Science Core	3		3
Electives	3		3

Junior Year	**F**		**S**
Engl 241, American Literature I **and** Engl 242, American Literature II	3		3
Engl 301, Advanced Composition	3	or	3
Engl 383, Creative Writing: **or** Engl 379, Technical Communications	3	or	3
English or American Literature Courses	3		3
Social Science Core	3	or	3
Electives	3		3

Senior Year	**F**		**S**
English or American Literature Courses	6		3
Linguistics Course (203, 425, 420, 443, 452)	3	or	3
Electives	6-12		6-12

Requirements for English Major – Option B (Education)
Bachelor of Arts in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Hist 121, History of Western Civilization to 1650 **and** Hist 122, History of Western Civilization since 1650	3		3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Foreign Language	4		4
Natural Science Core (sequence courses)	4		4
Elective	3	or	3

Sophomore Year	**F**		**S**
Anth 421, Indians of North America **or** Hist 368, History of the American Indians	3	or	3
Engl 221, English Literature I **and** Engl 222, English Literature II	3		3
Engl 330, Shakespeare	3		
Ling 203, English Grammar			3
Psyc 101, General Psychology **or** Soc 100, Introduction to Sociology	3	or	3
Foreign Language	3		3
Math Core	3	or	3
Professional Semester I (SeEd 287,Practicum & Professional Lab **and** EdFn 375, Human Relations)	5	or	5

Junior Year	**F**		**S**
EdFn 365, Integrating Computers into the Curriculum	2	or	2
Engl 241, American Literature I **and** Engl 242, American Literature II	3		3
Engl 301, Advanced Composition	3	or	3
Engl 308, The Teaching of English	3	or	3
Engl 312, Juvenile Literature	3		
Engl 351, American Indian Literature of the Past **or** Engl 352, American Indian Literature of the Present	3	or	3
Professional Semester II (EPsy 302, Educational Psychology and SeEd 314, Supervised Clinical/Field Experience **and** SeEd 450, Teaching of Reading)	6	or	6
Social Science Core	3		3

Senior Year	**F**		**S**
Professional Semester III (SeEd 400, Curriculum & Instruction in Secondary School **and** SeEd 410, Social Foundations, Management & Law **and** SeEd 420, Teaching Special Needs Students **and** SeEd 488, Supervised Teaching Internship)	16	or	16
English Electives	9	or	9
Electives	6	or	6

Requirements for English Minor: 20 cr
(Engl 101 and 301 do not apply)

British Literature			9
American Literature			6
One of the following courses:			
Engl 379, Technical Communications			3
Engl 383, Creative Writing:			3
Ling 203, English Grammar			3
Ling 420, The New English			3
Ling 425, The Structure of English			3
Ling 443, Development of the English Language			3
Ling 452, General Semantics			3

Environmental Management (EnvM) Major

Nels Troelstrup, Jr.
Department of Biology and Microbiology
Agricultural Hall 327
605-688-6141

Requirements for Environmental Management Major
Bachelor of Science in Biological Science

Freshman Year	**F**	**S**
Bio 151, 153, General Biology I-II	4	4
Chem 112, 114, General Chemistry I-II	4	4
Engl 101, Freshman Composition	3	
Math 113, Algebra & Trigonometry **or** Math 102, College Algebra **and** Math 120, Trigonometry	5	
SpCm 101, Fundamentals of Speech		3
WEL 100, Skills for Healthy Living and Lab		2
Electives (from approved list)**		3

Sophomore Year	**F**	**S**
Bio 311, Principles of Ecology	3	
Bio 290, Undergraduate Seminar (EnvM sec)	1	
EnvM 275, Introduction to Environmental Science	3	
Chem 326 & 328, Organic Chemistry **or** Chem 120, Elementary Organic Chemistry **and** Chemistry elective (Recommend Chem 361)	4	4
Econ 201, Macroeconomics Principles	3	
Micr 231, General Microbiology		4
PS 213, Soils	3	
PS 243, Geology		3
Soc 100, Introduction to Sociology		3
Electives		1

Junior Year	**F**	**S**
Bio 371, Genetics	3	
Engl 301, Advanced Composition	3	
Phys 111-113, Introduction to Physics I-II **or** Phys 211-213, University Physics I-II	4	4
Stat 341, Statistical Methods I		3
Humanities Elective		3
Social Science Elective	3	
Electives (from approved list)**	3	6

Senior Year	**F**	**S**
ABS 475, Integrated Natural Resource Management		3
EnvM 425, Biological Monitoring and Assessment		4
Seminars†	1	
Communications Elective*		2
Electives	8	7
Humanities Electives	3	
Electives (from approved list)**	4	

* Communications elective to be selected from the following: Engl 379; MCom 210, 313, 315, 331; SpCm 315, 334.

** Environmental Management Majors are required to take 15 hours from the following list of approved electives:

AE 353, Physical Climatology and Meteorology	3
AE 434, Soil and Water Engineering	4
AE 503, Energy and Environment	3
AE 522, Bio-environmental Engineering	2
AST 463, Agricultural Waste Management	3
Bio 200, Biological Diversity	4
Bio 343, Cell Biology	3
Bio 353, Introduction to Oceanography	3
Bio 373, Evolution	3
Bio 383, Bioethics	4
Bio 415, Mycology	3

Bot 201, General Botany 3
Bot 301, Plant Systematics 4
Bot 305, Agrostology 3
Bot 327, Plant Physiology 4
Bot 415, Plant Ecology 4
CEE 333, Hydrology 3
Chem 232, Analytical Chemistry I 4
Chem 340, Elementary Physical Chemistry 3
Chem 341, Elementary Physical Chemistry Lab 1
Chem 352, Inorganic Chemistry 4
Chem 361, Biochemistry 4
Chem 380, Environmental Chemistry 4
CSc 285, Data Structures 3
CSc 484, Database Management Systems 3
CScA 243, Spreadsheet Applications 3
CScA 244, Database Applications 3
Econ 423, Statistics II 3
GE 525, Risk/Loss Control Management 2
Geog 365, Land Use Planning 3
Geog 433, World Crop and Soil Resources 3
Geog 454, Industrial and Commercial Site Selection 3
Geog 464, Geographic Aspects of Regional Planning 3
Geog 483, Air Photo Interpretation 3
Geog 484, Remote Sensing 3
Geog 487, Geographic Information Systems I 3
Geog 493, Topics in Geography 1-5
HSc 440, Epidemiology 3
HSc 443, Public Health Science 3
La 231, Introduction to LandCADD 3
La 322, Site Planning 3
La 323, Landscape Construction 3
La 342, Planting Design 2
La 422, Landscape Design II 3
La 424, Recreational Facilities Design 3
La 442, Landscape Design III 3
Math 123, Calculus I 5
Math 222, Calculus for Non-Math Majors 5
Math 224, Calculus II 4
Math 225, Calculus III 3
ME 411, Environmental Engineering 3
Micr 310, Environmental Microbiology 4
Micr 421, Soil Microbiology 3
Micr 422, Immunology 4
PolS 320, Public Administration 3
PR 303, Forest Ecology and Management 3
PS 305, General Entomology 3
PS 310, Soil Geography and Land Use Interpretation 3
PS 362, Environmental Soil Management 3
PS 375, Water Quality in Agriculture 3
Rang 321, Wildland Ecosystems 3
Rang 421, Range Ecology Field Trip 3
Soc 362, Population Problems 3
Stat 442, Analysis of Variance 3
WL 363, Ornithology 4
WL 367, Ichthyology 3
WL 411, Principles of Wildlife Management 4
WL 430, Human Dimensions in Wildlife and Fisheries 3
Zool 325, Mammalian Physiology 4
Zool 355, Mammalogy 3
Zool 357, Invertebrate Zoology 4
Zool 365, Vertebrate Zoology 4
Zool 467, General Parasitology 3

† Senior Seminar may be elected in Animal Science and Range Science, Biology and Microbiology, Plant Science or any other second major department. See instructor of appropriate seminar for details.

European Studies Program (EurS)

Gordon Tolle
Department of Political Science
Scobey Hall 304
605-688-4912

Curriculum in European Studies Program
(Total of 20 hours. Because courses used to satisfy the university core and 8 hours from your major department may be counted, the total number of **additional** credits may vary.)

Requirements	Credits
Language: 8 credits of a European language or an appropriate European language substitution	8
History: Hist 122, History of Western Civilization to 1650 (or Hist 328 or 329)	3
Political Science: PolS 341, European Democratic Governments (or PolS 165, Political Ideologies or PolS 462, Modern Political Philosophy)	3
EurS 300, Topics in European Culture and/or EurS 301, European Union	6
Total	**20**

Family and Consumer Sciences Education (FCSE) Major

Mary Kay Helling
Department of Human Development, Consumer and Family Sciences
Nursing-Home Economics 369
605-688-6418

Requirements for Family and Consumer Sciences Education Major
Bachelor of Science in Family and Consumer Sciences

Freshman Year	F		S
CA 130, Coping Skills for Consumers*	2		
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
HDCF 327, Human Development and Personality I: Childhood	3	or	3
Math 102, College Algebra	3	or	3
Psyc 101, General Psychology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Elective	3	or	3
Natural Science Core (Bio or Chem sequence)	3-4		3-4

Sophomore Year	F		S
AM 121, Apparel in Popular Culture*	2		
AM 242, Textiles	3	or	3
CA 241, Management in Family and Personal Living*	3		
EdFn 375, Human Relations*	3		
FCSE 332, Occupational Home Economics Experience***	1		
HDCF 328, Experience in Human Relations	3	or	3
NFS 111, Food and People	3	or	3
NFS 141, Food: Principles	4	or	4
NFS 221, Survey of Nutrition	3	or	3
VTE 287, Practicum in Vocational Education*	1		
VTE 405, Philosophy of Vocational Technical Education*	2		
Elective	2	or	2
HDCF Elective	3	or	3

Junior Year	F		S
Anth 421, Indians of North American	3	or	3
CA 361, Household Technology*			2
EdFn 365, Integrating Computers into the Curriculum	2	or	2
EdFn 527, Middle School: Affective Applications	2	or	2
Engl 301, Advanced Composition	3	or	3
EPsy 302, Educational Psychology	2	or	2
FCSE 331, Teaching Occupational Home Economics Programs#	2		
HDCF 241, Family Relations	3	or	3
HDCF 312, Human Development and Personality II: Adolescence **or** EPsy 526, Psychology of the Early Adolescent Learner	3	or	3
NFS 251, Meal Management			3
SeEd 314, Supervised Clinical/Field Experience	1	or	1
SeEd 450, Teaching of Reading	3	or	3
HDCF Elective	3	or	3

Senior Year	F		S
CA 391, Consumers and the Market	3		
CA 442, Family Resource Management Lab	3	or	3
EdFn 528, Middle School Curriculum and Instruction	3		
FCS 401, Professional Perspectives	2		
FCSE 411, Philosophy and Methods*	3		
FCSE 412, Preparation for Student Teaching and Extension Practicum*			5
FCSE 473, Supervised Student Teaching in Home Economics*			10
FCSE 493, Current Topics: Process Applications	1		
ID 450, Shelter and Families†	3		

* Courses offered only once a year as designated. Deviations from the established sequence schedule can extend the required time to complete the program.

** 3-4 additional Natural Science credits are required. If another sequence is selected, additional credits will be in addition to the 128 required for graduation.

*** Could be taken Fall of Sophomore, Junior, or Senior Year.

\# Courses offered fall of even years.

† Course offered interim of uneven years.

Food and Biological Materials Engineering (FBME) Major

Ralph Alcock
Department of Agricultural Engineering
Agricultural Engineering 105
605-688-5141

Requirements for Food and Biological Materials Engineering Major
Bachelor of Science in Food and Biological Materials Engineering
In the 1994-96 catalog this was a separate major. Students enrolled in the major prior to July 1, 1996, will complete the major as described in the 1994-96 catalog. Effective July 1, 1996, this becomes an option as described under the Agricultural Engineering Major.

Food Science Major

Padu Krishnan
Department of Nutrition and Food Science
Nursing-Home Economics 443
605-688-5161

Requirements for Food Science Major
Bachelor of Science in Family and Consumer Sciences
In the 1994-96 catalog this was a separate major. Students enrolled in the major prior to July 1, 1996, will complete the major as described in the 1994-96 catalog. Effective July 1, 1996, this becomes an option as described under the Nutrition and Food Science Major.

Foreign Language Business-Economics Specialization

Karen Cárdenas
Department of Foreign Languages
Nursing-Home Economics 121
605-688-5101

Requirements for Foreign Language Business-Economics Specialization:

Core

Mathematics Core	3
Econ 201, Macroeconomics Principles	3
Econ 202, Microeconomics Principles	3
subtotal	**9**

Choose 4 of the following courses:

Econ 330, Money and Banking	3
Econ 370, Marketing	3
Acct 210, Principles of Accounting I	3
AgEc 354, Agricultural Marketing and Prices	3
AgEc 454, Economics of Grain & Livestock Marketing	3
AgEc 479, Agricultural Policy	3
PolS 350, International Relations	3
BAdm 310, Business Finance	3
BAdm 350, Legal Environment of Business and Contracts	3
BAdm 360, Organization and Management	3
Stat 341, Statistical Methods I	3
subtotal	**12**

Choose 1 of the following courses:

Econ 405, Comparative Economic Systems	3
Econ 440, Economics of the International Sector	3
Econ 460, Economic Development	3
Econ 472, Resource and Environmental Economics	3
subtotal	**3**
Total	**24**

Within the above framework, individually tailored specializations will be possible. They will be planned in consultation with, and will be subject to the approval of, an adviser in the Department of Economics.

French (Fren) Minor

Karen Cárdenas
Department of Foreign Languages
Nursing-Home Economics 121
605-688-5101

Students who minor in French are encouraged to declare their decision as soon as possible by completing a form in the main office of the Department of Foreign Languages. The minor must be declared at least two semesters before the student's anticipated date of graduation. No course in which the student receives a grade lower than "C" will count toward the minor.

Requirements for French Minor: 20 cr

Fren 101-102*, Introductory French I-II	8
Fren 201-202, Intermediate French I-II	6
Fren 311-312, French Composition and Conversation	4
Fren 300-400 level Electives	2

* Students who have a background in foreign language study before entering the University should take the Placement Examination to determine the appropriate course in which to enroll. Credit may be obtained for courses exempted upon completion of one course in the department, completion of appropriate paperwork, and the payment of the established fee.

General Agriculture Major

Eugene Arnold
College of Agriculture and Biological Sciences
Agricultural Hall 156
605-688-5133

Requirements for Associate of Arts in Agriculture

The two-year program is designed for the student who does not find it advisable or possible to enter a regular four-year college program. A typical student in this situation could be one who desires some education but not necessarily four years before returning to the farm or ranch. The core requirement is as follows:

Course	Credits
Wellness	2
English	3
Speech	3
Humanities	3
Physical Science	3
Social Science	3
Major field of concentration	16
General electives	31
Total†	64
GPA	2.0

Requirements for General Agriculture Major
Bachelor of Science in Agriculture

Freshman Year	F		S
AS 101, Introduction to Animal Science			3
Bio 101, Biology Survey I	3		
Bio 103, Biology Survey II			3
Chem 106, Chemistry Survey			4
Engl 101, Freshman Composition	3		
Math 102, College Algebra	3		
PS 103, Crop Production	3		
Soc 100, Introduction to Sociology	3		
Social Science Elective*			3
SpCm 101, Fundamentals of Speech			3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	F		S
AgEc 271, Farm & Ranch Management			4
Chem 120, Elementary Organic Chemistry	4		
Econ 201, Macroeconomics Principles	3		
Humanities Elective	3		
Humanities (2nd Discipline) **or** Fine Arts Elective			3
Micr 231, General Microbiology	4		
Phys 101, Survey of Physics			4
PS 213, Soils			3
Free Electives	2		2

Junior Year	F	S
AS 233, Applied Animal Nutrition	3	
Bio 371, Genetics		3
Communications Elective†		2
Engl 301, Advanced Composition	3	
PS 223, Principles of Plant Pathology	3	
PS 307, Insect Pest Management		3
Restricted Elective (from, Math, Stat, CSc, Acct, BAdm)	3	
Free Electives	4	8

Senior Year	F	S
Free Electives (at least 24 credits must be 300 level or above courses excluding Internships, Cooperative Education, or Field Experience courses)	16	15

* See approved listing.
† Communications Elective to be selected from the following: Engl 379; MCom 210, 313, 315, 331; SpCm 201, 315, 334.

General Studies Major

Allen Branum
College of Arts and Science
Nursing-Home Economics 251
605-688-6619

Requirements for General Studies Major
Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities and Fine Arts Course	3		
Mathematics Core	3		
Biological Science Courses	3		3
Social Science Course			3
Plan of Study Courses	3		3
General Elective Courses			2-4

Sophomore Year	F		S
Humanities and Fine Arts Course	3	or	3
International Studies Course	3	or	3
Physical Science Courses	4		4
Social Science Course	3	or	3
Plan of Study Courses	3		3
General Elective Courses	2-4		3-4

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Humanities and Fine Arts Course	3	or	3
International Studies Course	3	or	3
Social Science Courses	3		3
Plan of Study Courses	6		6
General Elective Courses	5-7		5-7

Senior Year	F	S
Plan of Study Courses	8	8
General Elective Courses	8	5-8

Requirements for General Studies Major
Bachelor of Arts in Arts and Science
This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Geographic Information Systems (GIS) Minor

Roger Sandness
Department of Geography
Scobey Hall 232
605-688-4511

Requirements for Geographic Information Systems Minor: 18 cr

CEE 304, Land Surveying	3
Geog 487, Geographic Information Systems I	3
Geog 406, Seminar: Geographic Information Systems II	3
Courses from Electives Lists I and II available at the department	9

Geography (Geog) Major and Minor

Roger Sandness
Department of Geography
Scobey Hall 232
605-688-4511

Requirements for Geography Major
Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Geog 131, Physical Geography I	4		
Geog 132, Physical Geography II			4

Geog 200, Introduction to Human Geography	3	or	3
Geog 210, World Regional Geography			3
Math 102, College Algebra	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
Biological Science Elective	3		3
Humanities Elective	3		

Sophomore Year	**F**		**S**
Geog 382, Geographic Research Methods			3
WEL 100, Skills for Healthy Living & Lab	2	or	2
Geography Electives	3		3
Geography Electives (Upper Division)	3		3
Humanities Elective	3		3
Regional Geography	3		
Social Science Elective (not Geog)	3		3

Junior Year	**F**	**S**
Engl 301, Advanced Composition	3	
Geography Electives (Upper Division)	4	6
Social Science Elective (not Geog)		3
Free Electives (may include Geog)	9	7

Senior Year	**F**	**S**
Free Electives (may include Geog)	13	16
Social Science Elective (not Geog)	3	

Technical Geography – Science Option

It is strongly suggested that technical-science geographers choose a minor from the list of recommendations available in the Department of Geography. The following discipline electives are required:

Physical Science Electives	6
Agricultural Science, Engineering Science, or Math Electives	6
Computer Programming Language	3
Geog 486, Computer Mapping	3
Geog 487, Geographic Information Systems I	3
Total	**21**

Environmental Planning and Management Option

It is strongly suggested that environmental geographers choose a minor from the list of recommended minors available in the Geography Department. The upper division credits within the department should be selected from the following:

Geog 310, Soil Geography & Land-use Interpretation	4
Geog 337, Atmospheric Sciences	3
Geog 339, The Earth's Landforms	2
Geog 343, Natural Disasters & Human Hazards	3
Geog 351, Economic Geography	3
Geog 365, Land Use Planning	3
Geog 383, Cartography	3
Geog 425, Population Geography	3
Geog 484, Remote Sensing	3
Geog 486, Computer Mapping	3
Geog 487, Geographic Information Systems I	3

For those students wishing to pursue a greater emphasis in planning, the upper division hours should be selected from the following courses:

Geog 365, Land Use Planning	3
Geog 461,Urban Geography	3
Geog 464, Geographic Aspects of Regional Planning	3
Geog 483, Air Photo Interpretation	3
Geog 484, Remote Sensing	3
Geog 486, Computer Mapping	3
Geog 487, Geographic Information Systems I	3

Recommended electives outside of the Department:

Plan 471, Principles of State, Regional and Community Planning	3
Plan 472, Techniques of State, Regional and Community Planning	3

Requirements for Geography Major
Bachelor of Arts in Arts and Science

This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Requirements for Geography Minor: 17 cr

Geog 131, Physical Geography I	4
Geog 132, Physical Geography II	4
Geog 200, Intro to Human Geography	3
Upper-division courses or substitutions approved by the Department.	6

German (Germ) Major and Minor

Karen Cárdenas
Department of Foreign Languages
Nursing-Home Economics 121
605-688-5101

The major in German requires a minimum of 36 credit hours in German. The course work should include 101, 102, 201, 202, 311, 312, and 18 credit hours of upper-division (300-400) classes. Upper-division course work must include a minimum of 4 credit hours in literature, 4 credit hours in civilization and culture, and 2 credit hours in advanced language study.

Students who wish to major in German are encouraged to obtain an application for the major from the main office of the Department of Foreign Languages as soon as possible. Students are required to have a minimum overall CGPA of 2.5 to be admitted to the German major. No German class in which the student receives a grade lower than "C" will be allowed to count toward the major. Students are expected to maintain an overall CGPA of 2.5 to continue in the German program as a major.

The following curriculum plans are very general. Please contact a German adviser for more specific information.

Requirements for German Major
Bachelor of Arts in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Germ 101-102, Introductory German I-II*	4	and	4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Mathematics Core	3	or	3
Natural Science Core	3-4	and	3-4
Social Science Core	3	or	3
Electives			

Sophomore Year	**F**		**S**
Germ 201-202, Intermediate German I-II	3	and	3
Germ 311-312, German Composition and Conversation	2	and	2
Humanities Core	3	and	3
Social Science Core	3	and	3
Electives (Second major/minor)			

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
German course work (300-400 level)	3-6	and	3-6
Social Science Core	3	or	3
Electives			

Senior Year	**F**		**S**
German course work (300-400 level)	3-6	and	3-6
Electives			

Students who minor in German are encouraged to declare their decision as soon as possible by completing a form in the main office of the Department of Foreign Languages. The minor must be declared at least two semesters before the student's anticipated date of graduation. No course in which the student receives a grade lower than "C" will count toward the minor.

Requirements for German Minor: 20 cr

Germ 101-102*, Introductory German I-II	8
Germ 201-202, Intermediate German I-II	6
Germ 311-312, German Composition and Conversation	4
Germ 300-400 level Electives	2

* Students who have a background in foreign language study before entering the University should take the Placement Examination to determine the appropriate course in which to enroll. Credit may be obtained for courses exempted upon completion of one course in the department, completion of appropriate paperwork, and the payment of the established fee.

Gerontology (Gero) Minor

Cindy Schmiege
Department of Human Development, Consumer and Family Sciences
Nursing-Home Economics 369
605-688-6418

Requirements for Gerontology Minor: 18 cr

Choose 11 credits from the following Level One courses:

Bio 525, Biology of Aging	3
CA 442, Family Resource Management Lab	1-3
Gero 201, Introduction to Gerontology (required for minor)	3
HDCF 313, Human Development and Personality III: The Middle and Later Years	2
Psyc 493, Topics in Psychology: Psychology of Aging	3
Soc 490, Seminar: Sociology of Aging,	3
Seminar, Current Topics, or Special Problems. The topic and credits vary by semester	

Choose 7 credits from Levels Two and Three. Lists of courses for Levels Two and Three are available in the Department Office or the Office of the Dean of the College of Family and Consumer Sciences.

Students who minor in Gerontology need to complete the Gerontology minor form available in the HDCFS Department Office (NHE 371) or the Family and Consumer Sciences Dean's Office (NHE 249).

A grade of "C" or better is required in all courses in the minor.

Health Education (Hlth) Minor

Patty Hacker
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-5218

All student interested in obtaining this minor must obtain written approval from the PETE Coordinator. A minimum final grade of "C" is required in all courses taught by the HPER Department.

Requirements for Health Education Minor: 21 cr (minimum)

Required courses are:

Hlth 212, Contemporary Health Problems	2
Hlth 120, Community Health	2
NFS 221, Survey of Nutrition	3
Psyc 442, Health Psychology	3
HDCF 250, The Development of Human Sexuality	3
Hlth 420, Methods of Health Instruction	2

Three courses must be completed from among the following (6-9 cr):

CA 391, Consumers and the Market	3
Hlth 250, First Aid	2
Hlth 440, Epidemiology	3
HSc 302, Wellness and the Family	2
Pha 201, Medication and the Consumer	2
Soc 250, Marriage **or** HDCF 141, Individual and the Family **or** HDCF 341, Family Dynamics	2-3

Health, Physical Education, and Recreation (HPER) Major

Patty Hacker
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-5218

The intent of this major is to provide students with a general background in health/wellness, physical education and recreation.

Students in this major are not required to earn a minor or an emphasis but may pursue an emphasis in wellness/fitness or an emphasis in teaching physical education. Students choosing either of these emphases must contact the faculty coordinator for that area for the information on the application/acceptance requirements and procedures. Students may wish to obtain a minor in Public Recreation, Health Education, or other area. A minimum final grade of "C" is required in all courses taught by the HPER department.

Required courses for the HPER major: 36 cr

Danc 130, Dance Fundamentals	1	or	1
Hlth 212, Contemporary Health Problems	2	or	2
Hlth/PT 250, First Aid	2	or	2
HPER 180, Introduction to HPER	3	or	3
HPER 252, Motor Learning and Development	2		
HPER 490, Senior Seminar	3	or	3
PE 353, Biomechanics	3	or	3
PE/PT 354, Prevention and Care of Athletic Injuries	2	or	2
WEL 100, Skills for Healthy Living and Lab	2	or	2
Zool 221, Anatomy	3	or	3
Recr 260, Recreation Leadership			2

Minimal additional 1 course in each of these three areas: Hlth/Hsc, Recr, HPER/PE for a total of 11 cr

Additional Requirements:
Requires a 2.5 Cumulative GPA to graduate.
Departmental approval required for graduation.

Requirements for HPER Major – Teaching Emphasis
Bachelor of Science in Arts and Science

Patty Hacker
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-5218

Application for admission into the Physical Education teaching emphasis is required and can begin after successful completion of 30 credits, including HPER 180, Danc 130, Engl 101, and SpCm 101.

Additional admission requirements are available from the Physical Education Teacher Education (PETE) Coordinator. All HPER teaching majors are strongly encouraged to obtain a health teaching endorsement (12 hours). Information on courses which fulfill this endorsement (or other teaching area endorsements) can be obtained from the PETE Coordinator. A minimum final grade of "C" is required in all courses taught by the HPER department.

Freshman Year	**F**		**S**
Bio 101, Biology Survey I	3	or	3
Danc 130, Dance Fundamentals	1	or	1
Engl 101, Freshman Composition	3	or	3
Hlth 212, Contemporary Health Problems **or**			
Hlth 120, Community Health	2	or	2
HPER 180, Introduction to HPER	3	or	3
Math 102, College Algebra (or higher)	3	or	3
PE 321, Water Safety Instructor	1	or	1
Psyc 101, Introduction to Psychology.	3	or	3
Recr 260, Recreation Leadership			2
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Core	3	or	3
Social Science Core	3	or	3
International Studies (taken as part of Hum and Soc Sci Core)			

Sophomore Year	**F**		**S**
Bio 103, Biology Survey II	3	or	3
EdFn 375, Human Relations	3	or	3
HPER 252, Motor Learning and Development	2		
PE 170, Fundamental Movement	1	or	1
Two credits from these:			
PE 200, Skill Concept: Fitness	1		
PE 201, Skill Concept: Gymnastics			1
PE 202, Skill Concept: Individual/Dual Activities			1
PE 203, Team Sport Activity	1		
PE 204, Skill Concept: Rhythms and Dance			1
PE/Recr 205, Skill Concept: Recreational Activities	1		1
PE 241, Curriculum in PE	2		
PE 352, Adapted Physical Education			2
PE 360, Methods of Teaching Elementary School PE			2
Recr/PE 342, Recreation Sport Programming and Administration	2		
SeEd 287, Practicum and Professional Lab	2	or	2
Soc 100, Introduction to Sociology	3	or	3
Zool 221, Anatomy	3	or	3
Humanities Core	3		3
International Studies (taken as part of Hum or Soc Sci core)			

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Hist 368, History of American Indians **or** Anth 421, Indians of North America	3	or	3
Hlth 420, Methods of Health Instruction			2
HPER 451, Test and Measurement	2		
PE 101-144, Fitness and Lifetime Activities	1-2		1-2
Two credits from these:			
PE 200, Skill Concept: Fitness	1		
PE 201, Skill Concept: Gymnastics			1
PE 202, Skill Concept: Individual/Dual Activities			1
PE 203, Team Sport Activity	1		
PE 204, Skill Concept: Rhythms and Dance			1
PE/Recr 205, Skill Concept: Recreational Activities	1		1
PE 334, Assisting Teaching I **or** PE 336, Assisting Teaching II	1	or	1
PE 353, Biomechanics	3	or	3
PE/PT 354, Prevention and Care of Athletic Injuries	2	or	2
Chemistry or Physics	4		4
Social Science Core	3	or	3

Senior Year	**F**		**S**
EdFn 365, Integrating Computers into the Classroom	2	or	2
EPsy 302, Educational Psychology	2	or	2
HPER 440, Organization and Administration of HPER			2
HPER 490, Senior Seminar	3	or	3
PE 101-144, Fitness and Lifetime Activities	1-2		
PE 334, Assisting Teaching I **or** PE 336, Assisting Teaching II	1	or	1
PE 461, Methods of Teaching Physical Education	2		
PE 350, Exercise Physiology	3	or	3
SeEd 314, Supervised Field Experience	1	or	1
SeEd 400, Curriculum & Instruction in Secondary Schools	3	or	3
SeEd 410, Social Foundation, Management & Law	2	or	2
SeEd 420, Teaching Special Needs Students	1	or	1
SeEd 450, Teaching of Reading	3	or	3
SeEd 488, Supervised Teaching Internship	10	or	10

Requirements for HPER Major – Fitness/Wellness Emphasis Bachelor of Science in Arts and Science

Kevin Finn
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-4829

This program is designed to prepare students for national certification as health fitness professionals so that employment may be obtained in a wellness center environment. The student is encouraged to minor in an area of wellness. A minimum final grade of "C" is required in all courses taught by the HPER department.

Freshman Year	**F**		**S**
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II	3		3
Chem 106, Chemistry Survey	4	or	4
Engl 101, Freshman Composition	3	or	3
HPER 180, Introduction to HPER	3	or	3
Psyc 101, General Psychology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities and International Studies Core	3		3
Mathematics Core	3	or	3

Sophomore Year	**F**		**S**
Hlth 212, Contemporary Health Problems	2	or	2
Hlth/PT 250, First Aid	2	or	2
HPER 252, Motor Learning and Development	2		
NFS 221, Survey of Nutrition	3	or	3
PE 200, Skill Concept: Fitness	1		
Phys 101, Survey of Physics	4	or	4
Recr 260, Recreation Leadership			2
Soc 100, Introduction to Sociology	3	or	3
Zool 221, Anatomy	3	or	3
Humanities and International Studies Core	3		3
Social Science Core	3	or	3

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
PE 350, Exercise Physiology	3	or	3
PE 353, Biomechanics	3	or	3

PE 354, Prevention and Care of Athletic Injuries.....2 or 2
Psyc 358, Behavior Modification 3
Zool 325, Mammalian Physiology .....4 or 4
Major Concentration Electives*
Minor Requirements

Senior Year	**F**		**S**
Hlth 440, Epidemiology			3
Hlth 480, Wellness Programming.....			2
HPER 468, Internship.....			8
HPER 490, Senior Seminar.....3		or	3
HPER 496, Field Experience 2		or	2
PE 400, Exercise Testing and Prescription.....2			
Major Concentration Electives*			
Minor Requirements			

* Electives toward the major concentration must be approved. These courses are based on development of administration or clinical skills.

Health Science (HSc) Minor

Roberta Olson
College of Nursing
Nursing-Home Economics 255
605-688-5178

Requirements for Health Science Minor: 26-27 cr
5 or 6 credit hours chosen from:
HDCF 313, Human Development and Personality III: The Middle and Later Years 2
HDCF 327, Human Development and Personality I: Childhood.....3
HDCF 341, Family Dynamics 3

12 credit hours chosen from:
Hlth 250, First Aid **or** Hlth 364, Emergency Medical Technician .....2 or 4
HSc 120, Community Health 2
HSc 212, Contemporary Health Problems 2
HSc 420, Methods of Health Instruction 2
HSc 440, Epidemiology 3
HSc 443, Public Health Science 3
HSc 433/533, Industrial Hygiene 3
Nurs 201, Medical Terminology 1

9 credit hours of biological science

All minors must consult the department head of Undergraduate Nursing for approval.

History (Hist) Major and Minor

Rodney Bell
Department of History
Scobey Hall 322
605-688-4311

Requirements for History Major: 33 cr
Hist 121, History of Western Civilization to 1650 3
Hist 122, History of Western Civilization since 1650 3
Hist 151, U.S. History to 1877 3
Hist 152, U.S. History since 1877 3
Upper level credits, including Hist 380, Methods and Philosophy of History 21

Requirements for History Major
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition.....3		or	3
Hist 121, History of Western Civilization to 1650 **or** Hist 122, History of Western Civilization since 1650 **or** Hist 151, U.S. History to 1877 **or** Hist 152, U.S. History since 1877 3			3
Math 102, College Algebra 3		or	3
SpCm 101, Fundamentals of Speech 3		or	3
WEL 100, Skills for Healthy Living and Lab 2		or	2
Foreign Language (BA only) 4			4
Natural Science Core (BS only) 3-4			3-4

Sophomore Year	**F**		**S**
Hist 121, History of Western Civilization to 1650 **or** Hist 122, History of Western Civilization since 1650 **or** Hist 151, U.S. History to 1877 **or** Hist 152, U.S. History since 1877 3			3
Foreign Language (BA only) 3			3
Natural Science Core (BA only) 4			4
Natural Science Core (BS only) 3-4			3-4
Social Science Core 3-4		or	3-4
Electives (consider Educ, second major, minor) 0-3			0-3

Junior Year	**F**		**S**
Engl 301, Advanced Composition 3		or	3
Hist 380, Methods and Philosophy of History			3
Humanities Core (BS only) 3		or	3
Social Science Core 3		or	3
Upper level Hist courses 6-9			3-6
Electives (consider Educ, second major, minor) 1-9			1-6

Senior Year	**F**		**S**
Upper level Hist courses 3-9			
Upper level Electives (consider Educ, second major, minor) 7-13			16

Requirements for History Minor: 18 cr
Three of the following four courses:
Hist 121, History of Western Civilization to 1650 3
Hist 122, History of Western Civilization since 1650 3
Hist 151, U.S. History to 1877 3
Hist 152, U.S. History since 1877.....3
Additional credits (6 must be upper level) 9

Please Note: No more than 6 credits in Special Problems (Hist 492) and Internship (Hist 495) may be counted toward the major or minor; and, no grade below a "C" in history courses may be used to fulfill major and minor requirements.

Honors Program (Hon)

Allen Branum
College of Arts and Science
Nursing-Home Economics 251
605-688-6619

Requirements

Freshman Year	**F**		**S**
Hist 121, History of Western Civilization to 1650 (Honors).....3		or	3
Hist 122, History of Western Civilization since 1650 (Honors).....3		or	3
Phil 100, Introduction to Philosophy (Honors) 4		or	4

Sophomore Year	F		S
Departmental Honors Course Electives*	9	or	9

Junior Year	F		S
Honors Colloquium**	3	or	3

Senior Year	F		S
Hon 492, Honors Independent Study	3	or	3

* Electives must have the designation of "Honors" and will fulfill General Education Core requirements if listed in the core.

** Honors Colloquium may be designated Hon 301, 302, 303, or 304.

Horticulture (Ho) Major

Peter Schaefer
Department of Horticulture, Forestry, Landscape, and Parks
Northern Plains Biostress Laboratory 201A
605-688-5136

No grade below a "C" in an Ho prefixed course will be accepted toward a major in Horticulture.

Requirements for Horticulture Major – Production Emphasis
Bachelor of Science in Agriculture

Freshman Year	F		S
Bio 101, Biology Survey I	3		
Chem 106, Chemistry Survey			4
CSc 105, Introduction to Computers			3
Engl 101, Freshman Composition	3	or	3
Ho 111, General Horticulture	3	or	3
Math 102, College Algebra	3		
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	F		S
Bot 201, General Botany	3		
Econ 201, Macroeconomics Principles	3	or	3
Ho 220, Landscape Maintenance	3		
Ho 230, Greenhouse and Nursery Crops			3
Ho 240, Fruit and Vegetable Production			3
Ho 250, Woody Plants: Trees	3		
Ho 260, Woody Plants: Shrubs and Vines			2
Phys 101, Survey of Physics			4
PS 213, Soils	3	or	3
PS 223, Principles of Plant Pathology	3		
Elective	3	or	3

Summer Term			
Ho 494, Cooperative Education	1		

Junior and Senior Years	F		S
BAdm 360, Organization and Management **or**			
Acct 210, Principles of Accounting I	3	or	3
Bio 371, Genetics **or**			
Ho 383, Principles of Crop Improvement	3	or	3
Bot 327, Plant Physiology	4		
Engl 301, Advanced Composition	3		
Engl 379, Technical Communications			3
Ho 311, Herbacious Plants	3		
Ho 312, Plant Propagation			3
Ho 490, Seminar	1	or	1
PS 305, General Entomology	3		
PS 334, Diseases of Horticultural Crops	3		
Electives	3		3
Humanities and Fine Arts Electives (see pages 28-29)	3		3
Technical Electives, see approved department listing*	5	or	5

Choose 18 credits from the following:

Ho 314, Turf Management			3
Ho 316, Vegetable Growing			3
Ho 410, Woody Plants II			3
Ho 411, Fruit Production			3
Ho 412, Greenhouse Management			3
Ho 413, Arboriculture			3
Ho 415, Nursery Management	3		
La 261, Landscape Design I	3		

* Technical electives will be selected with the assistance of the student's adviser from the list of approved electives on file in the HFLP Department office. Any departure from this list must be approved by the Head of the HFLP Department.

Requirements for Horticulture Major – Business Option
Bachelor of Science in Agriculture

Freshman Year	F		S
Bio 101, Biology Survey I	3		
Chem 106, Chemistry Survey			4
CSc 105, Introduction to Computers			3
Engl 101, Freshman Composition	3	or	3
Ho 111, General Horticulture	3	or	3
Math 102, College Algebra	3		
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	F		S
Acct 210, Principles of Accounting			3
Bot 201, General Botany	3		
Econ 201, Macroeconomics Principles	3	or	3
Ho 220, Landscape Maintenance	3		
Ho 230, Greenhouse and Nursery Crops			3
Ho 240, Fruit and Vegetable Production			3
Ho 250, Woody Plants: Trees	3		
Ho 260, Woody Plants: Shrubs and Vines			2
Phys 101, Survey of Physics			4
PS 213, Soils	3	or	3
PS 223, Principles of Plant Pathology	3		

Summer Term			
Ho 494, Cooperative Education	1		

Junior and Senior Years	F		S
BAdm 360, Organization and Management			3
Bio 371, Genetics **or**			
Ho 383, Principles of Crop Improvement	3	or	3
Bot 327, Plant Physiology	4		
Econ 202, Microeconomics Principles	3	or	3
Engl 301, Advanced Composition	3		
Engl 379, Technical Communications			3
Ho 312, Plant Propagation			3
Ho 490, Seminar	1	or	1
PS 305, General Entomology	3		
PS 334, Diseases of Horticultural Crops	3		
Electives	2	or	2
Humanities and Fine Arts Electives (see pages 28-29)	3		3

Choose 15 credits from the following:

Ho 311, Herbacious Plants			3

Ho 314, Turf Management			3
Ho 316, Vegetable Growing			3
Ho 410, Woody Plants II			3
Ho 411, Fruit Production			3
Ho 412, Greenhouse Management			3
Ho 413, Arboriculture			3
Ho 415, Nursery Management	3		
La 261, Landscape Design I	3		
Choose 12 credits from the following:			
Acct 211, Principles of Accounting II	3	or	3
AgEc 354, Agricultural Marketing and Prices	3	or	3
BAdm 310, Business Finance	3	or	3
BAdm 350, Legal Environment of Business & Contracts	3	or	3
BAdm 351, Business Law I	3	or	3
BAdm 380, Personal Finance	3	or	3
Econ 330, Money and Banking	3	or	3
Econ 370, Marketing	3	or	3
Econ 476, Marketing Research	3	or	3
Stat 341, Statistical Methods I	3	or	3

Requirements for Horticulture Major – Science Option
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
Bio 151, General Biology I	4		
Chem 106, Chemistry Survey			4
CSc 105, Introduction to Computers			3
Engl 101, Freshman Composition	3	or	3
Ho 111, General Horticulture	3	or	3
Math 102, College Algebra	3		
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
Bot 201, General Botany	3		
Econ 201, Macroeconomics Principles	3	or	3
Ho 220, Landscape Maintenance	3		
Ho 230, Greenhouse and Nursery Crops			3
Ho 240, Fruit and Vegetable Production			3
Ho 250, Woody Plants: Trees	3		
Ho 260, Woody Plants: Shrubs and Vines			2
Math 120, Trigonometry	3	or	3
Phys 101, Survey of Physics			4
PS 213, Soils	3	or	3
PS 223, Principles of Plant Pathology	3		

Summer Term			
Ho 494, Cooperative Education	1		

Junior and Senior Years	**F**		**S**
Bio 371, Genetics			3
Bot 327, Plant Physiology	4		
Chem 120, Elementary Organic Chemistry	4	or	4
Chem 361, Biochemistry	4	or	4
Engl 301, Advanced Composition	3		
Engl 379, Technical Communications			3
Ho 311, Herbaceous Plants	3		
Ho 312, Plant Propagation			3
Ho 490, Seminar	1	or	1
PS 305, General Entomology	3		
PS 334, Diseases of Horticultural Crops	3		
Stat 341, Statistical Methods I	3	or	3
Humanities and Fine Arts Electives (see pages 28-29)	3		3

Choose 15 credits from the following:			
Ho 314, Turf Management			3
Ho 316, Vegetable Growing			3
Ho 410, Woody Plants II			3
Ho 411, Fruit Production			3
Ho 412, Greenhouse Management			3
Ho 413, Arboriculture			3
Ho 415, Nursery Management	3		
La 261, Landscape Design I	3		
Choose one course from the following:			
Bio 343, Cell Biology	3		
Bot 301, Plant Systematics	4		
Bot 415, Plant Ecology	4		
Bot 421, Plant Anatomy	3		
Ho 492, Problems	1-2		
Ho 493, Special Topics	1-4		
Ho 480, Environmental Stress Physiology	3		
Ho 590, Special Topics in Horticulture	1-3		

If necessary, choose elective credits to bring total to 128 required for graduation.

Hotel, Restaurant, and Institution Management (HRIM) Major

Jon Fields
Department of Nutrition and Food Science
Nursing-Home Economics 443
605-688-5161

Requirements for Hotel, Restaurant, and Institution Management Major
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
CSc 105, Introduction to Computers			3
Engl 101, Freshman Composition	3		
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
Math 102, College Algebra			3
NFS 110, Perspectives in Nutrition	3		
NFS 141, Foods: Principles*	4		
NFS 171, Introduction to the Hospitality Industry*	2		
NFS 251, Meal Management*			3
Psyc 101, General Psychology			3
SpCm 101, Fundamentals of Speech			3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
Acct 210, Principles of Accounting I	3		
BAdm 350, Legal Environment of Business & Contracts			3
Econ 201, Macroeconomics Principles	3		
Econ 202, Microeconomics Principles			3
NFS 261, Food Service Operations*	3		
NFS 271, Hotel/Motel Operational Management I*			3
NFS 381, Quantity Food Production and Service			2
Soc 100, Introduction to Sociology	3		
Humanities Elective			3
Natural Science	4		4

Junior Year	**F**		**S**
BAdm 360, Organization and Management			3
Econ 370, Marketing	3		
Engl 301, Advanced Composition			3
HDCF 241, Family Relations	3		

NFS 272, Hotel/Motel Operational Management II	3	
NFS 361, Hospitality Industry Law		2
NFS 362, Financial Management for the Hospitality Industry	3	
NFS 371, Food Service Purchasing		3
Elective**	3	3
Humanities Elective	3	

Senior Year	**F**	**S**
BAdm 474, Principles of Selling	3	
Econ 330, Money and Banking		3
Econ 467, Labor, Law and Economics		3
FCS 401, Professional Perspectives		2
NFS 363, Travel and Tourism Management		3
NFS 391, Institution Organization and Management	3	
NFS 471, Hospitality Management Information Systems	3	
NFS 482, Hospitality Marketing		3
Electives**	5	

NFS 497, Professional Practicum (3 cr) to be taken after sophomore year.
* Must be taken in this sequence.
** See Economics Department for Econ Minor requirements.

Human Development and Family Studies (HDFS) Major

Mary Kay Helling
Department of Human Development, Consumer and Family Sciences
Nursing-Home Economics 369
605-688-6418

Requirements for Human Development and Family Studies Major
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
HDCF 141, Individual and the Family	2	or	2
HDCF 293, Current Topics: Early Experience	1	or	1
HDCF 327, Human Development and Personality I: Childhood			3
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
Math 102, College Algebra	3	or	3
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Electives	3		3

Sophomore Year	**F**		**S**
HDCF 241, Family Relations	3	or	3
HDCF 250, The Development of Human Sexuality	3	or	3
HDCF 312, Human Development and Personality II: Adolescence	3		
HDCF 313, Human Development and Personality III: The Middle and Later Years	2	or	2
HDCF 350, The Helping Relationship	3	or	3
Natural Science Course	4	or	4
Recommended Electives	10	or	10

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
HDCF 341, Family Dynamics	3	or	3
HDCF 355, Prevention Programs in Human Development and Family	3	or	3
HDCF 364, Parent Education	3	or	3
HDCF 487, Orientation to Child and Family Services Practicum#			1
Electives	8		8

Senior Year	**F**		**S**
FCS 401, Professional Perspectives	2	or	2
HDCF 414, Research Applications in HDCFS	3	or	3
HDCF 441, Applied Family Systems in Varied Interactional Contexts	3	or	3
HDCF 457, Family Assessment	3	or	3
HDCF 493, Current Topics: Senior Seminar	3	or	3
HDCF 497, Practicum in Child and Family Services (or SS)+	12	or	12
Electives	7-11	or	7-11

To be taken semester before HDCF 497, Practicum.
+ SS=Summer Session

A pre-graduation check is required 1 semester before graduation semester. At beginning of graduation semester, a graduation application must be completed.

A grade of "D" on courses in the major cannot be counted and course must be repeated. Any required course with a department/program prefix is considered a course in the major.

Human Development, Child and Family Studies Minor

Mary Kay Helling
Department of Human Development, Consumer and Family Sciences
Nursing-Home Economics 369
605-688-6418

Requirements for Human Development, Child and Family Studies Minor: 18 cr

All courses for the minor must be approved by the department head no later than the beginning of the junior year. Suggested courses include (but are not limited to):

HDCF 141, Individual and the Family	2
HDCF 241, Family Relations	3
HDCF 250, The Development of Human Sexuality	3
HDCF 312, Human Development and Personality II: Adolescence	3
HDCF 313, Human Development and Personality III: The Middle and Later Years	2
HDCF 327, Human Development and Personality I: Childhood	3
HDCF 328, Experiences in Human Relations (Reservation required; complete form in department office)	3

Interior Design (ID) Major and Minor

Sandra Evers
Department of Apparel Merchandising and Interior Design
Nursing-Home Economics 229
605-688-5196

Requirements for Interior Design Major
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
Art 121, Design I	3		
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
ID 211, Design in the American Home	2		
ID 221, Introduction to Interiors & Housing			3
ID 222, Lab in Interiors & Housing			1
ID 122, Design Graphics	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3

WEL 100, Skills for Healthy Living and Lab	2	or	2
General Education Courses	6-9		6-9

Sophomore Year	**F**		**S**
AM 242, Textiles	3		
Art 111, Drawing I	3	or	3
ArtH 100, Art & Design Appreciation	3	or	3
HDCF 241, Family Relations	3	or	3
Hist 122, History of Western Civilization since 1650 (recommended)			3
ID 223, Programming & Presentation	3		
ID 315, Interior Design Materials	3	or	3
General Education Courses	6-9		6-9
ID Electives			5

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
ID 310, Interior Design Fabrics	2	or	2
ID 316, Interior Design Technology	2	or	2
ID 320, Lighting Design	3	or	3
ID 322, Intermediate Interior Design I	3		
ID 323, Intermediate Interior Design II			3
ID 373, Retailing (1/2 semester)	3		
ID 424, History of Interiors I	3		
ID 425, History of Interiors II			3
ID 487, Pre-Practicum in Interior Design and Housing (or senior year)			1
General Education Courses & Electives	6-8	or	6-8

Summer School either Junior or Senior Year	
ID 497, Professional Practicum	7

Senior Year	**F**		**S**
FCS 401, Professional Perspectives	2	or	2
ID 310, Interior Design Fabrics)	2	or	2
ID 316, Interior Design Technology	2	or	2
ID 317, Interior Design Practices			2
ID 320, Lighting Design	3	or	3
ID 422, Advanced Interior Design I	3		
ID 423, Advanced Interior Design II			3
ID 424, History of Interiors I	3		
ID 425, History of Interiors II			3
ID 487, Pre-Practicum in Interior Design and Housing (if not done in junior year)			1
General Education Courses & Electives	6-9	or	6-9

Requirements for Interior Design Minor: 17 cr	
ID 211, Design in the American Home	2
ID 221, Introduction to Interiors & Housing	3
ID 222, Lab in Interiors & Housing	1
Interior Design Electives	11

International Agriculture Option

Eugene Arnold
College of Agriculture and Biological Sciences
Agricultural Hall 156
605-688-5133

Leading to the B.S. in Agriculture or Biological Science	
Two Years of same International Language	14
Required Electives*	12
Group I Electives**	12
International Experience and Seminar***	2

* From the following listed courses one course each must be selected from three of the following course areas: economics, geography, history, and political science. The remaining credits to make up the total of 12 may be chosen from any of the remaining courses in the listing.
Anth 200, General Anthropology
Anth 310, Cultural Anthropology
Econ 202, Microeconomics Principles
Econ 370, Marketing
Econ 405, Comparative Economic Systems
Econ 440, Economics of the International Sector
EurS 300, European Union
EurS 301, European Union
Geog 200, Introduction to Human Geography
Geog 313, Geography of Latin America
Geog 314, Geography of the Former USSR
Geog 315, Geography of Europe
Geog 316, Geography of Asia
Geog 317, Geography of Africa
Geog 433, World Crop & Soil Resources
HDCF 141, Individual & the Family
Hist 345, History of Russia
Hist 418, History of Latin America
Hist 467, U.S. Foreign Relations (20th Century)
NFS 111, Food & People
NFS 321, Human Nutrition
PolS 253, Current World Problems
PolS 350, International Relations
PolS 446, China & Asian Politics
PolS 461, Early Political Philosophy
PolS 462, Modern Political Philosophy
PS 433, World Crop & Soil Resources
Psyc 101, General Psychology
Psyc 441, Social Psychology
Soc 362, Population Problems

** The Group I Electives (ag) are presently included in all curricula leading to the B.S. degree in agriculture but under this option they would also be required for a degree leading to a B.S. in Biological Science.

*** A work experience or experience at a university in another country through international student exchange or other means. You may also participate in international travel/study courses or international travel tours with consent. Student should register for credit using the 494, 495, or 496 series in their major.

Journalism Major and Minor

Richard Lee
Department of Journalism and Mass Communication
Printing and Journalism 209
605-688-4171

Requirements for Journalism Major – Advertising
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II (BS only)	3		3
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
MCom 151, Introduction to Mass Communication (recommended)	2	or	2
SpCm 101, Fundamentals of Speech	3	or	3
Foreign Language (BA only)	4		4
Humanities Core	3		3
Social Science Core	3		3

Sophomore Year	**F**		**S**
Econ 201, Macroeconomics Principles	3	or	3
MCom 160, Basic Photography	2	or	2
MCom 210, Newswriting and Reporting	3	or	3
MCom 213, Journalism Typography	2	or	2
WEL 100, Skills for Healthy Living and Lab	2	or	2
Foreign Language (BA only)	3		3
Humanities Core (BS only)	3	or	3
Physical Science Core (sequential)	4		4
Social Science Core	3		3
Elective (BS only)	3	or	3

Junior Year	F		S
Econ 370, Marketing	3	or	3
Engl 301, Advanced Composition	3	or	3
MCom 370, Principles of Advertising	3	or	3
MCom 371, Advertising Copy and Layout	3	or	3
MCom 372, Media and Markets	3	or	3
MCom Elective	3	or	3
Humanities Electives	3	or	3
International Studies (Humanities)	3		
International Studies (Social Science)			3
Social Science Electives	3	or	3
Elective (BA only)			3
Electives (BS only)	3		2

Senior Year	F		S
MCom 414, Mass Communication Law	3		
MCom 417, History of Journalism **or** MCom 416, Mass Media in Society	3	or	3
MCom 473, Advertising Campaigns	3	or	3
MCom 495, Internship (summer)	2	or	2
MCom Elective (upper division)	3	or	3
Social Science Electives (upper division)	3		3
Upper Division Electives	6		6

Requirements for Journalism Major – Broadcast Journalism
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	F		S
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II (BS only)	3		3
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
MCom 151, Introduction to Mass Communication (recommended)	2	or	2
SpCm 101, Fundamentals of Speech	3	or	3
Foreign Language (BA only)	4		4
Humanities Core	3		3
Social Science Core	3		3

Sophomore Year	F		S
MCom 160, Basic Photography	2	or	2
MCom 210, Newswriting and Reporting	3	or	3
PolS 210, State and Local Government	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Foreign Language (BA only)	3		3
Humanities Core	3	or	3
Physical Science Core (sequential)	4		4
Social Science Core (BA only)	3		
Social Science Core (BS only)	3		3
Electives (BA only)	3	or	3
Electives (BS only)	3		2

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
MCom 316, Public Affairs Reporting (recommended)	3	or	3
MCom 331, Television Production	3		
MCom 332, Radio News Reporting	3	or	3
MCom 333, Television News Reporting	3	or	3
Humanities Electives	3	or	3
International Studies (Humanities)	3		
International Studies (Social Science)			3
Social Science Electives	3		3
Elective (BA only)			2
Electives (BS only)	3		2

Senior Year	F		S
MCom 414, Mass Communication Law	3		
MCom 417, History of Journalism **or** MCom 416, Mass Media in Society	3	or	3
MCom 433, Advanced Television News Reporting	3		
MCom 495, Internship (summer)	2	or	2
MCom Elective (upper division)	3	or	3
Social Science Electives (upper division)	3		3
Upper Division Electives	6		6

Requirements for Journalism Major – News-Editorial
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	F		S
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II (BS only)	3		3
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
MCom 151, Introduction to Mass Communication (recommended)	2	or	2
SpCm 101, Fundamentals of Speech	3	or	3
Foreign Language (BA only)	4		4
Humanities Core	3		3
Social Science Core	3		3

Sophomore Year	F		S
MCom 160, Basic Photography	2	or	2
MCom 210, Newswriting and Reporting	3	or	3
MCom 213, Journalism Typography	2	or	2
PolS 210, State and Local Government	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Foreign Language (BA only)	3		3
Humanities Core (BS only)	3	or	3
Physical Science Core (sequential)	4		4
Social Science Core	3		3
Elective	3	or	3

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
MCom 310, Newspaper Editing	2	or	2
MCom 311, Editing Lab (concurrent with 310)	1	or	1
MCom 316, Public Affairs Reporting	3	or	3
MCom Elective	3		3
Humanities Electives	3	or	3
International Studies (Humanities)	3		
International Studies (Social Science)			3
Social Science Electives	3		3
Elective (BA only)			3
Elective (BS only)	3		2

Senior Year	F		S
MCom 412, Advanced Editing Lab	1	or	1
MCom 414, Mass Communication Law	3		
MCom 417, History of Journalism **or** MCom 416, Mass Media in Society	3	or	3
MCom 495, Internship (summer)	2	or	2
MCom Elective (upper division) (BA only)	3	or	3
MCom Elective (upper division) (BS only)	3		2
Social Science Electives (upper division)	3		3
Upper Division Electives (BA only)	6		8
Upper Division Electives (BS only)	6		6

Requirements for Journalism Minor: 16 cr.
To include:
MCom 210, Newswriting and Reporting 3

Landscape Design (La) Major

Peter Schaefer
Department of Horticulture, Forestry, Landscape, and Parks
Northern Plains Biostress Laboratory 201A
605-688-5136

Requirements for Landscape Design Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
Bio 101, Biology Survey I	3		
Biological Science Sequence, Bio 103 or Bio 200			3
Chem 106, Chemistry Survey	4	or	4
EG 123, Computer Aided Design & Graphics	1	or	1
Engl 101, Freshman Composition	3	or	3
Ho 111, General Horticulture	3	or	3
La 190, Introduction to Landscape Architecture			1
Math 113, College Algebra & Trigonometry, **or** Math 102, College Algebra **and** Math 120, Trigonometry	5	or	5
Phys 101, Survey of Physics	4	or	4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
Area I Fine Arts Elective - See Departmental listing**	3	or	3
Area III Social Science Elective - see University listing	3	or	3
CEE 106, Elementary Surveying	3	or	3
Ho 250, Woody Plants: Trees	3		
Ho 260, Woody Plants: Shrubs and Vines			2
ID 293, Current Topics: Design Graphics	3	or	3
La 222, Landscape Graphics	2	or	2
La 231, Introduction to LANDCADD	3	or	3
La 241, History of Landscape Architecture			3
La 261, Landscape Design I	3	or	3
PS 213, Soils	3	or	3
Soc 100, Introduction to Sociology	3	or	3

Junior Year	**F**		**S**
Area I Humanities Elective - see University listing	3	or	3
CEE 208, Engineering Surveys	3		
Econ 201, Macroeconomics Principles	3	or	3
Engl 301, Advanced Composition	3	or	3
Group I Ag Elective, see ABS College listing	3	or	3
Ho 220, Landscape Maintenance **or** Ho 314, Turf Management	3	or	3
Ho 311, Herbaceous Plants	3		
La 322, Site Planning	3		
La 323, Landscape Construction			3
La 324, Planning Public Grounds	3		
La 332, Residential Landscape Design			3
La 342, Planting Design			2
Communication Elective, see ABS College listing	2	or	2

Senior Year	**F**	**S**
La 421, City Planning	3	
La 422, Landscape Design II	3	
La 423, Construction Specifications		2
La 424, Recreational Facilities Design	3	
La 442, Landscape Design III		3
Electives	3	3
Technical Electives, see approved department listing*	2	6

* Technical electives will be selected with the assistance of the student's advisor from the list of approved electives on file in the HFLP Department office. Any departure from this list must be approved by the Head of the HFLP Department.

**Area I Fine Arts elective will be selected with the assistance of the student's advisor from the following list:
Art 111, Drawing I
Art 121, Design I
Art 123, Three Dimensional Design

No grade below a "C" in an La prefixed course will be accepted toward a major in Landscape Design.

Latin American Area Studies Program (LAAS)

Allen Branum
College of Arts and Science
Nursing-Home Economics 251
605-688-6619

Requirements (Minimum of 22 credit hours as indicated below)

Section A	**Credits**
Span 101-102, Introductory Spanish I-II	4/4
Span 201-202, Intermediate Spanish I-II	3/3
Span 311-312, Spanish Composition and Conversation	2/2
Minimum Sub Total	**8**

Section B	**Credits**
Span 356, Spanish American Literature	3
Span 436, Spanish American Culture & Civilization	2
Span 484, 20th Century Spanish American Literature	3
Span 492, Special Problems (oriented toward Latin America)	1-3
(Courses in English)	
Geog 313, Geography of Latin America	3
Hist 418, History of Latin America	3
Hist 493, Topics in History	1-4
PolS 347, Latin American Politics	3
(LAAS courses)	
LAAS 301, Latin American Cultures (Topical)	3
LAAS 302, Latin American Societies (Topical)	3
LAAS 491, Directed Studies in Latin American Cultures	1-3
Minimum Sub Total	**14**

Recommended Electives
(Additional courses in Spanish are strongly recommended.)

Anth 200, General Anthropology	3
Anth 310, Cultural Anthropology	3
Econ 405, Comparative Economic Systems	3
Econ 440, Economics of the International Sector	3
Hist 467, U.S. Foreign Relations (20th Century)	3
NFS 321, Human Nutrition	3
PolS 253, Current World Problems	3
PolS 350, International Relations	3
PolS 461, Early Political Philosophy	3
PolS 462, Modern Political Philosophy	3
Soc 362, Population Problems	3

Manufacturing Engineering Technology (MET) Major

Jerry Sorensen
Department of General Engineering
Wenona Hall 310
605-688-6417

Requirements for Manufacturing Engineering Technology Major
Bachelor of Science in Technology

Freshman Year	**F**	**S**
Chem 106, Chemistry Survey **or** Chem 112, General Chemistry I	4	
EG 121-122, Engineering Design Graphics I-II	1	1
Engl 101, Freshman Composition	3	
ES 222, Advanced Machine Shop		2
ES 225, Industrial Machine Tool Applications	1	

ET 112, DC and AC Concepts		5
ET 113, DC and AC Concepts Lab		2
GE 101, Introduction to Engineering and Technology	2	
Math 113, College Algebra & Trigonometry	5	
Math 222, Calculus for Non-Math Majors **or**		
Math 123, Calculus I		5
WEL 100, Skills for Healthy Living and Lab		2

Sophomore Year	**F**	**S**
CSc 105, Introduction to Computers	3	
EG 123, Computer Aided Design and Graphics	1	
ES 131, Welding	2	
MET 223, Mechanics for Technologists		3
MET 232, Micro-Computers in Industry		2
Phys 111-113, Introduction to Physics I-II	4	4
SpCm 101, Fundamentals of Speech	3	
Stat 341, Statistical Methods I		3
Social Science or Emphasis*	3	
Humanities or Emphasis*		4

Junior Year	**F**	**S**
CM 332, Building Systems	2	
Econ 202, Microeconomics Principles		3
Engl 379, Technical Communications	3	
MET 211, Introduction to Engineering Materials	3	
MET 333, Computer Aided Manufacturing (CAM)		3
MET 343, Automated Production Techniques		3
Emphasis*	6	3
Humanities	3	
Social Science or Emphasis*		3

Senior Year	**F**	**S**
GE 231, Technology and Society	3	
MET 477, Senior Design		3
Emphasis*	6	3
Humanities or Emphasis*		3
Technical Electives	7	6

*See General Engineering Department for applicable course work.

Mathematics (Math) Major and Minor

Kenneth Yocom
Department of Mathematics and Statistics
Harding Hall 101
605-688-6196

Requirements for Mathematics Major
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Chem 106, Chemistry Survey **or**			
Chem 112, General Chemistry I	4		
CSc 150, Computer Science I			3
Engl 101, Freshman Composition	3	or	3
Math 123, Calculus I	5		
Math 224, Calculus II			4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Biological Science Electives	3		3
Electives			2

Sophomore Year	**F**	**S**
Econ 201, Macroeconomics Principles		3
Math 215, Matrix Algebra	2	
Math 225, Calculus III	3	
Math 253, Elementary Logic & Set Theory		3
Math 271, Mathematical Applications in FORTRAN		3
Phys 211, University Physics I	4	
Phys 213, University Physics II		4
Humanities Elective		3
Social Science Electives	3	
Electives	4	

Junior Year	**F**	**S**
Engl 301, Advanced Composition	3	
Engl 379, Technical Communications		3
Choose 3 of the following 4 courses:		
Math 313, Modern Algebra **or**		
Math 315, Linear Algebra **or**		
Math 425, Introduction to Real Analysis I **or**		
Math 426, Introduction to Real Analysis II	6	3
Humanities Electives	3	3
Social Science Elective	3	3
Electives	2	3

Senior Year	**F**		**S**
Math 401, Senior Seminar	1	or	1
Math Electives (300 level or above)	6		3
Electives	10		12

Mathematics Requirements in Teacher Education
In the B.S. program above, students seeking teacher certification in secondary mathematics must take the following mathematics courses:

Math 261, Geometry for Teachers	3
Math 345, Topics in Discrete Mathematics	2
Math 355, Methods of Teaching Mathematics	3
Math 381, Mathematical Statistics	4
and the two courses	
Math 313, Modern Algebra	3
Math 315, Linear Algebra	3

rather than three of 313, 315, 425, and 426.

Requirements for Mathematics Major
Bachelor of Arts in Arts and Science
This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Requirements for Mathematics Minor: 23 cr

Math 123, Calculus I **or**	
Math 222, Calculus for Non-Math Majors	5
Math 224, Calculus II	4
Math 253, Elementary Logic and Set Theory	3
Mathematics courses at the 200 level or above.	11

Required of minors in the **Teacher Education** Program:

Math 261, Geometry for Teachers	3
Math 355, Methods of Teaching Mathematics	3
One of the following	
Math 313, Modern Algebra	3
Math 315, Linear Algebra	3
Math 361, College Geometry	3
Math 425, Introduction to Real Analysis I	3

An average of "C" is required in the minor courses.

Mechanical Engineering (ME) Major

Don Froehlich
Department of Mechanical Engineering
Crothers Engineering Hall 210
605-688-5426

Requirements for Mechanical Engineering Major
Bachelor of Science in Mechanical Engineering
(Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology)

Freshman Year	**F**	**S**
Chem 112, General Chemistry I	4	
EG 121, Engineering Design Graphics I **and** EG 122,Engineering Design Graphics II	1	1
EM 221, Statics		3
Engl 101, Freshman Composition **and** SpCm 101, Fundamentals of Speech	3	3
GE 101, Introduction to Engineering and Technology	2	
Math 123, Calculus I **and** Math 224, Calculus II	5	4
Phys 211, University Physics I		4
WEL 100, Skills for Healthy Living and Lab	2	
Electives		2-3

Sophomore Year	**F**	**S**
CSc 213, Introduction to Programming with FORTRAN **or** CSc 218, Introduction to C/C++/UNIX for Engineers	3	
Econ 201, Macroeconomics Principles		3
EG 123, Computer Aided Design & Graphics	1	
EM 222, Dynamics	3	
EM 321, Mechanics of Materials		3
Engl 210, Introduction to Literature		3
ES 225, Industrial Machine Tool Applications	1	
Math 225, Calculus III	3	
Math 321, Differential Equations		3
ME 240, Introduction to Mechanical Design		3
ME 241, Engineering Materials	3	
ME 311, Thermodynamics I		3
Phys 213, University Physics II	4	

Junior Year	**F**	**S**
EE 305, Basic Electrical Engineering I **and** EE 306, Basic Electrical Engineering II	3	3
EM 331, Fluid Mechanics for ME's	3	
Engl 379, Technical Communications	3	
Math 331, Advanced Engineering Math **or** Math 571, Numerical Analysis	3	
Math 381, Mathematical Statistics		4
ME 312, Thermodynamics II	3	
ME 321, Fundamentals of Machine Design	3	
ME 376, Measurements & Instrumentation Lab		2
ME 415, Heat Transfer		3
Electives		5-6

Senior Year	**F**	**S**
ME 322, Vibrations	3	
ME 419, Heating and Air Conditioning Design **or** ME 418, Design of Thermal Systems **or** ME 413, Turbomachinery	3	
ME 421, Design of Machine Elements	3	
ME 451, Automatic Controls		3
ME 456, Dynamic Systems Lab		1
ME 476, Thermo-Fluids Lab	1	
ME 477, Mechanical Systems Design I	1	
ME 478, Mechanical Systems Design II		2
ME 480, Inspection Trip	0	
Electives	5-6	8-9

Technical Electives (11 credits)
The 11 credits of technical electives may be chosen from the following list. At least one course must be in design. Design courses are identified by an asterisk (*).

ME 313, Analytical Thermodynamics 3
ME 341, Metallurgy 3
ME 362, Industrial Engineering 3
ME 411, Environmental Engineering 3
ME 412, Internal Combustion Engines* 3
ME 413, Turbomachinery* 3
ME 414, Air Pollution Control 3
ME 416, Computer Aided Engineering 3
ME 418, Design of Thermal Systems* 3
ME 419, Heating & Air Conditioning Design* 3
ME 427, Gas Dynamics I 3
ME 428, Machine Design - Case Studies* 3
ME 431, Aerodynamics* 3
ME 440, Computer Aided Design* 3
ME 461, Analysis & Design of Industrial Systems* 3
ME 492, Special Problems* 1-5
ME 493, Special Topics 1-5
ME 494/495, Cooperative Education/Internship* 1-3
Any ME 500 level course
Courses from other departments or disciplines accepted on approval

Microbiology (Micr) Major and Minor

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 304
605-688-6141

Requirements for Microbiology Major
Bachelor of Science in Arts and Science

Freshman Year	**F**	**S**
Bio 151, 153, General Biology I-II	4	4
Chem 112, 114, General Chemistry I-II	4	4
Engl 101, Freshman Composition	3	
Math 113, Algebra & Trigonometry **or** Math 102, College Algebra **and** Math 120, Trigonometry	5	
SpCm 101, Fundamentals of Speech		3
WEL 100, Skills for Healthy Living and Lab		2
Electives		3

Sophomore Year	**F**	**S**
Bio 371, Genetics	3	
Chem 326 & 328, Organic Chemistry **or** Chem 120, Elementary Organic Chemistry **and** Chemistry elective	4	4
Micr 231, General Microbiology	4	
Micr 332-333, Microbial Physiology		4
Micr 390, Undergraduate Seminar	1	
Social Science Electives (approved list)	3	3
Electives	1	5

Junior Year	F	S
Chem 232, Analytical Chemistry I	4	
Chem 361, Biochemistry	4	
Engl 301, Advanced Composition		3
Phys 111-113, Introduction to Physics I-II	4	4
*Microbiology courses		4
Humanities Electives (approved list)	4	5

Senior Year	F	S
Micr 422, Immunology	4	
Micr 436, Molecular & Microbial Genetics	4	
Micr 490, Seminar		1
Stat 341, Statistics Methods I **or** Math 222, Calculus for Non-Math Majors **or** Math 123, Calculus I		3
*Microbiology courses	4	4
Social Science Electives (approved list)	3	3
Communications Elective (recommend Engl 379)		3
Electives	1	2

The College of Arts and Science requires that at least 40 semester credits of the 128 total for graduation be upper division (300 and above). The College of Arts and Science requires two courses which concentrate on the humanities and social science aspects of an international area. These courses may be used to partially satisfy the social science and humanities requirements. (See International Studies list.)

* One (1) course in applied microbiology from the following list is **required**; additional courses from this list may be taken as electives:

Micr 310, Environmental Microbiology	4
Micr 311, Food Microbiology	4
Micr 323-324, Medical Microbiology and Lab	4
Micr 421, Soil Microbiology	3

Other elective courses in microbiology to complete the 28 credit minimum. Electives may be chosen from the following list (or from the list above):

DS 301, Dairy Microbiology
Micr 414, Anaerobic Microbiology
Micr 425, Pathogenesis
Micr 492, Microbiology Problems
Micr 493, Special Topics
Micr 494/495, Cooperative Education/Internship
Vet 424, Medical & Veterinary Virology
Zool 467, Parasitology

Requirements for Microbiology Major
Bachelor of Science in Biological Science

Freshman Year	F	S
Bio 151, 153, General Biology I-II	4	4
Chem 112, 114, General Chemistry I-II	4	4
Engl 101, Freshman Composition	3	
Math 113, Algebra & Trigonometry **or** Math 102, College Algebra **and** Math 120, Trigonometry	5	
SpCm 101, Fundamentals of Speech		3
WEL 100, Skills for Healthy Living and Lab		2
Electives		3

Sophomore Year	F	S
Chem 326 & 328, Organic Chemistry **or** Chem 120, Elementary Organic Chemistry **and** Chemistry elective	4	4
Econ 201, Macroeconomics Principles	3	
Micr 231, General Microbiology	4	
Micr 390, Undergraduate Seminar	1	
Soc 100, Introduction to Sociology		3
Stat 341, Statistical Methods I **or** Math 222, Calculus for Non-Math Majors **or** Math 123, Calculus I		3
Humanities Electives (approved list)	3	3
Elective	1	3

Junior Year	F	S
Bio 371, Genetics	3	
Chem 361, Biochemistry	4	
Engl 301, Advanced Composition		3
Micr 332-333, Microbial Physiology		4
Phys 111-113, Introduction to Physics I-II	4	4
*Microbiology courses	4	
Social Science Elective		3
Electives	1	2

Senior Year	F	S
Chem 232, Analytical Chemistry I		4
Micr 422, Immunology	4	
Micr 436, Molecular & Microbial Genetics	4	
Micr 490, Seminar		1
*Microbiology courses	4	4
Communications Elective (recommend Engl 379)	3	
Electives (recommend Micr courses)	1	7

* One (1) course in applied microbiology from the following list is **required**; additional courses from this list may be taken as electives:

Micr 310, Environmental Microbiology	4
Micr 311, Food Microbiology	4
Micr 323-324, Medical Microbiology	4
Micr 421, Soil Microbiology	3

Other elective courses in microbiology to complete the 28 credit minimum. Electives may be chosen from the following list (or from the list above):

DS 301, Dairy Microbiology
Micr 414, Anaerobic Microbiology
Micr 425, Pathogenesis
Micr 492, Microbiology Problems
Micr 493, Special Topics
Micr 494/495, Cooperative Education/Internship
Vet 424, Medical & Veterinary Virology
Zool 467, Parasitology

Requirements for Microbiology Major
Bachelor of Science in Agriculture

This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Requirements for Microbiology Minor: 16 cr

The minor in Microbiology consists of Micr 231, General Microbiology, and additional credit hours with a Micr prefix for a total of at least 16 credits. DS 301 may be included in the 16 credits. Two courses must be at the 300 level or above.

Military Science (Mil) Minor

Jan Griesenbrock
Department of Military Science
DePuy Military Hall 200
605-688-6151

Requirements for Military Science Minor: 16 cr

A minor in Military Science is available for those who complete 12 credits offered and who enroll and complete Mil 494 Internship. This minor is compatible to fields of major studies.

Music (Mus) Major and Minor

Corliss Johnson
Department of Music
Lincoln Music Hall 204
605-688-5187

Requirements for Music Major
Bachelor of Arts in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3

Mus 110, Basic Theory & Musicianship I **and** Mus 111, Basic Theory & Musicianship II	4		4
Mus 130, Music Literature & History I **and** Mus 131, Music Literature & History II	2		2
Mus 195, Recital Attendance	0		0
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Applied Music	1		1
Foreign Language	4		4
Music Organization	1-2		1-2

Sophomore Year	**F**		**S**
Math 102, College Algebra	3	or	3
Mus 195, Recital Attendance	0		0
Mus 210, Intermediate Theory & Musicianship III **and** Mus 211, Intermediate Theory & Musicianship IV	4		4
Mus 230, Music Literature & History III **and** Mus 231, Music Literature & History IV	2		2
Mus 260, Conducting Fundamentals	2		
Applied Music	1		1
Foreign Language	3		3
Music Organization	1-2		1-2
Natural Science Core (see approved list)*	4		4

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Mus 195, Recital Attendance	0		0
Mus 311, Counterpoint (Advanced Musicianship V)	3		
Mus 313, Form and Analysis (Advanced Musicianship VI)			3
Mus 433, Music Literature V: 20th Century Music	2		
Applied Music (300-400)	2		2
Humanities Core**	3		
Social Science Core**	3		3
General Electives	2	or	2
Music Organization	1-2		1-2

Senior Year	**F**		**S**
Mus 195, Recital Attendance	0		0
Mus 420, Orchestration and Arranging (Advanced Musicianship VII)	2-3	or	2-3
Mus 483, Public Recital***	0-2		0-2
Applied Music	2		2
General Electives	4		4
Humanities Core**	3		3
Music Electives	2		2
Music Organization	1-2		1-2
Social Science Core**	3		3

* Must include two courses in sequence.
** Must be taken in at least two areas.
*** The piano proficiency must be passed before the senior recital may be scheduled. See the Student Handbook and your advisor for details.

Requirements for Music Minor: 22 cr

Mus 110-111, Basic Theory and Musicianship I-II	8
Mus 130, Music Literature and History I	2
Mus 260, Conducting Fundamentals	2
Mus 361, Music Education II (Vocal or Instrumental Conducting) or Music Electives	2
Applied (at least two hours upper level—300 or 400)	6
Note: Mus 195 required for each semester enrolled for applied lessons.	
Music Electives	2

(In addition, minors must participate in Major Ensembles each semester in which they are enrolled in Applied Music lessons. Participation in small ensembles is strongly encouraged.)

Music Education Major

Corliss Johnson
Department of Music
Lincoln Music Hall 204
605-688-5187

Requirements for Music Education Major
Bachelor of Music Education

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Mus 110, Basic Theory & Musicianship I **and** Mus 111, Basic Theory & Musicianship II	4		4
Mus 195, Recital Attendance	0		0
Psyc 101, General Psychology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Applied Music	1		1
Music Organization	1		1
Natural Science Core	4		4

Sophomore Year	**F**		**S**
Mus 130, Music Literature and History I **and** Mus 131, Music Literature and History II	2		2
Mus 195, Recital Attendance	0		0
Mus 210, Intermediate Theory & Musicianship III **and** Mus 211, Intermediate Theory & Musicianship IV	4		4
Mus 260, Conducting Fundamentals	2		
Mus 270, Pedagogy I **and** Mus 271, Pedagogy II	1-2		1-2
Mus 361, Music Education II: Conducting			2
Applied Music	1		1
Humanities Core	5	or	5
Music Organization	1		1
Professional Semester I	5	or	5

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Mus 195, Recital Attendance	0		0
Mus 230, Music Literature and History III **and** Mus 231, Music Literature and History IV	2		2
Mus 313, Form and Analysis (Advanced Musicianship VI)			3
Mus 351, Music Education I: Elementary Music Concepts	2		
Mus 362, Music Education III: Methods and Materials	2		
Mus 365, Music Education IV: Supervision and Administration of Music			2
Mus 370, Pedagogy III **and** Mus 371, Pedagogy IV	1-2		1-2
Applied Music	2		2
Music Organization	1		1
Professional Semester II	6	or	6

Senior Year	**F**		**S**
Anth 421, Indians of North America **or** Hist 358, History of the American Indians	3		
EdFn 365, Integrating Computers into the Curriculum	2		
Mus 195, Recital Attendance	0		0
Mus 420, Orchestration and Arranging (Advanced Musicianship VII)	3		
Mus 433, Music Literature and History V: 20th Century Music	2		
Mus 483, Public Recital*	0-2		

Applied Music	2	
International Studies	2	
Music Organization	1	
Professional Semester III		16
Social Science Core	3	

* Proficiencies: All Music Education Majors must pass piano and fretted instrument proficiencies before scheduling senior recitals. See the Student Handbook and your advisor for details.

An emphasis in choral or instrumental teaching may be elected, or, by adding appropriate hours, students may prepare in **both areas.**

Specific Courses Required for Choral Emphasis
Mus 260, Conducting Fundamentals
Mus 270-271, Pedagogy I-II
Mus 370-371, Pedagogy III-IV
Mus 351, Music Education I: Elementary Music Concepts
Mus 361, Music Education II: Conducting
Mus 362, Music Education III: Methods and Materials (Vocal)
Mus 365, Music Education IV: Supervision & Administration of School Music

Specific Courses Required for Instrumental Emphasis
Mus 260, Conducting Fundamentals
Mus 270-271, Pedagogy I-II
Mus 370-371, Pedagogy III-IV
Mus 351, Music Education I: Elementary Music Concepts
Mus 361, Music Education II: Conducting
Mus 362, Music Education III: Methods and Materials (Instrumental)
Mus 365, Music Education IV: Supervision & Administration of School Music

Music Merchandising Major

Corliss Johnson
Department of Music
Lincoln Music Hall 204
605-688-5187

Requirements for Music Merchandising Major
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
CSc 105, Introduction to Computers	2		
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra			3
MuAp 115, Class Instruction in Keyboard **and** MuAp 116, Class Instruction in Keyboard	1		1
Mus 201, History of Country Music			3
Mus 110, Basic Theory & Musicianship I **and** Mus 111, Basic Theory & Musicianship II	4		4
Mus 195, Recital Attendance	0		0
Mus 202, The Music Industry	3		
Mus 301, Blues, Jazz & Rock	3		
SpCm 101, Fundamentals of Speech	3	or	3
Applied Music	1		1
Music Organization	1		1

Sophomore Year	**F**	**S**
Econ 202, Microeconomics Principles		3
Mus 195, Recital Attendance	0	0
Mus 210, Intermediate Theory & Musicianship III **and** Mus 211, Intermediate Theory & Musicianship IV	4	4
Mus 230, Music Literature & History III **and** Mus 231, Music Literature & History IV	2	2
WEL 100, Skills for Healthy Living and Lab	2	or 2
Applied Music	1	1
Biological Science Core****	3	3
Humanities	3	
Music Organization	1	1
Social Science Core* or Elective	2-3	2-3

Junior Year	**F**	**S**
Acct 210, Principles of Accounting	3	
Engl 301, Advanced Composition		3
MCom 370, Principles of Advertising	3	
Mus 195, Recital Attendance	0	0
Applied Music	2	2
Electives or Humanities Core	2-4	or 2-4
Music Elective***	2-3	or 2-3
Music Organization	1	1
Physical Science Core****	4	4

Senior Year	**F**	**S**
BAdm 310, Business Finance	3	
Econ 370, Marketing	3	
Mus 195, Recital Attendance	0	0
Mus 433, Music Literature V: 20th Century Music	2	
Mus 483, Public Recital	0-2	0-2
CSc 150, Computer Science I		3
Social Science Core*		3
Music Organization	1	or 1
Professional Electives**	6-8	6-8

* Must be taken in at least two areas, one of which must be in international studies.
** Includes required internship.
*** Select from Mus 311, 313, or 420.
**** Science requirement includes one 2-course sequence.

Nursing (Nurs) Major

Roberta Olson
College of Nursing
Nursing-Home Economics 255
605-688-5178

Requirements for Nursing Major – Basic
Bachelor of Science in Nursing
(For students beginning the major spring 1998 or after. Students beginning the major before spring 1998 are referred to the 1994-96 Bulletin.)

Freshman Year	**F**	**S**
Chem 106, Chemistry Survey	4	
Chem 108, Organic and Biochemistry		5
Engl 101, Freshman Composition*	3	
Math 102, College Algebra*	3	
Psyc 101, General Psychology		3
Soc 100, 150, 240, 250, 340	3	
SpCm 101, Fundamentals of Speech*		3
WEL 100, Skills for Healthy Living and Lab*	2	
Zool 221, Anatomy		3
Elective/Humanities/Fine Arts*		2

Sophomore Year	**F**	**S**
HDCF lifespan course	3	
Micr 231, General Microbiology	4	
NFS 321, Human Nutrition	3	
Nurs 264, Professional Perspectives I		1
Nurs 265, Health Assessment and Intervention		4
Nurs 280, Professional Communication		4
Nurs 282, Health Promotion		2
Pha 241, Pharmacology		3

Zool 325, Mammalian Physiology	4		
Elective/Humanities/Fine Arts*	3		3

Junior Year	**F**		**S**
Engl 301, Advanced Composition*			3
HSc 443, Public Health Science			3
Nurs 304, Professional Perspectives II	1		
Nurs 320, Family as Client: Emerging & Developing	7		
Nurs 330, Family Health Environment Across the Lifespan	4		
Nurs 364, Professional Perspectives III			1
Nurs 370, Acute Health Care I			5
Nurs 375, Chronic Health Care I			5
Stat 341, Statistical Methods I	3		
Elective/Humanities/Fine Arts	2	or	2

Senior Year	**F**		**S**
Nurs 404, Professional Perspectives IV	1		
Nurs 410, Acute Health Care II	5		
Nurs 420, Chronic Health Care II	5		
Nurs 464, Professional Perspectives V			2
Nurs 475, Community as Client			3
Nurs 491, Directed Study in Nursing			6
Elective/Humanities/Fine Arts*	3		4

Required pre-nursing major courses: Chem 106, 108; Psyc 101; Soc 100, 150, 240, 250, or 340; Zool 221.

Required pre-nursing major **or** concurrent with first semester major courses: HDCF lifespan course, NFS 321, Zool 325, and Micr 231.

Required concurrent with Nurs 264, 265, 280, 282: Pha 241.

Required prerequisite or concurrent with Nurs 304, 320, 330: Stat 341.

Required prerequisite or concurrent with Nurs 364, 370, 375: HSc 443.

Note: Because the first semester of the major has 14 required credits [Nurs 264, Nurs 265, Nurs 280, Nurs 282, and Pha 241] it is very unlikely that students can plan to take more than one of the above required "pre-nursing" or "concurrent with first semester" major courses.

* University core courses–required for graduation.

Requirements for Nursing Major – RN Upward Mobility Bachelor of Science in Nursing

Curriculum under revision. Please contact the secretary, RN Upward Mobility, at (605) 688-6186, for plan.

Nutrition and Food Science (NFS) Major and Minor

Marilyn Swanson
Department of Nutrition and Food Science
Nursing-Home Economics 443
605-688-5161

Requirements for Nutrition and Food Science Major – ADA Didactic Program in Dietetics
Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			4
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2		
Math 102, College Algebra	3	or	3
NFS 110, Perspectives in Nutrition*	3		
NFS 141, Foods: Principles	4	or	4
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**	**S**
Chem 120, Elementary Organic Chemistry	4	
Chem 361, Biochemistry		4
Econ 201, Macroeconomics Principles	3	
NFS 261, Food Service Operations*	3	
NFS 321, Human Nutrition		3
NFS 371, Food Service Purchasing*		3
Psyc 101, General Psychology	3	
Zool 221, Anatomy	3	
Zool 325, Mammalian Physiology		4
Humanities		3

Junior Year	**F**	**S**
Acct 210, Principles of Accounting I	3	
CSc 105, Introduction to Computers	3	
Engl 301, Advanced Composition	3	
HDCF 241, Family Relations		3
Micr 231, General Microbiology		4
NFS 322, Assessment Skills in Nutrition*	4	
NFS 341, Advanced Food Science*	4	
NFS 381, Quantity Food Production & Service		2
Stat 341, Statistical Methods I		3
Elective**		5

Senior Year	**F**	**S**
FCS 401, Professional Perspectives		2
FCSE 421, Experiences in Adult Education*		2
NFS 391, Institution Organization and Management*	3	
NFS 422, Advanced Human Nutrition*	4	
NFS 423, Clinical Nutrition*		5
NFS 424, Community Nutrition*		3
NFS 471, Hospitality Management Information Systems*	3	
NFS 490, Seminar*	1	
NFS 497, Professional Practicum		3
Humanities	4	

* These courses are only offered once a year. Check the semester.
** Elective: good choice would be NFS 251 (3 cr).

NFS 423 and 424 require many off campus experiences at lunch time and later in the day. Plan a light course load when taking these courses.

Requirements for Nutrition and Food Science Major – Food Science Bachelor of Science in Family and Consumer Sciences

Freshman Year	**F**		**S**
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			4
Engl 101, Freshman Composition	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	2	or	2
NFS 110, Perspectives in Nutrition	3		
NFS 141, Foods: Principles			4
NFS 151, Food Technology	2		
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**	**S**
AS 241, Meat: Production to Consumption		3
Bio 101, Biology Survey I		3
Chem 120, Elementary Organic Chemistry	4	
Chem 232, Analytical Chemistry I		4

DS 231, Dairy Foods....3
Math 113, College Algebra & Trigonometry 5
NFS 341, Advanced Food Science 4
Phys 111, Introduction to Physics I 4
Psyc 101, General Psychology ....3 or 3

Junior Year	F		S
Chem 361, Biochemistry			4
DS 221, Technical Control of Dairy Products I 3			
Engl 301, Advanced Composition			3
HDCF 241, Family Relations			3
Math 222, Calculus for Non-Math Majors 5			
Micr 231, General Microbiology			4
NFS 351, Principles of Food Processing 3			
NFS 360, Food Chemistry			4
Stat 341, Statistical Methods I 3			
Humanities 3			

Senior Year	F		S
AST 443, Food Process and Engineering Fundamentals ...3			
DS 422, Technical Control of Dairy Products II			4
FCS 401, Professional Perspectives 2			
Micr 311, Food Microbiology 3			
NFS 321, Human Nutrition 3			
NFS 450, Food Analysis 4			
NFS 451, Advanced Food Processing			4
Humanities			3
Social Science Elective			3

Requirements for Nutrition and Food Science Minor: 18-19 cr
Required courses include:
NFS 110, Perspectives in Nutrition 3
NFS 141, Foods: Principles 4
NFS 321, Human Nutrition 3
NFS 422, Advanced Human Nutrition 4
plus one of the following:
NFS 322, Assessment Skills in Nutrition 4
NFS 423, Clinical Nutrition 5
NFS 424, Community Nutrition **and**
NFS 303, Diet Therapy 4
Any required prerequisites must also be taken. Students planning a minor must receive departmental approval.

Park Management (PR) Major

Peter Schaefer
Department of Horticulture, Forestry, Landscape, and Parks
Northern Plains Biostress Laboratory 201A
605-688-5136

Requirements for Park Management Major
Bachelor of Science in Agriculture

Freshman Year	F		S
Bio 101, Biology Survey I 3		or	3
Chem 106, Chemistry Survey			4
Engl 101, Freshman Composition 3		or	3
Ho 111, General Horticulture 3			
Math 102, College Algebra 3		or	3
PR 101, Parks and Society 3			
PR 496, Field Experience (summer) 1			
PS 213, Soils			3
Psyc 101, General Psychology 3		or	3
Soc 100, Introduction to Sociology 3		or	3
SpCm 101, Fundamentals of Speech 3		or	3
WEL 100, Skills for Healthy Living and Lab 2		or	2
Humanities Elective (see page 18) 3		or	3

Sophomore Year	F		S
Bio 200, Biological Diversity 4		or	4
CSc 130, BASIC Programming **or**			
CSc 105, Introduction to Computers 2		or	3
Econ 201, Macroeconomics Principles 3			
Phys 101, Survey of Physics			4
PolS 100, American Government **or**			
PolS 210, State & Local Government 3		or	3
PR 202, Outdoor Recreation Resource Management			3
PR 496, Field Experience (summer) 1			
PS 243, Geology			3
WL 110, Environmental Conservation **or**			
Bio 311, Principles of Ecology 2		or	3
Humanities Electives (see page 18)....3		or	3

Junior Year	F		S
AST 333, Soil and Water Mechanics			3
Engl 301, Advanced Composition 3		or	3
Ho 250, Woody Plants: Trees 3			
Ho 311, Herbaceous Plants **or**			
Ho 413, Arboriculture 3		or	3
PR 301, Park Interpretation 3			
PR 302, Commercial Recreation Areas			3
PR 303, Forest Ecology and Management 3			
PR 496, Field Experience (summer) 1			
SpCm 315, Public Speaking 3		or	3
Economics/Business Electives 3		or	3
Electives....			2

Senior Year	F		S
Engl 379, Technical Communication 3		or	3
Ho 314, Turf Management			3
PolS 320, Public Administration **or**			
PolS 428, Personnel & Budgetary Administration.....3		or	3
PR 300, Park Operations & Facility Management 3			
PR 401, Advanced Park Management			3
PR 496, Field Experience (summer) 1			
Recr 440, Administration of Leisure Services			2
Economics/Business Electives 3			3
Land-use Planning Electives 3			3
Electives 1-3			

Park Management Economics/Business Electives:
Choose 9 credits from the following:
Acct 210, Principles of Accounting I 3
Acct 211, Principles of Accounting II 3
BAdm 350, Legal Environment of Business and Contracts 3
BAdm 351, Business Law I 3
BAdm 360, Organization and Management 3
Econ 202, Microeconomics Principles 3
Econ 370, Marketing....3
Econ 433, Public Finance 3
Stat 341, Statistical Methods I 3

Park Management Land-use Planning Electives:
Choose 6 credits from the following:
La 241, History of Landscape Architecture 3
La 261, Landscape Design I 3
La 322, Site Planning 3
La 324, Planning Public Grounds 3
La 421, City Planning 3
La 424, Recreational Facilities Design 3
Plan 471, Principles of State, Regional & Community Planning 3
Plan 472, Techniques of State, Regional & Community Planning ...3
PS 310, Soil Geography & Land-Use Interpretation 3

Park Management Suggested Electives:

Geog 464, Geographic Aspects of Regional Planning 3
Hlth 250, First Aid 2
Ho 260, Woody Plants: Shrubs and Vines 2
MCom 313, Publicity Methods.....2
PE 321, Water Safety Instructor 1
Phil 220, Introduction to Ethics 3
Recr 260, Recreation Leadership 2
Soc 310, Research Methods II 3

Students must obtain 2 to 4 credits of PR 494, 495, 496 Cooperative Education/Internship/Field Experience in Park Management by completing either (a) or(b):

a. Field Experience (PR 496). Work 2 summers or equivalent time unit between freshman and senior years in Department approved park or recreation system, agency or institution. 1 credit per each summer or semester completed.
b. Cooperative Education (PR 494), Internship (PR 495), Field Experience(PR 496). Work 1 summer or equivalent time unit as stated in (a) for 1 credit and participate in Department approved Professional Internship for 1 semester for 3-12 credits. Students are encouraged to use electives to broaden their perspective and/or to develop an area of specialization. Consult with your adviser. Students will have up to 7 credits of electives depending on their selection of specified electives and choice of PR 494, 495, 496 option (a) or (b).

Pest Management Minor

Dale Gallenberg
Department of Plant Science
Agricultural Hall 219
605-688-5121

Requirements for Pest Management Minor: 16 cr

PS 223, Principles of Plant Pathology 3
PS 305, General Entomology 3
PS 343, Weed Science 3
PS 490, Undergraduate Seminar 1
Plus 6 additional credits from:
PS 307, Insect Pest Management 3
PS 333, Diseases of Field Crops 3
PS 334, Diseases of Horticultural Crops 3
PS 415, Mycology.....3
PS 420, Biological Control of Arthropods 3
PS 431, Applied Insect Ecology 3
PS 492, Special Problems (in Pest Management Areas) 1-4
PS 493, Special Topics (in Pest Management Areas) 3

Pharmacy (Pha) Major

Danny Lattin
College of Pharmacy
Pharmacy 125
605-688-6197

Progression Standards for Class Standing

Some pharmacy courses have prerequisites such as 3rd Year Standing, etc. These are defined as follows:
(note: "completion" means a passing grade in each pharmacy course and maintaining semester and cumulative Pha GPA requirements)

3rd Year Standing – the student must have been admitted into the professional program

4th Year Standing – completion of all Pha 300 level required courses

5th Year Standing – completion of all Pha 400 level required courses and a B.S. in Pharmaceutical Sciences are required to begin the first semester. Completion of all required Pha courses in the first semester is required to progress to the second semester.

6th Year Standing – completion of all Pha 700 level required, non-clerkship courses.

Requirements for Entry Level Doctor of Pharmacy Degree

Pre-Pharmacy Courses:

First Year	**F**		**S**
Bio 101, Biology Survey I	3	or	3
Chem 112, General Chemistry I	4		
Chem 114, General Chemistry II			4
Engl 101, Freshman Composition	3	or	3
Math 222, Calculus for Non-Math Majors	5	or	5
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities and Social Sciences	6		3

Second Year	**F**		**S**
Chem 326, Organic Chemistry	4		
Chem 328, Organic Chemistry			4
Econ 201, Macroeconomics Principles	3	or	3
Micr 231, General Microbiology	4	or	4
Phys 101, Survey of Physics	4	or	4
Stat 341, Statistical Methods I	3	or	3
Zool 221, Anatomy	3		
Zool 325, Mammalian Physiology			4
General Electives*	3	or	3
Humanities and Social Sciences	3	or	3

Professional Program Courses:

Third Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Pha 310, Introduction to Pharmaceutical Care	3		
Pha 311, Professional Communication Skills			3
Pha 313, Pharmaceutical Calculations	1		
Pha 323, Pharmaceutical Biochemistry	4		
Pha 324, Biomedical Science			4
Pha 331, Pharmaceutics I	3		
Pha 332, Pharmaceutics II			4
Pha 340, Principles of Drug Action I	4		
Pha 341, Principles of Drug Action II			4
General Elective*	3	or	3

Fourth Year**	**F**	**S**
Pha 415, Biopharmaceutics & Pharmacokinetics	5	
Pha 430, Pharmaceutical Jurisprudence	3	
Pha 442, Principles of Drug Action III	6	
Pha 443, Principles of Drug Action IV		6
Pha 445, Drug Literature & Research Design		4
Pha 450, Drug Distribution Systems		4
Pha 465, Professional Resources Management		4
General Electives*	2	

Fifth Year	**F**	**S**
Pha 719, Physical Assessment Laboratory	1	
Pha 722, Therapeutics-The Geriatric Patient	2	
Pha 723, Ethics in Healthcare Practice	2	
Pha 732, Therapeutics-Renal/Fluids & Electrolytes	3	
Pha 733, Therapeutics-Gastrointestinal and Nutrition		3
Pha 734, Therapeutics-Endocrine/Reproduction		3

Pha 735, Therapeutics-Infectious Disease 2
Pha 736, Therapeutics-Neurology/Psychiatry 3
Pha 737, Therapeutics-Cardiopulmonary 4
Pha 738, Therapeutics-Hematology/Oncology 3
Pha 739, Therapeutics-Rheumatology/Skin/Skeletal.....2
Pha 741, Drug Utilization & Quality Assurance 1
Pha 742, Adverse Drug Reactions 2
Pha 784, Seminar 1
Pharmacy Electives.....2 2

Sixth Year – Clerkships* Su/F/S**
Pha 714, Community Pharmacy 6
Pha 716, Institutional Pharmacy 6
Pha 770, Pediatrics 4
Pha 771, Geriatrics 4
Pha 772, Internal Medicine I.....4
Pha 773, Internal Medicine II 4
Pha 774, Ambulatory Care/Family Practice 4
Pha 775, Psychiatry 4
Elective Clerkships (see below) 8

Elective Clerkships (choose 2)***
Pha 700, Directed Studies.....4
Pha 701, Home Health Care/Hospice 4
Pha 702, Indian Health Service.....4
Pha 703, Pharmacy Administration 4
Pha 704, Nutrition.....4
Pha 705, Clinical Research 4
Pha 706, Critical Care 4
Pha 707, Infectious Disease 4
Pha 708, Surgery 4
Pha 709, Nephrology 4
Pha 710, Pharmacokinetics 4
Pha 711, Oncology 4
Pha 712, Nuclear Pharmacy 4
Pha 713, Managed Care 4

* General Electives must not be natural science, math, health, nutrition science, or computer science, and a minimum of 5 must be 300 level or above.
** Eligible for Bachelor of Science degree in Pharmaceutical Sciences after completion of fourth year.
*** Clinical Clerkship Year completed during Summer Term, Fall and Spring Semesters.

Requirements for Post-B.S. Doctor of Pharmacy Degree

Prerequisite
B.S. in Pharmacy which must include:
Pharmacokinetics (available by correspondence)
Pathophysiology (available by correspondence)

F S

(at SDSU Campus in Brookings)
Pha 718, Advanced Clinical Laboratory 3
Pha 730, Advanced Pharmacotherapeutics I.....6
Pha 755, Research Design and Drug Information 4
Pha 784, Seminar 1
Stat 341, Statistical Methods I 3

(at Sioux Falls Classrooms)
Pha 715, Pharmacy Physical Assessment 2
Pha 721, Immunotherapy 2
Pha 728, Current Issues in Pharmacy Practice 3
Pha 731, Advanced Pharmacotherapeutics II 6
Pha 760, Clinical Pharmacokinetics 3
Pha 785, Seminar 1

Required Clerkships (4 weeks each/4 credits each)
Pha 770, Pediatrics
Pha 771, Geriatrics
Pha 772, Internal Medicine I
Pha 773, Internal Medicine II
Pha 774, Ambulatory Care/Family Practice
Pha 775, Psychiatry

Elective Clerkships (4 weeks each/4 credits each) [choose 2]
Pha 700, Directed Studies
Pha 701, Home Health Care/Hospice
Pha 702, Indian Health Service
Pha 703, Pharmacy Administration
Pha 704, Nutrition
Pha 705, Clinical Research
Pha 706, Critical Care
Pha 707, Infectious Disease
Pha 708, Surgery
Pha 709, Nephrology
Pha 710, Pharmacokinetics
Pha 711, Oncology
Pha 712, Nuclear Pharmacy
Pha 713, Managed Care

Philosophy (Phil) Minor

Robert Burns
Department of Philosophy and Religion
Scobey Hall 308
605-688-4909

Requirements for Philosophy Minor: 16 cr
Phil 100, Introduction to Philosophy 4
Upper division courses. 6
Additional Phil courses 6

Physical Education (PE) Minor

Patty Hacker
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-5218

All students interested in obtaining this minor must obtain written approval from the PETE Coordinator. A minimum final grade of "C" is required in all courses taught by the HPER department.

Requirements for Physical Education Minor: 23 cr
Hlth/PT 250, First Aid 2
HPER 252, Motor Learning and Development.....2
PE 352, Adapted Physical Education 2
PE 360, Methods of Elementary School Physical Education 2
PE 461, Methods of Teaching Physical Education 2

Five hours from the following courses:
Danc 130, Dance Fundamentals 1
PE 200, Skill Concept: Fitness 1
PE 201, Skill Concept: Gymnastics 1
PE 202, Skill Concept: Individual/Dual Activities 1
PE 203, Skill Concept: Team Sport Activities 1
PE 204, Skill Concept: Rhythms and Dance 1
PE/Recr 205, Skill Concept: Recreational Activities 1

Eight hours from the following courses:
Danc 241, Creative Movement for Children.....2
HPER 180, Introduction to HPER 3
HPER 440, Organization & Administration of HPER 2
HPER 451, Tests & Measurements in HPER 2
PE 241, Curriculum in Physical Education 2
PE 321, Water Safety Instructor 2
PE/Recr 342, Recreation Sports Programming/Administration 2
PE 350, Exercise Physiology 3
PE 353, Biomechanics 3

Physics (Phys) Major and Minor

Warren Hein
Department of Physics
Crothers Engineering Hall 310A
605-688-5428

Requirements for Physics Major – General
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Bio 101, Biology Survey I **or** Bio 151, General Biology I	3		
Bio 103, Biology Survey II **or** Bio 153, General Biology II			3
Chem 112, General Chemistry I **or** Chem 106, Chemistry Survey	4		
Chem 114, General Chemistry II **or** Chem 120, Elementary Organic Chemistry			3
Engl 101, Freshman Composition	3	or	3
Math 113, College Algebra & Trigonometry	5		
Math 123, Calculus I			5
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
CSc 213, Introduction to Programming with FORTRAN **or** CSc 218, Introduction to C/C++/UNIX for Engineers	3		
GE 231, Technology and Society			3
Math 224, Calculus II	4		
Math 225, Calculus III			3
Phys 211, University Physics I **or** Phys 111, Introduction to Physics I	4		
Phys 213, University Physics II **or** Phys 113, Introduction to Physics II			4
Humanities Electives*	6		
Social Science Electives*	3		
Additional Electives	3		

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Math 321, Differential Equations	3		
Phys 312, Measurement Theory & Experiment Design	2		
Phys 331, Introduction to Modern Physics	3		
Physics Electives	7		
Social Science Electives*	6		
Additional Electives	8		

Senior Year	**F**		**S**
Phil 331, Philosophy of Science **or** Phil 200, Introduction to Logic	3	or	3
Phys 351, Classical Mechanics **or** Phys 471, Quantum Mechanics I **or** Phys 421, Electromagnetism	3	or	3
Phys 490, Physics Colloquium	1	or	1
Physics Electives	3		
Additional Electives	22		

Requirements for Physics Major – Science Teaching
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Bio 101, Biology Survey I **or** Bio 151, General Biology I	3		
Bio 103, Biology Survey II **or** Bio 153, General Biology II			3
Chem 112, General Chemistry I **or** Chem 106, Chemistry Survey	4		
Chem 114, General Chemistry II **or** Chem 120, Elementary Organic Chemistry			3
Engl 101, Freshman Composition	3	or	3
Math 113, College Algebra & Trigonometry	5		
Math 123, Calculus I			5
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	**F**		**S**
CSc 213, Introduction to Programming with FORTRAN **or** CSc 218, Introduction to C/C++/UNIX for Engineers	3		
EdFn 375, Human Relations			3
GE 231, Technology and Society			3
Math 224, Calculus II	4		
Math 225, Calculus III			3
Phys 211, University Physics I **or** Phys 111, Introduction to Physics I	4		
Phys 213, University Physics II **or** Phys 113, Introduction to Physics II			4
Psyc 101, General Psychology **or** Soc 100, Introduction to Sociology	3		
SeEd 287, Practicum and Professional Lab			2
Humanities Electives*	3		

Junior Year	**F**		**S**
EdFn 365, Integrating Computers into the Curriculum	2		
Engl 301, Advanced Composition	3		
EPsy 302, Educational Psychology			2
Hist 368, History of the American Indians **or** Anth 421, Indians of North America			3
Math 321, Differential Equations	3		
Phys 185, Introduction to Astronomy			3
Phys 312, Measurement Theory and Experiment Design	2		
Phys 331, Introduction to Modern Physics	3		
SeEd 314, Supervised Clinical/Field Experience			1
SeEd 416, Strategies in Science Teaching	3		
SeEd 450, Teaching of Reading			3
Physics Electives	4		

Senior Year	**F**		**S**
Phil 331, Philosophy of Science **or** Phil 200, Introduction to Logic	3		
Phys 490, Physics Colloquium	1		
SeEd 400, Curriculum and Instruction in Secondary Schools			3
SeEd 410, Social Foundations, Management and Law			2
SeEd 420, Teaching Special Needs Students			1
SeEd 488, Supervised Teaching Internship			10
Biology or Chemistry Electives	4		
Humanities Electives*	3		
Physics Electives	3		
Social Science Electives*	3		

* Humanistic and social science electives must be chosen to satisfy the University Core and the requirements of the College of Arts and Science (see pages 28 and 29-30 of the SDSU Catalog). Six credits must be taken in the area of International Studies and no more than six credits may be taken in any one discipline.

Requirements for Physics Minor: 17 cr (minimum)

Phys 111-113, Introduction to Physics I-II **or**	
Phys 211-213, University Physics I-II	8
Phys 331, Introduction to Modern Physics	3
Other Physics Department courses (except Phys 101)	6

Planning (Plan) Minor

Roger Sandness
Department of Geography
Scobey Hall 232
605-688-4511

Requirements for Planning Minor

Planning is an essential part of most private and public activities. It is a process that can be learned and applied to increase effectiveness in decision making and operations.

The Minor in Planning **(Master's Degree Level)** and teaching Planning courses are governed by a Coordinating Committee appointed by and responsible to the Vice President for Academic Affairs.

Political Science (PolS) Major and Minor

Robert Burns
Department of Political Science
Scobey Hall 308
605-688-4909

Requirements for Political Science Major
Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Bio 101, Biology Survey I (BS only)	3		
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra (or higher)	3-5	or	3-5
PolS 100, American Government **or**			
PolS 101, American Government Honors	3		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Foreign Language (BA only)	4		4
Biological Science Core (BS only)			3
PolS 100 or 200 level			3
Social Science Core	3	or	3

Sophomore Year	**F**	**S**
Foreign Language (BA only)	3	3
Humanities Core (BS only)	3	3
Physical Science Core Sequence	4	4
PolS 100 or 200 level	3	3-6
Social Science Core	3	3
Electives (consider Education, Second Major, or Minor)	3-6	3-6

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Humanities Core	3		3
PolS 300-400 level	6-9		6-9
Electives (consider Education, Second Major, or Minor)	6-9		6-9

Senior Year	**F**	**S**
PolS 300-400 level	6-9	0-9
Electives 300-400 level (consider Education, Second Major, or Minor)	6-9	6-16

Requirements for Political Science Minor: 18 cr

PolS 100, American Government **or**	
PolS 101, American Government Honors	3
Upper division (over 300) credits	9
Additional PolS courses	6

You may opt for a minor with a concentration in public law, public administration, or the international area by carefully choosing your courses.

Printing Management (Prtg) Major

Richard Lee
Department of Journalism and Mass Communication
Printing and Journalism 209
605-688-4171

Requirements for Printing Management Major
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Prtg 111, Basic Presswork	3		
Prtg 112, Introduction to Graphic Arts* **or**			
Prtg 211, Typography*	3	or	3
Prtg 114, Desktop Publishing	3	or	3
Prtg 212, Binding, Finishing and Distribution* **or**			
Prtg 213, Reproduction Photography*			3-4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Core	3	or	3
Social Science Core	3	or	3

Sophomore Year	**F**		**S**
MCom 160, Basic Photography	2	or	2
MCom 210, Newswriting and Reporting **or**			
MCom 313, Publicity Methods	2	or	3
Prtg 112, Introduction to Graphic Arts* **or**			
Prtg 211, Typography*	3		
Prtg 212, Binding, Finishing and Distribution* **or**			
Prtg 213, Reproduction Photography*			3-4
Prtg 315, Advanced Presswork			3
Psyc 101, General Psychology	3	or	3
Humanities Core	3		3
Physical Science Core	4		4

Junior Year	**F**		**S**
Bio 101, Biology Survey I **and**			
Bio 103, Biology Survey II	3		3
Econ 201, Macroeconomics Principles	3	or	3
Econ 370, Marketing	3	or	3
Engl 301, Advanced Composition	3	or	3
Prtg 411, Estimating* **or**			
Prtg 415, Tone and Color Reproduction*			3
Psyc 331, Business and Industrial Psychology	3		
International Studies (Humanities)	3		
International Studies (Social Science)			3
Upper Division Electives	2		5

Senior Year	F		S
Prtg 495, Internship	4		
Prtg 411, Estimating* or			
Prtg 415, Tone and Color Reproduction*			3
Prtg 412, Production Problems	1-4		1-4
Econ 467, Labor, Law and Economics			3
Social Science Core	3	or	3
Upper Division Electives	6		5

* Offered alternate years.

Not more than 50 credits in printing management and 16 credits in journalism will be counted. All students must complete a minimum of 40 semester credits in courses numbered 300 or above to qualify for the degree. Students must also have 6 semester credits of courses designated International Studies, with 3 credits in humanities and 3 credits in social science as listed in the College of Arts and Science section.

Effective July 1, 1996, this major will be on inactive status, accepting no new students until further notice.

Psychology (Psyc) Major and Minor

Kenneth Hillner
Department of Psychology
Scobey Hall 338
605-688-4322

Requirements for Psychology Major – Psychological Services Option
Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Psyc 102, Introduction to Psychology	4		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Core	3	&/or	3
Natural Science Core	4		4
Social Science Core	3	&/or	3
Electives	3	&/or	3

Sophomore Year	F		S
Psyc 202, Advanced General Psychology	3	or	3
Psyc 411, Physiological Psychology	3		
Psyc 362, Theories of Personality			3
Psyc 414, Drugs and Behavior			3
Stat 341, Statistical Methods I	3	or	3
Humanities Core (as needed)	3	&/or	3
International Studies Core (as needed)	3	&/or	3
Natural Science Core	3		3
Elective (as needed)	9	&/or	6

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Psyc 305, Simple Learning and Conditioning	3		
Psyc 315, Research Methods in Psychology			3
Psyc 358, Behavior Modification			3
Psyc 441, Social Psychology	3		
Psyc 451, Abnormal Behavior	3	or	3
Humanities Core (as needed)	3	&/or	3
International Studies Core (as needed)	3	&/or	3
Social Science Core (as needed)	3	&/or	3
Electives (as needed)	3	&/or	3

Senior Year	F		S
Psyc 356, Psychological Assessment	3		
Psyc 357, Psychological Therapies			3
Psyc 490, Psychology Seminar	1		
Psyc 495, Internship*	6	or	6
Electives (as needed)	10	&/or	10

* Six credits total of Internship required. May be taken as a 6 hour block or in smaller units over two semesters.

Requirements for Psychology Major – Preprofessional Option
Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Psyc 102, Introduction to Psychology	4		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Core	3	&/or	3
Natural Science Core	4		4
Social Science Core	3	&/or	3
Electives	3	&/or	3

Sophomore Year	F		S
Psyc 202, Advanced General Psychology	3	or	3
Psyc 301, Sensation and Perception			3
Psyc 411, Physiological Psychology	3		
Psyc 362, Theories of Personality			3
Stat 341, Statistical Methods I	3	or	3
Humanities Core (as needed)	3	&/or	3
International Studies Core (as needed)	3	&/or	3
Natural Science Core	3		3
Electives (as needed)	6	&/or	9

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Psyc 302, Psychological Investigations	3		
Psyc 303, Experiments in Psychology			3
Psyc 305, Simple Learning and Conditioning	3		
Psyc 306, Human Learning and Cognitive Behavior			3
International Studies Core (as needed)	3	&/or	3
Humanities Core (as needed)	3	&/or	3
Social Science Core (as needed)	3	&/or	3
Electives (as needed)	3	&/or	3

Senior Year	F		S
Psyc 409, History and Systems of Psychology			3
Psyc 441, Social Psychology	3		
Psyc 451, Abnormal Behavior	3	or	3
Psyc 490, Psychology Seminar	1		
Psyc 492, Problems in Psychology	3	or	3
Electives (as needed)	9	&/or	9

Requirements for Psychology Major – Applied Option
Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Psyc 102, Introduction to Psychology	4		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Core	3	&/or	3
Natural Science Core	4		4
Social Science Core	3	&/or	3
Electives	3	&/or	3

Sophomore Year	F		S
Stat 341, Statistical Methods I	3	or	3
Humanities Core (as needed)	3	&/or	3
International Studies Core (as needed)	3	&/or	3
Natural Science Core	3		3
Psychology Electives (as needed)	6	&/or	6
Electives (as needed)	9	&/or	9

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Psyc 315, Research Methods in Psychology			3
Humanities Core (as needed)	3	&/or	3
International Studies Core (as needed)	3	&/or	3
Psychology Electives (as needed)	6	&/or	6
Social Science Core (as needed)	3	&/or	3
Electives (as needed)	3	&/or	3

Senior Year	F		S
Psyc 490, Psychology Seminar	1		
Psychology Electives (as needed)	6		6
Electives (as needed)	10	&/or	10

Requirements for Psychology Major – Teaching Option
Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Psyc 102, Introduction to Psychology	4		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Humanities Core	3	&/or	3
Natural Science Core	4		4
Social Science Core	3	&/or	3
Electives	3	&/or	3

Sophomore Year	F		S
EdFn 365, Integrating Computers into the Curriculum			2
Hist 368, History of the American Indians **or** Anth 421, Indians of North America	3	or	3
Psyc 202, Advanced General Psychology	3	or	3
Psyc 411, Physiological Psychology	3		
Psyc 362, Theories of Personality			3
SeEd 412, Methods of Teaching Social Studies	3	or	3
Stat 341, Statistical Methods I	3	or	3
Humanities Core (as needed)	3	&/or	3
Natural Science Core	3		3
PS I, the following courses to be taken concurrently:			
EdFn 375, Human Relations	3	or	3
SeEd 287, Practicum and Professional Lab	2	or	2

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Psyc 305, Simple Learning and Conditioning	3		
Psyc 306, Human Learning and Cognitive Behavior			3
Psyc 315, Research Methods in Psychology			3
Psyc 327, Child Psychology			3
Psyc 366, Psychological Gender Issues			3
Humanities Core (as needed)	3	&/or	3
International Studies Core (as needed)	3	&/or	3
Electives (as needed)	3	&/or	3
PS II, the following courses to be taken concurrently:			
EPsy 302, Educational Psychology	2	or	2
SeEd 314, Supervised Clinical/Field Experience	1	or	1
SeEd 450, Teaching of Reading	3	or	3

Senior Year	F		S
Psyc 441, Social Psychology	3		
Psyc 451, Abnormal Behavior	3		
Psyc 490, Psychology Seminar	1		
Psyc 492, Problems in Psychology	3	or	3
Electives (as needed)	6	&/or	6
PS III, the following courses to be taken concurrently:			
SeEd 400, Curriculum and Instruction in Secondary Schools			3
SeEd 410, Social Foundations, Management and Law			2
SeEd 420, Teaching Special Needs Students			1
SeEd 488, Supervised Teaching Internship			10

Requirements for Psychology Minor: 16 cr

Psyc 101, General Psychology **or** Psyc 102, Introduction to Psychology	3 or 4
Psyc 202, Advanced General Psychology	3
Psyc 409, History and Systems of Psychology	3
300-400 level courses	6-7

Public Recreation (Recr) Major and Minor

Linda Olson Sandness
Department of Health, Physical Education, and Recreation
Physical Education Center 251
605-688-6163

The Bachelor of Science degree may be earned by completing the curriculum outlined below. Programs are based on an interdisciplinary approach providing a broad, comprehensive background for leadership and administrative roles in the recreation profession. All students transferring into the Public Recreation major from within the university or from another institution will be evaluated on an individual basis by a departmental screening committee. Transfer students must have a 2.0 GPA to be accepted into the Public Recreation major program. Transfer students with less than a 2.0 GPA may petition for approval. If accepted, the transfer student will enter on probation for one semester. A Public Recreation major must have a 2.4 cumulative GPA to be recommended for the required 8-week internship experience. A minimum final grade of "C" is required in all courses taught by the HPER department.

Requirements for Pubic Recreation Major
Bachelor of Science in Arts and Science

Freshman Year	F		S
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II	3		3
CSc 105, Introduction to Computers **or** CSc 130, BASIC Programming	3	or	3
Engl 101, Freshman Composition	3	or	3
HDCF 141, Individual and the Family	2	or	2
HPER 180, Introduction to HPER	3	or	3
Math 102, College Algebra	3	or	3
Mus 100, Music Appreciation	2	or	2
PE/Recr 205, Skill Concept: Recreational Activities	1	or	1
Recr 260, Recreation Leadership			2
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Social Science Core	3	or	3

Sophomore Year	F		S
ArtH 100, Art & Design Appreciation **or** ArtH 211, Survey of World Art and Architecture **or** ArtH 212, Western Traditions in Art and Architecture	3	or	3

Chem 106, Chemistry Survey	4	or	4
Danc 130, Dance Fundamentals	1		
Econ 201, Macroeconomics Principles **or** Econ 202, Microeconomics Principles	3	or	3
Geog 131, Physical Geography I	4	or	4
Hist 121, History of Western Civilization to 1650 **or** Hist 122, History of Western Civilization since 1650	3	or	3
PE 135, Swimmers Swim Level 5-6	1	or	1
PE/Recr 342, Recreation Sports Programming & Administration	2		
PR 101, Parks and Society	3		
Psyc 101, General Psychology	3	or	3
Soc 100, Introduction to Sociology	3	or	3

Junior Year	**F**		**S**
BAdm 350, Legal Environment of Business & Contracts	3	or	3
Engl 301, Advanced Composition	3	or	3
Hlth/PT 250, First Aid	2	or	2
NFS 221, Survey of Nutrition (3) **or** WL 110, Environmental Conservation (2)	2/3	or	2/3
Phil 100, Introduction to Philosophy	4	or	4
Recr 330, Therapeutic Recreation	3	(odd)	
Recr 350, Recreational Facilities and Area Design	3	(even)	
Recr 395, Practicum in Recreation	3	or	3
Recr 440, Administration of Leisure Services			3
SpCm 315, Public Speaking **or** SpCm 330, Oral Interpretation	3	or	3
Suggested Electives			

Senior Year	**F**		**S**
BAdm 360, Organization and Management	3	or	3
Econ 370, Marketing (3) **or** MCom 313, Publicity Methods (2)	2/3	or	2/3
PE 111, Canoeing/Hiking **or** PE 110, Camping Skills	1	or	1
PolS 210, State and Local Government	3	or	3
Recr 414, Current Issues in Recreation			3
Recr 495, Recreation Internship	8	or	8
Suggested Electives			

Requirements for Public Recreation Minor: 23 cr

PE 135, Swimmer's Swim Level 5-6	1
PR 101, Parks and Society	3
HPER 180, Introduction to HPER	3
PE/Recr 205, Skill Concepts: Recreational Activity	1
Recr 260, Recreation Leadership	2
Recr 330, Therapeutic Recreation **or** Recr 350, Recreation Facilities & Area Design	3
Recr 440, Administration of Leisure Services	3

Students in the recreation minor will be counseled in selecting eight additional semester hours of course work from the suggested elective list.

Range Science (Rang) Major and Minor

James Males
Department of Animal and Range Sciences
Animal Science Complex 103A
605-688-5166

Requirements for Range Science Major
Bachelor of Science in Agriculture

Freshman Year	**F**		**S**
AS 101, Introduction to Animal Science	3	or	3
Bio 101, Biology Survey I	3		
Bio 103, Biology Survey II **or** Bot 201, General Botany			3
Chem 106, Chemistry Survey	4	or	4
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra **or** Math 113, Algebra and Trigonometry	3or5	or	3or5
Rang 205, Introduction to Range Management	3		
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Electives and Option courses	0-2		0-2

Sophomore Year	**F**		**S**
AS 233, Applied Animal Nutrition	4	or	4
Phys 101, Survey of Physics **or** Phys 111, Introduction to Physics I	4	or	4
PS 213, Soils	3	or	3
Rang 210, Range Plant Identification	2		
Stat 341, Statistical Methods I	3	or	3
Social Science Elective[1]	3	or	3
Electives and Option courses	0-13		0-13

Junior Year	**F**		**S**
Bot 301, Plant Systematics **or** Bot 305, Agrostology	3	or	4
Engl 301, Advanced Composition	3		
Engl 379, Technical Communications			3
Humanities Electives[2]	3		3
Electives and Option Courses	7-10		6-10

Senior Year	**F**		**S**
AS 490, Animal Science Senior Seminar	1	or	1
ABS 475, Integrated Natural Resource Management			3
Electives and Option Courses	16		12

[1] See approved list. Students taking the Technical Option are required to take Soc 240, Sociology of Rural America to fulfill this requirement.

[2] See approved list.

Technical Option (Resource Conservation)

AgEc 271, Farm and Ranch Management	4
AS 474, Beef Cattle Production **or** AS 477, Sheep and Wool Production	3
Bot 415, Plant Ecology	4
Chem 120, Elementary Organic Chemistry w/lab **or** Bot 327, Plant Physiology **or** Bot 421, Plant Anatomy	3 or 4
Econ 201, Macroeconomics Principles **or** Econ 202, Microeconomics Principles	3
Geog 487, Geographic Information Systems I **or** Geog 484 , Remote Sensing **or** AST 333, Soil and Water Mechanics **or** CEE 106, Elementary Surveying	3
PS 310, Soil Geography and Land Use Interpretation **or** PS 323, Soil Fertility and Fertilizers	3
Rang 321, Wildland Ecosystems	3
Rang 325, Natural Resource Measurements	3
Rang 415, Range Improvements and Grazing Management	3
Rang 421, Range Ecology Field Trip	3
SpCm 315, Public Speaking **or** SpCm 201, Interpersonal Communication **or** SpCm 334, Discussion	3
Natural Resource Management Electives[1]	5
General Electives	12-18

[1] Choose from WL 220, WL 411, WL 412, PR 202, PR 300, PR 401, PS 313, PS 362, or others as approved.

Science Option (Range Science/Research)

AS 474, Beef Cattle Production **or** AS 477, Sheep and Wool Production	3
Bio 371, Genetics **or** Bio 373, Evolution **or** Zool 301, Animal Behavior	3

Bot 327, Plant Physiology[1] or Chem 361, Biochemistry	4
Bot 415, Plant Ecology	4
Chem 120, Elementary Organic Chemistry w/lab	4
Econ 201, Macroeconomics Principles or Econ 202, Microeconomics Principles	3
Math 222, Calculus for Non-Math Majors	5
PS 310, Soil Geography and Land Use Interpretation or PS 323, Soil Fertility and Fertilizers	3
Rang 321, Wildland Ecosystems	3
Rang 325, Natural Resource Measurements	3
Rang 415, Range Improvements and Grazing Management	3
Rang 421, Range Ecology Field Trip	3
Group I Elective[2]	3
General Electives	12-16

[1] If Bot 327 is selected, an additional 3 credits of Math, Chemistry, or Physics required.

[2] See approved list.

Business Option (Ranch/Business)

Acct 210, Principles of Accounting	3
AgEc 271, Farm and Ranch Management	4
AgEc 354, Agricultural Marketing and Prices or Econ 370, Marketing	3
BAdm 360, Organization and Management	3
Chem 120, Elementary Organic Chemistry w/lab or Bot 327, Plant Physiology or Bot 421, Plant Anatomy	3 or 4
Econ 201, Macroeconomics Principles	3
Econ 202, Microeconomics Principles	3
Rang 321, Wildland Ecosystems	3
Rang 325, Natural Resource Measurements	3
Rang 415, Range Improvements and Grazing Management	3
Animal Science Production Electives[1]	6
Business Electives[2]	6
General Electives	13-17

[1] Select two (2) courses from AS 365, AS 474, AS 477.

[2] See approved list.

Requirements for Range Science Minor: 18 cr

To include twelve (12) hours of Range Science courses as approved by the department.

Religion (Rel) Minor

Robert Burns
Department of Philosophy and Religion
Scobey Hall 308
605-688-4909

Requirements for Religion Minor: 15 cr

Rel 213, Introduction to Religion	3
Additional Religion Courses	12

Rural Sociology Major

James Satterlee
Department of Rural Sociology
Scobey Hall 224
605-688-4132

Requirements for Rural Sociology Major
Bachelor of Science in Agriculture

This program will not accept new students after July 1, 1996. Students enrolled in this program prior to July 1, 1996, will follow the plan of study outlined in the 1994-96 catalog.

Sociology (Soc) Major and Minor

James Satterlee
Department of Rural Sociology
Scobey Hall 224
605-688-4132

Requirements for Sociology Major – General
Bachelor of Science in Arts and Science
(CJus minors use the General Option for their major)

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Soc 100, Introduction to Sociology	3		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Biological Science Electives (BS only)(from approved list)	3		3
Foreign Language (BA only)	4		4
Soc/Anth Electives			6
General Electives	6		

Sophomore Year	**F**		**S**
Foreign Language (BA only)	3		3
Humanities (BS only)(from approved list)	3	or	3
Natural Science Electives (BA only)(in sequence) (from approved list)	4		4
Physical Science Electives (BS only)(in sequence) (from approved list)	4		4
Social Science Electives (from outside major) (from approved list)	3		3
Soc/Anth Electives	3		3
General Electives (BA only)	3		3
General Electives (BS only)	6		3

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Soc 309, Research Methods I	3		
Soc 310, Research Methods II			3
Humanities Electives (BA only)(from approved list)	3		3
Soc/Anth Electives	3		3
General Electives (BA only)	6		6
General Electives (BS only)	9		9

Senior Year	**F**		**S**
Soc 401, Sociological Theory	3	or	3
Humanities Electives (BS only)(from approved list and two disciplines)	6	or	6
International Studies Electives (from approved list)	6	or	6
Soc/Anth Elective	3	or	3
General Electives (BA only)	17	or	17
General Electives (BS only)	16	or	16

Requirements for Sociology Major – Teaching+
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Soc 100, Introduction to Sociology	3		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Biological Science Electives (BS only)(from approved list)	3		3

Foreign Language (BA only)	4		4
Soc/Anth Elective			3
General Electives	6		3

Sophomore Year	**F**		**S**
EdFn 375, Human Relations*	3	or	3
SeEd 287, Practicum and Professional Lab*	2	or	2
Foreign Language (BA only)	3		3
Humanities Elective (BS only)(from approved list)	3	or	3
Natural Science Electives (BA only)(in sequence) (from approved list)	4		4
Physical Science Electives (BS only)(in sequence) (from approved list)	4		4
Social Science Electives (from outside major) (from approved list)	3		3
Soc/Anth Electives	3		6

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
EPsy 302, Educational Psychology**	2	or	2
SeEd 314, Supervised Clinical/Field Experience**	1	or	1
SeEd 450, Teaching of Reading**	3	or	3
Soc 309, Research Methods I	3		
Soc 310, Research Methods II			3
Humanities Elective (BA only)(from approved list other than foreign language)	3		
International Studies Electives (from approved list)	3	or	3
Soc/Anth Electives	3		6
General Electives (BS only)	3	or	3
General Electives (BA only)	1	or	1

Senior Year	**F**	**S**
EdFn 365, Integrating Computers into the Curriculum	2	
SeEd 400, Curriculum and Instruction in Secondary Schools***		3
SeEd 410, Social Foundations, Management and Law***		2
SeEd 412, Methods of Teaching Social Studies	3	
SeEd 420, Teaching Special Needs Students***		1
SeEd 488, Supervised Teaching Internship***		10
Soc 401, Sociological Theory	3	
Humanities Electives (BA only)(from approved list other than foreign language)	3	
Humanities Electives (BS only)(from approved list and two disciplines)	6	
International Studies Electives (from approved list)	3	

* Must be in same semester.
** Must be in same semester.
*** Must be in same semester; no other courses this semester.
+ Must have GPA of 2.2 to enter the program.

Requirements for Sociology Major – Social Work (SDSU/USD Cooperative Program)+
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Soc 100, Introduction to Sociology	3	or	3
Soc 270, Introduction to Social Work			3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Biological Science Electives (BS only)(from approved list)	3		3
Foreign Language (BA only)	4		4
Social Science Electives - Support Courses	3		3

Sophomore Year	**F**		**S**
Engl 210, Introduction to Literature	3		
Engl 301, Advanced Composition			3
Foreign Language (BA only)	3		3
Humanities Elective (BS only)(from approved list)	3	or	3
Natural Science Electives (BA only)(in sequence) (from approved list)	4		4
Physical Science Electives (BS only)(in sequence) (from approved list)	4		4
Social Science Electives (from outside major) (from approved list)	3		3

Junior Year (Fall Semester Only)	**F**	**S**
Soc 370, Social Policy	3	
Humanities Elective (BA only)(from approved list)	3	
Humanities Elective (BS only)(from approved list and two disciplines)	3	
Soc Electives – Support Courses	6	
General Elective	3	

Transfer to University of South Dakota Program for spring semester and senior year.

Senior Year
Enrolled in USD Program

+ Must have GPA of 2.2 to enter the program.

Requirements for Sociology Major – Human Services+
Bachelor of Science in Arts and Science

Freshman Year	**F**		**S**
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Biological Science Electives (BS only)(from approved list)	3		3
Foreign Language (BA only)	4		4
Soc/Anth Elective			3
General Electives	3		3

Sophomore Year	**F**		**S**
Soc 270, Introduction to Social Work	3		
Foreign Language (BA only)	3		3
Humanities Elective (BS only)(from approved list)	3	or	3
Physical Science Electives (BS only)(in sequence) (from approved list)	4		4
Natural Science Electives (BA only)(in sequence) (from approved list)	4		4
Social Science Electives (from outside major) (from approved list)	3		3
Soc/Anth Elective			3
General Electives (BS only)	3		3
General Electives (BA only)	6		6

Junior Year	**F**		**S**
Engl 301, Advanced Composition	3	or	3
Soc 309, Research Methods I	3		
Soc 310, Research Methods II			3
Soc 370, Social Policy	3		
Humanities Electives (BA only) (from approved list and two disciplines)	3		3
Soc/Anth Electives	3		3
General Electives	6		6

Senior Year	F		S
Soc 401, Sociological Theory	3	or	3
Soc 471, Social Work Skills & Methods I			3
Soc 495, Internship in Sociology (often taken during summer)	12	or	12
Humanities Electives (BS only)(from approved list and two disciplines)	6	or	6
International Studies Electives (BS only)(from approved list)	6	or	6
General Electives (BA only)	5	or	5
General Electives (BS only)	7	or	7

+ Must have GPA of 2.2 to enter the program.

Requirements for Sociology Major – Personnel Services+
Bachelor of Science in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3	or	3
Soc 100, Introduction to Sociology	3		
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Biological Science Electives (BS only)(from approved list)	3		3
Foreign Language (BA only)	4		4
Soc/Anth Elective			6
General Electives	6		

Sophomore Year	F		S
Acct 210, Principles of Accounting I	3		
Foreign Language (BA only)	3		3
Humanities Elective (BS only)(from approved list)	3	or	3
Physical Science Electives (BS only)(in sequence) (from approved list)	4		4
Natural Science Electives (BA only)(in sequence) (from approved list)	4		4
Social Science Electives (from outside major) (from approved list)	3		3
Soc/Anth Electives	3		3
General Electives Outside Sociology (from approved list – see advisor)	3		3

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Soc 309, Research Methods I	3		
Soc 310, Research Methods II			3
Soc 353, Sociology of Work	3		
Soc 453, Industrial Sociology			3
Humanities Elective (BA only)(from approved list)	3		
BAdm/Econ Elective	3		
Soc/Anth Elective			3
General Electives Outside of Sociology (from approved list – see advisor)	3		6

Senior Year	F		S
Soc 401, Sociological Theory	3	or	3
Soc 495, Internship in Sociology (strongly recommended)	12	or	12
Humanities Electives (BS only)(from approved list and two disciplines)	6	or	6
International Studies Electives (from approved list)	6	or	6
General Elective (BA only)	6	or	6
General Elective (BS only)	7	or	7

+ Must have GPA of 2.2 to enter the program.

Requirements for Sociology Major
Bachelor of Arts in Arts and Science
At the time of publication, availability of this degree program was under review by the Board of Regents. If interested in this degree program, contact the Dean of Arts and Science at 605-688-6619.

Requirements for Sociology Minor: 18 cr

Soc 100, Introduction to Sociology	3
300 level or above	6
Additional Soc or Anth credits	9

It is recommended that students declare minor prior to junior year. Register with department.

Spanish (Span) Major and Minor

Karen Cárdenas
Department of Foreign Languages
Nursing-Home Economics 121
605-688-5101

The major in Spanish requires a minimum of 36 credit hours in Spanish. The course work should include 101, 102, 201, 202, 311, 312, and 18 credit hours of upper-division (300-400) classes. Upper-division course work must include a minimum of four credit hours in literature, four credit hours in civilization and culture, and two credit hours in advanced language study.

Students who wish to major in Spanish are encouraged to obtain an application for the major from the main office of the Department of Foreign Languages as soon as possible. Students are required to have a minimum overall CGPA of 2.5 to be admitted to the Spanish major. No Spanish class in which the student receives a grade lower than "C" will count toward the major. Students are expected to maintain an overall CGPA of 2.5 to continue in the Spanish program as a major.

The following schedules are very general. Please contact a Spanish adviser for more specific information.

Requirements for Spanish Major
Bachelor of Arts in Arts and Science

Freshman Year	F		S
Engl 101, Freshman Composition	3	or	3
Span 101-102, Introductory Spanish I-II*	4	and	4
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2
Mathematics Core	3	or	3
Natural Science Core	3-4	and	3-4
Social Science Core	3	or	3
Electives			

Sophomore Year	F		S
Span 201-202, Intermediate Spanish I-II	3	and	3
Span 311-312, Spanish Composition and Conversation	2	and	2
Humanities Core	3	and	3
Social Science Core	3	and	3
Electives (Second major/minor)			

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Spanish course work (300-400 level)	3-6	and	3-6
Social Science Core	3	or	3
Electives			

Senior Year	F	S
Spanish course work (300-400 level)	3-6	and 3-6
Electives		

* Students who have a background in foreign language study before entering the University should take the Placement Examination to determine the appropriate course in which to enroll. Credit may be obtained for courses exempted upon completion of one course in the department, completion of appropriate paperwork, and the payment of the established fee.

Students who minor in Spanish are encouraged to declare their decision as soon as possible by completing a form in the main office of the Department of Foreign Languages. The minor must be declared at least two semesters before the student's anticipated date of graduation. No course in which the student receives a grade lower than "C" will count toward the minor.

Requirements for Spanish Minor: 20 cr

Span 101-102*, Introductory Spanish I-II	8
Span 201-202, Intermediate Spanish I-II	6
Span 311-312, Spanish Composition and Conversation	4
Span 300-400 level Electives	2

* Students who have a background in foreign language study before entering the University should take the Placement Examination to determine the appropriate course in which to enroll. Credit may be obtained for courses exempted upon completion of one course in the department, completion of appropriate paperwork, and the payment of the established fee.

Teaching Minors

Darrell Jensen
College of Education and Counseling
Wenona Hall 108
605-688-4321

Requirements for Teacher Education Minors

Frequently students in the teacher education program complete a combination of courses that constitute a minor. These would be courses not included in a student's major. For detailed information consult with the Dean of the College of Education and Counseling who is the minor adviser. These minors are listed below:

Social Science Minor

The minimum requirement for a Social Science Minor at South Dakota State University is 24 credit hours. The student must have an emphasis in two of the three following subject areas:

Geog 200, 210 - Geography, elective	9
Hist 151, 152 - U.S. History, elective	8
PolS 100, 102, 210 - American Government	9

A student may choose the remaining 8 credits from one of the following subject areas or the remaining third area from above:

Econ 201, 202 - Economics, elective
Hist 121, 122 - History of Western Civilization, elective
Psyc 202 - Psychology, elective
Soc 100, 150 - Sociology elective

Language Arts Minor

Engl 101, & 301, Freshman & Advanced Composition	6
English electives	7
MCom 210, Newswriting & Reporting	3
Journalism elective	2
SpCm 101, Fundamentals of Speech	3
Speech electives	3

General Science Minor*

Bio 101-103, Biology Survey I-II	6
Chem 106 & 120 **or** 112 & 114, General Chemistry	7
Phys 101 & 185 **or** 111 & 113, Introductory Physics	7
Electives	4

Any physical geography course:
AE 353, Physical Climatology and Meteorology
Bio 353, Introduction to Oceanography
PS 243, Geology
PS 305, General Entomology
WL 110, Environmental Conservation
Zool 221, Anatomy

Biological Science Minor*

Bio 101-103, Biology Survey I-II	6
Bio 311, Principles of Ecology	3
Bio 343, Cell Biology	3
Bio 371, Genetics	3
Electives in Botany, Zoology, Biology, Microbiology, or Wildlife	9

Physical Science Minor*

Chem 112, 114, General Chemistry	8
Chem 120, Elementary Organic Chemistry	4
Phys 111-113, Introduction to Physics I-II	8
Phys 331, Introduction to Modern Physics	3
Physics elective	1

* Strategies in Science Teaching, SeEd 416 strongly recommended as an elective for all science teaching minors.

Some schools hiring teachers place their local requirements above the minimum set by the South Dakota Division of Education and the North Central Accrediting Association.

Those planning to teach should consult the dean of the college, college staff members, and advisers in college major and minor departments early in the junior year for more detailed interpretation of these regulations.

Veterinary Science (Vet)

John Thomson
Department of Veterinary Science
Animal Disease Research 105
605-688-5172

Suggested Pre-Veterinary Medicine Plan of Study

Freshman Year	F		S
Bio 101, Biology Survey I **and** Bio 103, Biology Survey II	3		3
Chem 112, General Chemistry I **and** Chem 114, General Chemistry II	4		4
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra **or** Math 113, College Algebra & Trigonometry **or** Math 222, Calculus for Non-Math Majors			3-5
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living and Lab	2	or	2

Sophomore Year	F		S
Chem 120, Elementary Organic Chemistry	4	or	4
Micr 231, General Microbiology			4
Phys 111, Introduction to Physics I **and** Phys 113, Introduction to Physics II	4		4
Electives	8		5

Junior Year	F		S
Bio 371, Genetics	3	or	3
Chem 361, Biochemistry	4		
Chem 461, Intermediate Biochemistry			3
Engl 301, Advanced Composition	3	or	3
Electives	6-10		7-11

Senior Year	F		S
Electives			
Major requirements			
Specific requirements for various veterinary colleges			

*This curriculum meets the pre-veterinary requirements of most Colleges of Veterinary Medicine. The student and his or her adviser may alter the pre-veterinary curriculum to meet specific requirements of certain colleges.

Vocational Technical Education (VTE) Major

Lon Moeller
Department of Undergraduate Teacher Education
Wenona Hall 103
605-688-4378

Requirements for Vocational Technical Education Major
Bachelor of Science in Education

Contact the department.

Wildlife and Fisheries Sciences (WL) Major

Charles Scalet
Department of Wildlife and Fisheries Sciences
Northern Plains Biostress Laboratory 138C
605-688-6121

Requirements for Wildlife and Fisheries Sciences Major
Bachelor of Science in Biological Science

Freshman Year	F		S
Bio 101, Biology Survey I (or Bio 151)	3-4		
Bio 103, Biology Survey II (or Bio 153)			3-4
Chem 112, General Chemistry I			4
Engl 101, Freshman Composition	3	or	3
Math 102, College Algebra	3		
Soc 100, Introduction to Sociology	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
WEL 100, Skills for Healthy Living	2	or	2
WL 220, Introduction to Wildlife and Fisheries Management	2		
Humanities Elective	3	or	3

Sophomore Year	F		S
Bio 311, Principles of Ecology	3		
Chem 120, Elementary Organic Chemistry	4		
Econ 201, Macroeconomics Principles (or Econ 202)	3	or	3
Phys 101, Survey of Physics (or Phys 111)	4	or	4
Math 222, Calculus for Non-Math Majors (or Math 123)	5	or	5
WL 230, Wildlife and Fisheries Techniques			3
WL 490, Undergraduate Seminar	1		
Chemistry Elective (Chem 232, 361, or 380)			4
Humanities Elective	3	or	3
Social Science Elective	3	or	3

Junior Year	F		S
Engl 301, Advanced Composition	3	or	3
Stat 341, Statistical Methods I	3	or	3
WL 363, Ornithology			4
WL 367, Ichthyology	3		
WL 412, Principles of Fisheries Management			3
Zool 355, Mammalogy	3		
Botany Elective (Bot 201, 301, 305, 415, or PR 303)	3-4	or	3-4
Computer Science Elective	3	or	3
Communications Elective (SpCm 201, 315, or 334)	3	or	3

Senior Year	F		S
ABS 475, Integrated Natural Resource Management			3
Bio 371, Genetics	3	or	3
WL 411, Principles of Wildlife Management	4		
WL 430, Human Dimensions in Wildlife and Fisheries			3
WL 490, Undergraduate Seminar	1		
Botany Elective (Bot 201, 301, 305, 415, or PR 303)	3-4	or	3-4
Communications Elective (Engl 379, MCom 210, or MCom 313)	2-3	or	2-3
Physiology Elective (Bot 427, Bio 343, or Zool 325)	3-4	or	3-4
Remaining hours of 128 hour requirement are electives			

Women's Studies (WmSt) Minor

Virginia Norris
Department of Psychology
Scobey Hall 325
605-688-4322

Requirements for Women's Studies Minor: 18 cr

WmSt 101, Introduction to Women's Studies	3
WmSt 492, Special Problems in Women's Studies	3
Choose one course from the following:	3
Hist 349, Women in History	
PolS 305, Women and Politics	
Psyc 366, Psychological Gender Issues	
Soc 383, Sociology of Sex Roles	
Choose one course from the following*:	3
Engl 248, Women's Literature	
Rel 331, Feminism and Theology	
Elective Courses	6
Courses can be selected from the required list above and from the following	
CA 340, Work, Time, and Energy Decisions	
Soc 250, Marriage	
WmSt 300, Topics in Women's Studies	

In addition, courses related to the roles of women in society are offered on a periodic basis in various departments. These courses may be used as electives with the approval of the Coordinator.

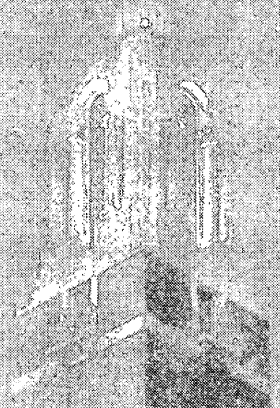
* Appropriate courses in the Humanities and Fine Arts may be substituted with the approval of the Coordinator.

Zoology (Zool) Minor

Charles McMullen
Department of Biology and Microbiology
Agricultural Hall 306
605-688-6141

Requirements for Zoology Minor: 16 cr

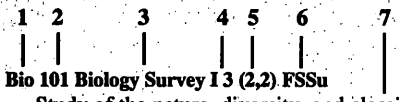
The minor in Zoology consists of Bio 101 or 151, and additional courses with a Zool prefix for a total of at least 16 credits. Two courses must be at the 300 level or above.



Course Descriptions

Curriculum Entries

Course Descriptions



Study of the nature, diversity, and classification of life; ecology; cells and cell cycles, Mendelian and modern Genetics. Intended for those not majoring in Biology. Duplicate credit for 101 and 151 not allowed.

1. Course prefix.
2. Course number. The first digit of the three-digit number indicates the level of instruction, as follows:
0 Pre-college, non-degree;
1 Freshman;
2 Sophomore;
3 Junior;
4 Senior.
3. Name of the course.
4. Number of credits assigned to the course. One credit is usually interpreted as one hour of class work per week or as two to three hours of lab work per week.
5. The first number inside the parenthesis indicates the number of recitation/lecture hours per week and the second number is the number of laboratory hours per week that the course requires.
6. Semesters in which the course is taught. F Fall; S Spring; Su Summer.
7. A brief description of the course. This section will also include other information affecting your enrollment in the course. A course description might include, for instance: "P, Math 102." This means that Math 102 is a prerequisite and must be taken before enrollment in this course. Other information included in various course descriptions would be: "Alternate years," "Not open to majors," "May be repeated for a total of six credits," etc.

Course Numbering

Undergraduate Courses:
001-099 Pre-college, remedial skills, special improvement (non-degree credit)
100-199 Freshman level
200-299 Sophomore level
300-399 Junior level
400-499 Senior level (may be dual listed with 500 level graduate course)

Graduate Courses:
500-599 Entry level graduate (may be dual listed with a 400 level undergraduate course and may include limited enrollment by undergraduates)
600-699 Graduate level (undergraduate enrollment only by exception)
Open to senior students for **graduate credit** under the following conditions:
Within 15 credits of completing Bachelor's degree;
Have an overall grade point average of 2.5 or higher, or a Junior-Senior grade point average of 3.0 or higher;
Enroll for no more than 18 credits (9 credits during Summer Term);
The course or courses are not required for the Bachelor's degree.
700-799 Graduate level (graduate students only)
800-899 Doctoral and post-doctoral level (doctoral and post-doctoral students only)

Experimental Courses
Courses at the 100-800 levels ending in 97, 98, or 99 are experimental and may be active for two years from the date of the first offering, at which time they end or must become permanent courses.

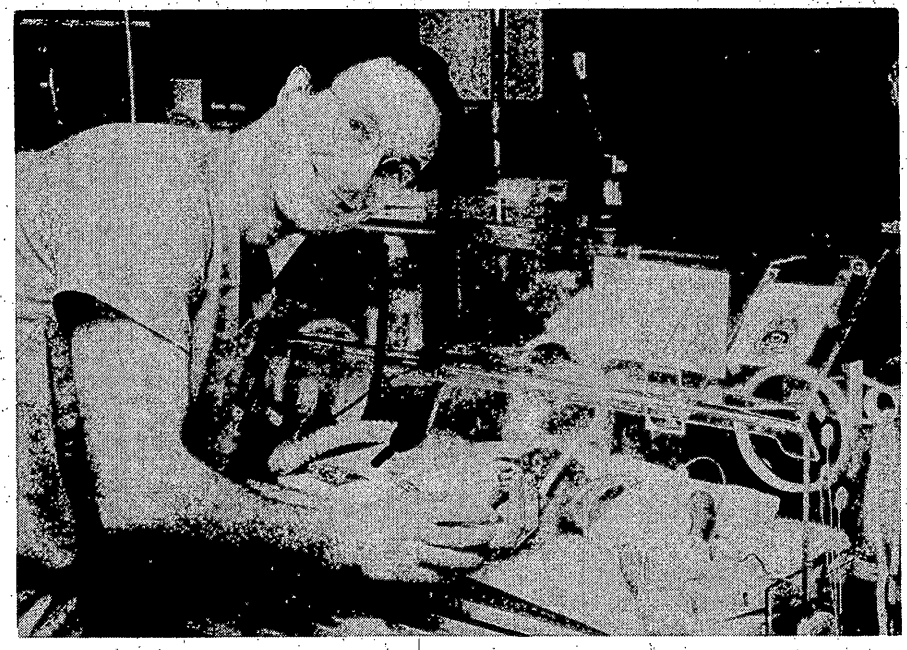
Colleges, Departments and Program Abbreviations

ABS, Agriculture & Biological Sciences
Acct, Accounting
AE, Agricultural Engineering
AgEc, Agricultural Economics
AgEd, Agricultural Education
AgEx, Agricultural Extension
AHEd, Adult Higher Education
Air, Aerospace Studies
AM, Apparel Merchandising
Anth, Anthropology
Art, Art
ArtD, Art Design
ArtE, Art Education
ArtH, Art History
AS, Animal Science
AST, Agricultural Systems Technology
AT, Athletic Training
Avia, Aviation
BAdm, Business Administration
Bio, Biology
BioS, Biological Sciences
Bot, Botany
CA, Consumer Affairs
CEE, Civil and Environmental Engineering
Chem, Chemistry
Chin, Chinese
CHRD, Counseling and Human Resource Development
CJus, Criminal Justice
CM, Construction Management
CSc, Computer Science
CScA, Computer Science Applications
CST, Communication Studies and Theatre
Danc, Dance
DCom, Communication Disorders
DS, Dairy Science
Econ, Economics
EdAd, Educational Administration
EdER, Education Evaluation & Research
EdFn, Educational Foundations
EE, Electrical Engineering
EG, Engineering Graphics
ElEd, Elementary Education
EM, Engineering Mechanics
Engl, English
Ent, Entomology
EnvM, Environmental Management
EPsy, Educational Psychology
ES, Engineering Shops

ET, Electronics Engineering Technology
EurS, European Studies
FCS, Family and Consumer Sciences
FCSE, Family and Consumer Sciences Education
FL, Foreign Languages
Fren, French
GCom, General Communication
GE, General Engineering
Geog, Geography
Germ, German
Gero, Gerontology
GIS, Geographic Information Systems
HDCF, Human Development, Child & Family Studies
Hist, History
Hlth, Health
Ho, Horticulture
Hon, Honors
HPER, Health, Physical Education & Recreation
HSc, Health Science
ID, Interior Design
Japn, Japanese
La, Landscape Design
LAAS, Latin American Area Studies
Lak, Lakota
Ling, Linguistics
Math, Mathematics
MCom, Mass Communication
ME, Mechanical Engineering
MedT, Medical Technology
MET, Manufacturing Engineering Technology
Micr, Microbiology
Mil, Military Science
MuAp, Music Applied
MuEn, Music Ensemble
Mus, Music
NFS, Nutrition & Food Science
Nurs, Nursing
PE, Physical Education
Pha, Pharmacy
Phil, Philosophy
Phys, Physics
Plan, Planning
PolS, Political Science
PR, Park Management
Prtg, Printing
PS, Plant Science
Psyc, Psychology
PT, Physical Therapy
Rang, Range Science
Recr, Recreation
Rel, Religion
RTVF, Radio, Television & Film
Russ, Russian
SeEd, Secondary Education
Soc, Sociology
Span, Spanish
SpCm, Speech Communication
Stat, Statistics
Thea, Theater
Vet, Veterinary Science
VTE, Vocational Technical Education
Wel, Wellness
WL, Wildlife
WmSt, Women's Studies
Zool, Zoology

Miscellaneous Abbreviations

admin, administration
adv, advanced
Ag, Agriculture
Am, American
AV, Audio-Visual
AY, alternate years
&, and
CAI, Computer Assisted Instruction
chem, chemistry
comp, composition
Conc, Concurrent
CRN, 5 digit course reference number
dev, development
econ, economics
ed, educational
F, fall semester
fr, freshman
fund, fundamentals
gen, general
Hum, Humanities
intro, introduction
jr, junior
prin, principles
L, or lab, laboratory
R, recitation (lecture)
S, spring semester
Schd, Schedule Type
Sec, Section
S.D., or SD, South Dakota
soph, sophomore
sr, senior
Su, summer term
TBA, time and/or credit to be arranged
U.S., or US, United States



Course Types

Studio Course/Small Group Instruction – Course involving the demonstration of design and theory in a defined physical setting (i.e., studio). The Studio Course is characterized by significant one-on-one student/instructor interaction with student exploration and experimentation pursued under the guidance of the instructor. Includes: Small Group Applied Music; Class Music; Studio Art Classes.

Clinical Laboratory – Clinical laboratory assignment meets in a defined physical setting (i.e., practice labs, hospital or agency setting or similar operational clinical laboratory) for the purpose of the application of methods and principles of a clinical discipline. Clinical laboratory courses are typically limited in enrollment to less than 10, with the size of a section varying according to accreditation standards, clinical space limitations, level of offering, availability of client experiences, nature of clients, and equipment. There is direct and close supervision of the students and faculty selection and control of assignments.

Competency-Based/Self-Paced Study – Students progress through a course of study at their own rate, assisted by computer or other means of augmentation. Mastery is based on structured competencies. Progress is monitored by a course instructor. May be supplemented by individual or group tutorial session.

Discussion/Recitation – A course, or a subdivision of a larger course, meeting for the expressed purpose of allowing individual contribution in the form of discussion, question and answer, and other class participation techniques.

Seminar – A highly focused, topical course, typically involving formal student presentations and discussions of reports concerning current literature, practices, problems, or research.

Clinical Experience – Participation in client and client related services occurring as an integral part of an educational program. Clinical instruction occurs in an institutional setting and involves work with clients who receive professional services from students serving under direct supervision by a faculty member and/or an approved member of the agency staff.

Ensemble – Small and large group musical performance courses. The size of the section will vary with medium and requirements of the musical score. Includes: Chamber Music; Small Ensemble; Large Ensemble; Marching Band.

Independent Study – A negotiated/directed plan of study with the professor specifying broad guidelines and the student or students and the professor together, identifying objectives, plan of study, and scope of work. Arranged meeting time lines vary with scope, plan, objectives and difficulties encountered. The objective of the course is not the production of a thesis or the meeting of a research requirement for a degree. Includes: Directed Studies; Special Projects; Mentored; and Special Problems.

Design/Research – Optional, negotiated study focusing on design and or research and not leading to a dissertation or thesis. The plan of study is arranged between a student and professor specifying broad guidelines, identifying objectives, and scope of work. Requires extensive and intensive one-on-one interaction between the professor and the student. Arranged meeting time lines vary with scope and plan of objective. Used as a research requirement for a degree. Includes: Research/ Research Problems.

Laboratory – Courses meeting in a defined physical setting (i.e., laboratory) for the purpose of the application of methods and principles of a discipline.

Private Instruction – Individual instruction with emphasis on arranged one-to-one demonstration, return demonstration, and critique of a performance area such as music, fine arts or performing arts, or flight instruction.

PE Activity – A course devoted to participation in or the performance of some form of physical activity. Knowledge associated with the proper performance of the activity is presented.

Orientation – Course designed to provide students with information and skills necessary to be successful in a given environment. The environment may be envisioned as the college or university as a whole (the focus is on learning strategies and skills, academic planning and traditions, time and money management, etc.) or as that of a specific discipline (content involves issues of career planning and preparation, opportunities, professionalism, and standards of ethics as related to the discipline).

Lecture – A formal method of instruction by which the instructor gives an oral presentation of facts or principles. Normally, instruction takes place in a traditional classroom setting.

Internship/Practicum – Applied, monitored and supervised, field-based learning experience for which the student may or may not be paid. The content of the experience is based on a negotiated and/or directed plan of study with the major objective of the student gaining practical experience. The nature of supervision may vary from intensive one-on-one relationships to those more characteristic of small groups of students. Includes: field work/experience; supervision courses; student teaching; and cooperative education.

Undergraduate Thesis – A formal treatise presenting the results of study, investigation or research which is submitted in partial fulfillment of the requirements of an undergraduate degree. The process requires extensive and intensive one-on-one interaction between the candidate and professor with more limited interaction between and among the candidate and the other members of the committee.

Graduate Thesis – A formal treatise presenting the results of study, investigation or research which is submitted in partial fulfillment of the requirements of an advanced degree. The process requires extensive and intensive one-on-one interaction between the candidate and major professor with more limited interaction between and among the candidate and the other members of the committee. Sometimes used interchangeably with the term "dissertation," but as used here both Masters and Doctoral levels are included.

Thesis Sustaining – Zero credit for continuing thesis or dissertation work while research and writing is in progress. After satisfactory completion of the plan of study for thesis or dissertation, a student must register during the academic year and summer until the degree is awarded. Failure to do so automatically terminates the degree program.

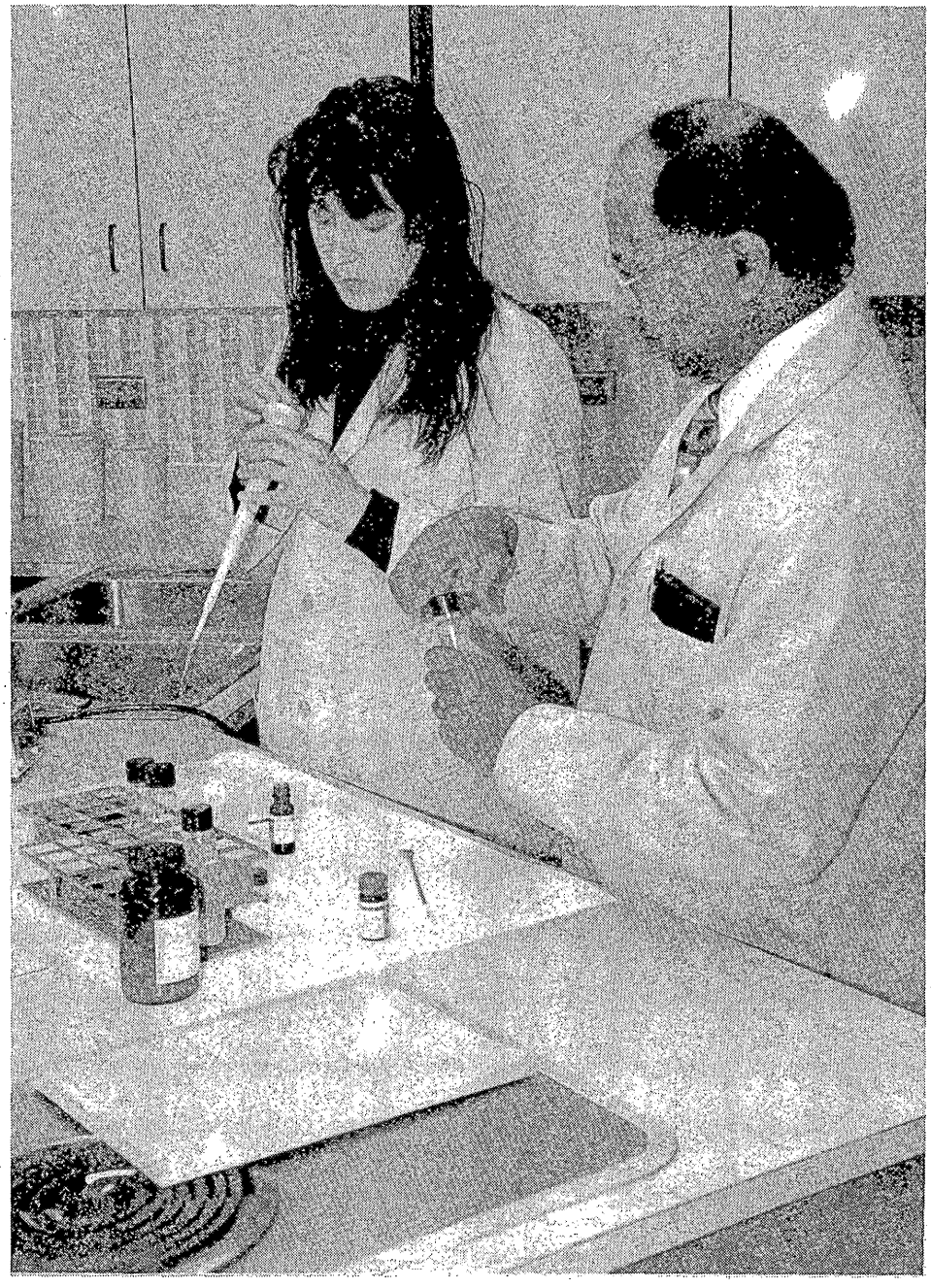
Workshop – Special sessions in specific topic areas. Approximately 45 hours of work is required for each hour of credit, including lecture, conference, committee, and group activity. Workshops may vary in time range.

Special Topics – A concentrated series of class meetings focused on the intensive study, work, or discussion of a particular issue in a specified field. Course content is usually directed toward topics that are not, or are only partially included, in the regular curriculum. As such, the design of the experience often involves the use of guest artists/experts.

Other Important Definitions

Dual-Numbered – A dual-numbered course is a single course specifically designed for simultaneous delivery at two or more levels with the two or more numbers taught simultaneously. In some instances, the course may be offered for credit at different levels (i.e., courses may be offered for upper/lower division credit or for undergraduate/graduate credit). The dual-numbered course may also be crosslisted.

Crosslisted – A crosslisted course is a course which carries more than one course prefix (i.e., Hist, PolS, Geog) with credit being offered under any one of the listed prefixes at the same time. Students choose to take the course under the prefix that is more beneficial to their course of study. All students meet at the same time in the same place, with the same instructor(s). A crosslisted course may also be multi-numbered.



ABS (Agriculture & Biological Sciences)

Undergraduate Course

ABS 475 Integrated Natural Resource Management 3(2,3) S
A capstone course that requires students to integrate previously-learned natural resource techniques and information into the strategic planning process. Students will be divided into small groups for plan development. Various majors are involved to allow for integrated course material. P, dependent on major.

Acct (Accounting)

Undergraduate Courses

Acct 210 Principles of Accounting I 3(3,0) FS
Basic accounting cycle; financial statements; asset valuation; accounting controls and concepts, payrolls, payroll taxes and an introduction to the corporate capital accounts. Fundamental procedure and accounting theory.

Acct 211 Principles of Accounting II 3(3,0) FS
Accounting for partnerships and corporations; cost accounting, budgeting, and other accounting reports for management, creditors, and investors. P, 210.

Acct 310 Intermediate Accounting I 3(3,0) F
Financial accounting relating to preparation and analysis of financial statements, corporate accounting, current and fixed assets, and working capital items. P, 211.

Acct 311 Intermediate Accounting II 3(3,0) S
Financial accounting relating to tangible properties, investments, liabilities, stockholders' equity, statements from incomplete records, tax allocation, price level impacts. P, 310.

Acct 320 Cost Accounting 3(3,0) S
Cost accounting for planning and control. Budgets, standards, and profitability analysis. Job-order, process, and standard accounting systems. P, 211.

Acct 430 Income Tax Accounting 3(3,0) F
Internal Revenue Service Codes and Regulations for individuals, including all supporting schedules. P, 211.

Acct 493 Special Topics 1-4
Organized by an instructor in consultation with his or her department head and a group of students. A medium through which a specific topic can be pursued. Normally experimental and may be a "one shot deal" for a particular semester and the unique group of students. Maximum: 4 credit hours per semester, 7 credit hours per degree.

AE (Agricultural Engineering)

Undergraduate Courses

AE 122 Introduction to Agricultural and Biological Engr. 2(2,0) F
An introduction to applications of engineering to biological systems. Emphasis is on engineering with plant, animal, and soil based systems and on the properties of biological materials.

AE 311 Design Project 1 1(1,0) F
Procedures, theory, concepts and design of equipment for agricultural production or ag product processing applications. The integration of design principles with design projects and reports. Junior standing.

AE 314 Ag Power & Machines 4(3,2) F
Analysis of factors affecting field machines and tractor performance, engine design, transmissions, traction, hitches, hydraulic systems, economics. P, EM 222, concurrent with ME 314.

AE 321 Design Project 2 1(1,0) S
Procedures, theory, concepts and design of equipment for agricultural production or ag product processing applications. The integration of design principles with design projects and reports. Junior standing.

AE 324 Ag Structures and Indoor Environment 4(3,2) S
Construction materials and agricultural structures design using wood, plywood, and connectors. Agricultural environmental fundamentals; modification, control and ventilation. Environmental requirements for livestock and livestock housing systems design. P, ME 314 and EM 321 concurrent.

AE 343 Engineering Properties of Biological Materials 3(2,2) F
Engineering Properties of biological and interacting materials within a system. Relationships between composition structure, and properties of various biomaterials including food and plant and animal tissues. Definition and measurement of mechanical, physical, thermal and electromagnetic properties and their variability. Use of these properties in engineering applications.

AE 353 Physical Climatology & Meteorology 3(2,2) FS
Physical description of daily weather changes and circulation of the atmosphere. Long time means and variation from means of climatological parameters. Application of meteorological and climatological principles to various problem areas.

AE 372 Microcomputer Applications in Agricultural Engineering 2(1,3) S
Data collection, computer aided engineering and processing using a microcomputer based system. Performing monitoring and controlling functions for electrical and electronic equipment using microcomputer technology. P, CSc 218.

AE 411 Design Project 2(1,2) F
Procedures, theory, concepts and design of equipment for agricultural production or ag product processing applications. The integration of design principles with design projects and reports. Senior standing.

AE 422 Design Project 2(1,2) S
Procedures, theory, concepts and design of equipment for agricultural production or ag product processing applications. The integration of design principles with design projects and reports. Senior standing.

AE 434 Soil & Water Engineering 4(3,3) F
Precipitation, infiltration, evapotranspiration and runoff from small agricultural watersheds and application to design of conservation structures, water and wind erosion control practices. Design of drainage and irrigation systems. Feedlot pollution control principles. P, EM 331.

AE 463 Applied Instrumentation 3(2,2) F
The generalized measurement system consisting of the detector-transducer, intermediate modifying stage and terminating stage is considered. Applied use of oscilloscopes, oscillographs, potentiometers, operational amplifiers, x-y plotters and other basic instruments. Electronic instrumentation and microprocessor based data acquisition systems. P, EE 305.

AE 490 Seminar & Inspection Trip 1(1,0) F
Review of current technical literature in agricultural engineering. Oral and written reports and discussion. P, senior standing.

AE 492 Special Problems in Ag Engineering 1-3 FSSu
The solution must be written up in a final report. P, must have approval of the adviser and head of department.

AE 493 Special Topics 1-4 (1-4, 0-2)
(On demand.) Individual or group study. P, consent.

AE 494-495-496 Cooperative Education/Internship/Field Experience 1-6 FSSu
Planned and supervised professional experience related to agricultural engineering which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Dual Numbered Courses

AE 444-544 Unit Operations of Biological Materials Processing 4(3,2) S
Transport processes of heat and mass are applied to the following unit operations: evaporation, drying, gas liquid separation processes (humidification cooling towers), vapor-liquid separation processes (distillation), soil-liquid separation processes (leaching), membrane separations (ultrafiltration, reserve osmosis), mechanical separation processes, extrusion. P, senior standing or consent.

AE 454-554 Advanced Unit Operations in Food/Biomaterials Processing 4(3,3)
Advanced study of engineering principles as they apply to unit operations for food preservation and processing, including effect of heat and time on the lethality of undesirable food microorganisms, heat transfer with foods and containers and its effect on food safety, freezing and refrigeration technology, high temperature short time extrusion processing, and aseptic processing. P, senior standing or consent.

Graduate Courses

AE 503 Energy & Environment 3(3,0)
AE 512 Advanced Agricultural Tractors & Machines 2(2,0)
AE 522 Bio-environmental Engineering 2(2,0)
AE 533 Advanced Irrigation Engineering 3(2,3)
AE 700-701 Seminar 0-1
AE 732 Advanced Hydrology in Agriculture 2(2,0)
AE 733 Ground Water Engineering in Ag 3(3,0)
AE 752 Theoretical Micro-Climatology 2(2,0)
AE 763 Instrumentation 3(2,3)
AE 770 Special Problems in Ag Engineering (1-2 on demand)
AE 771 Graduate Seminar 1(1,0)
AE 772 Similitude 2(1,2)
AE 773 Programming Agricultural Systems 3(2,2)
AE 790 Thesis 1-7 FSSu
AE 791 Thesis Sustaining 0 FSSu
AE 792 Research Report/Design Paper 2 FSSu (On demand)
AE 793 Research or Design Paper Sustaining 1 FSSu
AE 795 Special Topics 1-3 on Demand
AE 890 Dissertation, Ph.D. 1-12
AE 891 Dissertation, Ph.D. Sustaining 1

AgEc (Agricultural Economics)

Undergraduate Courses

AgEc 271 Farm & Ranch Management 4(3,2) FS
Farm or ranch business from viewpoint of continuous profit and efficiency. Basics of farm management applied to selection and combination of enterprises, level of production, size of business, labor efficiency, and machinery efficiency. Types of farming, tenure and leasing, risk, prices, credit and starting farming. Business and production records, their analysis and use in budgeting and planning future operations. P, Math 102.

AgEc 352 Agricultural Law 3(3,0) F
Legal rights and duties of parties to agricultural business transactions – sales, secured transactions, real and personal property, business associations, labor relations, bankruptcy, water and drainage, and livestock. Emphasis is on South Dakota law. P, BAdm 350, junior standing.

AgEc 354 Agricultural Marketing and Prices 3(3,0) F even years, S
Principal factors which affect the supply, demand and prices of agricultural commodities. Market information in forecasting price trends. Evaluation of alternate marketing strategies, e.g., futures trading, other forward pricing instruments. Alternative agricultural marketing institutions. P, Econ 201 or 202.

AgEc 373 Rural Real Estate Appraisal 3(2,2) F
Principles and practices of rural real estate appraisal. Principles of soils valuation and their application for farmland appraisal. Cost, market data and income approaches to farmland and building appraisal. Tax, loan and other specialized rural appraisal procedures. Half-day field trips to area farms are required. P, 271 and PS 213. Crosslisted with PS 373.

AgEc 421 Production Economics 3(3,0) S
Input-output analysis involving single and multiple inputs and products; types of production functions; technological changes; short run vs. long run supply; returns to scale and size; decision theory. P, Econ 301.

AgEc 454 Economics of Grain and Livestock Marketing 3(3,0) F
Advanced grain and livestock marketing principles in U.S. and World Markets. Marketing management alternatives for producers, processors and handlers. Cooperative's role in domestic and international marketing. P, 354 or AS 285 with Econ 202 recommended.

AgEc 478 Agricultural Finance 3(2,2) F
Capital and credit needs in agriculture; principles and problems in extending and using credit; developing information flows, capital budgeting, cost of capital, the role of financial intermediaries; control of land and depreciable assets; application of financial software packages in agriculture. P, 271, Econ 202, Acct 210, with Acct 211 recommended.

AgEc 479 Agricultural Policy 3(3,0) FS
Economic policies affecting agricultural prosperity, with special emphasis on farm programs, food assistance programs, agricultural trade, finance, bargaining and other institutional forces affecting agriculture and agri-business. Implication of agricultural policy alternatives on people living in rural and urban areas. P, Econ 201, 202.

AgEc 492 Agricultural Economics Problems 1-3 FS
Individual study of special topics or problems of concern to agriculture and agri-business. May involve case studies, special readings, and reports. Maximum of 4 hours. P, consent.

AgEc 493 Special Topics 1-4
Organized by an instructor in consultation with his or her department head and a group of students. A medium through which a specific topic can be pursued. Normally experimental and may be a "one shot deal" for a particular semester and the unique group of students. Maximum: 4 credit hours per semester, 7 credit hours per degree.

Dual Numbered Courses

AgEc 471-571 Advanced Farm & Ranch Management 3(3,0) S
Leasing arrangements, capital investment, computerized accounting and budgeting. Linear programming as a tool for planning and organizing the farm business. P, senior standing, 271, Econ 301, or consent.

Graduate Courses

AgEc 630 Advanced Agricultural Marketing & Prices 3(3,0)
AgEc 690 Special Problems 1-3 FS

AgEd (Agricultural Education)

Undergraduate Courses

AgEd 404 Program Planning AgEd 4(8,0) FS
Future Farmers of America Program, Adult Education, and supervised occupational experience programs; policy development.

AgEd 434 Special Methods in AgEd 3(6,0) FS
Aims, course of study selection and organization of subject matter, method in field, laboratory, classroom, and supervised occupational experience programs. Taken first six weeks of semester in which the student completes student teaching, and resumes following student teaching. P, EPsy 302, SeEd 450, VTE 287 and 405.

AgEd 454 Teaching Ag Mech 2(1,3) FS
Shop management, safety, shop plans, selection, care and use of hand and power tools, and equipment, to be taken as part of student teaching block in Agricultural Education. P, senior in Agricultural Education. Offered first six weeks of semester.

AgEd 475 Supervised Teaching Internship 10
Assigned in the individual student's major, or if appropriate, the teaching minor. An experiential application of teaching pedagogy and content for an extended period of time. Application must be made through the Supervisor of Clinical Experiences no later than the second semester of the junior year. P, Professional Semester I courses, Professional Semester II courses, acceptance and admittance into the Teaching Internship Program.

AgEd 492 Problems In AgEd 1-3
Selected studies and activities to meet the needs of undergraduate students. Written permission of Department Head required.

AgEd 494-495-496 Cooperative Education/Internship/ Field Experience 1-12 FSSu
Planned and supervised professional experience related to Agricultural Education which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator. Written permission of Department Head required.

Dual Numbered Courses

AgEd 406-506 Problems 1-3 FSSu
Directed reading and research in selected agricultural education topics.

Graduate Courses

AgEd 605 Seminar 1-2(1,0) or (2,0) FSSu
AgEd 706 Adult Ed in Ag 2(2,0) Su
AgEd 707 Supervised Occupational Experiences & Student Groups in AgEd 2(2,0) Su
AgEd 776 Curriculum in AgEd 2(2,0) Su
Cross listed with VTE.
AgEd 792 Research Problems in AgEd 2(2,0) FSSu

AHEd (Adult Higher Education)

Undergraduate Course

AHEd 496 Field Practice Training in Extension 2-5 FSSu
Available to a limited number of majors in agriculture or home economics interested in Extension work who have completed the junior year. Students will be assigned to a county during the summer for a period of time at the student's convenience.Written permission of Department Head required. Written permission of Department Head required.

Graduate Courses

AHEd 600 Special Problems in Extension 2-6
AHEd 681 Workshop in Adult & Continuing Education 1-3 FSSu
AHEd 691 Problems 1-3 FSSu
AHEd 710 Adult Curriculum and Instruction 3(3,0) F
AHEd 711 Organization and Administration of Adult Education 3(3,0) S
AHEd 751 Principles of College Teaching 3(3,0) S
AHEd 772 Administration and Leadership in Student Affairs 3
Crosslisted with CHRD.
AHEd 782 Seminar 1-3 FSSu
AHEd 789 Internship in Education 1-6 FSSu
AHEd 792 Research Problems in Adult Ed 2(2,0) FSSu

Air (Aerospace Studies)

General Military Courses
Air 101 Aerospace Studies 100 1(1,1) F
Professional appearance, customs and courtesies, officership/core values, basic communication, officer opportunities/benefits, and Air Force installations.
Air 102 Aerospace Studies 100 1(1,1) S
Interpersonal communication, macro U.S. military history, Air Force organizations/chain of command, cadet/officer candidate/officer, oral communication, and group leadership problems.
Air 201 Aerospace Studies 200 1(1,1) F
Air Power from balloons and dirigibles through 1947; Air Force mission, concepts, doctrine and use of air power.
Air 202 Aerospace Studies 200 1(1,1) S
History of air power from 1947 to present. Air Force relief missions and civic action programs in the late 1960's.

Professional Officer Courses
Air 301 Aerospace Studies 300 3(3,1) F
Individual motivational and behavioral processes; leadership and group dynamics provide a foundation for development of professional skills as an Air Force officer —includes speaking and writing as they apply to the Air Force.
Air 302 Aerospace Studies 300 3(3,1) S
Basic management processes of planning, organizing, decision-making, controlling and use of analytical aids. The manager's world of power, politics, strategy, tactics and value conflicts discussed within the context of the military organization.
Air 401 Aerospace Studies 400 3(3,1) F
Commissioned military service as a profession. The complex interaction between military and civilian society. Theory and workings of National Defense policy.
Air 402 Aerospace Studies 400 3(3,1) S
Evolution of defense strategy and the methods of managing conflict. Analysis of the system of Military Justice.

AM (Apparel Merchandising)

Undergraduate Courses

AM 112 Clothing Construction Principles 2(0,4)
Demonstrations and sample models of construction techniques. Principles for selection and use of professional sewing equipment.
AM 121 Apparel in Popular Culture 2(2,0)
Social, psychological and cultural factors affecting dress; aesthetic aspects of clothing and personal appearance, selection and coordination of wardrobe.
AM 235 Apparel Manufacturing 3(3,0) F
Investigation of the taxonomy of various apparel categories, covering merchandising, design, and production considerations. A study of volume apparel manufacturing and an analysis of ready-to-wear quality.
AM 242 Textiles 3(2,2) FS
An investigation of fiber, yarn, fabric construction, finishes and coloration methods in relationship to specific end use and consumer satisfaction. Textile standards and legislation are reviewed. P, sophomore standing.
AM 292 Special Problems 1-3
Problems for independent study selected according to special interests and needs. Arranged by contract with instructor.
AM 293 Current Topics 1-3
Discussion of current literature and issues. Investigation of topics for which there is a current need but are not part of any class. P, consent.
AM 296 Field Experience 2-3
Career exploration. Working under supervision of professionals and faculty in organizations which hire apparel merchandising graduates. P, at least 35 hours completed, 2.2 GPA, arranged by contract with instructor.
AM 315 Apparel Design 3(1,4) F
Study of past and present fashion designers. Working sketches are emphasized. Functional, structural and applied design are included. P, 121, Art 121.
AM 335 Introduction to the Sewing Trade 2(2,0) (alternate years)
Survey of apparel production and sewn products methods. Comparison of construction techniques used in ready-to-wear production, custom-made garments, and home sewn apparel. Alterations and their management in retail settings. P, 235 or concurrently.

AM 350 Dress and Adornment in World Cultures 3(3,0) (alternate years)

Cross-cultural study of world dress and adornment practices relating the clothing characteristics of selected cultures to their technical and material bases, to manufacture and trade, and to other major social phenomena. P, Soc 100 recommended.

AM 352 History of Costume in Western Civilization 3(3,0) S (alternate years)

Development of costumes from ancient times; social significance, symbolic meanings, and functions are investigated. Costume collection in College of Family and Consumer Sciences serves as resource material. P, Hist 121 or 122 recommended.

AM 363 Fashion Economics 3(3,0) S

Social and economic factors that influence fashion demand. History and development of the international fashion industry. Activities involved in the production, distribution and marketing of fashion goods. P, Econ 201.

AM 373 Retailing 3(3,0) F (1/2 semester)

Principles of retailing as applied to textiles, apparel and furnishings retailing. Study of customer demand, buying, inventory control and promotion. Field trip to market center is required. P, Econ 201. Crosslisted with ID 373.

AM 442 Advanced Textiles 3(2,2) (alternate years)

Effects of fabric components on fabric properties and performance. Laboratory problems using research equipment and standard testing practices. P, 242; Chemistry recommended.

AM 453 Socio-Psychological Aspects of Clothing 3(3,0) S (alternate years)

Examination of clothing behavior from sociological, psychological and cultural perspectives. P, Soc 100 and Psyc 101.

AM 473 Merchandise Planning and Control 3(3,0) S

Analysis of practicum experience; executive leadership for retail personnel, merchandise planning and management. Case study approach. P, 497 - 5 credits.

AM 487 Pre-practicum in Apparel Merchandising 1(1,0) F (1/2 semester)

Discussion of professional practices and issues. Experience in goal setting, reporting and evaluation. Organization and preparation of professional documents. P, 373 or concurrently.

AM 497 Professional Practicum 1-12 F (1/2 semester)

Planned and supervised work experience in a cooperating retail firm provides opportunity for integration of course work in the occupational setting. P, 373, 487; 90 sem. cr. and consent of the department; GPA 2.2.

Dual Numbered Courses

AM 480-580 Travel Studies 1-5

Study of businesses, museums, and other relevant places through site tours and presentations in selected locations. Includes pre-travel orientation and post-travel written report. P, consent of department.

AM 492-592 Special Problems 1-3

Problems for independent study selected according to special interests and needs. Arranged by contract with instructor.

AM 493-593 Current Topics 1-3

Discussion of current literature and issues. Investigation of topics for which there is a current need but which are not part of any class. P, consent.

Graduate Courses

AM 673 Costumes and Textiles Through the Ages 3(3,0) (On Demand)

AM 770 Seminar in Apparel Merchandising & Textiles 1-2

AM 792 Special Problems 1-3

Anth (Anthropology)

Undergraduate Courses

Anth 200 General Anthropology 3(3,0) S

Physical anthropology, archaeology and linguistics, analysis of concepts of society and culture. Emphasis on non-literate peoples of the world.

Anth 310 Cultural Anthropology 3(3,0) F

Meaning of culture, its significance for humans, its diverse forms among peoples, past and present.

Anth 410 North American Ethnology 3(3,0) S (alternate years)

A comparative survey of native North American cultures representative of major cultural areas of North America. Emphasis on traditional cultures using a case-study approach.

Anth 421 Indians of North America 3(3,0) FSSu

Provides prospective teachers and those interested in Indian people with a basic knowledge of Indian heritage and culture. Emphasis on the Dakota Indians. (Fulfills Teacher Ed. requirement.)

Anth 495-496 Internship/Field Experience in Anthropology 1-12 FSSu

Planned and supervised professional experience related to Anthropology which takes place outside the formal classroom with business, industry, public agencies. Credit will not count toward meeting minimum requirements of the major or minor. May be repeated until 12 credits are earned. Graded P or F. P, major, consent of department program coordinator.

Dual Numbered Courses

Anth 490-590 Special Problems 1-3 FSSu

P, open to undergraduate and graduate students with sufficient background and consent of instructor.

Anth 497-597 Topics in Anthropology 1-3(1-3,0) (On Demand)

Selected topics pertaining to theory and methods in cultural, physical anthropology and archaeology. P, undergraduate/graduate and consent of instructor.

Art (Art Studio)

Undergraduate Courses

Art 111 Drawing I 3(0,6) FS

Development of visual perception in representational and expressive drawing in various media, stressing visual thinking through observation, analysis and expression. No prerequisites.

Art 112 Drawing II 3(0,6)

Continuation of Drawing I with additional emphasis on developing conceptual and critical abilities related to the expression of visual ideas. P, 111, or consent of the instructor.

Art 121 Design I 3(0,6) FS

Introduction to the studio and approaches of the creative design process through a variety of media and techniques. The elements and principles of two-dimensional composition will be explored through studio projects, discussion, and critiques. No prerequisites.

Art 123 Three Dimensional Design 3(0,6) FS

History, theory, aesthetics and materials of the three dimensional design language. Organization of mass, plane, texture, color, space in visual problem-solving experiences. No prerequisite required.

Art 212 Figure Drawing 3(0,6)

A continuation of Drawing I with an emphasis on developing the visual intellectual and technical aspects by drawing the human figure. *P, 111 or consent of the instructor.

Art 222 Color Theory 3(0,6)

An emphasis on studio problems that explore the physical and psychological properties of color and color relationships as they pertain to individual visual expression. P, 121; recommend 111 or consent of the instructor.

Art 231 Painting I – Beginning Level 3(0,6) FS
Combine studio experience in drawing and painting with demonstrations and discussion on style, technique, color and composition as they relate to the expression of visual ideas. P, 111, or consent of the instructor.

Art 232 Painting II–Intermediate Level 3(0,6)
Continuation of Painting I with emphasis on composition and expression. P, 231, or consent of the instructor.

Art 241 Sculpture I – Beginning Level 3(0,6) S
An introduction to sculpture approaches through projects involving various 3-D traditional and contemporary materials and techniques. P, 123 or consent of the instructor.

Art 251 Ceramics I – Beginning Level 3(0,6) F
The study of the ceramic heritage from various cultures in relation to contemporary clay objects. Projects expose students to hand-building, throwing, glazing and firing. P, 123 or 121 recommended.

Art 281 Printmaking I – Beginning Level 3(0,6)
Creative use of basic printmaking techniques and processes in relief, intaglio and serigraphy to develop conceptual abilities for the solution of individual problems in visual communication. P, 111 or consent of the instructor.

Art 332 Painting III – Intermediate Level 3(0,6) FS
Continuation of Painting II. Emphasis on composition and expression. P, 232, or consent of the instructor.

Art 341 Sculpture II–Intermediate Level 3(0,6) S
A continuation of Sculpture I. Exploring individual concepts and various techniques and materials. P, 241, or consent of the instructor.

Art 342 Sculpture III – Intermediate Level 3(0,6) S
A continuation of Sculpture II. Further exploration of individual concepts and various techniques and materials. P, 341.

Art 351 Ceramics II–Intermediate Level 3(0,6) F
A continued exploration of clay through individual concepts, and glazing and firing methods. P, consent of the instructor.

Art 352 Ceramics III – Intermediate Level 3(0,6) F
Continuation of Ceramics II. Emphasis on individual concepts developed through hand-building and throwing techniques. Also more advanced glazing, firing techniques, and kiln maintenance. P, 351.

Art 381 Printmaking II–Beginning Level 3(0,6)
A continuation of Printmaking I. P, 281 or consent of the instructor.

Art 382 Printmaking III – Advanced Level 3(0,6)
Continuation of Printmaking II. Creative use of advanced printmaking techniques and processes in relief, intaglio, and serigraphy. P, 381.

Art 430 Watercolor 3(0,6)
Creative experience in developing and evaluating visual ideas expressed through the watercolor medium. Discussion and utilization of master artists' watercolor approaches and techniques. *P, 111 or consent of the instructor.

Art 431 Painting IV–Advanced Level 3(0,6) FS
Continuation of Painting III with more emphasis on self-directed and experimental approaches in developing subject matter and content. Emphasis on concepts in art history, art criticism, and issues in contemporary art. *P, 332, or consent of the instructor.

Art 441 Sculpture IV–Advanced Level 3(0,6) S
Continuation of Sculpture III. Advanced exploration of sculpture concepts. *P, 342, or consent of the instructor.

Art 451 Ceramics IV–Advanced Level 3(0,6) F
A continuation of Ceramics III, an advanced exploration of ceramic materials as directed by personal conceptual needs. Further technical aspects of clay, glaze, and firing processes. Students take a more active role in studio operations. *P, 352, or consent of the instructor.

Art 481 Printmaking IV–Advanced Level 3(0,6)
A continuation of Printmaking III. *P, 382, or consent of the instructor.

Art 491 Directed Studies 1-12 (3,18)
P, permission of Department Head and the instructor. Limited to no more than 6 semester hours under any single instructor. May be continued with more than one instructor (or under different sponsor).

Art 492 Problems in Visual Arts 3(0,6)
Independent study in art area arranged in consultation with the instructor. Limited to seniors with a 3.0 average in art and a working background in the art problem they wish to undertake.

Art 493 Topics in Visual Arts 1-5(0,6)
Selected topics of current interest in the discipline. P, permission of the Department Head.

Art 497 Internship 1-9 FSSu
You may elect to initiate and complete a major problem off campus. All Visual Arts majors may gain experiential work experience in coop jobs with selected employers and/or artists (students may be engaged as studio apprentices). Graphic Design majors may only take three credit hours. These work experiences are to be held concurrently with the regular study periods and may be arranged through the Department's Cooperative Education Coordinator. P, junior standing, consent of Department Head and adviser.

*Course may be repeated once.

ArtD (Art Design)

Undergraduate Courses

ArtD 251 Graphic Design I 3(0,6) FS
Introduction to visual communications and graphic design theory. Primary emphasis on basic visual design language and process. No prerequisite.

ArtD 255 Introduction to Computer Graphics 3(0,6) FS
A non-programming introduction to drawing, painting and page layout design software with an emphasis on the production of computer-generated design projects. P, 251 and permission of instructor.

ArtD 350 Graphic Design II 3(0,6)
The exploration of typographic form and theory for graphic designers. Emphasis on historical and current typographic usage and an introduction to computer-generated letter forms. P, 251 or consent of instructor.

ArtD 351 Graphic Design III 3(0,6)
The study of design systems, typography as visual communications, and the continuation of computer graphics. Emphasis on problem-solving. P, 350 or consent of instructor.

ArtD 355 Computer Graphics II 3(0,6)
A non-programming intermediate computer graphics course focusing on digital-imaging and page-layout applications for graphic designers. P, 251, 350.

ArtD 450 Graphic Design IV 3(0,6)
Professional practices, such as corporate design and portfolio for the graphic designer. P, 351, senior in graphic design, or consent of the instructor.

ArtD 465 Advertising Design 3(0,6)
A studio course in Advertising Design with an emphasis on concept development, graphic design, research, organization, and presentation. (For advertising majors crosslisted as MCom 471.) P, 351 for Visual Arts majors or MCom 371 for Journalism majors.

ArtE (Art Education)

Undergraduate Course

ArtE 415 Methods of Teaching Art in Public Schools 3(1,4)
P, art major and junior standing.

Dual Numbered Course

ArtE 492-592 Special Problems in Visual Arts 1-3

ArtH (Art History)

Undergraduate Courses

ArtH 100 Art & Design Appreciation 3(3,0)
Introduction to traditional and new visual media in art and design with a stress on practical knowledge. Primarily for non-art majors. No prerequisite.

ArtH 211 Survey of World Art and Architecture 3(3,0) F
Principal periods in the history of major world civilizations up to the 15th century A.D. and selected arts of indigenous cultures. Emphasis on international studies and cultural diversity. No prerequisite.

ArtH 212 Western Traditions in Art and Architecture 3(3,0) S
Principal artistic styles in western culture: Renaissance to present. Emphasis on international studies and cultural diversity. No prerequisite.

ArtH 310 History of U.S. Art and Architecture 3(3,0)
From colonial times to the present. No prerequisites.

ArtH 320 Modern Art and Architecture Survey 3(3,0)
Survey of Modern Art and Architecture from its beginnings in the 19th century. Emphasis on international studies and cultural diversity. P, junior or senior standing; recommend 100 or 212.

ArtH 493 Topics in Art and Design History and Criticism 1-3(1-3,0)
Reading and discussion of criticism and aesthetics in visual art and design. Analyses of various critical stances and instruction in writing about visual arts. P, junior or senior standing; recommend 100 or 212.

AS (Animal Science)

Undergraduate Courses

AS 100 Opportunities in Animal Science 1(0,2) F
An overview of opportunities in Animal Science.

AS 101 Introduction to Animal Science 3(2,2) FS
Adaptation, breeding, feeding, marketing, behavior, classification, growth, genetics, reproduction and animal health as they apply to farm animals.

AS 105 Light (Saddle) Horses 1(1,2) FS
Breeds of horses, gaits, grooming, equipment, diets; basic instruction with suitable equipment.

AS 106 Heavy (Draft) Horses 1(1,2) S
Breeds of draft horses, gaits, grooming, handling, safety, equipment, diets; basic instruction with suitable equipment (single and team).

AS 200 Introduction to Livestock, Meats and Wool Judging 1(0,3) F
Livestock terminology, selection criteria for beef, sheep and swine, EPD's and performance data. Beef yield and quality grading, pork and lamb carcass evaluation, beef wholesale cut selection. Written and oral reasons. P, 101 and sophomore standing or instructor consent.

AS 233 Applied Animal Nutrition 4(3,2) FS
Classification and nutritional characteristics of feedstuffs; methods of evaluating feedstuffs; principles of ration formulation and balancing for farm animals; preparation, processing, handling and storage of feedstuffs and feed regulation and control. P, 101.

AS 241 Meat: Production to Consumption 3(3,0) FS
Survey of meat industry. Composition of meat animals. Product identification, preservation, cooking, nutritive value, pricing and curing.

AS 285 Livestock Evaluation and Marketing 4(3,3) FS
Live and carcass evaluation of market animals. Methods of marketing and pricing livestock and carcasses. P, 101.

AS 322 Junior Livestock Judging Team 1(0,3) S
Type studies and selection for individual excellence; judging and oral discussion of classes of beef cattle, horses, sheep and swine. P, 200, 285.

AS 323 Advanced Animal Nutrition 3(3,0) FS
Functions of various nutrients; digestion and metabolism of nutrients by different animal species. Chem 120 desirable antecedent. P, 233.

AS 332 Principles of Animal Breeding 4(3,2) F
Application of genetics to improvement of farm animals. Emphasis on occurrence, origin, use and control of variation in economically important traits of farm livestock. P, Bio 371.

AS 341 Fresh Meat Operations 3(0,6) S
Observation and/or hands on experience of marketing, fabrication, quality control, harvest and grading of meat animal products and by-products. Evaluation of products and value/price relationships. P, sophomore standing and 241 or instructor consent.Desirable antecedent, 285.

AS 345 Processed Meat Technology 3(2,2) S (odd years)
Relate use as a food to structure, composition and function of muscle and connective tissues. Principles and practices of meat processing, product evaluation and quality control in food industry. P, 241.

AS 365 Horse Production 3(2,2) S
Feeding, breeding and management principles for horses. P, 101.

AS 390 Animal Science Junior Seminar 1(1,0) FS
Review of current research, discussions and reports. P, junior standing.

AS 400 Judging Teams
Section 1—Meats 1(0,2) F
Identifying, judging and grading carcasses and cuts; training in writing reasons; participation in intercollegiate meat judging contests. P, 200, 341.
Section 2—Livestock 1 (0,2) F
Trips to purebred herds; training in Oral Reasons; participation in American Royal and International Livestock Judging contests. P, 322.
Section 3—Wool 1(0,2) S
Wool judging and grading, training in written reasons, participation in National Western Wool Judging contests. P, 200.
Section 4—Range Plant ID 1(0,2) S
Instruction and practice in identification of important range plants of North America.

AS 433 Livestock Reproduction 3(2,2) F
Basic physiological processes of reproduction in domestic animals, factors affecting and methods of improving reproductive efficiency. P, Vet 223.

AS 474 Beef Cattle Production 3(2,2) FS
Feeding, breeding and management principles of beef cattle production under farm and ranch conditions. P, 101, 233. Desirable antecedents 323, 332.

AS 477 Sheep and Wool Production 3(2,2) F
Feeding, breeding and management principles for maximum production of meat and wool in farm and range flocks. P, 101, 233. Desirable antecedents 323, 332.

AS 478 Swine Production 3(2,2) S
Feeding, breeding and management principles for swine production. Breeds, production trends and equipment. Student participation in management techniques. P, 101, 233. Desirable antecedents 323, 332.

AS 490 Animal Science Senior Seminar: Current Issues 1(1,0) FS
Review of current research, discussions and reports. Limit 2 credits. P, senior standing.

AS 494-495-496 Cooperative Education/Internship/Field Experience 1-12 SSU
Supervised experience with a livestock enterprise or related agribusiness for exposure to industry problems and solutions, evaluation of career objectives and final career preparation.

Dual Numbered Courses

AS 491-591 Research Problems 1-3 FSSu
Investigation of problems in following areas with results submitted as technical paper: Animal Breeding, Nutrition, Meats, Livestock Production, Reproductive Physiology, Wool Technology, Poultry. Maximum of 3 credits for student program.

AS 492-592 Special Topics 1-6 FS
Advanced study of one or more selected topics: breeding, management, product technology, physiology, nutrition, research methods or marketing.

Graduate Courses

AS 711 Ruminology 3(3,0) F (Odd Years)
AS 712 Ruminant Nutrition 3(3,0) S (Even Years)
AS 723 Population Genetics 3(3,0) S (Odd Years)
AS 731 Experimental Procedure 2(2,0) S(Even Years)
AS 732 Advanced Physiology of Reproduction 3(2,2) S (Even Years)
AS 733 Vitamins and Minerals 3(3,0) S (Odd Years)
AS 734 Protein and Energy Nutrition 3(3,0) F (Even Years)
AS 736 Monogastric Nutrition 3(3,0) F(Even Years)
AS 750 Animal Growth and Development 3(3,0) S (Even Years)
AS 753 Meat Science 3(2,2) F (Odd Years)
AS 781 Graduate Seminar 1(1,0) FS
AS 790 Thesis M.S. 1-7 FSSu (as arranged)
AS 791 Thesis Sustaining, M.S. 0 FSSu (as arranged)
AS 890 Dissertation, Ph.D. 1-12 FSSu (as arranged)
AS 891 Dissertation Sustaining, Ph.D. 0 FSSu (as arranged)

AST (Agricultural Systems Technology)

Undergraduate Courses

AST 202 Agricultural Mechanics 2(1,2) FS
Wood and concrete building materials; efficient construction procedures; hand tools, portable and stationary power tools; safe working practices.

AST 213 Agricultural, Industrial, and Outdoor Power 3(2,2) FS
Operation and maintenance of large and small spark ignition engines and diesel engines. Proper selection of tractors with respect to: horsepower, fuel efficiency, safety, cost of operation, traction and power train type will be covered. P, Math 101.

AST 252 Auto Mechanics 2(1,2) FS
Engine tune-up, servicing and repairing engine accessories; testing valves, carburetors, ignition systems; installing new rings, valves, and general work required of mechanics.

AST 262 Environmental Safety and Society 2(2,0) F
Examination of appropriate safety procedures and practices for rural environments and associated occupations. Explorations of the social, economic and physical consequences of their implementations. Individual and societal responsibilities with regard to safety and safe practices.

AST 273 Microcomputer Applications in Agriculture 3(2,2) S
Explains basics of micro/transducer/control interfacing as used for farm machinery and equipment. Popular agricultural software, data management for agricultural applications will be explored. Practical experience in monitoring and controlling agricultural processes, equipment and systems.

AST 303 Design Management Experience 3(2,2) S
Collaboration on designs with Agricultural Engineering students. Develop design ideas and assist in the evaluation, construction and testing of designs. The students will have responsibility for managing the design projects. P, ES 131 or 121, EG 121and 123.

AST 313 Farm Machinery and Hydraulics 3(2,2) S
Farm machine selection, operation, and adjustment for efficient operations. Principles of fluid power, hydraulic systems and components, micro-processor and electro-hydraulic and pneumatic operation and controls. P, Phys 101 or 111-113.

AST 333 Soil & Water Mechanics 3(2,2) FS
Engineering phases of soil and water conservation; elementary measurements and surveying and application to field problems; design and layout of conservation, drainage and irrigation practices.

AST 342 Electricity for Farm & Home 3(2,2) FS
Basic wiring, electrical circuits, controls, lighting, electric motor selection and operation. Electric distribution system design, including wire and service entrance sizing.

AST 423 Farm Building Mechanization 3(2,2) FS
Materials and construction techniques for farm buildings. Special attention to planning mechanization of livestock housing facilities, feeding operations, and manure removal systems.

AST 443 Food Process and Engineering Fundamentals 3(2,2) F
Mechanics, refrigeration, heat transfer, instrumentation, and equipment operation as applied to materials, handling, storing, preserving, packaging and processing agricultural products.

AST 452 Teaching Agricultural Mechanics 2(3,3) 6 weeks
Shop management, safety, shop plans, selection, care, and use of hand and power tools and equipment to be taken as part of student teaching block in Agricultural Education. P, senior in agricultural education. Offered first half of semester. P, 202.

AST 463 Agricultural Waste Management 3(3,0) F
Agriculturally related pollution and waste problems. Regulations and techniques for collecting, handling, treating and disposing of agricultural wastes to minimize environmental pollution. Design and management of agricultural water systems. P, PS 213, Phys 101 or 111, Instructor consent.

AST 492 Special Problems 1-3
Must have approval of adviser and department head.

AST 493 Special Topics 1-4

AST 494-495-496 Cooperative Education/Internship/ Field Experience 1-12 FSSu
Planned and supervised professional experience related to mechanized agriculture which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Dual Numbered Courses

AST 412-512 Advanced Farm Machinery 2(1,3) Su (even years)
Operation, care, adjustment, new developments in farm machinery, with emphasis on field and farm machinery as related to needs of agricultural production.

AST 422-522 Advanced Farm Structures 2(1,3) Su (even years)
Materials for farm construction; construction methods and techniques; new developments in farm building.

AST 462-562 Advanced Irrigation Mechanics & Practices 2(1,3) Su (odd years)
Sprinkler, surface and trickle irrigation systems and equipment. Irrigation scheduling, management, and economics. Water laws and irrigation program financing. Water quality and environmental impact of irrigation.

AST 482-582 Advanced Farm Engines 2(1,3) Su (odd years)
Operation, selection, care, adjustment, and new development of internal combustion engines as applied to farm power units.

Graduate Courses

AST 792 Special Problems 1-3 FSSu
AST 793 Special Topics 1-4 FSSu

AT (Athletic Training)

Undergraduate Courses

AT 164 Introduction to Athletic Training 2(2,0) FS
A basic introductory course designed to acquaint students interested in athletic training with all aspects of the profession.

AT 361 Athletic Training Techniques I 3(3,0) F
This course is the first of the intermediate athletic training courses designed to meet all of the guidelines and competencies required by the National Athletic Trainers' Association to offer an approved curriculum. These courses should be taken in sequence. AT 361 includes: concepts and techniques relative to injury assessment and management, pathology of tissue injury and repair, mechanisms of injury, management of blood borne pathogens/soft tissue injuries/ fractures, athletic injuries related to environmental stress and on/off field injuries/management related to the spine (including a posture and neurological assessment). P, formally admitted to athletic training program; permission.

AT 362 Athletic Training Techniques II 3(3,0) S
This course is the second of the intermediate athletic training courses designed to meet all of the guidelines and competencies required by the National Athletic Trainers' Association to offer an approved curriculum. These courses should be taken in sequence. AT 362 includes techniques related to the prevention, recognition, and management of athletic injuries to the upper and lower extremities. Related topics include preseason screening, preparticipation physicals, and appropriate weight training techniques. P, 361.

AT 363 Athletic Training Techniques III 3(3,0) F
This course is the third of the intermediate athletic training courses designed to meet all of the guidelines and competencies required by the National Athletic Trainers' Association to offer an approved curriculum. These courses should be taken in sequence. AT 363 includes a combination of material. One section of the class is devoted to the prevention, recognition, and management of athletic injuries relative to head, face, throat, abdomen, and thorax. The remainder of the class includes material in regards to evaluation and care of general illnesses and dermatological disorders common to athletics, understanding the role of pharmaceuticals in athletics--both legal and banned substances, drug testing procedures, special issues related to women in athletics, and the athletic trainer's role in counseling athletes. P, 362.

AT 364 Athletic Training Techniques IV 3(3,0) S
This course is the fourth of the intermediate athletic training courses designed to meet all of the guidelines and competencies required by the National Athletic Trainers' Association to offer an approved curriculum. AT 364 is designed to address all emergency care issues related to athletic injuries. The course content of this class meets the standards set by Athletic Training Emergency Care (ATEC). Skills will include assessing an emergency situation, CPR, airway management, rescue breathing, care for a choking person, taking and recording vital signs, techniques for working with athletic equipment, i.e., airway management with a football helmet, C-spine stabilization, applying cervical collars, and spine boarding techniques. This course meets the first aid competencies required by the NATA. P, permission.

AT 371 Athletic Training Clinical Experience I 2(2,0) F
Clinical application of course content presented in AT 361. This course will enable the student athletic trainer to achieve an appropriate level of skill competency related to each area taught in AT 361 and according to the requirements established by the National Athletic Trainers Association. Graded pass/fail. P, Acceptance into the program.

AT 372 Athletic Training Clinical Experience II 2(2,0) S
Clinical application of course content presented in AT 362. This course will enable the student athletic trainer to achieve an appropriate level of skill competency related to athletic injury assessment and according to the requirements established by the National Athletic Trainers Association. Graded pass/fail. P, 371.

AT 373 Athletic Training Clinical Experience III 2(2,0) F
Clinical application of course content presented in AT 474. This course will enable the student athletic trainer to achieve an appropriate level of skill competency related to athletic rehabilitation according to the requirements established by the National Athletic Trainers Association. Graded pass/fail. P, 372.

AT 374 Athletic Training Clinical Experience IV 2(2,0) S
Clinical application of course content presented in AT 464. This course will enable the student athletic trainer to achieve an appropriate level of skill competency related to therapeutic modalities and according to the requirements established by the National Athletic Trainers Association. Graded pass/fail. P, acceptance into the program.

AT 454 Athletic Injury Assessment 3(3,0)F
This course is designed to have the student athletic trainers develop a sound understanding of the assessment of athletic related injuries and conditions. The course will incorporate anatomy of the various body areas, the athletic related injuries or conditions which may occur, and evaluation techniques used to assess the body part involved.

AT 464 Therapeutic Modalities in Athletic Training 2(2,0) S
This course is designed to have the student develop a sound understanding of the use of modalities in the treatment of the injured athlete. The class will be taught through lectures and demonstrations and provide for practical experience.

AT 471 Fall Football Clinical Experience 1(0,3) Su
This course is designed to meet the clinical experience competencies required during fall football activity. Clinical applications include physical examinations; fitting and maintaining football protective equipment; monitoring and management of environmental conditions; stretching and conditioning; and the evaluation and care of acute athletic injuries. Graded pass/fail. P, senior status and consent.

AT 474 Rehabilitation of Athletic Injuries 2(2,0) F
This course is designed to have the student develop a sound understanding of the use of exercise in the rehabilitation of the injured athlete. The class will be taught through lectures and demonstrations and provide for practical experience.

AT 490 Senior Seminar in Athletic Training 2(2,0) S
This course is designed to be the culminating class for those students enrolled in the athletic training major. Students should have completed most of the required coursework and be in their final year on campus. In this course, students will discuss a variety of contemporary issues and problems confronting the athletic trainer; review the NATA guidelines and competencies; and examine the legal, medical, and ethical protocols governing the athletic training profession. In addition, students will have the opportunity to review previous coursework in preparation for the athletic training exit and NATA certification examinations.

Avia (Aviation Education)

Undergraduate Courses

Avia 270 Introduction to Aviation 3(3,0) FS
Aviation principles for the beginning aviator. Topics include aerodynamics, basic aircraft systems, aircraft performance computations, weight and balance computations, meteorology, radio navigation and communication techniques, cross-country preparation, pilot physiology, and emergency operations. Students completing this course will be ready to challenge the Federal Aviation Administration Private Pilot written and oral exams.

Avia 272 Introduction to Flight I 2(0,4) FSSu
Individual flight instruction leading to Federal Aviation Administration Student Pilot Certification. Topics include aircraft preflight, weather briefings, basic flight maneuvers, take-offs and landings, and basic flight regulations. Students must complete a minimum of 25 flight hours, as assigned, under the supervision of SDSU flight instructors to complete this course. P, 270. Instructor consent required. Fees as required by the cost of aircraft operation.

Avia 273 Introduction to Flight II 2(0,4) FSSu
Individual flight instruction leading to Federal Aviation Administration Private Pilot Certification. Topics include cross-country flight and flight planning, night operations, lost and emergency procedures, basic instrument flight control, and basic Air Route Traffic Control and Airport Tower operations. Students must complete a minimum of 25 flight hours, as assigned, under the supervision of SDSU flight instructors to complete this course. P, 272 or equivalent. Instructor consent required. Fees as required by the cost of aircraft operation.

Avia 370 Complex Aircraft Systems and Operations 3 F
Performance, flight characteristics, and the safe operation of complex and high performance propeller driven aircraft. Students completing this course will be ready to challenge the Federal Aviation Administration Commercial Pilot written and oral exams. P, 270; Phys 111 is also recommended.

Avia 371 Instrument Aircraft Operations 3(3,0) S
Radio navigation principles and procedures, aircraft operations within the Air Route Traffic Control system, FAA regulations, and meteorology as pertinent for the safe operation of aircraft in restricted visibility. Students completing this course will be ready to challenge the Federal Aviation Administration Commercial Pilot written and oral exams. P, 370; Geog 337 or AE 353 also recommended.

Avia 372 Advanced Flight Training 1-8 FSSu
Individual instruction in preparation for advanced Federal Aviation Administration certificates (Commercial, Flight Instructor, and Airline Transport Pilot) and ratings (Single-engine, Multi-engine, and Instrument). Students will be expected to complete a minimum of 25 hours of flight training, as assigned, under the supervision of SDSU flight instructors for each credit hour the student has enrolled. Repetitive registration will be allowed for a total of 8 credit hours. Instructor consent required. Fees as required by the cost of aircraft operation.

BAdm (Business Administration)

Undergraduate Courses

BAdm 310 Business Finance 3(3,0) FS
Capital and credit needs of business firms; extending and using business credit; analysis of financial statements; financial management; planning and financing capital structure; market for and investing in debt and equity securities. P, Acct 210, 211, junior standing or consent.

BAdm 324 Operations Research 4(4,0) FS
Selected quantitative tools and methods used in the decision making process of business organizations. Linear programming, decision making under uncertainty, simulation, inventory models, and queuing models. P, Econ 301, Stat 341.

BAdm 334 Small Business Management 3(3,0) F
Fundamentals of forming and managing a successful small business enterprise. Includes initiation of new enterprise, financial and administrative control, store location, promotion, personnel, and finance. Market research or business plan term paper.

BAdm 350 Legal Environment of Business and Contracts 3(3,0) FS
Survey of judicial system and process, legal aspects of criminal law, torts, contracts, landlord/tenant law and domestic relations. Emphasis is on South Dakota law.

BAdm 351 Business Law I 3(3,0) F
Legal rights and duties of parties to business transactions — sales security devices and insurance, partnerships, corporations, real property, estates and bankruptcy. P, 350.

BAdm 360 Organization and Management 3(3,0) FS
Management, including planning, organizing, directing, controlling, and coordinating. Other disciplines such as finance and marketing are discussed as they apply to the basic functions. P, junior standing or consent.

BAdm 380 Personal Finance 3(3,0) S
Survey of individual investment opportunities, including common and preferred stock and corporate bonds; auto, health and life insurance; home ownership; wills and estate planning.

BAdm 416 Commercial Bank Management 3(3,0) S (alternate years)
Comprehensive introduction to the principles of commercial bank financial management. It will cover contemporary financial institution management issues as well as bank risk analysis, lending, investments, liquidity, and asset-liability management. P, 310, Econ 330 or AgEc 478.

BAdm 474 Principles of Selling 3(3,0)F
Philosophy and techniques of personal selling in a free enterprise economy. Preparation, prospecting, presentation, handling objections, and closing are examined in depth, with emphasis on "how to." Concepts from the behavioral sciences are explored to show their applications in sales interactions.

BAdm 482 Business Policy and Strategy 3(3,0) FS
Applications of Accounting, Finance, managerial concepts, quantitative techniques, and Business Law to management problem situations. Case study approach. P, 360, senior standing.

BAdm 483 Seminar in Business Consulting 3(3,0) FS
Consulting program in which students, working under faculty guidance, assist businesses by researching and developing possible solutions to specific problems, business start-up, and expansion. Junior/senior standing.

BAdm 493 Special Topics 1-4
Organized by an instructor in consultation with his or her department head and a group of students. A medium through which a specific topic can be pursued. Normally experimental and may be a "one shot deal" for a particular semester and the unique group of students. Maximum: 4 credit hours per semester, 7 credit hours per degree.

Bio (Biology)

Undergraduate Courses

Bio 101 Biology Survey I 3(2,2) FSSu
Study of the nature, diversity, and classification of life; ecology; cells and cell cycles, Mendelian and modern Genetics. Intended for those not majoring in Biology. Duplicate credit for 101 and 151 not allowed.

Bio 103 Biology Survey II 3(2,2) FSSu
Study of evolution and evolution theory; plant growth, development, and reproduction; human structure and function. Intended for those not majoring in Biology. Duplicate credit for 103 and 153 not allowed. P, 101 or 151.

Bio 105 Human Biology 3(3,0) F
Presents key biological principles that are characteristic of living things in general and human beings in particular, focusing on the application of these principles to the concerns of contemporary life. Not intended for life science majors.

Bio 151 General Biology I 4(3,3) F
The introductory course for those majoring in Biology and Microbiology. Presents the concepts of cell biology, energetics, heredity, molecular genetics.

Bio 153 General Biology II 4(3,3) S
A continuation of Bio 151, the introductory course for those majoring in Biology and Microbiology. Presents the concepts of evolution, animal and plant structure and function, reproduction, and ecology. P, 151 or 101 with B or higher.

Bio 200 Biological Diversity 4(3,3) FS
Investigate the five kingdoms comprising the living world focusing on biological diversity, systematics, reproductive patterns, principles of structure and function, ecology and evolutionary relationships. P, 101 or 151.

Bio 290 Undergraduate Seminar 1(1,0) F
Student will explore the various career opportunities in the biological sciences and procedures for employment.

Bio 292 Special Problems 1-4 FSSu
Independent study in specialized area of the biological sciences. Objectives, scope of work and plan of study specified by instructor and student(s). P, 101 or 151 and consent of instructor and department.

Bio 311 Principles of Ecology 3(3,0) F
Environmental interactions with organisms, populations and communities; population interactions and evolution, community organization and succession, energy flow, biogeochemical cycles; human ecology. P, 101 or 151 and 3 hours bioscience.

Bio 343 Cell Biology 3(2,2) S
Cell structure and function with laboratory techniques of culturing and handling cells. P, 101 or 151, Chem 120.

Bio 353 Introduction to Oceanography 3(3,0) S
Physical chemical, geological and biological aspects of oceanography. Ocean resource use. P, 1 year college science.

Bio 371 Genetics 3(3,0) FSSu
Principles governing the nature, transmission and function of hereditary material with application to plants, animals, humans, and microorganisms. P, 101 or 151.

Bio 372 Genetics Laboratory 1(0,2) FS
Experiments with Drosophila and other organisms, illustrating probability, meiosis, sex linkage, independent assortment, crossing over, interference and biochemical genetics. To be taken concurrently with Bio 371, but not required for 371.

Bio 373 Evolution 3(3,0) S
Provides an understanding of the processes which have brought about long-term changes in living systems. Surveys evidences of plant and animal evolution, achievement in evolution theory and examines mechanisms responsible for genetic change. P, 101 or 151.

Bio 375 Water Quality in Agriculture 3(3,0) S
An integration of a wide variety of topics intended to give students an introduction to the complex interactions between water supplies demands, and water quality. P, 101 or 151 and Chem 106. Crosslisted with PS 375.

Bio 383 Bioethics 4(4,0) F
Ethical, social and policy dilemmas in medicine and biology. P, 101 or 151. Crosslisted with Phil 383.

Bio 490 Senior Seminar 1(1,0) FS
Presentation of topics based on biological literature in scientific journals. P, three years of coursework.

Bio 492 Biological Problems 1-4 FSSu
Individually assigned investigative problems in biology. P, 101 or 151.

Bio 494-495-496 Cooperative Education/Internship/Field Experience 1-12 FSSu
Student will have an opportunity to become involved in on-or off-campus activity which promises to contribute to his or her education. Acceptance based on availability of experiences and permission of departmental staff.

Dual Numbered Courses

Bio 415-515 Mycology 3(2,3) F odd years
Comprehensive taxonomic survey of the Kingdom Fungi; reproductive biology, physiology, genetics, and ecology of fungal organisms; relationship of fungi to human affairs. Crosslisted with PS 415-515.

Bio 445-545 Histological Techniques 3(2,3) S
Preparation and observation of animal and plant tissues for microscopic and photomicroscopic study. Emphasis will be given to various techniques used in current research areas.

Bio 453-553 Advanced Genetics 3(3,0) F (even years)
Procedures in genetic studies as they relate to molecular and classical genetic applications. P, 371. Crosslisted with PS 453-553.

Bio 462-562 Procaryotic-Eucaryotic Molecular Biology I 2(2,0) F
Charge, Partitioning Migration of Molecules; Protein Structure, Enzymes; DNA Structure and Properties, Pro-caryotic and Eucaryotic Conjugation, Transduction and Transformation; DNA Replication and Repair; Genetic Recombination; RNA Structure and Properties; RNA Replication and Repair; mRNA Synthesis and Processing; Kinetics; Chromosomes and Chromosome Replication. P, Micr 436, Chem 361, or consent. Crosslisted with PS 462-562.

Bio 463-563 Procaryotic-Eucaryotic Molecular Biology I Laboratory 2(0,6) F
Isolation of plasmids; restriction analyses; DNA transfers and hybridization analyses; bacterial, transformations of eucaryotic cells; amplification of DNA utilizing polymerase chain reactions (PCR); restriction fragment length poly-morphism (RFLP) analyses; mRNA isolation; generation and amplification of bacteriophage cDNA libraries. P, Micr 436, Chem 361, or consent of instructor. Crosslisted with PS 463-563.

Bio 464-564 Procaryotic-Eucaryotic Molecular Biology II 2(2,0) S
Structure of the nucleus; endocytosis; genome of mitochondria and chloroplasts; cell growth and division; cancer; immune system; pattern formation; homeoboxes; intracellular transport; gene expression and regulation. P, 462-562 or consent of instructor. Crosslisted with PS 464-564.

Bio 465-565 Procaryotic-Eucaryotic Molecular Biology II Laboratory 2(0,6) S
Screening recombinant DNA libraries; DNA sequencing; analysis of proteins; detection of proteins; RNA transfer and hybridization analyses; use of nucleic acid and protein databases. P, 462-562, 463-563, or consent of the instructor. Crosslisted with PS 465-565.

Bio 497-597 Special Topics 1-5 FS

Graduate Courses

Bio 525 Biology of Aging 3(3,0) F

Bio 740 Metabolic Responses to Environmental Stress 3(3,0) F (even years)

Bio 751 Biology of Algae 4(2,6) F (odd years)

Bio 762 Eukaryotic Molecular Biology Laboratory 1(0,3) S

Bio 773 Cytogenetics 3(2,3) F (odd years)
Crosslisted with PS 773.

Bio 780 Developmental Genetics 3(3,0) S

Bio 782 Special Problems 1-4 FSSu

Bio 790 Thesis 1-7 FSSu

Bio 791 Thesis Sustaining 0 FSSu

Bio 792 Graduate Seminar 1(1,0) FSSu

Bio 793 Biological Research Problems 1-3 FSSu

BioS (Biological Sciences)

BioS 890 Dissertation—Ph.D. 1-7 FSSu

BioS 891 Dissertation Sustaining 0 FSSu

BioS 892 Ph.D. Seminar 1(1,0) FS

Bot (Botany)

Undergraduate Courses

Bot 201 General Botany 3(2,2) F
Introductory treatment of the structural organization and related functions of plant cells, tissue systems, leaves, roots, stems, flowers, fruits and seeds. P, Bio 101 or 151.

Bot 301 Plant Systematics 4(2,4) S
Principles of phylogeny, classification and nomenclature; demonstrations, field study and laboratory practice in collecting, preserving and identifying plants. P, 201 or Bio 103 or 153.

Bot 305 Agrostology 3(1,4) F
Systematic study of grasses, their classification and nomenclature; laboratory practice in recognition and identification of grasses. P, 201 or Bio 103 or 153.

Bot 327 Plant Physiology 4(3,3) F
Plant functions and adjustments. P, 201 or Bio 101-103 or 151-153; desirable antecedent Chem 120.

Bot 415 Plant Ecology 4(3,2) F
Descriptions of plant communities, their dynamics and distribution. Environmental factors and their relationships with plants. Field trips. P, 201 or Bio 103 or 153.

Bot 421 Plant Anatomy 3(2,3) F
Developmental anatomy of seed plant axis and its appendages. Structural fitness of tissues and organs for functions they perform. P, 201 or Bio 103 or 153.

Bot 492 Special Problems 1-4 FSSu
Independent study in specialized area of the botanical sciences. Objectives, scope of work and plan of study specified by instructor and student(s). P, Bio 101 or 151 and consent of instructor and department.

Dual Numbered Courses

Bot 412-512 Morphology of Non-Vascular Plants 3(2,3) F (odd years)

Bot 413-513 Morphology of Vascular Plants 3(2,3) S (even years)

Graduate Courses

Bot 705 Aquatic Plants 3(1,4) F (odd years)

Bot 715 Advanced Plant Ecology 4(3,2) S

Bot 727 Advanced Plant Physiology 4(2,4) S (even years)

Bot 730 Plant Molecular Biology 3(3,0) F (odd years)

Bot 781 Plant Tissue Culture 3(2,3) F (even years)

Bot 782 Special Problems 1-4 FSSu

Bot 785 Growth and Development 4(2,4) S (odd years)

Bot 797 Special Topics 1-5 FS

CA (Consumer Affairs)

Undergraduate Courses

CA 130 Coping Skills for Consumers 2(2,0) F
Principles of consumer education applied to various areas of consumer information. Decision making skills needed for competent purchasing. Open to all students.

CA 241 Management in Family and Personal Living 3(3,0) F
Resource management related to the economic aspects of family decision-making and financial planning. P, Sophomore or consent.

CA 292 Special Problems 1-3
Problems selected according to students' special needs and interests. P, Consent of instructor.

CA 293 Current Topics 1-3
For students needing additional study of a topic or experience not offered as part of a regular class.

CA 340 Work, Time and Energy Decisions 3(3,0) S
Study and evaluation of decision making in relation to specific time, energy and work patterns. Relationship of household production and consumption decisions to outside employment. Impact of decisions on present and future. Investigation of relevant work-time-energy and decision making theory and research.

CA 361 Household Technology 2(1,2) S
Selection, principles of operation, use and care of household equipment. Impact of technology on individuals and families.

CA 371 Issues in Consumer Affairs 2(2,0) F
Investigation of problems and issues facing consumers throughout the consumer life cycle. Consumer education competencies and resources are analyzed, consumer materials and networks are evaluated. Educational strategies are developed as they relate to the wide variety of audiences encountered in consumer affairs. Consumer issues are discussed as they relate to individuals, families, and the global community.

CA 381 Social Skills in the Business Environment 2(2,0) FS
Discover how social skills are cost effective and increase the quality of life in the workplace. Topics include first impressions, professional image, introductions, written, verbal and non-verbal communication, relationships in the workplace, business travel in the United States, international business behavior, protocol, dining etiquette, and executive entertaining.

CA 391 Consumers & the Market 3(3,0) FS
Factors important to families as purchasing agents and consumers, information about advertising, fraud, issues and consumer practices affecting cost, analysis of programs for consumer protection, the market structure. Principles of maximization of consumer satisfaction.

CA 412 Preparation for Consumer Affairs Practicum 3(2,3) S
Preparation for the practicum experience. Includes professional ethics, employer/employee communications, formal and informal communication networks, discussion of profit and nonprofit organizations, problem solving by using the planning process. Action plans for achieving goals and expectations for the student's individual practicum will be completed. Shadowing and/or site visit experiences in the workplace will be required. P, 487; 2.5 GPA; Senior standing in Consumer Affairs or consent of instructor. Concurrent with FCS 495 Internship.

CA 442 Family Resource Management Lab 3(3,0) FS
Application of management concepts as related to families of varying structures and conditions. Experiences designed to meet individual professional needs. Recommended for junior/senior level, following completion of all 100/200 level required courses. P, Reservations required.

CA 487 Orientation to Consumer Affairs Internship 1(1,0) F
Orientation to Consumer Affairs Internship will identify expectations of the Consumer Affairs Internship experience. Students will further develop effective written and verbal communication skills as related to consumer affairs work experiences and analyze various issues in the workplace. Students will investigate and locate an approved consumer affairs internship site and set appropriate professional goals for work responsibilities. P, Senior standing or consent, to be taken prior to Internship.

Dual Numbered Courses

CA 492-592 Special Problems 1-3
Problems selected according to students' special needs and interests. Consent of instructor.

CA 493-593 Current Topics 1-3
For students needing additional study of a topic or experience not offered as part of a regular class.

Graduate Courses

CA 792 Special Problems 1-3

CA 793 Current Topics 1-3

CEE (Civil & Environmental Engineering)

Undergraduate Courses

CEE 106 Elementary Surveying 3(1,6) FS
Use, adjustment, and care of surveying instruments; analysis of errors in observation. P, Math 120 or 113 and EG 121.

CEE 208 Engineering Surveys 3(1,6) FSu
Topographic surveys and mapping elements of photogrammetry, land and construction surveys, principles of curve and earth work calculations and other advanced topics in surveying. P, 106.

CEE 211 Materials of Construction 2(0,6) F
(For non-CEE students.) Sources, applications, and properties of materials used in construction. Laboratory tests to determine these properties. P, sophomore standing.

CEE 216 Materials 3(2,3) FS
Basic structure of materials and its effect on material properties. Laboratory tests on materials, principles of concrete mixes. P, Phys 211, Chem 112.

CEE 304 Land Surveying 3(3,0) F
Public land surveys, land subdivisions, land boundaries, land descriptions, state plane coordinates, legal aspects of land ownership, precise surveying methods such as triangulation, base line measurements. P, 208.

CEE 306 Photo Interpretation and Photogrammetry 3(2,3) S
Engineering evaluation of aerial photographs, including topography, analysis of soils and surface drainage characteristics. Use of aerial photographs for location and design of highways, airports and other construction projects. P, 208, or consent.

CEE 311 Structural Materials Lab 1(0,3) FS
Laboratory tests on structural materials and elements, and interpretation of test results. Careful laboratory techniques are emphasized. P, 216 with EM 321.

CEE 327 Water Supply Engineering 3(2,3) FS
Hydrologic cycle, surface water and ground water, water consumption and demand, quality of water, pumping, treatment and distribution of water supplies. P, Chem 112, EM 331 or consent.

CEE 331 Fluid Mechanics Lab 1(0,3) FS
Measurement of properties of common fluids, and tests on fluids in motion.

CEE 333 Hydrology 3(2,3) F
Principles of hydrology. Components of the hydrological cycle including the impact of precipitation, evaporation, infiltration, ground water flow and surface runoff on flow routing, water availability, extreme flows and drainage systems. P, EM 331, Stat 341 or 381 or concurrent.

CEE 336 Engineering Geology 3(2,3)
From an Engineering prospective, the principles of physical and environmental geology; minerals, rocks, weathering, soils, hydrologic cycle, groundwater and frost will be explored and related to engineering applications such as mechanics of unconsolidated materials, slope failures, subsidence, pollution, waste disposal, and exploration methods. P, 216.

CEE 353 Structural Theory 3(3,0) FS
Reactions, internal forces, use of influence lines for beams, frames, and trusses for moving loads. P, EM 321.

CEE 363 Transportation Engineering 3(3,0) S
Engineering principles in various common ,modes of transportation. P, 208, and CSc 213.

CEE 423 Waste Water Engineering 3(2,3) FS
Systems for collecting waste water, waste water disposal and treatment processes, solid waste disposal. P, 327.

CEE 433 Hydraulic Engineering 3(3,0) F
Development of fundamental principles related to closed conduit flow, flow in open channels, open channel transitions and controls, introduction to wave mechanics, hydraulic structures. P, EM 331.

CEE 446 Geotechnical Engineering 4(3,3) F
Soil principles, index properties, moisture density relations, compressibility, stresses, embankments, foundations, soil compaction and stabilization, laboratory tests on fundamental soil properties. P, 216, 336, senior standing.

CEE 455 Steel Design 3(1,6) FS
Design of steel members subjected to tensile, compressive flexural, and combinations of forces. Member design. Elementary concepts of frame design. Design of simple bolted and welded connections. P, 353.

CEE 456 Concrete Theory and Design 3(2,3) FS
Principles of analysis and design of reinforced concrete structures based on strength design methods for ACI Code. Design of flexural members, columns and footings. P, 353.

CEE 457 Indeterminate Structural Analysis 3(2,3) S
Analysis of deflections and indeterminate structures, double integration, moment areas, conjugate beam, energy methods, graphical integration, numerical methods, slope deflection, moment distribution, and matrix methods. P, 353.

CEE 458 Design of Timber Structures 2(2,0) (alternate years)
Physical and mechanical properties of wood. Design of columns, beams, trusses, curved members, connections and common structural systems. Loadings and deflection of structural members. Design using dimension lumber, plywood, and laminated members will be discussed. P, 353.

CEE 464 Senior Design Project I 1(0,3) FS
Development of a comprehensive civil engineering project design. P, senior standing and consent.

CEE 465 Senior Design Project II 2(1,3) FS
Completion of a comprehensive civil engineering project design. P, 464.

CEE 467 Highway Engineering 3(2,3) F
Highway administration, traffic characteristics, highway standards, drainage, geometric design, construction methods. P, 363.

CEE 473 Construction Engineering 3(3,0) S
Construction management, equipment, operations, and costs. P, senior standing or consent.

CEE 474 Construction Methods and Equipment 3(2,3) F
Detailed study of the various methods, equipment and techniques of construction. Interaction between contractor, design engineer, inspector and owner will be emphasized. P, senior standing or consent.

CEE 475 Engineering Administration 3(3,0) S
Law of contracts, agency, and other legal aspects of engineering. Preparation of specifications. Economic aspects of engineering. P, senior standing.

CEE 483 Municipal Engineering 3(2,3) F
Design/construction of municipal facilities including subdivisions, drainage, streets, water and wastewater systems, and solid waste disposal. Duties and responsibilities of city engineer. P, 208, 333.

CEE 490 Seminar 0(1,0) FS
Current literature on professional and technical aspects of Civil Engineering. P, junior standing. Pass/Fail Grading.

CEE 492 Special Problems 1-3 FSSu
Individual investigation. P, consent.

CEE 494-495-496 Cooperative Education/Internship/ Field Experience 1-6 FSSu
Planned and supervised professional experience related to civil engineering which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Dual Numbered Courses

CEE 411-511 Bituminous Materials 3(2,3) F (alternate years)
Properties of bituminous materials including their compatibility with various types of aggregates. Asphalt mixes are designed and tested. Standards tests are performed on bituminous materials with emphasis on test results. Asphalt surface evaluation techniques. P, 216.

CEE 424-524 Industrial Waste Treatment 2(2,0) S
Characteristics and compositions of industrial wastes, sampling and methods of analysis of these wastes and remedial measures for treatment and disposal. P, 423 or consent.

CEE 427-527 Environmental Engineering Instrumentation 3(1,6) F
Analysis of water and waste water samples, using environmental laboratory instrumentation. Design of treatment facility process instrumentation and controls. P, 423 or consent.

CEE 428-528 Solid Waste Engineering and Management 3(2,3) S
Solid waste regulation and characterization. Design of disposal facilities, management of collection, transport, transfer, storage and disposal systems. Field trips to various disposal facilities required. P, 446.

CEE 435-535 Water Resources Engineering 3(3,0) S
Topics related to water resources engineering including: multiple purpose river development, economic analysis of flood control measures, aspects of water law, advanced topics related to surface and ground water hydrology and administrative aspects of water resources planning. P, 433.

CEE 436-536 Foundation Engineering 3(2,3)
Bearing capacity, load induced pressures and settlements, soil exploration and sampling, lateral-earth pressure, retaining walls, sheet pile structures, pile formations and caissons. P, 446.

CEE 443-543 Matrix Analysis of Structures 3(3,0)
Theory and application of matrix methods in structural analysis. P, 353.

CEE 444-544 Precast Concrete Structures 3(3,0) (alternate years)
Advantages of precast concrete. Structural and architectural precast elements. Building systems. Design concepts and structural design. Connections, specifications, and detailing. P, 456.

CEE 447-547 Advanced Soils Engineering 3(2,3)
Application to engineering problems. Stability, compaction, embankments, seepage, draining, stabilization. P, 446.

CEE 452-552 Prestressed Concrete 3(3,0)
Theory and design of prestressed concrete including pre-tensioning and post-tensioning. P, 456.

CEE 459-559 Advanced Structural Mechanics 3(2,3) S
Review of principal moments of inertia; relationship of plain stresses and strains; use of rosettes; shear center; unsymmetrical bending; theories of failure; curved beams and closed rings; thick-walled cylinders; beams on continuous elastic support, miscellaneous topics in structural analysis. P, 353.

CEE 493-593 Special Topics 1-3 FSSu
P, consent.

Graduate Courses

CEE 623 Advanced Sanitary Engineering 3(3,0)

CEE 625 Environmental Engineering Planning 3(3,0) S

CEE 632 Advanced Foundation Engineering 3(2,3)

CEE 633 Open Channel Hydraulics 3(3,0) F

CEE 634 Fluvial Hydraulics 3(3,0) S

CEE 639 Geotechnical Testing Laboratory 3(1,6)

CEE 654 Advanced Design of Steel Structures 3(3,0) (alternate years)

CEE 656 Advanced Reinforced Concrete Design 3(3,0) (alternate years).

CEE 664 Highway Capacity Analysis 3(2,3) S (alternate years)

CEE 693 Special Topics 1-3 FSSu

CEE 700-701 Seminar 0-1

CEE 721 Environmental Engineering 3(3,0)

CEE 722 Hazardous and Toxic Waste Disposal 3(2,3)

CEE 724 Land Treatment of Wastes 3(2,3)

CEE 725 Biological Principles of Environmental Engineering 3(2,3)

CEE 726 Physical/Chemical Principles in Environmental Engineering 3(2,3)

CEE 727 Water Treatment Plant Design 3(1,6) F
P, 327 or consent.

CEE 728 Waste Water Treatment Plant Design 3(1,6) S
P, 423, graduate standing.

CEE 733 Advanced Water Resources Engineering 3(3,0) S
P, 535.

CEE 734 Surface Water Quality Modeling 3(3,0) (alternate years)

CEE 737 Hydraulic Design 3(3,0) F
P, 433, graduate standing.

CEE 738 Advanced Hydraulics 3(2,3) S
P, 433, graduate standing.

CEE 749 Structural Dynamics 3(3,0)
P, 353, 456.

CEE 756 Reinforced Masonry Design 3(3,0) (alternate years)

CEE 762 Pavement Management and Rehabilitation 3(2,3) F (alternate years)

CEE 765 Pavement Design 3(3,0) S

CEE 769 Design of Steel and Concrete Bridges 3(3,0) (alternate years)
P, 455, 456, graduate standing.

CEE 770 Engineering Research or Design Paper 2

CEE 790 Thesis 1-7 FSSu

CEE 791 Thesis Sustaining 0 FSSu

CEE 792 Special Engineering Problems 1-3 FS

CEE 793 Special Topics 1-3

CEE 795 Engineering Research or Design Paper Sustaining 1

CEE 797 Research 1-9

Chem (Chemistry)

Undergraduate Courses

Chem 100 World of Chemistry I 3(3,0) or 4(3,3) F (alternate years)
Introduction to chemistry in the home, garden, environment, world of art and everyday living in a non-mathematical context designed specifically for liberal arts majors with limited scientific training. Duplicate credit for 100, 106, and 112 not allowed.

Chem 101 Introduction to Chemical Sciences 1(1,0) S
An introduction to chemistry and clinical laboratory technology for majors, through classroom, laboratory and field experiences. Includes elements of laboratory safety, history of the profession and consideration of career preparation.

Chem 102 World of Chemistry II 3(3,0) or 4(3,3) S (alternate years)
Continuation of 100. P, 100.

Chem 106 Chemistry Survey 4(3,3) FSSu
A one-semester introduction to chemistry. Not intended for those needing extensive chemistry background. Duplicate credit for Chem 106 and 112 not allowed.

Chem 108 Organic and Biochemistry 5(4,3) FSSu
A survey of the chemical principles important to biological systems. For students who do not plan to take additional chemistry. Not a prerequisite for any 200 level and above course. Duplicate credit for Chem 108 and 120, 326 or 361 not allowed. P, 106.

Chem 112 General Chemistry I 4(3,3) FS
Comprehensive coverage of general chemistry. Preferred for those needing extensive background in chemistry. Duplicate credit for Chem 106 and 112 not allowed.

Chem 114 General Chemistry II 3(3,0) or 4(3,3) FS
Continuation of 112. P, 112 or a B in 106.

Chem 115 Experimental General Chemistry II 1(0,3) FS
The laboratory portion of Chem 114 for those who have completed 114 for 3 credits. P, 114 (3 credits).

Chem 120 Elementary Organic Chemistry 3(3,0) or 4(3,3) FSSu
Compounds of carbon with emphasis on those of interest to students of Agriculture, Family and Consumer Sciences. P, 106 or 112. Duplicate credit for Chem 108, 120, and 326 not allowed.

Chem 121 Experimental Elementary Organic Chemistry 1(0,3) FSSu
The laboratory portion of Chem 120 for those who have completed 120 for 3 credits. P, 120 (3 cr).

Chem 178 Decision Making and Technology 4(4,0) S (alternate years)
Covers the problems, issues, and hurdles involved in taking an idea from an industrial research laboratory to the marketplace. Curriculum will have a decision-making orientation. P, 101, 106, or 112.

Chem 232 Analytical Chemistry I 4(2,6) FS
Fundamental principles and laboratory practice in gravimetric and volumetric analysis; introduction to instrumental analysis. P, 114 (4 credits).

Chem 326-328 Organic Chemistry 4(3,3) FS
Fundamentals of organic chemistry. P, 114 (4 credits). Duplicate credit for Chem 120, 326 not allowed.

Chem 330 Applied Chemical Instrumentation 4(3,3) S
Principles, practices and evaluation of quantitative instrumental methods of analysis used in agricultural, biological, clinical and engineering studies. P, 232 or consent of instructor. Crosslisted with MEDT 330.

Chem 340 Elementary Physical Chemistry 3(3,0) S
One semester introduction to the principles of physical chemistry. P, 114, 1 year of physics, Math 113.

Chem 341 Elementary Physical Chemistry Lab 1(0,3) S
Laboratory practice to accompany 340. P, 232, 340 or concurrent registration in 340.

Chem 342-344 Physical Chemistry 3, 5(3,0 or 3,4) FS
Fundamentals of physical chemistry. P, 232, 1 year physics, 1 year calculus.

Chem 343-345 Physical Chemistry Lab 2(0,4) FS
The laboratory portion of Chem 342-344 for those who have completed 342-344 for 3 credits. P, 342-344 (3 credits).

Chem 352 Inorganic Chemistry 4(3,3) F
Theoretical and periodic aspects of inorganic chemistry. P, 232.

Chem 361 Biochemistry 4(3,3) FSSu
Introduction to biochemical processes and the study of compounds of biological interest. P, 120 (4 credits) or equivalent. Duplicate credit for Chem 108 and 361 not allowed.

Chem 380 Environmental Chemistry 4(4,0) S
Emphasis on the role of chemistry in understanding and solution of environmental problems. P, 112, 114 (4 credits) or 106, 120 (4 credits).

Chem 382 Techniques in Clinical Laboratory Technology 3(2,3) S
Introduction to techniques used in the clinical laboratory including urinalysis, hematology and clinical chemistry.

Chem 434 Instrumental Analysis 4(2,6)
Theory and practice in instrumental analysis. P, 232, 328, 344, or consent.

Chem 461 Intermediate Biochemistry 3(3,0) S
Intermediate level study of biochemical processes of plants and animals, emphasizing the integration and control of their metabolic processes. P, 361.

Chem 462 Intermediate Biophysical Chemistry 3(3,0)
Kinetics, mechanisms, and equilibrium of biochemical systems.

Chem 492 Special Problems 1-9 FSSu
P, consent.

Chem 495 Internship 1-4 FSSu
Planned and supervised professional experience related to chemistry which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Graduate Courses

(if not listed, see department for schedule of offerings)

Chem 616 Chemical Literature 3(3,0) S
Chem 622 Advanced Organic Chemistry I 3(3,0) F
Chem 632 Advanced Analytical Chemistry 3(3,0) S
Chem 642 Advanced Physical Chemistry 3(3,0) F
Chem 654 Advanced Inorganic Chemistry 3(3,0) F
Chem 662 Principles of Biochemistry 3(3,0) F
Chem 691 Special Problems 0 FS
Chem 720 Special Topics in Organic Chemistry 1-6
Chem 722 Synthesis of Natural Products 3(3,0)
Chem 724 Structural Determination of Organic Compounds 3(2,3)
Chem 725 Polymer Chemistry 4(3,3)
Chem 726 Advanced Organic Chemistry II 3(3,0)
Chem 728 Bioorganic Chemistry 3(3,0)
Chem 730 Special Topics in Analytical Chemistry 1-6
Chem 732 Analytical Ag and Environmental Chemistry 4(3,3)
Chem 734 Analytical Spectroscopy 3(3,0)
Chem 736 Chromatography and Separations 3(3,0)
Chem 738 Electroanalytical Chemistry 3(3,0)
Chem 740 Special Topics in Physical Chemistry 1-6
Chem 741 Quantum Chemistry I 3(3,0)
Chem 742 Quantum Chemistry II 3(3,0)
Chem 744 Chemical Thermodynamics 3(3,0)
Chem 745 Statistical Thermodynamics 3(3,0)
Chem 746 Atomic and Molecular Structure 3(3,0)
Chem 748 Chemical Kinetics 3(3,0)
Chem 750 Special Topics in Inorganic Chemistry 1-6
Chem 752 Descriptive Inorganic Chemistry 3(2,3)
Chem 753 Organometallic Chemistry 3(3,0)
Chem 754 Physical Methods of Inorganic Chemistry 3(3,0)
Chem 760 Special Topics in Biochemistry 1-6
Chem 764 Biochemistry I 3(3,0)
Chem 766 Biochemistry II 3(3,0)
Chem 767 Biophysical Chemistry 3(3,0)
Chem 768 Plant Biochemistry 3(3,0)
Chem 769 Nutritional Biochemistry 3(3,0)
Chem 772-773 Seminar 1(1,0) FS
Chem 781 Bioinorganic Chemistry 3(3,0))
Chem 782 Radioisotope Techniques 4(3,3)S
Chem 790 Thesis (M.S.) 1-7
Chem 791 Thesis Sustaining (M.S.) 0
Chem 890 Dissertation (Ph.D.) 1-12
Chem 891 Dissertation Sustaining (Ph.D.) 0

The following Physics courses may be used in either the Chemistry graduate major or minor program.

Phys 637 Science of Solids 3(3,0); **Phys 743 Statistical Mechanics** 2(2,0); **Phys 775 Tensors & General Relativity** 3(3,0); **Phys 779 Group Theory in Quantum Mechanics** 3(3,0).

Chin (Chinese)

Undergraduate Courses

Chin 101-102 Introductory Chinese I-II 4(4,0)
Introduction to the Chinese language and culture. Class work may be supplemented with work in the language laboratory.

CHRD (Counseling and Human Resource Development)

Graduate Courses

CHRD 601 Introduction to Counseling 3 F
CHRD 603 School Counseling 3(3,0) F
CHRD 610 Pre-Practicum 3(3,0) FSSu
CHRD 630 Gender Issues in Counseling 3 FSu
CHRD 651 Mental Health and Personality Development 3(3,0)
CHRD 661 Theories of Counseling 3(3,0) FS
CHRD 671 Counseling in Gerontology 3
CHRD 681 Workshop 1-3 FSSu
CHRD 682 Seminar 1-3 FSSu
CHRD 690 Special Topics 1-3 FSSu
CHRD 706 Counseling the Victim 3 SSu (even)
CHRD 713 Administration and Management of Mental Health Care Organizations 3 S
CHRD 716 Human Resource Management in Business and Industry 3 S
CHRD 721 Counseling Through the Lifespan 3
CHRD 722 Administration and Management of School Counseling Programs 3 S
CHRD 723 Counseling the Family 3 F

CHRD 736 Appraisal of the Individual 3(3,0) FS
CHRD 742 Career Counseling & Planning 3(3,0) FS
CHRD 755 Mental Pathology 3 F
CHRD 756 Counseling the Addictive Client 3
CHRD 766 Group Counseling 3(3,0) FSSu
CHRD 770 Student Development: Theory and Practice 3 F
CHRD 771 Student Personnel Services 3 S
CHRD 772 Administration and Leadership in Student Affairs 3 S
Crosslisted with AHEd.
CHRD 787 Counseling Practicum 3-5 FSSu
CHRD 788 Group Counseling Practicum 2-4 FSSu
CHRD 789 Internship (Topical) 2-6 FSSu
CHRD 790 Thesis 1-6 FSSu
CHRD 791 Thesis Sustaining 0 FSSu
CHRD 792 Research Problems 2(2,0) FSSu
CHRD 793 Problems 1-3 FSSu

CJus (Criminal Justice)

Undergraduate Courses

CJus 201 Introduction to Criminal Justice 3(3,0) FS
An overview of the criminal justice system focusing primarily on the institutions involved in the operations of the criminal law including the police, the attorney in the legal system, the bail system, the trial, the guilty pleas, sentencing, and corrections. A limited portion of the course is devoted to an analysis of the purposes of the criminal law in terms of ascertaining why we make certain kinds of conduct criminal in our society. (Recommend taking CJus 201 prior to other CJus courses.)

CJus 203 Police and Community Relations 3(3,0) F (alternate years)
Examination of the historical development of policing; the role and function of policing; the process of policing; administration and evaluation of the police organization; police-community relations; the organization and control of policing; other related issues.

CJus 331 Civil Rights and Liberties 3(3,0) S
Individual First Amendment guarantees, constitutional right of the accused in the criminal process and equal protection of the law as interpreted through U.S. Supreme Court decisions. P, PolS 100 (or 101) or consent. Crosslisted with PolS 331.

CJus 333 Fundamentals of Criminal Procedure 3(3,0) S (alternate years)
Constitutional analysis of the criminal procedure that focuses primarily on the Fourth, Fifth, and Sixth Amendments; the right to be free from unreasonable search and seizure, the privilege against self-incrimination, and the right to counsel. The course examines the need to protect the public and enhance law-enforcement efficiency and the need to protect individual defendants from abuse at the hands of the state.

CJus 334 Criminal Law 3(3,0) F (alternate years)
Examination of the substantive criminal law and a unique opportunity to explore the larger issues concerning the relationship of the individual to the state. Includes analysis of the following topics: the nature of criminal liability and the functions and justifications for criminal punishment, legal limitations upon criminalization, the general principles of criminal liability such as the "act" and "state of mind" requirements, specific offenses against persons and property, and law of attempt, the law of complicity, and conspiracy.

CJus 335 Criminal Prosecution and Defense 3(3,0) F
Behavioral and legal analysis of the stages and procedures of a criminal case including initial appearance, bail, preliminary hearing, grand jury, arraignment, suppression hearings, trial and sentencing. Emphasis is on bail reform, plea bargaining, screening, diversion, speedy trial, insanity defense, discovery, and the role of the defense attorney, prosecutor, and judge. Included is an examination of the court system as a social institution of human actors who exercise discretion within and without the boundaries of the law.

CJus 336 Juvenile Justice 3(3,0) F (alternate years)
Historical, philosophical, and legal examination of the separate system created in our society to handle juvenile justice in this country. Traces the development of the juvenile justice system in the country and examines the various stages of the juvenile justice process and critical issues currently facing the system.

Dual Numbered Courses

CJus 416-516 Problems in Criminal Justice 3(3,0) S
An examination of selected contemporary problems in the administration of criminal justice. Topic will change each semester. May be repeated for credit. Course descriptions available prior to term course is offered.

CM (Construction Management)

Undergraduate Courses

CM 232 Micro-Computers in Construction 2(0,4) FS
Introduction to the micro-computer, word processing, data base, and spreadsheets and their applications in the construction industry. Specific construction applications of the micro-computer in planning, scheduling, estimating, communications, and design as well as software and new/future technology will be covered.

CM 294 Cooperative Education/Internship/Field Experience 1-3 FSSu

CM 321 Strength of Materials 3(3,0) F
Strength of Materials (For Non-Civil Engineering Students)
Applied mechanics with analytical and graphical application of physical principles to engineering related problems. Applications of: stress and strain relationships; Mohr's circle; centric, torsional, and flexural loadings; and deflections of beams. P, Math 222 and Phys 113.

CM 332 Building Systems 2(2,0) F
The study of the structural, electrical, and mechanical building systems and their components. Emphasis is placed upon the understanding of: 1) the fundamental vocabulary of construction in both verbal and graphic terms, 2) the relationship of the individual building systems to the functional value of the total building. P, junior standing or instructor approval.

CM 333 Practical Hydrology & Hydraulics 3(3,0) S
The principles of precipitation, run-off, stream flow and ground water flow will be covered in the hydrology segment of this course. Both closed and open channel flow, hydraulic structures, fluid mechanics, flow measurements, and pumps will be covered in the hydraulics segment of this course. P, junior standing or instructor approval.

CM 352 Cost Estimating Techniques 2(2,0) S
To gain knowledge of estimating the cost of projects to be constructed. Interpretation of plans and specifications for the purpose of preparing a bid. Topics include: approximate and detailed estimates of materials, equipment and labor costs, lump sum and unit cost estimates, overhead, profit, and production rates. P, 232, 332, CEE 211.

CM 353 Structural Theory for Technologists 3(3,0) S
Reactions, internal forces and use of influence lines. P, 321.

CM 400 Risk/Loss Control in Construction 3(3,0) S
Emphasis on business aspects of construction. 1) Organizational and administration: industry structure; construction contracts, arbitration, bonds and insurance; accounting and cost control; labor relations. 2) Construction estimating: quality takeoff and pricing; labor and equipment estimates; estimating excavation, concrete, masonry and carpentry; proposal preparation. Students prepare detailed estimate of a building. P, 353, Math 222 or 224.

CM 492 Special Problems 1-3 FSSu
CM 493 Special Topics 1-3 FSSu
CM 494 Cooperative Education/Internship/Field Experience 1-3 FSSu

CSc (Computer Science)

Undergraduate Courses

CSc 105 Introduction to Computers 3(3,0) FSSu
Computer literacy will be stressed and microcomputers will be used. Topics covered will include history, impact on social and cultural environment and daily life, professional opportunities, ethics, hardware, software, applications to other disciplines and elementary topics on DOS as well as the use of a wordprocessor, spreadsheet, graphics and data base manager. P, 1 year of high school math.

CSc 130 BASIC Programming 3(3,0) FSSu
The fundamental concepts of the Computer and the Computer language BASIC will be introduced. That is, decision statements, string manipulation, loops, flow of control, subroutines, user defined functions, random generators, sequential and random access files will be topics covered in the course. P, 1 year of high school math.

CSc 150 Computer Science I 3(3,0) FSSu
This is an introductory course on the topics of structured programming. Topics covered will be top-down design, step-wise refinement, procedures, functions, decision statements, loops, one dimensional arrays, strings, and the use of external files. All topics when covered will stress good problem solving, documentation, debugging and testing. P, 2 years high school algebra or consent.

CSc 210 Introductory SAS Programming 1(1,0) FS
An overview of SAS Programming with an emphasis on getting data into data sets, manipulating the data sets and using some of the more simple procedures SAS already employs to modify and display data.

CSc 213 Introduction to Programming with FORTRAN 3(3,0) FSSu
FORTRAN programming for engineering and computer science majors. P, 2 years of high school algebra or equivalent of Math 113.

CSc 218 Introduction to C/C++/UNIX for Engineers 3(3,0) FSSu
This is an introductory course on the topics of structured programming using C/C++. Topics covered will be top-down design, step-wise refinement, functions, and decisions statements, loops, arrays, pointers, dynamic allocation of memory, use of external files, character strings, macros, introduction to objects and structures. P, two years of high school algebra or equivalent of Math 113.

CSc 241 Computer Logic 3(3,0) FS
An introduction to computer operating principles, information storage and logic gates. Boolean algebra and other methods of simplifying boolean functions are covered to provide an elementary understanding of computer logic analysis and design, suitable for a student at the sophomore level. P, 250 or 213 and Math 113.

CSc 250 Computer Science II 3(3,0) FSSu
The topics in this course will be introduced as needed in the context of one or more projects involving larger programs. Structured programming techniques will be utilized with a strong emphasis toward good programming style, expression and documentation. The course will extend the concepts of stepwise refinement, top-down programming, debugging, testing, string processing, arrays, searching, sorting and recursion. The concepts of stacks, queues, linked lists and linked allocation will be introduced. P, 150.

CSc 285 Data Structures 3(3,0)F S
A more advanced study of such topics as strings, arrays, linked lists, stacks, queues, trees, graphs, search and sorting. Other topics covered will be introductory algorithm analysis, design and comparison of different structures and algorithms. P, 250.

CSc 290 Programming Languages 3(3,0) FS
A systematic approach to the study of programming languages, their data and their behavior at execution time. Methods for specifications of syntax and semantics. Global properties and algorithmic languages including the scope of declarations, grouping of statements, binding time storage allocation. P, 285.

CSc 303 Introduction to Ethical Issues in Computer Science 2(2,0) FS
This course will cover the code of ethics adopted by the major computer science societies and the consequences of violating the code. Laws affecting computer and information processing as well as the varied interpretations of those laws will be covered. P, 105 and junior status.

CSc 312 Advanced Microcomputer Applications 3(3,0) FSSu
Covers advanced topics in DOS as well as advanced topics of a word processor, spreadsheet, graphics and database manager from an individual package point of view as well as from an integrated package point of view. Macros, a fourth generation language, file transfer between packages and communications will also be covered. P, 105 or consent.

CSc 314 Assembly Language 3(3,0) FSSu
ASSEMBLY language programming, organization and operating principles of the IBM computer, and others. For students seriously interested in computers or computer programming. P, 250 or 213.

CSc 316 PL/1 Programming 3(3,0) FSSu
Introduction to PL/1 programming. Includes scientific and business oriented programming applications, data structures, structured programming and file processing. P, 150 or 213.

CSc 318 Object Oriented Programming in C++ 3(3,0)
The study of object oriented methodologies using C++ in a UNIX environment. Advanced data structures, I/O and file management will be implemented using polymorphism, inheritance and encapsulation. P, 285.

CSc 325 Management Information Systems 3(3,0)
Introduction to application software development and design methods. Data base and management information systems are also presented. P, 312.

CSc 328 Introduction to Automata Theory 3(3,0) FS
Turing machines, computational functions, unsolvability of the halting problem, recursive functions. Finite state models, equivalence, minimization, properties, decision questions, characterizations. Regular expressions. Survey of other automata. P, 250 and Math 253 and 345.

CSc 330 COBOL Programming 3(3,0) FSSu
An introduction to COBOL Programming. The topics of structured programming style, data structures, file processing concepts and techniques both sequential and random organization, and documentation are presented. Programming problems are from typical business applications. P, 213 or 150.

CSc 331 Advanced COBOL Programming 3(3,0)FS
Advanced programming features of the COBOL Language. Topics include string manipulation, multi-dimensional arrays, subprograms, file processing concepts utilizing sequential, random and dynamic access to indexed files with primary and alternate keys. Programming problems deal with transaction processing in typical business applications. P, 330.

CSc 354 Introduction to Systems Programming 3(3,0) FS
The study of macros, subroutines, subroutine linkage, conditional assembly, input-output, interrupt processing, assemblers, loaders and linkers. P, 285 and 314.

CSc 410 Programming Using SAS 3(3,0) S
The Base SAS System will be covered as it applies to information storage and retrieval; data input, modification, and programming; report writing, descriptive and simple statistics and file handling. Additional SAS packages will be explored dealing with SAS/FSP (interactive facility for data entry, editing, and retrieval), SAS/ASSIST (menu-driven, task-oriented interface), and SAS/Graph (information and presentation graphics).

CSc 426 Computer Architecture and Organization 3(3,0) S
Elementary computer architecture, gates and digital logic, register transfer, microprocessors and micro operations, computer arithmetic and processor studies of existing systems. P, 241 and 314.

CSc 428 Compiler Construction 3(3,0) S
Structure of algorithmic, conversational, list processing and string manipulation languages. Concepts and facilities of programming languages; structure of compilers, introduction to formal languages and parsing. P, 285 and 328.

CSc 456 Operating Systems 3(3,0) F
Operating systems structure; memory, process and I/O management; concurrent processes and case studies of existing operating systems. P, 285 and 314 and Stat 341 or Math 381.

CSc 470 Software Engineering 3(3,0) S
The principles, techniques and tools used to design and construct accurate, reliable, maintainable and dependable software will be studied. P, 285.

CSc 480 Methods for Teaching Computer Science 3(3,0) FS
The principles, methods and theories in teaching computer science subjects to secondary school students will be studied. P, 285.

CSc 484 Database Management Systems 3(3,0) FS
Introduction to the fundamental concepts of database systems. The relational, hierarchical, and network approaches. The underlying design of a database system and the characteristics of widely used database packages. Emphasis on project using a database package. P, 285.

CSc 494-495-496 Cooperative Education/Internship/Field Experience 1-6
Planned and supervised professional experience related to computer science which takes place outside the formal classroom with private business or industry or public agencies. P, consent of department head.

Dual Numbered Courses

CSc 472-572 Artificial Intelligence 3(3,0) FS
Introduction to ideas, issues and applications of Artificial Intelligence. Knowledge representation, problem solving, search, inference techniques, theorem proving. Expert systems. Artificial intelligence programming languages. P, 290.

CSc 474-574 Computer Networks 3(3,0) FS
Analysis of current and future computer networks with emphasis on the OSI model. Local and wide area networks. TCP/IP, SNA, token ring, ethernet and other common networks will be covered. Protocol and interfaces within and across networks including the OSI layers, routers, bridges and gateway. P, 285, Math 381 or Stat 341.

CSc 476-576 Computer Graphics 3(3,0) F
Principles of computer graphics. A study of the algorithms used to generate raster and vector graphics. P, 285, Math 215 and 224.

CSc 493-593 Special Topics in Computer Science 1-3
Individualized problems determined by mutual agreement between instructor and student. Programming language optional. P, consent of department head.

Graduate Courses

CSc 630 Principles of Data Base System Design 3(3,0) FS
P, 484.

CSc 643 System Analysis and Design 3(3,0)
P, 325 or permission of instructor.

CSc 700-701 Seminar 0-1
P, permission of instructor.

CSc 705 Design and Analysis of Computer Algorithms 3(3,0)
P, 285.

CSc 710 Structure and Design of Programming Languages 3(3,0)
P, 290.

CSc 720 Theory of Computation 3(3,0)
P, 328.

CSc 740 Management Information Systems 3(3,0) FS
P, 325.

CSc 750 Recent Advances in Parallel Processing 3(3,0)
P, 705.

CSc 770 Software Engineering Management 3(3,0)
P, 470 or permission of instructor.

CSc 790 Thesis 1-7

CSc 791 Thesis Sustaining 0

CSc 792 Research Report/Design Paper 2

CSc 793 Special Topics in Computer Science 1-3

CSc 794 Special Problems in Computer Science 1-3 (max 6)

CSc 795 Computer Science Research or Design Paper Sustaining 1

CSc 797 Research 1-9 Repeatable P/F

CScA (Computer Science Applications)

The following courses, which all carry the CScA prefix, can be applied to the Certificate Program in Microcomputer Applications offered through the Capital University Center.

CScA 100 Keyboarding/Introduction to Computers 1-3 FSSu
An introductory course emphasizing the development of basic keyboarding skills. Course content includes experience in building keyboarding skills, computer terms, functions of the different keys, entering and printing material, and introduction to several types of software programs.

CScA 120 Introduction to Microsoft Windows 1(1,0) FSSu
Basic information needed for effective computer use is presented. Course content includes: working with menus, directories and subdirectories, creating, naming, deleting and batch files. Techniques for working with the hard disk are included. P, 100 or permission of instructor.

CScA 142 Introduction to Microcomputer Software Applications 3(3,0) FSSu
Latest state-of-the-art software packages to introduce word processing in order to illustrate the use of the computer for writing letters, memos, reports, etc.; the use of modern spreadsheet for bookkeeping purposes and an introduction to the concept of a database management software package with business applications in mind. P, 100, 120, or permission of instructor.

CScA 242 Word Processing Applications 2(2,0) FSSu
An in-depth study of a word processing software package such as DisplayWrite, WordStar, WordPerfect, etc., will be presented. Microcomputers will be utilized. P, 100, 120, 142, or permission of instructor.

CScA 243 Spreadsheet Applications 3(3,0) FSSu
An explanation of graphic capabilities, the spreadsheet commands and the macro command language. The course includes an overall look at worksheet organization, dates and some frequently used functions. P, 100, 120, 142, or permission of instructor.

CScA 244 Database Applications 3(3,0) FSSu
A presentation of information necessary to design an application, create a structure and build a database. Topics include: global alterations and deletions, labels and reports, statistics commands and memory variables, indexing, searching, automation, writing menus, screen formatting and relating databases. P, 100, 120, 142, or permission of instructor.

CScA 263 Advanced Topics in Microcomputer Applications 1-3 FSSu
Courses on such topics as desktop publishing, networking, and advanced software applications in word processing, database, spreadsheet and graphics, or programming microcomputers. Microcomputers will be used. P, permission of instructor.

CScA 264 Integrated Software 3(3,0) FSSu
A tightly integrated software program that offers a word processor, a database manager, data communications and a spreadsheet with charting. P, 100, 120, 142, or permission of instructor.

CScA 265 Artificial Intelligence Integrated Software Packages 3(3,0) FSSu
A data filing program that combines word processing, report generation, and artificial intelligence in a tightly integrated package. Content includes terminology, structures, design concepts, and automation. P, 100, 120, 142, or permission of instructor.

Danc (Dance Education)

Undergraduate Courses

Danc 130 Dance Fundamentals 1(0,2) FS
Basic skills course required of all physical education majors. Includes analysis and skill development of round, folk, square and social dances, traditional and contemporary. P, sophomore standing. Professional Skills for Majors course.

Danc 240 Multicultural Dance Activities 1(0,2) S
Folk and square dances from around the world, including cultural background, costumes, skill differences for elementary, middle and high school, or adults. P, sophomore standing.

Danc 241 Creative Movement for Children 2(1,2) F
Theory and laboratory class which studies how creative movement activities meet special needs of children. Emphasis is on a problem-solving approach. Consideration is given to developmental stages of children, basic elements of dance, creative movement, games, rhythms and manipulatives, plus teaching methods, structuring and presenting lessons. P, sophomore standing.

Danc 420 Techniques of Teaching Dance 2(2,0) S (even years)
Theory and practice of teaching the various dance forms: social, square, folk, modern, rhythmic games, creative dance for children. Experience in lesson planning. Unit and general curriculum requirements K-12. P, 130, 240.

Danc 492 Special Problems in Dance 1-3
Independent studies and/or research activities related to Dance. P, consent.

Danc 493 Topics in Dance 1-5

DCom (Communication Disorders)

Undergraduate Courses

DCom 131 Introduction to Communication Disorders 3(3,0) F (Even years) S
A study of the basic processes of speech, language, and hearing, and the major speech, language and hearing disorders.

DCom 200 Observation of Clinical Practicum 1 S
Supervised observation of evaluation and management procedures of speech, language, and hearing disorders.

DCom 212 Language Development 3(3,0) S
Emphasis on the acquisition and development of language, verbal and non-verbal, as children learn to communicate effectively by selecting the most appropriate communication strategies.

DCom 310 Phonological & Articulation Disorders 3(3,0) F
The nature, etiology, assessment, and remediation of disorders of phonology/articulation. P, 131, consent.

DCom 312 Language Disorders 3(3,0) F
The nature, etiology, and clinical management of language disorders. P, 212, consent.

DCom 321 Audiology 4(4,0) S (Even years)
The study of hearing and hearing disorders. Administering and interpreting audiological tests. P, consent.

DCom 330 Clinical Procedures of Speech—Language Pathology 3(3,0) F (Odd years)
Management procedures utilized by the speech-language pathologist for operating a speech/language/hearing program. P, 131, consent.

DCom 336 Diagnostic Methods in Communication Disorders 3(3,0) S (Odd years)
Evaluation/assessment tools used for speech and language disorders. P, 131, consent.

DCom 341 Clinical Practicum in Speech—Language Pathology 3 FS
May be repeated for total of 9 credits. P, consent.

DCom 414 Voice Disorders 3 F (Even years)
The study of voice and its disorders; their symptomology, etiology, assessment and clinical management.

DCom 441 Clinical Practicum in Audiology 1-2 FS
May be repeated for a total of 2 credits. P, consent.

DCom 492 Special Problems 1-2 FSSu
May be repeated to a total of 6 credits. P, consent.

DCom 493 Topics in Communication Disorders 1-5

DS (Dairy Science)

Undergraduate Courses

DS 130 Introduction to Dairy Science 3(2,2) FS
Essentials of successful dairy farm operation, production testing, feeding, and management of dairy herd. Composition of milk; testing of milk for milk fat, milk solids and quality; and an examination of nutritive value of dairy products.

DS 202 Dairy Products Judging 1(0,3) S
Quality of milk, cheddar, cheese, ice cream, and cottage cheese.

DS 212 Dairy Cattle Evaluation 2(0,4) S
Fundamental aspects of evaluation of dairy cattle for type; type classification of dairy cattle.

DS 221 Technical Control of Dairy Products I 3(1,4) F
Fundamental properties of milk and its products as they affect testing. Common physical and chemical intake and laboratory tests for procurement and grading milk. Compositional tests for control of dairy products during processing. P, 130, Chem 106.

DS 231 Dairy Foods 3(3,0) F
Survey of the dairy processing industry. Principles of processing and manufacturing dairy foods including quality standards and nutritive quality. For non-dairy manufacturing majors only.

DS 301 Dairy Microbiology 3(2,3) S (odd years)
Quality control problems during the production and processing of fluid milk for human use, including role of regulatory agencies and quality standards. P, Micr 231.

DS 311 Dairy Cattle Judging 1(0,2) F
Judging major breeds of dairy cattle. Type classification. May include participation in regional dairy cattle or national collegiate cattle judging contests. Maximum of two credits. P, 212.

DS 321 Dairy Product Processing I 5(4,3) F (odd years)
Principles and practices in assembling, receiving, processing, and packaging milk and cream for beverage use; cultured milk and cream, frozen milk and cream; concentrated milks; and ice cream. Sanitation procedures. P, 130, 221 and Micr 231 desirable.

DS 322 Dairy Product Processing II 5(4,3) S (even years)
Processing or manufacturing of relatively nonperishable dairy products such as butter, cheese, dried milk, casein, lactose, and anhydrous milkfat. P, 321 desirable.

DS 401 Advanced Dairy Products Judging 1(0,3) F
Quality evaluation of dairy products. Usually includes participation in regional and national collegiate dairy products contest. P, 202 and written consent. Maximum of 2 credits.

DS 411 Dairy Breeds & Breeding 2(2,0) S (even years)
Origin, genetics, characteristics, and development of major breeds of dairy cattle. Breeding and selection based on pedigrees, production records, type classification, and sire analysis. P, 130.

DS 412 Dairy Farm Management 3(3,0) S (odd years)
Dairy herd management practices, production testing, labor requirements, buildings and equipment maintenance, crop systems, merchandising cattle and milk. Dairy farm capital, budgets, and credits; and factors affecting economic returns of dairy farming. P, 130 or consent.

DS 421 Dairy Plant Management 3(3,0) F (even years)
General costs, buildings, equipment, merchandising, personnel, other management factors of dairy processing plants. P, junior standing or consent.

DS 422 Technical Control of Dairy Products II 4(3,3) S
Physical and chemical properties of milk constituents and their effect on processing, testing, and nutritive value of milk and its products. Intentional or accidental additives, their effect and significance. Laboratory tests for process control or legal compliance. P, 221, Chem 120 or equivalent.

DS 432 Dairy Cattle Feeding 3(3,0) F (even years)
Practical considerations involved in feeding dairy cattle. P, AS 233 and AS 323 desired.

DS 490 Dairy Seminar 1(1,0) F
Review of scientific literature and other items of special interest to dairy majors. P, senior standing.

DS 492 Special Problems in Dairy Science 1-3 (As arranged) FSSu
Investigation of problems in dairy production or dairy manufacturing. Results to be submitted as a technical paper. P, Junior or Senior standing plus consent. Maximum of 3 cr. for B.S. degree.

DS 493 Special Topics 1-4
Selected topics to provide specific knowledge and technical experience in current areas of research and development. Topics may include new processing, breeding or nutrition techniques or product development. P, consent and junior or senior standing.

DS 494-495-496 Cooperative Education/Internship/Field Experience 3-12 FSSu
On the job experience to supplement knowledge gained in the classroom. A written job description and work plan will be required. Emphasis will be on total educational value of the experience for the student. Written reports will be submitted to a designated departmental faculty member who will serve as major adviser during the time of the practicum. P, permission of department program coordinator.

Dual Numbered Courses

DS 413-513 Physiology of Lactation 3(3,0) S (odd years)
Anatomy, physiology, and biochemistry of mammary glands. Factors affecting quality and quantity of milk. P, Vet 223 or equivalent.

Graduate Courses

DS 702 Seminar 1(1,0) S

DS 711 Ruminology 3(3,0) F (odd years)

DS 722 Advanced Dairy Microbiology 3(2,3) S (even years)

DS 731 Laboratory Techniques in Dairy Science 2(0,6) F (even years)

DS 780 Dairy Science Problems 1-4 FSSu

DS 790 M.S. Thesis in Dairy Science (as arranged)

DS 792 Thesis Sustaining 0

DS 890 Ph.D. Dissertation in Dairy Science (as arranged)

DS 892 Dissertation Sustaining 0

Econ (Economics)

Undergraduate Courses

Econ 201 Macroeconomics Principles 3(3,0) FS
U.S. economy. Money and banking. Federal Reserve policy, national income, government spending, taxation, business fluctuations, and levels of employment and prices. Supply and demand, business organization, world trade, economic growth, and economic systems. P, Math 102 or equivalent.

Econ 202 Microeconomics Principles 3(3,0) FS
Price as it allocates resources and distributes income. Theory of firm, supply and demand, economic efficiency, types of competition in markets, marginal productivity and wage determination; public interest in industry, agriculture, labor and individual welfare. P, Math 102 or equivalent.

Econ 301 Intermediate Microeconomics 3(3,0) FS
Economic analysis. Pricing process under varying degrees of competitive conditions and role of price in allocation of resources. Income distribution. P, 202, Math 222 or equivalent.

Econ 302 Intermediate Macroeconomics 3(3,0) FS
Determinants of national income, employment and price level in free enterprise system. Aggregate consumption, investment and government spending. Methods of maintaining a high level of employment and income and related aspects of economic policy. P, 201, 202, Math 102 or equivalent.

Econ 330 Money & Banking 3(3,0) FS
Money, banking, and credit; financial institutions, their significant functions and policies. P, 201 and 202, sophomore standing.

Econ 370 Marketing 3(3,0) FS
Marketing; market organization and cooperative marketing functions; pricing; efficiency, and role and management of marketing activities. P, 202.

Econ 405 Comparative Economic Systems 3(3,0) FS
Philosophy, organization, and operation of various economic systems – Capitalism, Socialism, Communism, Fascism, etc. Impact of various levels of industrial and agricultural development on the structure of selected economic systems. P, 201 plus 9 hours of Hist, Econ, PolS, and/or Soc.

Econ 423 Statistics II 3(3,0) F
Probability, point and interval estimation, tests of hypotheses, multiple regression and correlation, chi-square analysis, and analysis of variance. P, Stat 341, Math 222 or equivalent.

Econ 428 Mathematical Economics 3(3,0) F
Mathematical methods in introductory calculus and linear algebra. Applications to economic analysis. Static and dynamic partial and general equilibrium models, production functions, activity analysis, distribution, cycles, growth, mathematical programming, and model building. P, 301, 302.

Econ 433 Public Finance 3(3,0) FS
Public revenues and expenditures. Attaining equitable distribution of burdens and benefits. P, 201, 301.

Econ 453 Risk Management — Personal & Business 3(3,0)
(Offered on demand) Protection against or adaptation to risk and uncertainty. Principles and practices of fire, casualty, surety and life insurance and other risk management techniques.

Econ 467 Labor, Law & Econ 3(3,0) S
History and development of the U.S. labor movement; the labor market in a market economy from firm's and union's viewpoint; collective bargaining; public policy toward collective bargaining. P, 201 or 202, junior standing.

Econ 476 Marketing Research 3(3,0)
(Offered on demand) Marketing problems confronting agribusinesses and businesses. Descriptive and analytical techniques in a research methods approach. Marketing research techniques. P, 370, Stat 341.

Econ 492 Economics Problems 1-3 FS
Individual study. May involve case studies, special reports, assigned readings, analysis of data and report preparation. Maximum of 4 hours. P, consent.

Econ 493 Special Topics 1-4
Organized by an instructor in consultation with his or her department head and a group of students. A medium through which a specific topic can be pursued. Normally experimental and may be a "one shot deal" for a particular semester and the unique group of students. Maximum: 4 credit hours per semester, 7 credit hours per degree.

Econ 494-495-496 Cooperative Education/Internship/ Field Experience 1-3 FSSu
On-the-job experience to supplement knowledge gained in the classroom. Variety and educational value are emphasized. Job description by employer and a written and/or oral report are required. Approval of the experience by internship adviser is required before the activity begins. The student must be registered for credit during the entire internship period. May be repeated to a maximum of 6 credits.

Dual Numbered Courses

Econ 404-504 History of Economic Thought 3(3,0) F
The historical development of economic ideas. Various schools of economic thought and the economic environment which produced them. P, 301, 302 or consent.

Econ 420-520 Economics of the Public Sector 3(3,0)
Governmental operations, policies, and revenues as related to employment, productivity and economic welfare. Alternatives that would affect social services, education, commerce and trade, fiscal policies, and quality of life. P, 201 or consent.

Econ 431-531 Managerial Economics 3(3,0) S
Applications of microeconomic theory, statistics and other quantitative methods to analysis and solution of decision making problems confronted by managers of agribusiness, commercial and manufacturing enterprises. Topics include economic analysis of demand, production, cost, market structure, government regulation, risk, and capital budgeting. P, 301, Math 222, Stat 341, or equivalent.

Econ 440-540 Economics of the International Sector 3(3,0)
International flow of trade and balance of payments. Monetary and fiscal policies. Trade controls and their effect upon the agricultural and domestic economies. Significant current developments in trade and finance. P, 201, 202, 330 or consent.

Econ 450-550 Industrial Organization 3(3,0)
The elements involved in market power and how they function. How the structure of institutions and conduct of sellers and buyers affect economic performance. P, 301 and 302 or consent.

Econ 460-560 Economic Development 3(3,0)
Developing and developed national economies. Factors impacting economic development. Role of public policies in development. Agricultural and rural development issues emphasized. P, 201, 202, or consent.

Econ 472-572 Resource and Environmental Economics 3(3,0)
Allocation, conservation, and development of natural resources. Environmental economics, water and land use, and methods of evaluating projects and programs. P, 202.

Graduate Courses

Econ 601 Economic Study in Industrial Management 3(3,0) F
Econ 610 Financial Management 3(3,0)
Econ 690 Special Problems 1-3 FS
Econ 701 Research Methods 2(2,0)S
Econ 703 Advanced Macroeconomics 3(3,0)S
Econ 704 Advanced Microeconomics 3(3,0)F
Econ 705 Econometrics 3(3,0)S
Econ 724 Advanced Mathematical Economics 3(3,0)F
Econ 753 Advanced Market Research 3(3,0)
Econ 760 Operations Management 3(3,0)
Econ 782 Personnel and Labor Relations 3(3,0)
Econ 790 M.S. Thesis (as arranged)
Econ 791 Thesis Sustaining 0
Econ 792 Research Paper 2
Econ 793 Graduate Special Topics 1-4

EdAd (Educational Administration)

Graduate Courses

EdAd 700 Public School Administration 3(3,0) FSu
EdAd 710 Elementary School Administration 3(3,0) Su
EdAd 711 Secondary School Administration 3(3,0) SSu
EdAd 715 Supervision 3(3,0) SSu
EdAd 730 School Finance 2,(2,0)
EdAd 732 School Buildings & Grounds 2(2,0)
EdAd 735 School Law 3(3,0) SSu
EdAd 781 Workshop 1-3 FSSu
EdAd 782 Seminar 1-3(1-3,0) FSSu
EdAd 789 Internship in Ed 1-6(0,1-6) FS
EdAd 792 Research Problems in Ed Administration 2(2,0) FSSu
EdAd 793 Problems 1-3 FSSu
EdAd 795 Special Topics 1-3

EdER (Education Evaluation and Research)

Dual Numbered Courses

EdER 490-590 Special Topics 1-3 FSSu
Advanced courses will be taught upon sufficient demand covering such topics as Least Restrictive Environment, computers in education, observation techniques for classroom evaluation.

Graduate Courses

EdER 691 Problems 1-3
EdER 711 Educational Assessment 3(3,0) SSu
EdER 761 Research and Writing 3(3,0) FSSu

EdFn (Education Foundations)

Undergraduate Courses

EdFn 143 Mastering Lifetime Learning Skills 2(2,0) FS
Learn, develop and apply lifetime learning skills relevant to the individual's collegiate/professional career and/or personal life.

EdFn 338 Foundations of American Education 2(2,0) FS
Historical, philosophical, psychological, and sociological backgrounds for education in America. Aims and functions of American education. Organization and administration on federal, state, and local levels in America. Teaching as a profession. An overview of education in American Society for classroom teachers. Education elective.

EdFn 365 Integrating Computers into the Curriculum 2(2,0) FSSu
An overview of the application of computer technology in the classroom. Topics include computer literacy, educational software, microcomputer applications in special education, and an introduction to word processing and programming (BASIC).

EdFn 375 Human Relations 3
This Human Relations course will use four content strands focusing first on characteristics, contributions, and strengths of a pluralistic society; second on various cultural perspectives and specific information about cultures; third on the dehumanizing impact of biases and negative stereotypes; and fourth on the human relations approach to teaching.

Dual Numbered Courses

EdFn 427-527 Middle School: Affective Applications 2(2,0) SSu
Group processes and issues in affective education at the middle school/junior high level. Topics for study are group processes, interdisciplinary team planning, cooperative learning, student advisory programs, self-esteem building, and student/teacher relationships. P, admitted to teacher education program, junior standing, an adolescent psychology/development course of 3 credits.

EdFn 428-528 Middle School Curriculum and Instruction 3(3,0) SSu
The essential methods and materials of judging high/middle school instruction. (Methods topics included are the middle school concept, team teaching, mastery learning, exploratories, classroom management, and grouping strategies.) Representative curriculum materials, appropriate to the transescent learner, are examined and utilized in multi-disciplinary team planning projects. P, admitted to teacher education program, junior standing, adolescent developmental/psychology course of 3 credits.

EdFn 451-551 Curriculum and Instruction in Gifted Education 3(3,0) Su

Examines curriculum methods and materials for gifted and talented children and youth. Students will be exposed to various programming models, IEP development, differentiated curricular concepts, as well as skills in self directed learning.

EdFn 490-590 Special Topics 1-3

Advanced study covering such topics as Introduction to Multi-Cultural Education, Introduction to Law Related Education, and Interpretation and Implementation of Public Law 94-142.

Graduate Courses

EdFn 605 Computers in the Classroom 2(2,0) Su

EdFn 648 Learning Styles 3(3,0) (alternate years)

EdFn 700 Working with Exceptional Children 3(3,0) S

EdFn 720 History and Philosophy of Education 3(3,0) FSu

EdFn 725 Education in a Pluralistic Society 3(3,0) SSu

EdFn 727 Group Processes 3(3,0) SSu

EdFn 744 Research on School Improvement 3(3,0) FSu

EdFn 745 Effective Teaching: Theory Into Practice 3(3,0) SSu

EdFn 751 Teaching Reading Across Disciplines 3(3,0) (alternate years)

EdFn 752 Foundations of Reading 3

EdFn 753 Diagnosis and Remediation of Reading Problems 3 Su

EdFn 754 Clinical Practice in Reading 2

Written permission of Department Head required.

EdFn 782 Seminar 1-3

EdFn 789 Internship in Gifted Education 1-6

EE (Electrical Engineering)

Undergraduate Courses

EE 220 Circuits I 3(3,0)

Ohm's law, Kirchhoff's laws, mesh and nodal equations, source transformations, superposition, RLC circuits, and introduction of PSPICE and MATLAB. P, Math 224, Phys 211.

EE 221 Circuits II 3(3,0)

Sinusoidal analysis including the sinusoidal forcing function, phasor concepts, sinusoidal steady-state response, average power, root-mean-square value, and polyphase power; complex frequency and frequency response; two-port networks. Use of PSPICE and MATLAB. P, 220, 222 (both with C or better).

EE 222 Circuits I Laboratory 1(0,3)

This course introduces the student to laboratory practices and closely follows the lecture topics in EE 220 Circuits I. P, concurrent with 220.

EE 223 Circuits II Laboratory 1(0,3)

This laboratory course enhances understanding of the lecture topics in EE 221 Circuits II. P, concurrent with 221.

EE 265 Electric Materials 2(2,0)

The science and engineering of materials, emphasizing electrical and magnetic properties and applications. P, Chem 114.

EE 305-306 Basic Electrical Engineering I & II 3(2,2) & 3(2,3)

Laws of electric and magnetic fields and circuits, measurements of electric and magnetic properties, electric circuit analysis. Resonance and coupled circuits. Characteristics of equipment used in applying electric power to mechanical drives. For non-EE students. P, Math 225, Phys 213.

EE 310 Probabilistic Methods in Electrical Engineering 3(3,0)

Basic probability and random variables. Applications to system reliability and effect of tolerance specifications. Description of engineering systems and problems using nondeterministic modeling. P, 316 or concurrent with.

EE 316 Signals and Systems I 3(3,0)

Description of deterministic signals through the use of Fourier Series, Fourier, Laplace and Z-Transforms. Systems description treated by differential and difference equations including transform methods. Computations of system response to both continuous and discrete inputs. P, 221.

EE 317 Signals and Systems II 3(3,0)

Continuation of 316, emphasizing discrete time signals and systems and digital signal processing. Extensive use of MATLAB. P, 316.

EE 320 Electronics I 3(3,0)

Analysis of electronic devices and circuits. Introduction to electronic circuit design. P, 220, 221 (both with C or better).

EE 321 Electronics II 3(3,0)

Design and analysis concepts for linear and digital electronic circuits. Emphasis on integrated circuit design. P, 320.

EE 322 Electronics Laboratory I 1(0,3)

Experimental design and analysis of basic electronic circuits. P, 223, concurrent with 320.

EE 323 Electronics Laboratory II 1(0,3)

Experimental design and analysis of electronic circuits. P, concurrent with 321.

EE 345 Digital Systems 3(3,0)

The fundamental concepts of analysis and design of digital circuits including combinational and sequential logic design using TTL, CMOS, PLD's and software tools. P, 320.

EE 346 Digital Systems Laboratory 1(0,3)

Laboratory topics which enhance the design concepts of the lecture course, EE 345. P, concurrent with 345.

EE 360 Electronic Devices 3(3,0)

Introduction to microelectronic devices, semiconductor and junction theory, semiconductor devices, other solid-state devices. P, 265, 320 or concurrent with 320.

EE 385 Electromagnetics 3(3,0)

Experimental results of Coulomb, Ampere, and Farady, classical field theory. Forces, potentials, energy storage and dissipation are all treated for static fields. Faraday's induction law, Maxwell's displacement current, and a complete description of the time-varying fields given by Maxwell's equations. P, 221, Math 225.

EE 386 Electromagnetics Laboratory 1(0,3)

Laboratory topics which enhance the concepts presented in the lecture course EE 385. P, concurrent with 385.

EE 415 Linear Control Systems 3(3,0)

Feedback control systems by operational methods. Stability criteria and compensation design. State variables, sampled data systems. P, 316, Math 225.

EE 420 Electronics III 3(3,0)

Selected topics in the design of analog and digital electronics. Provides increased understanding of theory, simulation, and application of semiconductor devices. P, 321, 323, 345.

EE 421 Electronics Laboratory III 1(0,3)

Experimental design and analysis of analog and digital electronic circuits. P, concurrent with 420.

EE 422 Engineering Economy 2(2,0) FS

Economic aspects of engineering, annual cost-percent worth calculations, decisions among alternatives. P, senior standing.

EE 430 Energy Conversion 3(3,0)

Basic engineering laws and concepts in analysis of energy-conversion and energy transfer systems and devices. Includes AC and DC machines and analysis of response of machines to operating conditions. P, 385.

EE 431 Power Systems 3(3,0)

Basic parameters of transmission lines. Representation of power systems, network equations and solutions, load-flow studies and load-flow control, and symmetrical faults on synchronous machines. P, concurrent with 430, or consent.

EE 432 Advanced Power Systems 3(3,0)

Symmetrical components, protective devices, economic generation, and stability analysis of power systems. P, 431 or consent.

EE 434 Energy Laboratory 1(0,3)
Experimental work with energy transfer and energy conversion devices. P, concurrent with 430.

EE 435 Seminar in Power Systems 1(1,0)
Guest speakers, field trips, panel discussions and selected films on pertinent electric power and energy topics. Senior standing or consent.

EE 447 Microprocessor Systems 3(3,0)
Hardware concepts, organization and design of microcomputer systems, including single-chip microcomputers. Principles of microcomputer programming and operation using machine and assembly language. P, 345 or consent of instructor.

EE 448 Microprocessor Systems Laboratory 1(0,3)
Laboratory topics which enhance the design concepts presented in the lecture course 447. P, concurrent with 447.

EE 464 Senior Design I 2(1,3)
Capstone senior design project. Students write specifications for a design project and complete the initial design. Oral and written reports are required. P, senior standing.

EE 465 Senior Design II 2(1,3)
Capstone senior design project. Students build and test the design specified in 464. Final oral presentation and written reports required. P, 464.

EE 470 Communications Engineering 3(3,0)
Modulation and detection methods including circuit analysis and design for digital and analog communication systems are presented. P, 316, 320.

EE 492 Special Electrical Problems 1-3
Problems in electrical engineering of mutual interest to students and faculty. P, consent.

EE 494 Cooperative Education 1-6 FSSu
Planned supervised professional experience related to electrical engineering which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator, senior standing.

Dual Numbered Courses

EE 410-510 Passive and Active Filters 3(3,0) or 3(2,3)
The analysis and design of passive and active filters for electrical signals. Topics include Butterworth, Chebyshev, Bessel-Thompson response characteristics, biquad and Sallen-Key circuits, frequency and impedance transformations, sensitivity, gyrators, negative impedance elements, leap-frog filters and switched capacitor filters. P, 321 or consent.

EE 424-524 RF Electronics 3(3,0)
Performance analysis and design methods for the functional blocks of radio frequency systems operating below the microwave bands. P, 321, 316.

EE 433-533 Computer Analysis of Power Systems 3(3,0)
Concepts used in formulating load flow and fault study problems for computer solution. P, 430, FORTRAN, or consent.

EE 450-550 Biomedical Signal Processing 3(3,0)
Methods and techniques for the analysis and processing of physiological signals. Off-line and real-time digital signal processing using time and frequency domain techniques. Emphasis on signal processing of electrocardiographic signals. P, 317.

EE 452-552 Biomedical Systems Analysis 3(3,0)
Engineering concepts applied to the study of biological systems. Modeling of representative biological systems and analysis using techniques developed in the engineering disciplines. P, 316 or equivalent.

EE 454-554 Biomedical Instrumentation & Electrical Safety 3(3,0)
The design of electronic instrumentation for physiological applications. Emphasis on modeling and design of biopotential electrode/amplifier systems, physiological measurement techniques, therapeutic and prosthetic devices, and electrical safety in health care facilities. P, 321.

EE 471-571 Optical Fiber Communications 3(3,0)
Theory and application of optical fibers and communication systems. Topics include fundamentals of optical fiber waveguides, electroluminescent sources, single-mode and multimode, propagation, coupling consideration, photo-detectors, signal degradation, fabrication and cabling, and transmission linked analysis. P, 316 or consent.

EE 475-575 Digital Image Processing 3(3,0)
Introduction to the fundamentals of digital image processing. Topics include image formation, transforms, enhancement, restoration, compression, and analysis. P, 317 or consent.

EE 493-593 Special Topics in EE 1-3
Current topics in selected areas of engineering.

Graduate Courses

EE 515 Microprocessor Controls 3(3,0)
EE 547 Advanced Microprocessor System Design 3(3,0)
EE 570 Digital Communication Systems 3(3,0)
EE 615 Linear Systems Theory 3(3,0)
EE 620 Advanced Digital Hardware 3(3,0)
EE 665 Electrical Properties of Materials 3(3,0)
EE 670 Information & Signal Processing 3(3,0)
EE 685 Microwave Theory 3(3,0)
EE 690 Special Electrical Problems 1-3
P, consent.
EE 693 Special Topics in Electrical Engineering 1-3
P, consent.
EE 700-701 Seminar 0-1
EE 790 Thesis in Electrical Engineering 1-7
EE 791 Thesis Sustaining 0
EE 792 Engineering Research or Design Paper 2(2,0) FSSu
EE 793 Special Topics in Electrical Engineering 1-3
EE 795 Engineering Research or Design Paper Sustaining 1
EE 797 Research 1-9 Repeatable P/F

EG (Engineering Graphics)

Undergraduate Courses

EG 121 Engineering Design Graphics I 1(0,3) FS
Analysis of projection. Methods of systematic interpretation and representation of two- and three-dimensional shapes. Development of instrument drawing and sketching as a means of design. P, Math 102.

EG 122 Engineering Design Graphics II 1(0,3) FS
Continuation of EG 121. Functional scales. Graphical conventions and design applications as expressed through free hand technical sketching and instrument drawing. P, 121.

EG 123 Computer Aided Design and Graphics 1(0,3) FS
The major emphasis is two-dimensional drafting skills utilizing microcomputer software. All work will require a "hands-on" approach. P, 121 or equivalent.

EG 223 Architectural Design Graphics I 3(1,6) S
Frame building construction. Practice in modern drafting procedures. Opportunity to design a building. P, 121 or consent.

EG 231 Technical Sketching 1(0,3) S
Engineering interpretation, expression and design through free hand sketching of orthographic and pictorial representations related to intricate geometric shapes, assemblies, exploded views, diagrams. P, 121.

EG 320 Advanced Autocad 2(1,3) FS
Major course emphasis will be on creating 3-dimentional wireframe, surface and solid models using AUTOCAD software. Attributes, attribute extraction, slideshow and script files, custom menus and mass properties will also be covered. P, 123.

ElEd (Elementary Education)

Undergraduate Courses

See Human Development, Consumer and Family Sciences
Mus 351 Music Ed I: Elementary Concepts (See Music Section)

Dual Numbered Courses

ElEd 481-581 Workshop 1-3 FSSu
Special areas in elementary education are comprehensively explored in an intensive time framework. Designed to increase specific skills and understanding in a current area.

Graduate Courses

ElEd 773 Elementary School Curriculum 3(3,0) Su

EM (Engineering Mechanics)

Undergraduate Courses

EM 221 Statics 3(3,0) FS
Vector algebra, forces, moments, couples; principles of statics, resultant and equilibrium of force systems, free body diagrams, centroids; analysis of statically determinate states of equilibrium. P, Math 123, Phys 211 or concurrently.

EM 222 Dynamics 3(3,0) FS
Vectorial kinematics and kinetics; absolute and relative motion, force-mass-acceleration relations, potential and kinetic energy, work, and power, impulse, momentum, conservation of energy and momentum. Application to particles, particle systems and rigid bodies. P, 221.

EM 223 Engineering Mechanics 3(3,0) FS
Basics of statics and dynamics. P, Math 224 and Phys 211 or consent.

EM 321 Mechanics of Materials 3(3,0) FS
Two dimensional analysis of stress and strain, principal stresses. Mohr's circle; stresses in members subjected to centric, torsional and flexural loadings; deflections of beams. P, 221.

EM 331 Fluid Mechanics 3(3,0) FS
Fluid properties. Fluid statics. Conservation of mass, energy and momentum. Bernoulli's equation. Flow measurements. Dimensional analysis. Viscosity, introduction to Boundary layer. Laminar, turbulent incompressible flows. Drag, lift. Introduction to compressible flow. P, 222, ME 311 with "C" or better (for ME students only), Math 321.

Dual Numbered Courses

EM 421-521 Introduction to Mechanics of a Continuous Medium 3(3,0) (On sufficient demand)
General theory of a continuous medium. Kinematics of deformation and flow; stress tensors; conservation of mass, momentum and energy; invariance requirements; constitutive equations for solids and fluids; applications for special problems. P, 331, Math 331.

EM 422-522 Theory of Elasticity 3(3,0)
Analysis of stress and strain; equilibrium and compatibility equations; Hooke's law; fundamental problems in the theory of elasticity; plane-stress and plane-strain problems of the narrow beam, rotating discs and a plate with a circular hole. P, 321, Math 331 or equivalent.

EM 423-523 Theory of Plasticity 3(3,0)
Analysis of stress and strain; plastic behavior of materials; basic laws of plastic flow; applications to bending of beams, torsion of bars and thick-walled cylinders; slip line theory and its application to extrusion problems; limit analysis theorems and their applications to structural problems. P, 422-522 or consent.

Graduate Courses

EM 624 Theory of Plates & Shells 3(3,0)
EM 631 Advanced Fluid Mechanics 3(3,0)
EM 641 Finite Element Analysis 3(3,0) (alternate years)

Engl (English)

Undergraduate Courses

Engl 003 English as a Second Language: Grammar Review and Intermediate Composition 3(3,0) FS
Conversation, listening and reading comprehension, vocabulary and idioms, grammar review and intermediate composition.

Engl 013 English as a Second Language: More Complex Structural Patterns and Advanced Composition 3(3,0) FS
Conversation, listening and reading comprehension, vocabulary and idioms, more complex structural patterns, and advanced composition. P, 003 or placement.

Engl 023 English as a Second Language: Listening and Reading Comprehension 3(3,0) FS
Reading and listening comprehension, vocabulary building, pronunciation, and formal and informal oral English. A major focus will be written and oral responses to written and spoken sources. P, placement or permission of the instructor. May be required instead of or in addition to other English courses.

Engl 101 Freshman Composition 3(3,0) FSSu
Instruction in reading critically and in writing clearly, correctly, and persuasively. In particular, students will study principles of grammar, rhetoric, and logic in order to analyze and compose text effectively. Includes work on personal, expository, and research essays.

Engl 210 Introduction to Literature 3(3,0) FSSu
Readings in fiction, drama, and poetry to acquaint students with literature and aesthetic form.

Engl 211 World Literature I 3(3,0) F
Literary masterpieces of world literature in translation, from ancient times through the Renaissance.

Engl 212 World Literature II 3(3,0) S
Literary masterpieces of world literature in translation, from the Renaissance to the present.

Engl 221 English Literature I 3(3,0) F
English literature survey from Beowulf through the 18th century.

Engl 222 English Literature II 3(3,0) S
English literature survey from the early 19th century to the present.

Engl 241 American Literature I 3(3,0) F
American literature survey from colonial times through 1870.

Engl 242 American Literature II 3(3,0) S
American literature survey from 1870 to the present.

Engl 248 Women in Literature 3(3,0) (alternate years)
Study of literature by and about women. Course materials may range from early times to the present and may also include non-American literature. Accepted as credit for Women's Studies Minor.

Engl 250 Literature of Diverse Cultures 3(3,0) (alternate years)
Study of the literature of the world's peoples to appreciate ethnicity and cultural diversity. Course materials may range from early times to the present and may also include literature from Asia, Africa, South America, and Australia, as well as works from Native American, African American, Hispanic, Chicano, Jewish, Scandinavian, etc. sources. Accepted as humanities credit.

Engl 256 Literature of the American West 3(3,0) FS
Attention given to various attitudes toward the West expressed in literature, including American Indian literature. Accepted as credit for American Indian Studies Minor.

Engl 268 Literature: 3(3,0) FS
Introductory literature course focusing on **one** genre such as fiction, poetry, drama, etc. The genre will be identified each semester as, for example, "Literature: Fiction," or "Literature: Poetry," etc. May be repeated with different genre and content. Accepted as humanities credit.

Engl 301 Advanced Composition 3(3,0) FSSu
Advanced course in reading critically and in writing clearly, correctly, and persuasively. P, 101 and junior standing.

Engl 308 The Teaching of English 3(3,0) FS
Techniques, materials, and resources for teaching English language and literature to middle and secondary school students. Required of students in the English Education Option.

Engl 309 Literary Criticism 3(3,0) (alternate years)
The theory and practice of various critical approaches to literature.

Engl 310 Mythology & Literature 3(3,0) (alternate years)
Mythological backgrounds of literature and the ways literature itself contributes to the various mythologies that underlie our culture and shape the assumptions governing our values and behavior.

Engl 311 Literature of the Bible 3(3,0) (alternate years)
Structural analysis of Old and New Testament texts which are literary in form (i.e., lyric, dramatic, epic, and narrative) for their aesthetic and ethical meanings. Comparison and relation of Hebraic form to modern symbolic modes.

Engl 312 Juvenile Literature 3(3,0) S
A survey of the history of literature written for children and adolescents, and a consideration of the various types of juvenile literature.

Engl 330 Shakespeare 3(3,0) F
Representative comedies, tragedies, and histories of Shakespeare.

Engl 334 English Drama: 3(3,0) (alternate years)
Course content can be any period or type of English drama; the period or type will be identified each semester as, for example, "English Drama: Renaissance" or "English Drama: Contemporary," etc. May be repeated with different name and content.

Engl 335 English Novel: 3(3,0) (alternate years)
Course content can be any period or type of the English novel; the period or type will be identified each semester as, for example, "English Novel: Gothic" or "English Novel: Victorian," etc. May be repeated with different name and content.

Engl 350 Science Fiction Literature 3(3,0) (alternate years)
A survey of short stories and novels from the 19th century, the Golden Age of Pulps, social satire of the 1950's, the New Wave of the 1960's, and the speculative fabulation of the 1970's-90's. Authors included are Shelley, Wells, Heinlein, Gibson, and Dick.

Engl 351 American Indian Literature of the Past 3(3,0) F
Concentration on myths and legends of major language groups, particularly the Siouan. Accepted as credit for American Indian Studies Minor.

Engl 352 American Indian Literature of the Present 3(3,0) S
Twentieth-century autobiography, fiction, and poetry by Native American authors. Accepted as credit for American Indian Studies Minor.

Engl 356 American Poetry: 3(3,0) (alternate years)
Course content can be any period or type of American poetry; the period or type will be identified each semester as, for example, "American Poetry: Contemporary" or "American Poetry: Nature," etc. May be repeated with different name and content.

Engl 367 American Short Story: 3(3,0) (alternate years)
Course content can be any period or type of American short story; the period or type will be identified each semester as, for example, "American Short Story: Contemporary" or "American Short Story: Western," etc. May be repeated with different name and content.

Engl 368 American Novel: 3(3,0) (alternate years)
Course content can be any period or type of American novel; the period or type will be identified each semester as, for example, "American Novel: Contemporary" or "American Novel: Gothic," etc. May be repeated with different name and content.

Engl 379 Technical Communications 3(3,0) FSSu
Study of and practice in writing of a technical nature; expository writing will be stressed. P, 6 hours of composition (Except for Engineering Students).

Engl 383 Creative Writing: 3(3,0) FS
Writing of fiction, drama, biography, or poetry. P, 12 hours of English and Engl 301 or consent of instructor.

Engl 423 Old & Middle English Literature 3(3,0) (alternate years)
Emphasizing pre-Norman heroic and Christian literature, the work of Chaucer and his contemporaries, and folk literature such as the ballads.

Engl 424 English Renaissance Literature 3(3,0) (alternate years)
Major writers of the 16th and early 17th centuries excluding Shakespeare.

Engl 431 English 18th Century Literature 3(3,0) (alternate years)
Literature of the later 17th and 18th centuries (1660-1800), including major works and developments in literature and thought.

Engl 439 Modern English Literature to WWII 3(3,0) (alternate years)
English literature from 1900 to WWII.

Engl 459 American Literature Between the Wars 3(3,0) (alternate years)
American literature of the modernist movement from 1917 to 1945.

The following alternatives and options may be taken only after consultation with the Head of the English Department.

Engl 490 Seminar in English 1-3

Engl 492 Special Problems 1-4

Engl 493 Topics in English 1-5

Engl 495 Internship 1-12 FSSu

Dual Numbered Courses

Engl 422-522 Chaucer (3,0) (alternate years)
Major works of Chaucer, with some attention to his sources and his language.

Engl 427-527 Advanced Shakespeare 3(3,0) (alternate years)
Selected plays of Shakespeare and significant Shakespearean criticism.

Engl 428-528 Milton 3(3,0) (alternate years)
Selected works of Milton, particularly Paradise Lost.

Engl 432-532 English Romantic Literature 3(3,0) (alternate years)
English literature of the romantic movement (1789-1832).

Engl 436-536 English Victorian Literature 3(3,0) (alternate years)
English literature of the Victorian Period (1840-1900).

Engl 440-540 Contemporary English Literature 3(3,0) (alternate years)
English literature since WWII.

Engl 453-553 American Renaissance Literature 3(3,0) (alternate years)
American literature of the mid nineteenth-century, including the Transcendentalists and Romantics.

Engl 454-554 American Realist & Naturalist Literature 3(3,0) (alternate years)
American literature of the realist and naturalist movements of the late 19th and early 20th centuries.

Engl 460-560 Contemporary American Literature 3(3,0) (alternate years)
American literature since WWII.

Engl 485-585 Advanced Creative Writing 3(3,0) (alternate years)
A course allowing students with experience in creative writing to specialize in a particular genre (poetry, fiction, etc.). P, 383 or consent of instructor.

Graduate Courses

Engl 655 Studies in Minority Literature: 3(3,0) (alternate years)

Engl 705 Seminar in Teaching Composition 3(3,0)

Engl 706 Research Tools in the Humanities 3(3,0)

Engl 707 Speech/English/Drama for Teachers 1-3

Engl 710 Seminar in Rhetoric 3

Engl 724 Seminar in English Literature to 1660 3(3,0)

Engl 725 Seminar in English Literature since 1660 3(3,0)

Engl 728 Seminar in American Literature to 1900 3(3,0)

Engl 729 Seminar in American Literature since 1900 3(3,0)
Engl 742 Seminar in American Indian Literature 3(3,0)
Engl 784 Seminar in Literary Criticism 3(3,0)
Engl 790 Thesis 1-7 Pass/Fail
Engl 791 Thesis Sustaining 0 Pass/Fail
Engl 795 Independent Research & Study 1-3(1-3,0)
Engl 797 Special Topics in Composition & Literature 1-3(1-3,0)

EnvM (Environmental Management)

Undergraduate Courses

EnvM 275 Introduction to Environmental Science 3(3,0) F
Presents an introduction and review of the factors influencing the quantity, quality and distribution of resources within the environment, uses of the environment and relation to human population size and demographics, effects of natural and human disturbances on the environment and economic and political considerations for environmental management. P, Bio 101-103 or 151-153 and Chem 112.

EnvM 425 Biological Monitoring and Assessment 4(3,3) S
This course provides an introduction to concepts, techniques and applications of biological monitoring for environmental management. Topics include the historical development of biological monitoring, ecological endpoints and indicators, design of monitoring programs, analysis of monitoring data, development of criteria and narrative standards, field and laboratory techniques useful at different levels of biological organization and a field case study exercise. P, Bio 311, PS 213 and 243, and Chem 120.

EPsy (Educational Psychology)

Undergraduate Courses

EPsy 302 Ed Psychology 2(2,0) FS
Exploration into the world of the learner. Basic learning theories and use of these concepts in teaching. Focuses on disciplines, grouping, special needs students, and multi- cultural concepts in educating and motivating students. Required for certification. P, junior standing, education student. One section per year also offered for students not in professional semester sequence.

EPsy 303 The Exceptional Child 3(3,0) F
Designed for persons who plan to work with children. This course explores the world of children with special needs. Emphasis is placed on discovering the social, personal and learning characteristics of children with various handicapping conditions.

Dual Numbered Courses

EPsy 426-526 Psychology of the Early Adolescent Learner 3
To guide students in the personal construction and application of an early adolescent development knowledge base. The learning environment of the early adolescent/ middle school student will be the context of study in this course. A theoretical base related to intellectual development, identity development, and social development will be used as a basis for exploring the benefits and needed changes in current educational settings of the 10-15 year old. Students will study the impact of various influences on the healthy and positive development of the learner. Students will apply the knowledge base to evaluate and critique personal experiences, issues, and programs designed for early adolescent learners. P, admitted to education program, junior standing (526) or graduate student (626).

EPsy 450-550 Gifted and Talented 3(3,0) Su
Overview of the Gifted and Talented field; explores the development of gifted/talented children as well as identification and curriculum adaptations for meeting the needs of these children; also focuses on issues surrounding the parents and families of gifted and talented as well as program development and evaluation.

EPsy 452-552 Enhancing Creativity 3(3,0) Su
Explores the various dimensions of creativity, including what it is, how it develops, how to teach creative students, and how to evaluate creative works. Emphasis will be on how to work with students who already exhibit significant creative abilities as well as how to foster creativity with all students.

Graduate Courses

EPsy 630 Learning Disabilities 3(3,0) SSu (alternate years)
EPsy 740 Advanced Ed Psychology 3(3,0) FSu
EPsy 761 Testing Practicum: Intellectual Assessment 2
EPsy 762 Testing Practicum: Personality Assessment 3 FSu
EPsy 763 Testing Practicum: Projective Techniques 2

ES (Engineering Shops)

Undergraduate Courses

ES 121 Machine Shop 2(1,2)
Machine tools in industry, principles of operation, production methods and related equipment. Introduction to jigs and fixtures and computer numerical control.

ES 131 Welding 2(1,2)
Lectures, demonstrations and exercises. Gas and arc welding, cutting, heat treatment, spot welding and related information.

ES 222 Advanced Machine Shop 2(1,2)
Complicated processes involving operation of machine tools. Introduction to tool and die work and methods of inspection. P, 121.

ES 225 Industrial Machine Tool Applications 1(0,3)
Problems and solution related to industrial machine tools and other production equipment, automation, computer numerical control. P, recommended for engineering students.

ES 232 Advanced Welding 2(1,2)
Advanced application of arc and gas welding, position welding, pipe welding and joining of non-ferrous metals. Identification of metals. P, 131.

ES 235 Metal Processing 1(0,3)
Engineering approach to science of joining metals. Capabilities and limitations of present equipment. Brief introduction to metallurgy, heat treatment of steel and characteristics of other metals and alloys, introduction to metal castings, gas welding, arc welding and related equipment. Recommended for engineering students.

ET (Electronics Engineering Technology)

Undergraduate Courses

ET 100 Introductory Electronics 3(3,0)(on sufficient demand)
Nonmathematical survey of fundamental electronic components and circuits.

ET 112 DC and AC Concepts 5(5,0) F
Direct and alternating current circuits. Topics covered are basic laws and theorems directed toward resistive and reactive circuits. P, Math 102 or concurrent enrollment.

ET 113 DC and AC Concepts Laboratory 2(0,6) F
Laboratory experiences with basic components such as resistors, capacitors and inductors. Direct current and alternating current used in the analysis. P, concurrent enrollment in 112 or consent.

ET 120 Circuits 5(5,0) S
Active and passive components and the interrelationships involved in circuit combinations. P, 112 or equivalent.

ET 121 Circuits Laboratory 2(0,6) S
Basic circuits, circuit parameters, and various circuit applications. Both discrete and integrated circuits are studied. P, 112, 113 or equivalent.

ET 200 EET—Off Campus Orientation 0(0,0) FSSu
EET enrollment sustaining.

ET 210 Logic and Digital Circuits 4(4,0) F
Switching theory, Boolean Algebra and logic diagrams. Karnaugh mapping, counter circuits, pulse circuits, memories, basic computer operations, binary, octal, and hexadecimal number systems. P, 112, or equivalent.

ET 211 Logic and Digital Circuits Lab 2(0,6) F
Experiments are performed on the circuits and material discussed in ET 210. P, 112 and concurrent enrollment in 210.

ET 220 Radio Systems 3(2,2) F
Radio from a black box-block diagram standpoint. Emphasizes the application of basic circuit concepts to super-heterodyne receivers. P, 120, or equivalent.

ET 254 Microprocessor I 2(2,0) S
The design and use of the microprocessor in microcomputers and process control applications. Includes concepts, properties and basic architecture of a microprocessor and peripheral circuits. Concurrent enrollment in 255. P, 210, 211.

ET 255 Microprocessor I Lab 1(0,3) S
This is a hands on microcomputer lab. Students will work with the INTEL type microprocessor. Programming and testing on an assembly level. Concurrent enrollment in 254.

ET 292 Special Problems 1-3 FSSu
Provides the student with the opportunity to identify a problem and develop a hypothesis, gather information which might be used in solving the problem, work on solving the problem, and report actual findings and accomplishments. P, Permission of the instructor.

ET 293 Special Topics in ET 1-3 FSSu
Current selected topic areas in Electronic Engineering Technology. P, Permission of the instructor.

ET 294-295-296 Cooperative Education/Internship/Field Experience 1-8 FSSu
Supervised work experience with a business, industrial firm, or public agency. The work experience must relate to the student's program of study and be performed under institutional and discipline guidelines governing this type of educational experience. P, departmental approval.

ET 302 Discrete & Integrated Devices 4(3,3) F
Physical principles of transistors, tunnel diodes, LED's, light sensing diodes, photo diodes, differential amplifiers, operational amplifiers, and other linear IC technologies, capabilities, and applications. P, 220 or equivalent and Math 123.

ET 334 Microprocessor II 2(2,0) F
Additional experience in the programming and architectures of microprocessors in microcomputers and process control applications. Concurrent enrollment in 335. P, 254, 255.

ET 335 Microprocessor II Lab 1(0,3)F
This hands on lab is a continuation of ET 255. Students work with additional programming as well as microprocessor control input/output control, and memory mapping with the INTEL type microprocessor. Concurrent enrollment in 334. P, 255.

ET 340 Techniques of Servicing 2(2,0) S
The practical aspects of servicing many types of electronic equipment. The latest techniques and equipment will be available for demonstration and laboratory usage. P, 120 or equivalent.

ET 350 Resonating Systems I 3(3,0) F
Radio wave propagation, transmission line theory, and antennas. Emphasis is placed on conduction of radio waves from a source to a load and its propagation through space. Laboratory demonstrations are used as needed. P, 120 and 220.

ET 360 Resonating Systems II 3(3,0) S (on sufficient demand)
Complex resonant circuits, antenna arrays, impedance matching devices, transmission lines and microwave components. Emphasis is placed on antenna systems and related components. The student is given an opportunity to study the operation and theory of a variety of electronic instruments used in industry. P, 350.

ET 380 Prototype Techniques 2(0,6) S
A lecture-laboratory course to acquaint the student with procedures used to prototype and construct circuits used in electronics. Topics include metal chassis pre-fabrication, printed circuit board layout and production, design techniques for audio and RF circuits and final test procedures. P, 302 or equivalent.

ET 384 Industrial and Computer Control Circuits 4(4,0) S
Industrial type circuits. Types of circuits studied include: gaseous rectifiers, thyratrons, silicon-controlled rectifiers, light control systems, solid state devices, magnetic amplifiers, and servo systems. P, 254 or equivalent.

ET 385 Industrial and Computer Control Circuits Lab 2(0,6) S
Experiments are performed on the advanced circuits discussed in 384. P, 254 or equivalent.

ET 403 PC Software/Hardware Maintenance 3(2,3)
This course will familiarize the student with software/ hardware configurations, installations, usage, and basic troubleshooting techniques. P, 210, 211.

ET 404 Integrated Circuit Technology 3(3,0) (on sufficient demand)
Digital and linear IC circuits and assemblies as used in equipment and large scale integration. This builds to a summary of where and how IC assemblies exist in the real world of communication, data processing and numerical control. P, 302 and/or permission of the instructor.

ET 430 Video Systems I 3(3,0) F
The study of circuits used in television and video displays. Color and monochrome video systems are studied simultaneously. P, 120 or equivalent.

ET 431 Video Systems I Lab 2(0,6) F
Laboratory analysis of the operation of color and monochrome video. Individual circuits of the receiver are experimented with separately. Operation of various test instruments stressed. P, 121 or equivalent.

ET 440 Video Systems II 3(3,0) S
Study of circuits used in various video systems. This includes primarily commercial television. Some analysis of VCRs and Video monitors is included. P, 430 or equivalent.

ET 441 Video Systems II Lab 2(0,6) S
Laboratory analysis of color TV, monitors, and VCR equipment. Analysis with appropriate test equipment is emphasized. P, 431 or equivalent.

ET 450 Communication Circuits & Systems I 3(3,0) F
Study of transmitters, receiver circuits and related systems. Principles of modulation detection, amplification, and generation of radio frequency signals. Emphasis is placed on mobile and fixed radio systems. P, 120 or equivalent.

ET 451 Communications Circuits & Systems Lab I 2(0,6) F
Laboratory work consisting of analyzing and trouble-shooting communications equipment. Usage of test equipment such as deviation meters, frequency counters, signal generators, service monitors, power meters, etc. Basic two-way radio installation is also covered. P, 121 or equivalent.

ET 460 Communications Circuits & Systems II 3(3,0) S
Complex radio systems including repeaters, remote control systems, mobile telephone, and paging system. Systems design and troubleshooting techniques are studied as well as microwave and basic radar systems. P, 450 or equivalent.

ET 461 Communications Circuits & Systems Lab II 2(0,6) S
Laboratory work in advanced troubleshooting of transmitters, receivers and control systems. Familiarization with sophisticated test equipment is stressed as well as simplified, pragmatic servicing techniques in system testing and alignment. P, 451 or equivalent.

ET 470 Electronic Computer Systems I 3(3,0) F
The study of electronic computer systems, concentrating on IBM type microcomputers, networking and data communications from a software and management point of view. P, 334.

ET 471 Electronic Computer Systems I Laboratory 2(0,6) F
Further study of electronic computer systems, concentrating on IBM type microcomputers, networking and data communications from a hardware, software and management point of view. Concurrent with 470.

ET 480 Electronic Computer Systems II 3(3,0) S
Further study of electronic computer systems, concentrating on IBM type microcomputers, networking and data communications from a hardware, software and management point of view. P, 470.

ET 481 Electronic Computer Systems II Laboratory 2(0,6) S
Further study of electronic computer systems, concentrating on IBM type microcomputers, networking and data communications from a hardware, software and management point of view. Concurrent with 480.

ET 492 Special Problems 1-3 FSSu
Provides the student with the opportunity to identify a problem and develop a hypothesis, gather information which might be used in solving the problem, work on solving the problem, and report actual findings and accomplishments. P, Permission of the instructor.

ET 493 Special Topics in ET 1-3 FSSu
Current selected topic areas in Electronic Engineering Technology. P, Permission of the instructor.

ET 494-495-496 Cooperative Education/Internship/Field Experience 1-8 FSSu
Supervised work experience with a business, industrial firm, or public agency. The work experience must relate to the student's program of study and be performed under institutional and discipline guidelines governing this type of educational experience. P, departmental approval.

ET 497 Technology Certification 1(1,0) (on sufficient demand)
A coordination of communication skills, mathematics, physical science, and basic technical concepts and skills in the student's area of study in preparation for certification exams.

EurS (European Studies)

Undergraduate Courses

EurS 300 Topics in European Culture 3(3,0)
Topics in European culture as expressed in literature, art, music, philosophy, and religion. The topic may be limited to a theme, for example, Death, War, or Justice, or to a period in history, for example, Women in the Renaissance, Love in the Seventeenth Century, or Solitude in the Romantic Period. (May be repeated for credit when the topic is different.)

EurS 301 European Union 3(3,0)
An interdisciplinary examination of a topic in European social life. Examples include, among others, Ethnicity and Nationality, Aging, Revolution, European Unification, Political Parties and Economic Development, or Migrant Workers. (May be repeated for credit when the topic is different.) Crosslisted with PolS 352.

EurS 311 European Exchange Orientation 1
This course is designed to prepare students to live and study in a European setting. The course will combine an overview of historical, political, social, and cultural topics with a preparation for daily life. This will facilitate adaptation to the exchange experience in the hosting European nation. P, acceptance for a European exchange program and completion of or concurrent registration in two approved courses in the European Studies Program.

EurS 320 European Studies – Humanities: 1-6
Instruction in the Humanities through a European Educational Institution with which South Dakota State University has a student exchange agreement. Students may enroll in multiple sections consistent with the number of courses they are attending at the European Educational Institution. The course content is subject to approval by the SDSU European Studies Committee. P, 311.

EurS 321 European Studies – Social Sciences: 1-6
Instruction in the Social Sciences through a European Educational Institution with which South Dakota State University has a student exchange agreement. Students may enroll in multiple sections consistent with the number of courses they are attending at the European Educational Institution. The course content is subject to approval by the SDSU European Studies Committee. P, 311.

EurS 322 European Studies – Fine Arts: 1-6
Instruction in the Fine Arts through a European Educational Institution with which South Dakota State University has a student exchange agreement. Students may enroll in multiple sections consistent with the number of courses they are attending at the European Educational Institution. The course content is subject to approval by the SDSU European Studies Committee. P, 311.

EurS 493 European Studies – Special Topics 1-3
Opportunities to investigate special problems or carry out independent study under the supervision of a European Educational Institution faculty member. The course content is subject to approval by the SDSU European Studies Committee. P, 311.

FCS (Family and Consumer Sciences)

Undergraduate Courses

FCS 101 Family and Consumer Sciences: Professional Foundations 2(2,0) FS
Introduction to the family and consumer sciences profession: career orientation, professional role delineation, professional ethics, basic systems theory.

FCS 103 Career Exploration 1(1,0) On sufficient demand
Discussion and analysis of selected careers in Family and Consumer Sciences and the profession.

FCS 292 Special Problems 1-3
Problems selected according to student's special needs and interests. Consent of instructor.

FCS 293 Current Topics 1-3
For freshmen and sophomores needing additional study or experience related to a particular topic not offered as part of a regular class. May be repeated for up to three credits.

FCS 301 Families and Their Ecological Systems 3(3,0) (on sufficient demand)
Nature and function of the family as an ecological system and its interaction with the microenvironment; integrative role of the home economics professional in relationship to family ecological systems. P, 101, recommended after 60 credits.

FCS 401 Professional Perspectives 2(2,0) FS
Examination of professional roles in home economics in various sections of society today and in the future. Contributions of research to understanding and improving quality of life. P, junior or senior standing.

FCS 495 Internship 1-12 FSSu (S only for CA majors – 10 credits and concurrent with CA 412)

Dual Numbered Courses

FCS 400-500 Practicum in Home Economics 2-6
Provides an opportunity for students to gain experience in a job or career related to their subject specialization. A learning plan is developed by the student and faculty member prior to the practicum. Consent of department and instructor is required.

FCS 492-592 Special Problems 1-3
Individual research and study in home economics. May be repeated for a total of 3 credits. Consent of instructor and department is required.

FCS 493-593 Current Topics 1-3
For students needing additional study of a topic or experience not offered as part of a regular class.

Graduate Courses

FCS 601 Seminar in Home Economics 1(1,0)
FCS 611 History and Philosophy of Home Economics 2(2,0)
FCS 700 Research Methods in Home Economics 3(3,0)
FCS 761 Evaluation in Home Economics 2(2,0)
Crosslisted with VTE.
FCS 790 Thesis 1-7
FCS 791 Thesis Sustaining 0
FCS 792 Special Problems 1-3
FCS 793 Current Topics 1-3
FCS 794 Graduate Internship 1-7
FCS 795 Individual Research and Study 1-7
FCS 796 Individual Research Paper Sustaining 1

FCSE (Family and Consumer Sciences Education)

Undergraduate Courses

FCSE 292 Special Problems 1-3
Problems selected according to student's special needs and interests. Consent of instructor.
FCSE 293 Current Topics 1-3 F
For students needing additional study of a topic or experience not offered as part of a regular class. (1 credit, Current Topics, Early Experience, must be taken by FCSE majors as a sophomore.)
FCSE 331 Teaching Occupational Family and Consumer Sciences Programs 2(2,0) F even years
Subject matter preparation to develop competencies desirable for teaching in occupational family and consumer sciences programs.
FCSE 332 Occupational Family and Consumer Sciences Experience 1(0,1) F
A work experience to develop competencies desirable for teaching in occupational family and consumer sciences programs.
FCSE 411 Philosophy & Methods 3(3,0) F
The philosophical foundations and history of the family and consumer sciences profession related to general and vocational education programs in the school systems as well as to programs in business, industry, government, and non-profit agencies. The learner and the constructivist learning process, curriculum development, and program planning, methods of instruction, selection and use of resource materials, and the educator's role will be studied in depth as preparation for the practicum/internship experience. Must be taken in semester immediately preceding FCSE 412. P, 2.5 GPA.
FCSE 412 Preparation for Student Teaching 5(3,2)S First Part Semester
Planning and developing instruction for various types of family and consumer sciences programs to meet the needs of selected age groups in structured situations. P, 411, Professional Semester II and 2.6 GPA in professional classes and 2.5 GPA overall.
FCSE 421 Experiences in Adult Education 2(2,0) S
Background and trends in teaching adults. Observing, organizing and implementing instructional techniques. Open to all majors.
FCSE 473 Supervised Student Teaching in Family and Consumer Sciences 10(0,10) S
A minimum of ten weeks of the second part of Spring Semester. Roles and responsibilities of the vocational family and consumer sciences teacher. Teaching under supervision at least two subject areas of family and consumer sciences in an approved school. P, 412, a 2.6 GPA in professional classes and 2.5 GPA overall, and senior standing in family and consumer sciences.
FCSE 496 Field Experience 1-12 FSSu
Working under supervision in an approved experience. Number of credits dependent on experience and supervisory arrangements. Consent of department and instructor.

Dual Numbered Courses

FCSE 492-592 Special Problems 1-3
Individual research and study in home economics education. May be repeated for a total of 4 credits. Consent of instructor and department is required.
FCSE 493-593 Current Topics 1-3
For students needing additional study of a topic or experience not offered as part of a regular class.

Graduate Courses

FCSE 601 Trends in Family and Consumer Sciences Education 2(2,0)
FCSE 741 Supervision in Family and Consumer Sciences Education 2(2,0)
FCSE 751 Curriculum in Family and Consumer Sciences Education 2(2,0)
Crosslisted with VTE.
FCSE 792 Special Problems 1-3
FCSE 793 Current Topics 1-3

FL (Foreign Languages)

Undergraduate Courses

FL 101-102 Introduction to Foreign Language and Culture (Topical) 1-4(1-4,0)
Fundamentals of the language and introduction to the culture where the language is spoken. Classwork may be supplemented with work in the language laboratory. May be repeated for credit.
FL 134 Foreign Cultures (Topical) 3(3,0)
Provides a broad view of the language and civilization of the people studied, including history, literature, social life and institutions,and culture. If appropriate, the course will include the study of the subject people's heritage in South Dakota. No prerequisites. Intended for students from all disciplines. May be repeated for credit twice provided change of topic. Taught in English. Credit for this course may not be applied to a foreign language major, minor, or to the 14-hour B.A. language requirement.
FL 195 Living and Study Abroad (culture emphasis) 1-6
This course is designed for the student traveling abroad primarily for cultural purposes. It entails a program of pre-departure study, keeping a travel journal, and a post-trip faculty interview. Credit is based on the program of study and the length of time in country. For students who will not be using a foreign language in their travels. This course may not be used to satisfy requirements for foreign language majors or minors, nor can it be used in partial fulfillment of the 14-hour B.A. requirement.
FL 293 Undergraduate Course Special 1-5(1-5,0)
Students who wish to study a topic in which a faculty member is competent may propose a Special. The duration, subject matter, amount of credit, and mode of grading will be planned by the instructor and students, under the general supervision of the head of the department in whose discipline and under whose supervision the special will be taught.
FL 395 Living & Study Abroad Program(Language Emphasis) 1-6(1-6,0)
Prior approval by the department head and dean required.
FL 420 Foreign Language Teaching Methods 1-3(1-3,0)
Seminar dealing with problems encountered in teaching modern foreign languages. Textbook selection, subject matter presentation, testing, realia and laboratory techniques. Consult with head of the department during year previous to taking this course. Required for all foreign language majors and minors who plan to teach. On demand.

FL 490 Seminar in French, German or Spanish (Topical) 1-3(3,0)
Detailed reading and discussion of major works dealing with French, German or Spanish language, literature or culture. Focus on language, literary appreciation, writers, culture, or artistic movements. Students will be expected to express themselves in the particular language, both orally and in writing. Reports in the foreign language will be required. Topics will vary, and course may be repeated for a maximum of 9 credit hours. P, two years of college French, German, or Spanish, or consent of instructor.

FL 492 Special Problems (Topical) 1-3(1-3,0)
Independent study on a topic of interest to the student. A typical course will contain readings, discussions and written work which will enable students to improve their language skills and deepen their understanding of civilization, culture, and/or literature.

FL 493 Topics in Foreign Language 1-5(1-3,0)
Selected topics of current interest in the discipline.

FL 495-496 Internship/Field Experience (Topical) 3-12(3-12,0)
Students who have the opportunity to engage in an off-campus activity which will contribute significantly to their education, such as an internship or study abroad, may enroll for 3-12 hours of credit for the experience. A maximum of one credit for each week of experience will be given. The student's project must be approved by the department and will be supervised by a member of the faculty in conjunction with the head of the department.

Dual Numbered Courses

FL 460-660 Topics in French, German or Spanish Literature 1-4 (1-4,0)
An intensive examination of a significant writer(s), period or theme in French, German, or Spanish literature. It may be repeated for credit if topic is different.

Graduate Courses

FL 593 Special Topics in Language and Culture 1-3(1-3,0)

Fren (French)

Undergraduate Courses

Fren 101-102 Introductory French I-II 4(4,0) FS
Fundamentals of language structure and introduction to French culture enabling students to converse, read, and write simple French. Classwork supplemented with work in the language laboratory.

Fren 201-202 Intermediate French I-II 3(3,0) FS
Goals of the introductory course continued. Emphasis on cultural and intellectual aspects of French life and literature. Classwork supplemented with work in the language laboratory. Students pursuing a French major or minor are encouraged to enroll in 311-312 concurrently. P, 102 or equivalent.

Fren 311-312 French Composition & Conversation 2(2,0) FS
Development of proficiency in French composition and conversation. Classwork supplemented with work in the language laboratory. P, 202.

Fren 333-334 Francophone Culture and Civilization 3(3,0)
Overview of the historical events in Francophone civilizations as they relate to contemporary culture. Second semester emphasizes contemporary Francophone culture and civilization. P, 311-312 or consent of instructor.

Fren 383 Français Commercial 1-3 (1-3,0)
A study of the essential vocabulary used in business and an introduction to the basic workings of the French economy. Practical application through a variety of activities, e.g., the writing of business letters, applications, publicity, banking forms, and discussion of readings in French. P, 202 or consent.

Fren 473 Le Grand Siècle 3(3,0)
Reading and analysis of baroque and classical literature of the 17th century, emphasis on Corneille, Racine, Molière, and Madame de Lafayette. P, 312 or consent.

Fren 475 Raison et Sensibilité au 18 Siècle 3(3,0)
Reading and analysis of major literary works of the 18th Century. P, 312 or consent.

Fren 477 Du Romantisme au Symbolisme 3(3,0)
Reading and analysis of selected prose fiction, poetry and drama of the 19th Century. P, 312 or consent.

Fren 479 Le Vingtieme Siècle 3(3,0)
Reading and analysis of representative works of novelists, poets and dramatists of the 20th Century. P, 312 or consent.

Fren 492 Special Problems 1-3(1-3,0)
Readings and discussions in French as directed by the instructor. May be repeated for credit. P, 202 and consent of the instructor.

Fren 493 Topics in French 1-3
Special courses designed to complement the existing curriculum. Will be offered only when student demand and staff availability warrant.

GCom (General Communication)

Undergraduate Courses

GCom 211 Phonetics 3(3,0) S
The production and perception of sounds of English speech; the use of the International Phonetic Alphabet; the application of the principles of phonetic analysis to oral communication.

GCom 215 Communication Studies 3(3,0) FS
An overview of the communication discipline, theory, and practice. P, Advanced Placement in Speech or consent.

GCom 223 Speech Science 3(3,0) F (Odd years)
The basic scientific concepts fundamental to the understanding of speech production and perception with primary emphasis on the anatomy and function of the speech and hearing mechanism.

GCom 345 Organizational Communication 3(3,0) F
An examination of organizational theory and research as it relates to communication within the organization.

GCom 493 Topics in General Communication 1-5
Selected topics of current interest in the discipline.

GCom 495 Internship 1-12
Planned and supervised professional experience which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Graduate Courses

GCom 605 Current Approaches to Communication 3(3,0) S

GCom 793 Special Topics in Communication 1-3 FSSu

GE (General Engineering)

Undergraduate Courses

GE 101 Introduction to Engineering and Technology 2(2,0)
Students are introduced to the concept of being a professional and the ethics required of a professional person. A breadth of ideas are presented to the students which helps them in their career choice.

GE 200 Engineering College – Off Campus Orientation 0
Engineering College Enrollment Sustaining.

GE 231 Technology & Society 3(3,0) FS
An examination of technological change by means of current problems and case studies. The creation and utilization of tools, machines, materials, techniques and technical systems will also be studied, as well as the life and works of various innovators in science and technology.

GE 292 Special Problems 1-3 FSSu
P, consent.

GE 293 Special Topics 1-3 FSSu
P, consent.

GE 443 Project Management 2(2,0) S
A case-oriented capstone course designed to integrate the technical, managerial, analytical, and communication skills which have been acquired. P, CM 352 and BAdm 360.

GE 496 Field Experience 1-6 FSSu
Planned and supervised professional experience related to engineering which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Dual Numbered Courses

GE 492-592 Special Engineering Problems 1-3 FSSu
This course will provide individual students the opportunity to pursue technical design problems, extensive literature searches, and individual study of new and timely subjects within the fields of Physical Science and Engineering. P, junior or senior standing in Engineering and consent of instructor.

GE 493-593 Special Topics in General Engineering 1-3 FSSu
Timely topics relating to Physical Science and Engineering. P, junior or senior standing in Engineering and consent of instructor.

Graduate Courses

GE 525 Risk/Loss Control Management 2(2,0)F
GE 543 Project Management 3(3,0) S
GE 601 Technical Studies in Industrial Management 3(3,0) F
GE 603 Designing the Workplace for Productivity 3(3,0)
GE 610 Human Factors in Engineering and Design 3(3,0)
GE 620 Industrial Safety 3(3,0)
GE 692 Special Problems in Engineering 1-3 FS
P, consent.
GE 693 Special Topics in Engineering 1-3 FS
P, consent.
GE 700-701 Seminar 0-1(1,0) FS
GE 790 Thesis 5-7
GE 791 Thesis Sustaining 0
GE 792 Research Report/Design Paper
GE 795 Research or Design Paper Sustaining 1
GE 797 Research 1-9
GE 793 Special Topics 1-3

Geog (Geography)

Undergraduate Courses

Geog 131 Physical Geography I 4(3,2) FS
An introduction to the physical patterns of the Earth. Location, Earth-sun relationships, portrayal of the Earth, cartographic analysis, weather and climate phenomena, along with the scientific method and consideration of cultural diversity factors from the Native American and other perspectives.

Geog 132 Physical Geography II 4(3,2) FS
A continuation of Geog 131 focusing on: location, cartographic analysis, basic geographic patterns, landforms (genesis, development, situation) in various physical environments plus soil and vegetation patterns and environmental relationships with consideration of cultural diversity factors from the Native American and other perspectives.

Geog 200 Intro to Human Geography 3(3,0) FS
Systematic study of world culture from perspective of five integrating themes: cultural region, cultural diffusion, cultural ecology, cultural integration, and cultural landscape. Topics include population, agriculture, political and economic systems, religion and language, folk and popular culture, and ethnicity.

Geog 210 World Regional Geography 3(3,0) FS
The differentiation of the world in terms of both natural and human environmental features and characteristics on a regional basis.

Geog 212 Geography of North America 3(3,0) F
A regional and topical analysis of the geographic patterns of the United States and Canada. Focus is upon the interaction of groups of people with the natural environment to produce regional differentiation. Geographic aspects of the physical geography, population, culture groups, economy, settlement system, land division, and use of natural resources.

Geog 219 Geography of South Dakota 3(3,0) S
Provides an in-depth study of the physical, cultural, and economic characteristics of the state, including an analysis of past, present, and prospective cultures and economies, dating from early Native American settlement through the present time period.

Geog 310 Soil Geography and Land-use Interpretation 4(2,4) F
See Plant Science section. May count toward Geography major. Crosslisted with PS 310.

Geog 313 Geography of Latin America 3(3,0) S97 F98
Topical study of Latin America, including: perceptions, myths, and realities; the physical environment and its importance; aboriginal and European history; Latin American institutions; contemporary Latin America's population, political, economic, and social conditions; regional overview and global relations.

Geog 314 Geography of the Former U.S.S.R. 3(3,0) S (odd)
Appraisal of the physical resource base of Russia and estimates of industrial and agricultural strengths.

Geog 315 Geography of Europe 3(3,0) F (even)
A regional and topical analysis of the geographic patterns of western and eastern Europe. Special attention given to the British Isles, Scandinavia, the Low Countries, Germany, France and Mediterranean Europe.

Geog 316 Geography of Asia 3(3,0) F (odd)
Asian nations, physical and cultural environments, their role in world relations.

Geog 317 Geography of Africa 3(3,0) S (odd)
Major natural regions of the African Continent of emerging nations. Activities and customs of the native tribes and how they have responded to European influences. Africa's position as a storehouse of raw materials.

Geog 337 Atmospheric Sciences 3(3,0) FS
Systematic methodological investigation of the meteorological elements (weather, climate, altitude, etc.) and their effects on geographic features.

Geog 338 Astrogeography 2(2,0) S
Planet Earth; its position, form and size; movements; latitude, longitude, and time; relation of the moon; the seasons; the calendar; the planets, stars, galaxies; universe.

Geog 339 The Earth's Landforms 2(2,0) F
Surface features. Continental landforms with their flood-plains, deltas, lacustrine, glaciers, coastal plains, marshes and dunes. One's relation to these landforms will be emphasized.

Geog 343 Natural Disasters and Human Hazards 3(3,0) S
An in-depth examination of various geophysical events (earthquakes, volcanic eruptions, tsunami, earth failures), meteorological events (floods, severe storms - tornadoes, hurricanes, blizzards, lightning) and human induced disasters (technological failures involving dams, nuclear power plants, etc.). Attention given to people's responses and their interactions with the environment plus prevention and amelioration efforts.

Geog 351 Economic Geography 3(3,0) S (even)
World wide distribution of economic activities and their physical bases. Agriculture, mining and manufacturing industries and their important commercial products and role in world trade.

Geog 363 Rural Geography 3(3,0) F (even)
Character of American countryside as shaped by private and public decision-making processes. Case studies of major U.S. and European rural planning efforts to understand the present landscape and the problems of rural populations.

Geog 365 Land Use Planning 3(3,0) S
Geographical patterns of human occupancy, land tenure, land division and land usage. Emphasis on North America and the Upper Midwest. Significance of these patterns in environmental, resource utilization and land use planning. P, 200 or 212 or 219.

Geog 382 Geographic Research Methods 3(3,0) S
This course will include a general review of methods most commonly employed in geographic research including varied library research, observation, map analysis, and the use of geographic theories and models. Experience will be gained in identifying geographic problems, collecting and analyzing geographic data, both organizing and presenting geographic information.

Geog 383 Cartography 3(2,2) F
History and principles of cartography. Emphasis on field mapping; map projections; cartographic design; map interpretations; and exercises in map making.

Geog 384 Advanced Cartography 3(2,2) S (even)
This course provides advanced cartographic training techniques as applied to practical applications in field mapping, the production of map projections, cartographic design, and map making. P, 383.

Geog 388 Geodesy 3 (3,0) F (odd)
A survey of geodesy, the science which determines the size and shape of the earth, the exact location of points on the earth's surface, and the measurement of terrestrial gravitation. P, Math 113, 120 or consent.

Geog 400 Cultural Geography 3(3,0) F97 S99
A detailed analysis of the concept of culture in a geographical context, including such applications as culture and nature, cultural growth and change, cultural universals, culture and economy, cultural relativity, cultural landscape, culture region, and cultural conflict.

Geog 425 Population Geography 3(3,0) F97 S99
Geographic analysis of such population characteristics as: numbers and distribution; growth and change; composition; mortality, fertility, and theories of population change; policy and family planning; migration and mobility; population, environment, food supply, and human well being. Problems and prospects are considered in the context of each topic.

Geog 433 World Crop & Soil Resources 3(3,0) F
Crosslisted with PS 433. May count toward Geography major.

Geog 447 Geography of the Future 3(3,0) F (odd)
The world, particularly the U.S. beyond the year 2000 A.D. Special emphasis on such areas as population, urban life, transportation, food, social and cultural developments and alternative futures.

Geog 454 Industrial & Commercial Site Selection 3(3,0) S (even)
Analysis of geographic factors involved in selection of locations and sites for manufacturing, commercial and agricultural enterprises.

Geog 461 Urban Geography 3(3,0) S (even)
Geography of cities: types, functions, and distribution of world cities. Special emphasis on planning of cities in the U.S.

Geog 464 Geographic Aspects of Regional Planning 3(3,0) F (even)
Regional planning with particular reference to the upper Mid-West.

Geog 467 Geography of the American Indians 3(3,0) S (even)
Study of the geography of the American Indians under three primary topics: loss of Indian lands; development of the Indian reservation system; historical and contemporary land use issues. P, Hist 368 or Anth 410 or 421, or Geog 219 or consent.

Geog 476 Historical Geography 3(3,0) S (even)
Historical periods portrayed against geographical background. Crosslisted with Hist 476.

Geog 483 Air Photo Interpretation 3(3,0) F
Development of skills and techniques involved in the interpretation of aerial photographs showing physiography, land use, industrial, commercial and military functions. P, 383 or consent.

Geog 484 Remote Sensing 3(3,0) S
Applications of remote sensing. Development of remote sensing; instrumentation; and techniques and methodology that will aid in the determination of need and proper utilization of our physical and cultural resources. P, 483 or consent.

Geog 486 Computer Mapping 3(3,0) S
Computer mapping as a tool in the preparation of maps or diagrams and in geographical analysis of maps and diagrams. Will include consideration of various mapping programs. P, Algebra course, and Geog 383 or consent.

Geog 487 Geographic Information Systems I 3(3,0) FS
GIS as a data base management system for spatial data. Includes application, planning and management. GIS facilitates modeling of natural and cultural resources in a spatial context.

Geog 492 Special Problems in Geography 1-2-3-4(1-2-3-4,0) FSSu
Opportunity for qualified students to investigate special problems or carry out independent study under supervision of department staff. Variable credit, may be repeated for up to 12 credits. P, Sophomore, Junior, or Senior standing and/ or consent.

Geog 493 Topics in Geography 1-5 FSSu

Geog 495-496 Internship/Field Experience (Topical) 1-12 FSSu
You have the opportunity to become involved in an off-campus Internship activity which promises to contribute significantly to your education, may enroll for and receive between 1 and 12 credits at the maximum rate of one credit per week. (See course description in Arts and Science College Section.) P, junior standing.
Students who participate in short tour, exchange, or field study programs off campus may enroll for and receive a total of 1-6 semester hours of credit. In no case will the credit granted exceed one per week nor a total of six. In the case of independent experience, the specific amount of credit to be granted, and the conditions established (projects, etc.) will be set prior to the student's departure, in consultation with the supervising instructor and with the approval of the appropriate department chairperson and dean.

Dual Numbered Courses

Geog 406-506 Seminar in Systematic Geography: (Topical) 1-4 FS
Will deal with one or more aspects of human, economic, physical, population and historical geography or techniques. May be repeated for credit. The specific topic to be studied will change each semester.

Graduate Courses

Geog 610 Topics in Geography Education 1-4

Geog 620 Advanced Regional Studies in Geography: (Topical) 1-4 FS

Geog 700 Seminar in Geography: (Topical) 1-4

Geog 710 Evolution of Geographic Thought 2(2,0) (every third semester)

Geog 712 Introduction to Graduate Study 2(2,0) (every third semester)

Geog 714 Research and Writing 2(2,0) S

Geog 732 Geomorphology 3(3,0) S (odd)

Geog 734 Climatology 3(3,0) S (even)

Geog 742 Cultural Geography 3(3,0) S (every third semester)

Geog 752 Urban Geography 3(3,0) (every third semester)

Geog 765 Advanced Studies in Land Utilization: (Topical) 1-4 F (even)

Geog 770 Advanced Geographic Techniques: (Topical) 1-4(1-4,0) FS

Geog 785 Quantitative Methods in Geography 3(3,0) F

Geog 786 Geographic Information Systems 3(3,0) S

Geog 790 Thesis 1-6

Geog 791 Thesis (Sustaining) 1

Geog 792 Special Problems in Geography: (Topical) 1-4

Geog 793 Internship 1-3

Geog 794 Geography Research Paper 1-3

Germ (German)

Undergraduate Courses

Germ 101-102 Introductory German I-II 4(4,0) FS
Study of the fundamentals of the German language aimed at preparing the student to understand, speak, read, and write simple German. Classwork supplemented with work in the language laboratory.

Germ 201-202 Intermediate German I-II 3(3,0) FS
Goals of First Year German continued with emphasis on modern cultural aspects of Germany, Austria, and Switzerland. Classwork supplemented with work in the language laboratory. Students pursuing a German major or minor are encouraged to enroll in 311-312. P, 102 or equivalent.

Germ 311-312 German Composition & Conversation 2(2,0) FS
Development of proficiency in German composition and conversation focusing on typical situations in everyday German life. P, 202 or concurrent.

Germ 353-354 German Literature 2-3(2-3,0)
Introduction to German literature through readings and discussion in German of representative literary works from various genres and epochs. P, 312 or consent.

Germ 380 Deutschland Heute 1-3(1-3,0)
An examination of contemporary German life, including family life, the workplace, life on the farm and in industrial areas, holidays, governmental institutions, transportation, geography, city culture, current interests and problems. P, 312 or consent.

Germ 383 Business German 2-3(2-3,0)
An introduction to the German language of everyday business dealings and an overview of practical and relevant information necessary for people doing business in German. P, 312 or consent.

Germ 411-412 Advanced Composition & Conversation 2(2,0)
More intensive development of ability in composition and conversation, placing special emphasis on idiomatic expressions and flexibility within the language. P, 311, 312. On demand. Topics vary. May be repeated once for credit.

Germ 433-434 German Civilization 2-3(2-3,0)
German civilization and culture including music, art, literature, government, geography, education, etc. 433: from beginning of German civilization to 1869. 434: from 1870 to present. Readings and discussions in German. P, 311, 312 or consent.

Germ 475 19th Century German Lit 2-3(2-3,0)
German literature of the 19th Century. Readings and discussions in German. P, 354 or consent.

Germ 479 20th Century German Literature 2-3(2-3,0)
Selected works of authors in the German language. Readings and discussions in German. Topics vary. P, 354 or consent.

Germ 492 Special Problems 1-3(1-3,0)
Readings and discussions in German as directed by the instructor. May be repeated for credit. P, 202 and consent of the instructor.

Germ 493 Topics in German 1-3 (1-3,0)
Special courses designed to complement the existing curriculum. Will be offered only when student demand and staff availability warrant.

Gero (Gerontology)

Undergraduate Course

Gero 201 Introduction to Gerontology 3 F
Introduction and overview of the field of gerontology. Interdisciplinary focus on aging process, community resources, diversity, health care and caregiving, retirement, death and bereavement, public policy and professional issues. Required course for gerontology minors.

HDCF (Human Development, Child and Family Studies)

Undergraduate Courses

HDCF 141 Individual and the Family 2(2,0) FS
Patterns of behavior and relationships as influenced by family interaction. Emphasis on social and emotional needs of individual and family. Open to students of all majors.

HDCF 241 Family Relations 3(3,0) FS
A survey course of family development from an interactional perspective as it applies to the family across the life span.

HDCF 250 The Development of Human Sexuality 3(3,0) FS
A basic course which explores the biological, behavioral, and cultural aspects of human sexuality. The course focuses on individual sexual development, interpersonal aspects of sexual behavior and social/cultural values and beliefs about sexuality and sex roles throughout the lifespan.

HDCF 292 Special Problems 1-3 FSSu
Individual study for quality students. P, consent of instructor.

HDCF 293 Current Topics 1-3
Study of current issues and concerns in human development and family studies. Focus on topics not included in other courses in the department. P, consent of instructor.

HDCF 312 Human Development and Personality II: Adolescence 3(3,0) F
Knowledge and understanding of adolescence within the developmental framework. Dimensions of physical growth, biological changes, social, intellectual and emotional development will be considered, as well as the impact of interaction of these forces on the individual. Emphasis is upon normal developmental patterns.

HDCF 313 Human Development and Personality III: The Middle and Later Years 2(2,0) FS
Developmental approach to middle age and aging. Emphasis on the physical, biological, intellectual and emotional changes. Impact of change upon the personality, self-concept of the individual and their effects upon social behavior, productivity and personal relationships.

HDCF 327 Human Development and Personality I: Childhood 3(3,0) FSSu
Knowledge and understanding of human beings through study of development beginning at conception continuing to adolescence. Consideration given to biological growth, social, emotional and intellectual development as it changes behavior and shapes the individual.

HDCF 328 Experience in Human Relations 3(1,6) FS (By Reservation Only)
Opportunity to more fully understand children as well as oneself and other adults while observing and working with children in Pre-School Laboratory. P, 327 with grade of "C"; grade of "C" or better in Psyc 101, Soc 100, Engl 101, SpCm 101.

HDCF 341 Family Dynamics 3(3,0) FS
Principles of interaction in marriage and family life. Family systems, processes of communication styles, interaction patterns as they influence problem solving, decision making, and other issues relating to the marriage process and family functioning.

HDCF 350 The Helping Relationship 3(3,0) FS
An introduction to the personal and interpersonal skills required for the development of effective helping relationships. Consideration of relational and group dynamic issues relevant to work in educational and social service settings.

HDCF 355 Prevention Programs in Human Development and Family 3(3,0)
Principles and application of methods used in the design of programs to enhance the development of individuals and families. Strategies used in program evaluation examined. Consideration of model programs currently developed. P, 241, 341.

HDCF 361 Materials and Techniques in Creative Expression 4(4,0) FS

Creativity in language, graphic arts, music, dance, physical and natural science, mathematics, social studies and social- personal growth aimed at appreciation, understanding and evaluation of creative production of children in relation to their developmental stages. P, 327, 328, concurrent with 362, 364.

HDCF 362 Planning and Methodology for Preschool Programs 4(4,0) FS

Planning curriculum to meet the needs of young children and their families. Setting up developmental goals and objectives and designing experiences to accomplish them. Consideration of problems in the education of young children and of the implications of various theoretical orientations. P, 327, 328, concurrent with 361, 364.

HDCF 364 Parent Education 3(3,0) FS

Principles of parent education for professional role that will include work with parents. Opportunity for formulation and presentation of program for parents. P, 327, 341, concurrent with 361, 362 for ECE majors.

HDCF 371 Infants and Toddlers: Developmentally Appropriate Practices 3(2,2) S

In-depth study of developmentally appropriate practices for infants/ toddlers (birth-3 years). Students learn to plan developmentally appropriate and integrated learning experiences for infants/toddlers that facilitate development and learning in all areas: cognitive, language, physical, social, emotional, and aesthetic. Curriculum areas will include language development, health, safety, nutrition and infant stimulation. Students will apply this curriculum in a practicum experience.

HDCF 400 Orientation to Cooperative Elementary Education Program 0 FS

This course is designed as an orientation to the cooperative elementary education program at DSU or BHSU. Procedures and requirements related to the cooperative program are presented and discussed. Students will be required to enroll in the course the semester immediately preceding their departure to the cooperating institution as well as each semester they are in residence at DSU or BHSU.

HDCF 401 Seminar 1-3 (on sufficient demand)

Discussion of current literature in areas of human development, early childhood education, marriage, and family relationships.

HDCF 414 Research Applications in HDCF 3(3,0) FS

The study and application of research and methods appropriate for the study of children and families. Emphasis on participation of students in research design, data collection and communication of results. P, 327 and 241 or 341; Senior standing or instructor's consent.

HDCF 441 Applied Family Systems in Varied Interactional Contexts 3(3,0) S

An introduction to theory and hands-on experiential information needed for working with families and children in a variety of interactional settings such as education, counseling, and family agencies.

HDCF 455 Administration and Supervision in Early Childhood Settings 3(3,0) S

Exploration of issues surrounding the administration of early childhood programs including identification of community needs, evaluation and appropriate use of space, equipment and materials, and policy and legal responsibilities. Exploration of staff selection, training and supervision. P, 328, 361, 362.

HDCF 457 Family Assessment 3(3,0) FS

An evaluation of family, community and intervention strategy measures, this course is designed to aide those working with individuals and families in a helping framework where such measures may be needed. P, 141, 241, 341, 414.

HDCF 465 Introduction to Developmental Assessment of Young Children 3(3,0) FS

Experiences to increase awareness of and knowledge about a variety of assessment procedures appropriate for use with children from birth through eight years of age. Advantages and limitations of assessment techniques noted; considerations used in the interpretation of findings and in making referrals discussed. Includes opportunities to work with assessing preschool age children and in developing prescriptive activity plans. P, 327 and 328 or equivalent, concurrent with 414, 472.

HDCF 466 Early Childhood Special Education I 3(3,0) F

This course is the first in a two-course sequence which will provide undergraduate level students in Early Childhood Education and other related fields with an overview of current issues, theories and practices in early childhood special education (ECSE). Historical, philosophical and attitudinal perspectives will be investigated, along with examination of service delivery models and legal issues as related to children (birth-8 years) with special needs and their families. A survey of disability characteristics will also be included. The changing roles of professionals and families of young children with special needs within a culturally sensitive and ecological perspective will be incorporated. P, 241, 361, 362, 364.

HDCF 467 Early Childhood Special Education II 3(3,0) S

This course is the second in a two-course sequence which will provide undergraduate level students in Early Childhood Education and other related fields with an overview of the following current issues in early childhood special education (ECSE): risk determinants, disability characteristics, medical issues, prevention, intervention and adaptations. Teaming, family/professional roles within a culturally sensitive and ecological perspective will be incorporated. P, 465, 466.

HDCF 472 Student Teaching in Preschool Programs 8(2,20) FS By Reservation Only

Planning and conducting various phases of early childhood programs. Student takes increasing responsibility, finally taking complete charge of the program. Weekly conferences. P, grade of "C" in 327, 328, 361, 362, concurrent with 414, 465.

HDCF 487 Orientation to Child and Family Services Practicum 1(1,0) S

Orientation to Child and Family Services Practicum will identify expectations of the experience. Students will develop written and verbal communication skills necessary to obtain a practicum and work site. Students will investigate and locate an appropriate practicum site and set professional and educational goals for the practicum experience. P, Junior standing and consent of instructor, to be taken prior to HDCF 497.

HDCF 497 Practicum in Child and Family Services 5-12 FSSu By Reservation Only

Field experience with agencies delivering social services to children and families. P, instructor's consent.

Dual Numbered Courses

HDCF 492-592 Special Problems 1-3 FSSu

Individual study for quality students. P, consent of instructor.

HDCF 493-593 Current Topics 1-3(1-3,0)

Study of current issues and concerns in human development, family therapy, and family studies. Focus on topics not included in other graduate courses in the department. P, consent. Can be repeated.

Graduate Courses

HDCF 614 Adult Development 3(3,0)F

HDCF 665 Parent Education: Theory and Issues 3(3,0)

HDCF 676 Early Childhood Education, Administration and Practicum 1-4 (On sufficient demand)

HDCF 702 Seminar 1-3(1-3,0) (On sufficient demand)

HDCF 711 Child Development Theory and Application 3(3,0)S

HDCF 742 Family Relations 3(3,0)F

HDCF 753 Family Public Policy 3(3,0) (alternate years)

HDCF 777 Child and Family Counseling 3(3,0)S

HDCF 792 Special Problems 1-3

HDCF 793 Current Topics 1-3

Hist (History)

Undergraduate Courses

Hist 121 History of Western Civilization to 1650 3(3,0) FS
Introduction to the major developments, events, and personalities in western civilization from prehistoric times through the Thirty Years War (1648).

Hist 122 History of Western Civilization since 1650 3(3,0) FS
Survey of western civilization from the Thirty Years War to the present.

Hist 151 U.S. History to 1877 3(3,0) FS
Consideration of main themes, events and personalities in American history from beginning to 1877, using political, social and economic perspectives.

Hist 152 U.S. History since 1877 3(3,0) FS
Consideration of main themes, events and personalities in American history from 1877 to present, using political, social and economic perspectives.

Hist 322 Greece and Rome 3(3,0)
Emphasis on Greek culture and Athenian democracy, the rise and failure of the Roman Republic, the development of the Roman Empire through the reign of Augustus.

Hist 323 Roman Empire and The Early Church 3(3,0)
The development of the Roman Empire from the late first century B.C. to the end of the fifth century A.D. The political, economic, social, and cultural systems of the Empire will be considered as well as the "decline and fall of Rome." Major attention will be given to the origins, growth, and "triumph of the Christian Church."

Hist 325 Medieval Europe 3(3,0)
Western Europe from 300-1400 A.D. Primary consideration given to The Fall of Rome, the church, feudalism, revival of cities, commercial revolution, rise of universities, early development of nation states.

Hist 326 Renaissance and Reformation 3
A study of the major European political powers in the 14th-16th centuries. The course will examine the dramatic changes in politics, society, religion, economics and world view occasioned by the phenomena known as the Renaissance and the Reformation.

Hist 328 Europe in the Age of Louis XIV, 1648-1789 3
A study of the emergence of the modern nation states of both Eastern and Western Europe, concentrating on the development of the French, English and Russian nations. The role of absolutism, mercantilism and militarism will be considered.

Hist 329 The French Revolution and Napoleon, 1789-1848 3
A study of the major changes in the European political powers due to the French Revolution and the emergence of Napoleon. The effects of the Congress of Vienna will also be evaluated.

Hist 331 Nineteenth Century Europe, 1815-1914 3
A study of changes brought about by the French Revolution and the era of Napoleon. Nationalism, romanticism, and the complex shifts in politics of the major European powers will be covered. The economic and social implications of the second Industrial Revolution will also be addressed.

Hist 340 Ireland since 1800 3(3,0)
An examination of the political, social, cultural, and economic history of Ireland from the Act of Union with Great Britain to the present. Among the topics covered are the struggle for Catholic rights, the Great Famine, emigration, land reform, Irish nationalism, the partition of Ireland, Ireland as an independent nation, and the conflict of Northern Ireland.

Hist 341 English History to 1688 3(3,0)
British history from the Roman occupation to The Glorious Revolution.

Hist 342 English History since 1688 3(3,0)
A study of the political and cultural history of the British Isles and the Empire to the present.

Hist 345 History of Russia 3(3,0)
From the earliest times to present, with emphasis on background and history of Communist regime. Treats cultural and social as well as political aspects.

Hist 346 History of Canada 3(3,0)
A study of the growth of Canada from pre-Columbian and European explorations to the present. Emphasis is placed on the history of French Canada, the fur trade and development of the West, the country's struggle to overcome ethnic, cultural, and regional differences, the impact of colonialism and continentalism, and the rise of a national spirit.

Hist 349 Women in History 3
This course will investigate the role of women in the history of the western world. It will attempt to discover what impact women have had on the course of events since the Renaissance. Selected women and their careers will be highlighted. The course will focus on either European or American women at the discretion of the instructor.

Hist 350 Colonial History of the U.S. 3(3,0)
Establishment of the British colonial empire in North America, settlement of the 13 colonies and the growth of the British American colonies to the end of the French and Indian Wars.

Hist 352 Revolutionary & Early National Period in U.S. History, 1763-1800 3(3,0)
Causes of the American Revolution, War for Independence, Articles of Confederation, Constitutional Convention of 1787, establishment of the Federal Union and early years of the Republic.

Hist 354 The Age of Jefferson and Jackson, 1800-1840 3(3,0)
Jefferson's administration, War of 1812, Jackson's administration.

Hist 355 American Civil War 3(3,0)
A critical appraisal of the ideas, significant encounters and creative processes which affected the manner in which Americans made war from 1861 to 1865. The technological and the operational aspects of the war will be the primary concern, although personalities will not be neglected.

Hist 356 The New Nationalism, 1877-1920 3(3,0)
Examination of political, economic, social, and cultural developments in the U.S. from 1877-1920. Emphasis on urban and industrial growth, reform movements, imperialism, war.

Hist 357 America Between The Wars, 1918-1941 3(3,0)
Major political, social, economic, and cultural developments in the U.S. during the crucial decades of the 1920s, 1930s.

Hist 358 The U.S. Since 1941 3(3,0)
Social, economic, and political change. The consequences, domestic and foreign, of global power and rising affluence.

Hist 362 History of the American West 3(3,0)
From exploration and colonization of the North American continent through closing of the frontier. Includes routes of migration, cattle frontier, mining frontier, Indians, pioneer farmers, mechanized farming, urban frontier, and the effect of the frontier on the American character.

Hist 365 American Military History 3(3,0)
A study of the military art as practiced by the United States. The relation between the armed forces and other government agencies will also be examined from the colonial period to the present.

Hist 368 History of the American Indians 3(3,0)
American Indian history with special emphasis on regional Dakota cultures. Topics include pre-historic origins and cultural evolution, history of Indian-White contacts, federal Indian policy, tribal sovereignty issues, cultural diversity, values, traditions, persistence and change in tribal cultures, historical overview of Indian education, current education issues, contemporary socio-economic conditions. (Satisfies the Teacher Preparation Program requirement of 3 credits of American Indian Studies.)

Hist 371 European Ethnic Groups in the U.S. 3(3,0)
An examination of European ethnic groups in America from colonial times to the present with the chief emphasis being on the period from 1820 to 1930. Among the topics covered will be the causes of immigration, the development of ethnic communities in America, and the impact of immigrants and their descendants on American society. Particularly attention will be paid to the ethnic groups who settled in South Dakota.

Hist 376 History of S.D. 3(3,0)
Physical environment, Native American presence, European settlement, economic developments, political institutions, and social life.

Hist 377 Economic History of the U.S. 3(3,0) F
Emphasis on economic factors but also correlated political and social developments, colonial period to present.

Hist 378 Social History of the U.S. 3(3,0)
Aspects of social development, with major emphasis on the period since the Civil War. Themes include gender, class, race, family, education, religion, leisure, music, arts, and values.

Hist 380 Methods & Philosophy of History 3(3,0) S
How historians research and write history. Also an account of attempts to explain larger meaning and directions of history. P, junior standing, required of majors.

Hist 418 History of Latin America 3(3,0)
A study of the national development of Mexico, Argentina, Chile, Brazil and Cuba in the 19th and 20th centuries.

Hist 420 Contemporary Europe 3(3,0) S (Odd years)
During the course of the twentieth century, Europe held political and cultural dominance. Two global wars, an ideological cold war, the end of colonialism and the rise of global economics eliminated that pre-eminence. This course covers the history, politics and culture of Europe from1890 to the present.

Hist 440 Nazi Germany 3(3,0)
The period from the establishment of the Weimar Republic after World War I through Adolf Hitler's Third Reich ending in 1945, is examined. Political, social, economic, cultural, and military aspects of this era in German history are covered.

Hist 447 Modern Germany 3(3,0)
Examination of German history in the 19th and 20th centuries. Emphasis on the formation of the German nation, Bismarck, development of the German empire, WWI, rise of Hitler, Nazi Germany and WWII.

Hist 467 U.S. Foreign Relations (20th Century) 3(3,0)
An interpretative analysis of American foreign policy from 1492-1992. Emphasis will be on the manner in which ideology, domestic political concerns and intergovernmental connections determined how the United States conducted its relations with the world from the Revolutionary War through Operation Desert Storm.

Hist 476 Historical Geography 3(3,0)
Crosslisted with Geog 476.

Hist 492 Special Problems in History 1-4(1-4,0) FSSu
Opportunity for qualified students to investigate special problems or carry out independent study under supervision of department staff. P, Sophomore, Junior or Senior standing and consent.

Hist 493 Topics in History 1-5 FSSu
Selected topics of current interest in the discipline.

Hist 495 Internship 1-12 FSSu
Planned and supervised professional experience related to history which takes place outside the formal classroom with private business or industry, or public agencies.

Dual Numbered Courses

Hist 460-560 Topics in History 1-4
An intensive examination of significant historical themes, issues, or problems. Topics will include, but are not limited to, the following: War and Society; The Hero in History; Republics and Self Government; The Early Church and Rome.

Graduate Courses

Hist 592 Special Problems in History 1-3 FSSu

Hlth (Health Education)

Many courses listed with the Hlth prefix are crosslisted with the same number under the Health Science (HSc) prefix, College of Nursing.

Undergraduate Courses

Hlth 120 Community Health 2(2,0) FS
See HSc 120.

Hlth 212 Contemporary Health Problems 2(2,0) FS
See HSc 212.

Hlth 250 First Aid 2(1,2)
Instruction for those who are in a position to provide first aid and emergency care frequently. Provides essential knowledge and skills needed to develop the functional first aid capabilities required by nurses, teachers, athletic trainers, crisis team personnel, police officers, firefighters, emergency squad and rescue squad members, ambulance attendants, and other special interest groups. You must be 18 or older.

Hlth 295 Allied Health Technical Training 20-48 FSSu
Designed to facilitate transfer of students who have completed a one or two year regionally or nationally accredited or certified program in an allied health area. The purpose is to provide transfer of previous work into an upward mobility option for students who have a commitment to an allied health profession.

Hlth 364 Emergency Medical Technician 4(3,3) S
This course develops skills in symptom recognition and in all emergency care procedures and techniques currently considered to be within the responsibilities of an EMT providing emergency medical care with an ambulance service. The EMT course follows State EMS guidelines and consists of 25 lessons involving a minimum of 80 hours of classroom and field training, plus 10 hours of in-hospital observation and training.

Hlth 420 Methods of Health Instruction 2(2,0) FS
Curriculum content at elementary and secondary levels. Methods of presentation including direct, correlated, and integrated health instruction. Organization of health and safety education. P, junior standing.

Hlth 440 Epidemiology 3(3,0) S
See HSc 440.

Hlth 443 Public Health Science 3(3,0) FS
See HSc 443.

Hlth 480 Wellness Programming 2(1,2) S
Practical skills of a worksite and community wellness professional will be investigated. Topics include a definition of worksite wellness, rationale for programs, types of programs, design, promotion, evaluation, marketing. P, instructor consent.

Ho (Horticulture)

Undergraduate Courses

Ho 111 General Horticulture 3(2,2) FS
Culture and growth processes involved in production of fruit, vegetables, flowers, lawn grasses, trees and shrubs; planning and care of home grounds.

Ho 220 Landscape Maintenance 3(2,2) F
Basic methods of establishment and maintenance of woody ornamental plants and turf in commercial and residential settings. Topics to be covered include turf selection and establishment, mowing, aerating, tree and shrub transplanting, pruning, fertilizing and other plant health care practices. P, 111.

Ho 230 Greenhouse and Nursery Crops 3(2,2) S (even years)
General greenhouse and nursery production and management principles. Topics to be covered include harvest and post-harvest care, environmental management, site selection, structures and integrated pest management. P, 111.

Ho 240 Fruit and Vegetable Production 3(2,2) S (even years)
Survey of vegetable and fruit crop distribution and production in temperate climates. Various topics include site selection, factors affecting plant growth, cultural practices and integrated pest management. P, 111, Bio 101.

Ho 250 Woody Plants: Trees 3(1,4) F
Nomenclature, identification and classification of hardy coniferous and deciduous trees and shrubs, vines and groundcovers. Landscape use as affected by inherent ornamental qualities, hardiness, environmental factors, and pests. P, 111, Bio 101.

Ho 260 Woody Plants: Shrubs and Vines 2(0,4) S
Nomenclature, identification, and classification of shrubs and vines hardy for the Northern Plains. P, 250 or consent.

Ho 311 Herbaceous Plants 3(2,2)F (odd years)
Identification, description, landscape uses, propagation, culture and adaptability of selected non-woody ornamental plants with emphasis on annuals, perennials and indoor plants. P, 111, Bot 201, or consent.

Ho 312 Plant Propagation 3(2,2)S (even years)
Fundamental anatomical and physiological principles and methods of reproducing herbaceous and woody plants by seeds, cuttings, grafts, layers and division. P, 111, Bot 201, or consent.

Ho 314 Turf Management 3(2,2) S
Maintenance and culture of turfgrass for lawns, parks, golf courses, athletic fields and special purpose turf. P, PS 213.

Ho 316 Vegetable Growing 3(2,2)F (odd years)
Methods used by home gardeners and commercial growers in vegetable production. P, 111 or PS 103.

Ho 383 Principles of Crop Improvement 3(2,2)
Evaluation of crop species, reproduction of crop plants, use of genetic variability, traits of interest, breeding programs, designs and management. Heritability, plant introduction, vegetative propagation, hands-on lab demonstration. P, Bio 371 or consent. Crosslisted with PS 383.

Ho 410 Woody Plants II 3(2,2) S (odd years)
This course expands the number of woody plant species and cultivars covered in Ho 250-260. Color, texture and habit in relation to various cultivars will be emphasized. P, 250, 260, PS 213.

Ho 411 Fruit Production 3(2,2)S (odd years)
Small fruit and tree fruit culture. Fundamentals of cultural and management practices in relation to soils, moisture, temperature, cultivars, pruning, rootstocks, growth regulators. P, 111, Bot 201.

Ho 412 Greenhouse Management 3(2,2)S (odd years)
Greenhouse construction, environmental control, production and scheduling of major greenhouse crops. Trips to commercial greenhouse operations and laboratory work in green-house crop production. P, 311, 312, Bot 201, and PS 213, or consent.

Ho 413 Arboriculture 3(2,2) S
A study of tree growth and how it is affected by cultural practices such as cabling, fertilizing, mulching, pruning and transplanting. Lab will include instructions in equipment use and rope and rigging techniques. P, 250, Bot 201.

Ho 415 Nursery Management 3(3,0) F
A study of current nursery and garden center crop cultural practices and business management. Topics to be covered include nursery and garden center design and organization, field and container crop production, transplanting, pricing, and shipping techniques. The working relationship between nurseries, landscape designers and contractors is also discussed. P, 111, PS 213.

Ho 490 Seminar 1(1,0) FS
Required of all major students; limited to two credits.

Ho 492 Problems 1-2 FS
Special investigation in horticulture area. Maximum four hours credit. P, consent, research problem 2.7 G.P.A.

Ho 493 Special Topics 1-4 FS

Ho 494-495-496 Cooperative Education/Internship/Field Experience 1-12 FSSu
a) Work experience in horticulture. One credit per semester or equivalent time unit. Consent.
b) Practical experience for selected Horticulture students. The project, program and grading criteria require approval by the department faculty. P, junior standing and must have completed 2 years of the Horticulture curriculum. Consent. Generally 3 cr. maximum.

Dual Numbered Courses

Ho 480-580 Environmental Stress Physiology 3(3,0) S (even years)
Physiological and cellular response of plants to environmental stresses. P, Bot 327.

Graduate Courses

Ho 590 Special Topics in Horticulture 1-3 FSSu

Ho 746 Plant Breeding 3(3,0)
Crosslisted with PS 746.

Hon (Honors Program)

Hon 301 Honors Colloquium 1-4(1-4,0) FS
History of ideas. May be repeated once.

Hon 302 Honors Colloquium 1-4(1-4,0) FS
The Arts. May be repeated once.

Hon 303 Honors Colloquium 1-4(1-4,0) FS
The Social Sciences. May be repeated once.

Hon 304 Honors Colloquium 1-4(1-4,0) FS
History and/or Philosophy of Science. May be repeated once.

Hon 492 Honors Independent Study 1-6 FSSu
Creative work in student's area of interest subject to approval by the Honors Program Committee.

HPER (Health, Physical Education and Recreation)

Major Theory Courses

Undergraduate Courses

HPER 180 Introduction to HPER 3(3,0) FS
An overview of the health, physical education, wellness/fitness and recreation professions primarily focusing on history, values, impact on society, and professional opportunities. Designed as an introduction to the HPER profession.

HPER 252 Motor Learning and Development 2(1,2) F
Course content deals with characteristic motor development patterns in children with concentration on fundamental locomotor, non-locomotor, manipulative skills and perceptual-motor development, and practical applications of research and knowledge to PE classroom teaching. P, sophomore standing.

HPER 440 Organization & Administration of HPER 2(2,0) S
Curricula, intramural and athletic programs. Administration of facilities, equipment and budgets. P, junior standing.

HPER 451 Tests & Measurements in HPER 2(1,2) F
Place of measurement in physical education. Analytical survey of tests and measures available; statistical approach, techniques and procedures in planning and administering tests and measurements. P, junior standing.

HPER 453 Psychological Aspects of Coaching 2(2,0)F
Psychological aspects of sport specifically applied to coaching. Topics include philosophy of coaching, leadership, communication, motivation and various intervention strategies designed to elicit optimal performance.

HPER 468 Internship 1-12
Planned and supervised professional experience which takes place outside the formal classroom with private business or industry, or public agencies. P, consent.

HPER 490 Senior Seminar 3(3,0) FS
Discussion of current issues, investigation of topics not covered in other classes, presentation and discussion of topics in HPER found in professional journals/related resources, planning for the internship, and various aspects of the job search. P, senior standing in HPER majors, HPER 180, consent.

HPER 492 Problems in HPER 1-3 FS
Directed studies and/or research activities related to HPER. P, consent.

HPER 493 Topics in HPER 1-5
P, consent.

HPER 496 Field Experience 2 FS
Provide student with professional experience related to their chosen field of study. P, consent.

Dual Numbered Courses

HPER 481-581 Workshops in HPER 1-3
Lectures, conferences, and outside assignments to increase understanding of a specific area.

Graduate Courses

HPER 682 Seminar in HPER 2(2,0) FSSu

HPER 742 Psychological Aspects of Sport and Exercise 3(3,0) F

HPER 743 Basic Issues in HPER 2(2,0) Su (alternate years)

HPER 745 Sports Medicine 2(2,0) SSu (alternate years)

HPER 760 Motor Learning & Development 3(3,0) SSu (alternate years)

HPER 765 Athlete Profiling 2(2,0) S (alternate years)

HPER 780 Seminar in HPER 1(1,0) FS

HPER 783 Research Methods in HPER 3(3,0) F

HPER 790 Thesis in HPER 1-5 FSSu

HPER 791 Thesis Sustaining 0 FSSu

HPER 792 Individual Research & Study in HPER 1-3 FSSu

HSc (Health Science)

Undergraduate Courses

HSc 120 Community Health 2(2,0)
Discussion based course with the goal of understanding the philosophy and principles of community health. Emphasis on knowledge, attitudes and behaviors utilized in solving community health problems. Credit is not allowed for HSc 120 if HSc 443 has previously been completed. Open to all students. Crosslisted with Hlth 120.

HSc 212 Contemporary Health Problems 2(2,0)
Personal health education course which focuses on the health problems facing today's society from birth to death. Emphasis on the knowledge essential in maintaining a healthy lifestyle. Open to all students. Crosslisted with Hlth 212.

HSc 253 Disaster Preparedness 2(2,0) (On sufficient demand)
Basic philosophy, fundamental principles of civil defense; citizen's role in emergency planning for non-military national defense. Open to all students.

HSc 262 Instructor's Course in Home Nursing 1 (On sufficient demand)
Workshop of 36 hours in effective methods of teaching home care of the sick. Limited to 14 students. P, consent.

HSc 302 Wellness and the Family 2(2,0) (On sufficient demand)
Planning for promotion of family health. Open to all students.

HSc 420 Methods of Health Instruction 2(2,0)
Curriculum content and methods in health education. Emphasis on elementary and secondary. Demonstration of teaching strategies. Organization of health/safety education. P, 212 or consent of instructor.

HSc 440 Epidemiology 3(3,0) (On sufficient demand)
Basic principles applicable to infectious and non-infectious disease. The epidemiologic methods for understanding the patterns of disease and health. P, junior or senior standing or consent of instructor. Crosslisted with Hlth 440.

HSc 442 Seminar 1-4
Current research and studies emphasizing Public Health terminology, study of reports, and problems. Consent of instructor.

HSc 443 Public Health Science 3(3,0) FS
Study of organization and administration of public and voluntary health agencies. Principle functions and program development in vital statistics, maternal-child health, adult health, sanitation, health education, and special health programs. Junior or senior standing or consent of instructor. Crosslisted with Hlth 443.

HSc 452 Workshop 1-4

HSc 494-495-496 Cooperative Education/Internship/ Field Experience 1-12
Planned and supervised professional experience related to health science which takes place outside the formal classroom with private business, industry, or public agencies. P, consent of department head.

Dual Numbered Courses

HSc 433-533 Industrial Hygiene 3(3,0)
Industrial hygiene deals with the scope, objectives, and functions of occupational health programs, examines work related diseases, harmful exposure to chemicals and physical agents which may cause discomfort, stress, inefficiency or disease; emphasis on preventive measures to assure a reasonably healthful work environment.

ID (Interior Design)

Undergraduate Courses

ID 122 Design Graphics 3(0,6) FS
Introduction to the graphic symbol system used to express site plans, building plans, and furnishings and equipment plans. Ability to interpret and to prepare basic diagrammatic documents used in the design professions.

ID 211 Design in the American Home 2(2,0) F
Selected functional and aesthetic concepts and principles of housing and interiors applied to consumer and family needs.

ID 221 Introduction to Interiors and Housing 3(3,0) FS
Introduction to the behavioral, functional, aesthetic and material aspects of interiors and settings of daily life. Processes of analysis and problem-solving to create appropriate interiors and places. P, Art 121.

ID 222 Laboratory in Interiors and Housing 1(0,2) FS
Processes, procedures and skills in solving basic interior design and setting problems. Concurrent with ID 221.

ID 223 Programming and Presentation 3(2,2) F
Introduction to the design problem-solving process as it relates to presentation methods. Includes needs assessment, client profiles, problem definition, space planning, diagramming techniques, developing design concepts, and the integration of visual, oral and written presentation strategies appropriate to clients and projects. P, 122, 221 and 222.

ID 292 Special Problems 1-3
Problems for independent study selected according to special interests and needs. Arranged by contract with instructor.

ID 293 Current Topics 1-3
Discussion of current literature and issues. Investigation of topics for which there is a current need but which are not part of any class. P, consent.

ID 296 Field Experience 2-3
Career exploration. Working under supervision of professionals and faculty in organizations which hire Interior Design graduates. P, 221, sophomore standing (or 55 hours completed), 2.2 GPA, approval of instructor.

ID *310* Interior Design Fabrics 2(1,2) (alternate years)
Relationship of weight, color, texture, design of textiles to their application in interiors. Sources of traditional and contemporary fabrics are explored. Lab: Designing and creating appropriate fabric structures. P, AM 242.

ID 315 Interior Design Materials 3(3,0)
Study of the characteristics of interior furnishings from raw materials to finished products. Evaluation of quality characteristics of similar product types.

ID 316 Interior Design Technology 2(2,0)
Study of the technical systems used in producing interior living spaces. Review and application of local and model codes. P, 315, upper division student.

ID 317 Interior Design Practices 2(2,0) S
Study of the professional practices of interior design firms. Preparation of specifications and installation documents. Review of installation procedures. P, 316, upper division student.

ID 320 Lighting Design 3(2,2) (alternate years)
Fundamentals of lighting. Preparation of lighting plans and specifications for a variety of interiors and related areas. P, 223, upper division student.

ID 322 Intermediate Interior Design I 3(0,6) F
Introduction to the design process, developing skills specifying materials for interiors. Application of design theory to practical situations. P, 223.

ID 323 Intermediate Interior Design II 3(0,6) S
Development of the basic knowledge and skills needed to specify materials for interiors. P, 223, 322.

ID 373 Retailing 3(3,0) F (1/2 semester)
Principles of retailing as applied to textiles, apparel and furnishings retailing. Retail store organization and operation. Study of customer, demand, buying, inventory, control and promotion. Field trip to market center is required. P, Econ 201. Crosslisted with AM 373.

ID 422 Advanced Interior Design I 3(0,6) F
Experience in solving commercial design problems within the frame of a business. P, 323.

ID 423 Advanced Interior Design II 3(0,6) S
Experience in solving design problems of commercial and contract interiors. P, 422.

ID 424 History of Interiors I 3(3,0) F (alternate years)
Historical backgrounds: from Antiquity through the Renaissance.

ID 425 History of Interiors II 3(3,0) S (alternate years)
Historical backgrounds: from Renaissance to present. P, 424.

ID 450 Shelter and Families 3(3,0) (alternate years)
Cross-cultural study of world housing and furnishings practices. Relating socio-cultural, aesthetic, technological and physical characteristics of the region to family living patterns.

ID 487 Pre-practicum in Interior Design and Housing 1(1,0) S
Discussion of professional practices, and issues. Experience in goal setting, reporting, and evaluation. Organization and preparation of professional documents. P, 323 or concurrently; GPA of 2.2.

ID 497 Professional Practicum 1-12 Su
Supervised work experience in a cooperating retail design firm or design studio. Provides opportunities for interaction between business, community and the university. P, 487, 90 sem. cr. and consent of the department. Minimum GPA 2.2.

Dual Numbered Courses

ID 473-573 Travel Studies 1-5 Su
Study of businesses, museums and other relevant places through site tours and presentations in selected locations. Includes pre-travel orientation and post-travel written report. P, consent of department.

ID 492-592 Special Problems 1-3
Problems for independent study selected according to special interests and needs. Arranged by contract with instructor.

ID 493-593 Current Topics 1-3
Discussion of current literature and issues. Investigation of topics for which there is a current need but not part of any class. P, consent.

Graduate Courses

ID 770 Seminar in Interior Design and Housing 1-2

ID 792 Special Problems 1-3

ID 793 Current Topics 1-3

Japn (Japanese)

Undergraduate Courses

Japn 101-102 Introductory Japanese I-II 4(4,0)
Introduction to Japanese language and culture. Classwork may be supplemented with work in the language laboratory.

La (Landscape Design)

Undergraduate Courses

La 190 Introduction to Landscape Architecture 1 (1,0) S
Introduction to design theory and professional practice, and exploration of professional values and ethics.

La 222 Landscape Graphics 2(0,4) FS
Wide range of basic graphic techniques using various media in preparing landscape plans and perspective renderings.

La 231 Introduction to LandCADD 3(0,6) FS
An introductory course in computer aided design and drafting with specific application to landscape design software applications. Emphasis is placed on the practical application of CAD to site analysis, design problem-solving, design management, and professional communication toward the creation of site plans, cost estimates and working drawings for the landscape industry. P, EG 123 or consent.

La 241 History of Landscape Architecture 3(3,0) S (alternate years)
History from early Egyptian to contemporary times. Styles viewed from the standpoint of aesthetic thought, societal and technological influences. Works of major historical and contemporary designers will be stressed.

La 261 Landscape Design I 3(0,6) FS
Introduction to historical and contemporary background and theory of landscape design. Solution of aesthetic and functional design problems relating to residential properties.

La 322 Site Planning 3(0,6) F
Technical work in preparing grading plans, computing areas of cut and fill, site selection, topographic analysis, soil and exposure analysis, surface and subsurface drainage, and pedestrian and vehicular circulation. P, CEE 106 or AST 333.

La 323 Landscape Construction 3(0,6) S
Design and construction of walks, terraces, fences, walls, pools, and other landscape structures and systems. P, 261.

La 324 Planning Public Grounds 3(1,4) F
Contemporary problems in the design of public properties such as parks and civic areas. Complexities of functional use, pedestrian and vehicular circulation, and land use are addressed. P, 261.

La 332 Residential Landscape Design 3(0,6) S
Advanced theory and practice of residential design focusing on indoor-outdoor relationships, regional and functional design styles, and the works of famous designers. P, 261 or consent.

La 342 Planting Design 2(0,4) S
Topics include planting design theory, plan preparation, design specification and installation. Small projects will be done to provide realistic hands-on experience.

La 421 City Planning 3(1,4) F
City planning in the United States, planning practice and theory, urban design, and land use planning. Local planning efforts observed. P, 322, 324.

La 422 Landscape Design II 3(0,6) F
Advanced landscape design involving contemporary theory and complex problems. P, 323, Ho 250.

La 423 Construction Specifications 2(1,2) S (alternate years)
Understanding the development and use of construction specifications and design details from both the designer and contractor viewpoint. Preparation of construction documents, including standard regulatory and legal sections, will be emphasized. P, 323 or consent.

La 424 Recreational Facilities Design 3(1,4) F
Design of public and private recreational facilities including parks, resorts, golf courses, trails, and ecosystems. Planning and design of facilities, and their function, operation, and maintenance will be emphasized. P, 324 or consent.

La 442 Landscape Design III 3(0,6) S
Advanced design theory and practice focusing on large scale, complex projects which require the application of knowledge from a wide variety of sources. The seminal design theory course in the Landscape Design major. P, 422 or consent.

La 492 Problems 1-2 FS
Special investigations in Landscape Design. Maximum of 5 hours credit. P, consent.

La 493 Special Topics 1-4 FS
Special Landscape Architectural topics offered for group study.

La 494-495-496 Cooperative Education/Internship/Field Experience in Landscape Design 1-12 FSSu
See course description under Horticulture curriculum. Generally 3 cr. maximum.

LAAS (Latin American Area Studies Program)

Undergraduate Courses

LAAS 301 Latin American Cultures 3(3,0) (Topical)
A broad view of a country, region, epoch or theme concerning Latin America. A multidisciplinary and multimedia approach. General supervision by the coordinator of Latin American Area Studies program. P, sophomore standing or consent. May be repeated with consent of the coordinator of the LAAS program. Enrollment limited to 20.

LAAS 302 Latin American Societies 3(3,0) (Topical)
A broad view of the society of a country, region, epoch or theme concerning Latin America. A multidisciplinary and multimedia approach. P, sophomore standing or consent. May be repeated for credit with consent of the LAAS Coordinator.

LAAS 491 Directed Studies in Latin American Cultures 1-3(1-3,0)
Advanced students interested in in-depth study of particular aspects of a given country, region, epoch or theme concerning Latin America may enroll for 1-3 credit hours of independent multidisciplinary directed study. Studies will be planned and method of evaluation and grading established by one or more instructors in consultation with the student, under the general supervision of the coordinator of the LAAS program. May be repeated with consent of the coordinator of the LAAS program. P, junior standing or consent.

Lak (Lakota)

Undergraduate Courses

Lak 101-102 Introductory Lakota I-II 4(4,0)
Introduction to Lakota language and culture. Classwork may be supplemented with work in the language laboratory.

Lak 201-201 Intermediate Lakota I-II 3(3,0)
Aims of the first year continued with emphasis on speaking and reading skills. P, 101-102 or comparable proficiency.

Ling (Linguistics)

Undergraduate Courses

Ling 203 English Grammar 3(3,0) S
Instruction in the theory and practice of traditional grammar including the study of parts of speech, parsing, and practical problems in usage.

Ling 425 The Structure of English 3(3,0) (alternate years)
Use of traditional, structural, and transformational grammars for describing the English language. Practical application in teaching. Strongly recommended for majors planning to teach.

Dual Numbered Courses

Ling 420-520 The New English 3(3,0) (alternate years)
Diverse new theories and applications in English linguistics: lexicography, pragmatics, stylistics, socio-semantics, semiotics, and discourse theory.

Ling 443-543 Development of the English Language 3(3,0) (alternate years)
Historical survey of phonology, grammar, syntax, and lexicon of English leading to an understanding of the present state of the language and future developments.

Ling 452-552 General Semantics 3 (alternate years)
Relations between symbols; human behavior in reaction to symbols including unconscious attitudes, linguistics assumptions; and the objective systematization of language. Crosslisted with SpCm.

Math (Mathematics)

Undergraduate Courses

Math 010 Basic Algebra 3(3,0) FSSu
Integers, Rational numbers, signed numbers, absolute values, and basic operations. Solving algebraic equations and inequalities in one variable with applications. Basic operations applied to polynomials, special products and factoring. Algebraic fractions, square roots and radicals. (Note: Remedial Level)

Math 101 Intermediate Algebra 3(3,0) FSSu
Set concepts, basic properties of real numbers, factoring of polynomials, solution of linear and quadratic equations, inequalities, systems of equations, exponents and radicals. Credit for Math 101 will not be granted to anyone who has previously received credit in Math 102 or 113. P, 1 unit of high school algebra.

Math 102 College Algebra 3(3,0) FSSu
Basic properties of real numbers. Solutions of linear, quadratic, and rational equations and inequalities. Exponents and radicals, factors, graphing, and zeros of polynomials. Systems of equations, exponentials, logarithmic, and inverse functions. Other topics selected from sequences, series, and complex numbers. Credit will not be allowed for both Math 102 and 113. P, 1 1/2 units of high school algebra or 101.

Math 113 College Algebra & Trigonometry 5(5,0) FSSu
The real number system as related to linear, quadratic, rational, trigonometric, exponential, logarithmic and inverse functions and their applications. Other topics selected from mathematical induction, complex numbers, partial fractions, determinants, matrices, theory of equations, sequences & series. P, 1 1/2 units of high school Algebra. Credit will not be allowed for Math 113 in addition to credit in Math 102 or 120.

Math 120 Trigonometry 3(3,0) FS
Trigonometric functions, equations and identities; inverse trigonometric functions; exponential and logarithmic functions, and applications of these functions. P, 102 or equivalent.

Math 123 Calculus I 5(5,0) FSSu
Plane analytic geometry, limits, derivatives of algebraic and elementary transcendental functions, extrema of functions, sketching of graphs, selected applications, antiderivatives, definite integrals, fundamental theorem of calculus. P, 113 or placement.

Math 140 Survey of Mathematics 3(3,0) (On demand)
To give the students in social science and liberal arts an appreciation of the nature of mathematics. An introduction to the logical structure of mathematics and its application to modern life, including such topics as logic, number systems, geometry, probability, statistics, and consumer mathematics. P, 1 unit of high school algebra.

Math 143 Finite Mathematics 3(3,0) (On demand)
BASIC programming, linear equations and matrices, graph theory, probability, Markov chains, linear programming and the simplex algorithm, game theory. P, 1 1/2 units of high school algebra, or equivalent.

Math 215 Matrix Algebra 2(2,0) FS
An introduction to vectors, matrices, and determinants with applications to linear mathematical problems. Linear transformations of n-dimensional Euclidean space and their matrix representations. P, 113 or consent.

Math 222 Calculus for Non-Math Majors 5(5,0) FSSu
An intuitive approach to functions, limits, calculus of algebraic, exponential and logarithmic functions, functions of several variables, applications of the derivative and integral. Credit will not be allowed for both Math 222 and 123. P, 102 or 113 or placement.

Math 224 Calculus II 4(4,0) FSSu
Applications of integration to areas, volumes, and selected physical applications, methods of integration, parametric equations, polar coordinates, infinite sequences and series, indeterminate forms, improper integrals, Taylor's formula. P, 123.

Math 225 Calculus III 3(3,0) FSSu
Three dimensional analytic geometry and vectors, partial derivatives, multiple integrals, selected physical applications. P, 224.

Math 241 Mathematics of Finance 3(3,0) S
Application of algebra to problems involving simple and compound interest including annuities, amortization, sinking funds, valuation of bonds, depreciation and capitalized cost. P, 102, or consent.

Math 253 Elementary Logic & Set Theory 3(3,0) FS
Logical connectives, quantifiers, arguments, and proof. Set operations, index sets, relations, functions, cardinality, and mathematical induction. P, 123.

Math 261 Geometry for Teachers 3(3,0) S
Axiomatic development of Euclidean and other geometries, coordinate geometry in two or three dimensions, transformational geometry, and informal Non-Euclidean geometry. Required of majors and minors planning to teach. P, 224, SeEd 287, or consent.

Math 271 Mathematical Applications in FORTRAN 3(3,0) F
An appreciation of the use of computer use for non-engineers. FORTRAN programming, flow charting, data processing techniques, evaluation of computer hardware; binary arithmetic, elementary numerical analysis and optimization applications. P, 123, CSc 150.

Math 313 Modern Algebra 3(3,0) FS
Groups, rings and fields. Homomorphism theorems. P, 224, 253 or consent.

Math 315 Linear Algebra 3(3,0) FS
Vector spaces, linear transformations and matrices. P, 215, 253 or consent.

Math 321 Differential Equations 3(3,0) FSSu
Ordinary differential equations including first order, higher order linear and systems of linear equations. General solutions and solutions to initial-value problems using matrices, Laplace transforms and power series and applications to physical science and geometry. P, 224, 225 recommended.

Math 327 Calculus of Several Variables 3(3,0) (On demand)
Calculus of functions of 2 and 3 variables starting with a review of Partial Derivations and Multiple Integration, and including the Implicit Function Theorems, Jacobians, Improper Integrals, Vector Field Theory, and Stokes' Theorem. P, 215, 225 or consent.

Math 331 Advanced Engineering Math 3(3,0) FSSu
Fourier series, vector analysis, matrices, determinants, and topics selected from: complex variables, partial differential equations, numerical methods. P, 321.

Math 345 Topics in Discrete Mathematics 2(2,0) FS
Topics in discrete mathematics including but not limited to: linear programming, difference equations, recurrence relations, application of algorithms, finite graphs, trees, paths and modeling. P, 215, 253.

Math 355 Methods of Teaching Mathematics 3(2,2) FS
Techniques, materials and resources for teaching mathematics to junior high school and high school students. Required of majors and minors planning to teach. P, 224, 261, and SeEd 287. May not be used for upper division math elective for majors not in Secondary Teaching Option.

Math 361 College Geometry 3(3,0) F
Axiomatic study of elementary Euclidean geometry including various advanced topics. P, 253.

Math 373 Intro to Numerical Analysis 3(3,0) S
Mathematical models, algorithms, sources of error, computer solution of systems of linear equations, non-linear equations; quadrature, approximation, and interpolation using the computer. P, 224, CSc 150 or 213.

Math 381 Mathematical Statistics 4(4,0) FSSu
Statistical methods and probability, related to engineering and physical sciences. Common single and multiple variable densities and moment generating functions. Applications of random sampling to hypothesis testing, confidence limits, correlation, and regression. P, 225 or consent. Crosslisted with Stat 381.

Math 401 Senior Seminar 1(1,0) FS
A capstone experience that includes readings from the mathematical literature, an oral presentation, and an assessment process. Open only to mathematics majors. P, 253.

Math 411 Theory of Numbers 3(3,0) S
Divisibility, greatest common divisor, least common multiple, Euler's phi function, perfect numbers, Diophantine equations, congruences, Fermats theorem, Wilson's theorem, quadratic residues, primitive roots, Pell's equations, continued fractions, distribution of primes. P, 224, 253.

Math 425-426 Intro to Real Analysis I-II 3(3,0) FS
Properties of real numbers, sequences, and series of real numbers, limits of functions, uniform continuity, differentiation, sequences and series of functions, uniform convergence, theories of integration. Extensions of R^n may be considered. P, 225, 253.

Math 433 Laplace Transform 3(3,0) (On demand)
Main features of Laplace transform theory. P, 321 or consent.

Math 490 History of Mathematics 3(3,0) S
A general presentation of historical topics in mathematics including contributions to mathematics from ancient civilizations; developments leading to the creation of modern geometries, calculus and modern algebra; and contributions of outstanding mathematicians. P, 224 or consent.

Math 491 Directed Studies 1-3(1-3,0)FSSu

Math 494-495-496 Cooperative Education/Internship/ Field Experience 1-6 FSSu
Planned and supervised professional experience related to mathematics which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Dual Numbered Courses

Math 421-521 Advanced Calculus I 3(3,0) F
Math 422-522 Advanced Calculus II 3(3,0) S
Math 461-561 Intro to Topology 3(3,0) S
Math 466-566 Projective Geometry 3(3,0) S (On demand)
Math 471-571 Numerical Analysis 3(3,0) FSu
Math 493-593 Special Topics 1-3

Graduate Courses

Math 672 Numerical Analysis 3(3,0) S
Math 700 Seminar 1 FS (Pass/Fail)
Math 716 Theory of Algebraic Structures I 3(3,0) F
Math 717 Theory of Algebraic Structures II 3(3,0) S
Math 726 Real Variables I 3(3,0) F
Math 727 Real Variables II 3(3,0) S
Math 728 Complex Variables I 3(3,0) F
Math 729 Complex Variables II 3(3,0) S
Math 731 Ordinary Differential Equations 3(3,0) S
Math 732 Partial Differential Equations 3(3,0) F
Math 770 Numerical Linear Algebra 3(3,0) S
Math 784 Applied Probability Theory 3(3,0) S
Math 790 Thesis 1-7 FSSu (Pass/Fail)
Math 791 Thesis Sustaining 0 FSSu (Pass/Fail)
Math 792 Research Paper 2 FSSu
Math 793 Advanced Topics 1-3 FSSu
Math 794 Research Paper Sustaining 1
Math 795 Special Problems 1-3 FSSu
Math 797 Research 1-9

MCom (Journalism & Mass Communication)

Undergraduate Courses

MCom 130 Introduction to Radio & TV 3(3,0) F
History, structure, regulations, and financial support; potentialities and limitations; public responsibilities, impact on society. Crosslisted with RTVF 130.

MCom 151 Intro to Mass Communication 2(2,0) FS
A comprehensive look at the mass media in the United States and the world and how they work. Includes discussions of newspapers, magazines, radio, television, books, movies, recordings, advertising and public relations. Also studies mass media rights and responsibilities, ethics and censorship. Recommended for journalism majors and minors.

MCom 160 Basic Photography 2(1,3) FSSu
Beginning camera and darkroom techniques, including processing and printing black and white photographs. The student will also survey the field of photography and its uses.

MCom 210 Newswriting & Reporting 3(2,3) FSSu
Gathering, evaluating and writing news. P, freshman English grade no lower than C. Not open to freshmen without consent.

MCom 213 Journalism Typography 2(1,3) FSSu
Fundamentals of effective visual communication in printed materials. Includes using type, design principles, illustrations, information graphics, color, and printing processes.

MCom 261 Photojournalism 2(1,3) FS
Photography as it relates to the media and the public. Emphasis on the content and design of photo essays, legal and ethical aspects of photography. P, 160.

MCom 310 Newspaper Editing 2(2,0) FS
The evaluation and editing of news stories, with an examination of editing problems, copy reading techniques, page makeup and design, headlines, picture usage, legal and ethical issues. Must be taken concurrently with 311. P, 210.

MCom 311 Editing Laboratory 1(0,3) FS
Comprehensive experience in a laboratory setting with editing techniques. Students work with Associated Press wire service copy, electronic page design and layout techniques, picture editing, and page composition. Must be taken concurrently with 310. P, 210.

MCom 313 Publicity Methods 2(2,0) FS
Newswriting, organizing publicity campaigns, press relations. (Cannot be taken for credit by journalism majors.)

MCom 314 Sales, Promotion & Marketing 3(3,0) S
Promotion, sales, advertising, circulation, practices and theories of marketing in advertising and graphic arts.

MCom 315 Magazine Writing & Editing 3(3,0) F
Includes overview of the magazine industry, how to write and submit freelance articles. Students write and submit articles for publication and edit a departmental magazine.

MCom 316 Public Affairs Reporting 3(2,3) FS
Covering and writing news of government, politics, economics, education, and social issues at the local, county, and state level. P, 210, PolS 210 or consent.

MCom 330 Writing for Radio & TV 2(1,2) S
Preparation of continuities such as commercials, public service announcements, talks, interviews, drama documentaries, and educational programs. Crosslisted with RTVF 330.

MCom 331 Television Production 3(2,3) FS
Includes preparation and presentation of talks, interviews, discussion and extension and community services for broadcast. Crosslisted with RTVF 331.

MCom 332 Radio News Reporting 3(2,3) FS
Radio news reporting, writing, editing, and producing. Lab practice in writing, audio tape, and delivery. Crosslisted with RTVF 332. P, 210 for majors; RTVF 330 for others.

MCom 333 Television News Reporting 3(2,3) FS
TV news videography, reporting, writing, and video editing. Lab practice with videotape. Crosslisted with RTVF 333. P, MCom/ RTVF 331, 332, or consent.

MCom 335 Broadcast Programming 3(3,0) S
Program types and essentials of effective structure. Audience characteristics and preferences. Managerial problems. Special consideration of agricultural, commercial, and educational broadcast requirements. Crosslisted with RTVF 335.

MCom 365 Advanced Photography 2(1,3) S
Exploration of photojournalism and electronic photojournalism. Emphasis on putting together a professional photojournalism portfolio including black and white and color. P, 160 and consent.

MCom 370 Principles of Advertising 3(3,0) FS
Study of advertising as an institution. Discuss historical foundations, economics, social consequences, structure, planning, execution, and evaluation phases of the advertising process. Discuss advertising as it relates to other types of marketing communication. P, junior standing or consent.

MCom 371 Advertising Copy and Layout 3(2,3) FS
Discuss principles and techniques for developing creative campaigns. Laboratory assignments are designed to apply thinking, design, and writing skills to creative problems for different media and different targets. Encompasses creative development for all advertising media. P, 370.

MCom 372 Media and Markets 3(3,0) FS
Learn theory and fundamentals of evaluating advertising media. Analyze marketing variables, media characteristics, sources, and strategies. Use computer planning models. Assigned range of planning problems and develop media plan within an integrated marketing framework. P, 370.

MCom 410 Advanced Reporting 3(2,3) S
Political, scientific, social issues done in in-depth reporting. P, 210.

MCom 412 Advanced Editing Lab 1(0,3) FS
Advanced editing and production.

MCom 414 Mass Communication Law 3(3,0) F
Libel, privacy, news gathering rights, and press freedom in America.

MCom 417 History of Journalism 3(3,0)F
Development, impact, and importance of individual journalists and media in U.S.

MCom 433 Advanced Television News Reporting 3(2,3) F
In-depth analysis of television news reporting, writing, videography, and video editing techniques. Major emphasis on out of class assignments. P, MCom/RTVF 331, 332, 333, or consent.

MCom 471 Advertising Design 3
A studio course in advertising design with an emphasis on concept development, graphic design, research, organization, and presentation. (For advertising majors–crosslisted as ArtD 465.) P, 371 or ArtD 351 for Visual Arts majors.

MCom 473 Advertising Campaigns 3(3,0) FS
The capstone course of the advertising sequence. Use case study method and develop complete integrated communication plan for client. Make formal advertising campaign presentation. P, 370, 371, 372, and consent.

MCom 492 Special Problems in Journalism 1-3 FSSu
P, Senior Standing.

MCom 493 Topics in Journalism 1-5

MCom 495 Internship 1-12 FSSu
Supervised media experience; print, broadcast, public relations. P, consent of department program coordinator.

Dual Numbered Courses

MCom 405-505 Theories of Communications 3(3,0) S
Major theories of communication, including media and interpersonal communication.

MCom 406-506 Public Opinion and Propaganda 3(3,0) S
Formation and measurement of public opinion; role of the media; propaganda techniques, agencies, theories. P, Senior standing, consent.

MCom 415-515 Editorial Writing & Policy 2(2,0)F
Opinion function of periodicals; great editorials and editorial writers; writing editorials; shaping policy.

MCom 416-516 Mass Media in Society 3(3,0) S
Rights and responsibilities of the press; relation of the media to individuals and society; role of media in a free society.

MCom 437-537 Education Radio & TV 3(3,0)
Preparation, presentation of educational and instructional materials for radio, TV, and film and classroom use. Crosslisted with RTVF 437-537.

MCom 475-575 Public Relations 3(3,0) S
Interpreting institutional and industrial policies and programs to the public.

MCom 481-581 Media Administration & Management 3(3,0) F
Business practices, newspaper, magazine, and broadcast management.

Graduate Courses

MCom 653 Workshop in Communications 1-4 Su

MCom 751 Special Problems in Communications 1-3 FSSu
P, consent.

MCom 790 Thesis in Journalism 1-6 FSSu

MCom 791 Thesis Sustaining 0 FSSu

MCom 792 Research Methods in Communications 3(3,0) S

ME (Mechanical Engineering)

Undergraduate Courses

ME 240 Introduction to Mechanical Design 3(3,0) FS
Introduction to the design process, statement of problem, modeling, research, interaction of system components. Economic, social, environmental and manufacturing constraints. Factors of safety, reliability. Utilization of graphics and vector methods in mechanical design. Design project. P, EM 221, concurrent ES 225.

ME 241 Engineering Materials 3(3,0) FS
Structure of metals, including atoms, perfect and imperfect crystals and phases. Effect of mechanical stresses, thermal reactions, magnetic fields and corrosion on microstructure. Phases and mechanical behavior of ceramics. Linear and three dimensional polymers and deformation of polymeric materials. P, Math 123, Chem 112.

ME 311 Thermodynamics I 3(3,0) FS
Thermodynamic properties of gases, vapors and mixtures. Zeroth, First and Second Laws of Thermodynamics. Entropy. Availability and irreversibility. P, Phys 211, Math 225 or concurrently.

ME 312 Thermodynamics II 3(3,0) FS
Thermodynamic power cycles using vapors and gases. Refrigeration cycles. Mixtures and psychrometry. Maxwell's relations, Combustion and Thermochemistry. P, 311, Math 321.

ME 313 Analytical Thermodynamics 3(3,0)
Thermodynamic properties and laws, statistical thermo-dynamics, kinetic theory and transport phenomena. Irreversible thermodynamics, applications to direct energy conversion devices. P, Phys 331, Math 321.

ME 314 Thermodynamics 3(3,0) FS
Terminal course for non-mechanical engineering students. Fundamental equations of thermodynamics. Properties of gases and vapors. Thermodynamic cycles. Introduction to heat transfer. P, Phys 211, Math 225.

ME 321 Fundamentals of Machine Design 3(3,0) FS
Analysis of motion and design of linkages, cams, gears, gear trains, planetary gear trains. Analytic and graphical solution of positions, velocities, accelerations, static and dynamic forces. Balancing of engine mechanism, flywheels analysis. Synthesis of planar mechanisms and introduction to spatial mechanisms. Computer applications. P, CSc 213 or 218, EM 222, ME 240.

ME 322 Vibrations 3(3,0) FS
Free and forced vibration of single-degree-of-freedom system. Vibration measurement. Vibration transmission and isolation. Multi-degree-of-freedom systems, matrix methods, vibration control and damping treatments. Introduction to continuous systems. P, EM 222, EM 321, Math 321.

ME 341 Metallurgy 3(1,4) S
Crystalline structure and physical properties of metals, phase transformation diagrams, effect of mechanical or thermal treatment on grain structure of ferrous and non ferrous alloys. Laboratory demonstrates fundamental principles and presents necessary techniques of metallography. P, 241 and consent.

ME 361 Methods Engineering & Work Measurement 2(0,4)
Work methods design and measurement of industrial enterprises. Rigorous engineering approach to work methods design. Methods of setting time standards including stop watch time study, work sampling, predetermined motion times, and standard data. P, 362 or consent.

ME 362 Industrial Engineering 3(3,0) F
Modern industrial engineering. Planning, organizing and directing industrial enterprises. Quantitative analysis of management problems in production planning and control, quality control, reliability, facility planning and PERT. Applications and examples from realistic situations. P, CSc 213 or 218, Math 381 or consent.

ME 376 Measurements and Instrumentation Lab 2(1,3) FS
Instruments for measuring pressure, temperature, flow, strain, vibration and sound. Experimental data analysis for accuracy, error and uncertainty. P, 311, Engl 379.

ME 381 Mechanical Equipment of Buildings 3(3,0)
Heating, ventilation and air conditioning systems, control and servicing. Refrigeration, plumbing systems and their maintenance. Fire and explosion prevention in buildings. P, 311 or consent.

ME 411 Environmental Engineering 3(3,0) F
Comfort and health requirements for space conditioning. Psychrometrics, steady-flow processes involving air-vapor mixtures. Heating and cooling load calculations. Basic air conditioning systems. Emphasis on systems design approach. P, 312, concurrent 415, EM 331.

ME 412 Internal Combustion Engines 3(3,0) F
Theory, design and operation of spark ignition and compression-ignition engines. Performance characteristics and efficiencies; combustion and thermochemistry of fuel-air mixture exhaust emissions as they pertain to air pollution. P, 312, EM 331.

ME 413 Turbomachinery 3(3,0) S
Theory, design, operation and energy transfer in Turbo-machines. Steam, gas and hydraulic turbines. Pumps, fans and centrifugal and axial flow compressors. P, 312, EM 331.

ME 415 Heat Transfer 3(3,0) FS
Basic principles of steady and unsteady conduction, convection of heat and mass transfer and thermal radiation. Computational methods of heat transfer. P, 311, EM 331, Math 321.

ME 416 Computer-Aided Engineering 3(2,2) S
Introduction to applied structural and thermal design and analysis using the ANSYS finite element software package. One-, two- and three-dimensional static structural problems modeled using the direct generation method as well as solid modeling techniques. Steady-state and transient thermal analysis are performed. Thermally-induced stresses and displacements that occur in non-uniform temperature structures, solutions of two- or three- dimensional fluid mechanics problems, and optimization techniques are discussed. P, 415, EG 123, EM 222, or instructor's consent.

ME 418 Design of Thermal Systems 3(3,0) FS
Systems approach to design, mathematical modeling, simulation and optimization of systems, with particular emphasis on thermal systems. P, 312, 415, EM 331.

ME 419 Heating and Air Conditioning Design 3(2,2) S
Analysis of heating and air conditioning equipment. Design of heating and air conditioning systems. Economic considerations. Use of computers as design aids. P, 411 or consent.

ME 421 Design of Machine Elements 3(3,0) FS
Fundamentals of mechanics. Energy methods. Working stresses and failure in materials. Design considerations of basic machine elements – shafts, springs, belts, clutches, brakes, chains, gear, bearings, fasteners and flywheels. Lubrication. Classification of engineering materials. P, 321, EM 321 with "C" or better.

ME 428 Machine Design – Case Studies 3(1,5)
Study of stress and strain as applied to mechanical engineering problems. Residual stresses and dynamic loading. Theories of failure. Design of components that form a complete working system. Design analysis of various current case studies. P, 421 or consent.

ME 431 Aerodynamics 3(3,0) S
Airfoil characteristics, wing shapes, static and dynamic forces, viscosity phenomena, boundary layer theory, flaps and slots, propellers, stability, control and performance. P, EM 331.

ME 451 Automatic Controls 3(3,0) FS
Modeling of mechanical, electrical, hydraulic and pneumatic systems. Laplace transform and system response. Transfer functions; control systems and frequency response. System analysis using polar, logarithmic and Root locus plots. System compensation. Introduction to nonlinear controls. P, 322, concurrent EE 306.

ME 456 Dynamic Systems Laboratory 1(0,3) FS
Experiments in mechanical vibration, control and robotics. Force and acceleration measurements, free and forced vibrations of systems, response of mechanical systems, stability of a feedback control system, performance of compensators. P, 322, concurrent with 451.

ME 461 Analysis & Design of Industrial Systems 3(3,0) S
Problems in product design and development, marketing, forecasting, capacity evaluation, plant layout, materials handling from standpoint of interrelated and integrated systems. P, 362.

ME 476 Thermo-Fluids Laboratory 1(0,3) FS
Experiments in fluid mechanics, thermodynamics and heat transfer. Single and multi-stage compressors. Heat pumps and air conditioning. Blowers and flow measurements in ducts. P, 376, 312, concurrent with 415; EM 331.

ME 477 Mechanical Systems Design I 1(0,2) FS
A systems approach to design, covering need analysis, design phases, design processes, economics, optimization, and success criteria. Students will design, build, and test an independent project which must be different than any previous design they have attempted. P, 321; Math 331 or 571.

ME 478 Mechanical Systems Design II 2(1,3) FS
A systems approach to design, covering need analysis, design phases, design processes, economics, optimization, and success criteria. Students will design, build, and test an independent project which must be different than any previous design they have attempted. P, 477.

ME 480 Inspection Trip (0) FS
Short inspection trips arranged to give students opportunity to observe and evaluate manufacturing and industrial processes, operations and facilities. P, senior standing.

ME 492 Special Problems 1-5

ME 493 Special Topics 1-5
May be analytical, design, or laboratory studies.

ME 494-495-496 Cooperative Education/Internship/ Field Experience 1-6 FSSu
Planned and supervised professional experience related to mechanical engineering which takes place outside the formal classroom with private business, industry, or public agencies. P, consent of department program coordinator.

Dual Numbered Courses

ME 414-514 Air Pollution Control 3(3,0)
Control of particulates and gaseous pollutants. Design and operating characteristics of gravity settlers, cyclones, electrostatic precipitators, fabric filters, scrubbers, incinerators, absorption beds and absorption towers. P, 311 or consent.

ME 427-527 Gas Dynamics I 3(3,0)
Objectives, applications, and scope of the subject. Methods of fluid dynamics and thermodynamics. Compressible flow in ducts, nozzles and diffusers. Propagation of plane waves; shock dynamics, characteristics, interaction of waves. General theorems of gas dynamics. P, EM 331, Math 331.

ME 440-540 Computer-Aided Design 3(3,0)
The use of digital computer as a design tool. Techniques and algorithms which increase the rationality of the design process. Design principles and optimization theory. General approach to constrained optimization. Probabilistic approaches to design. Computer-aided design to reliability specification. Application of computer graphics to engineering design. The emphasis is on extending the designer's potential and not on automating those activities. P, competence in FORTRAN programming and consent.

Graduate Courses

ME 590 Special Problems 1-5
ME 593 Special Topics 1-3
ME 603 Thermo-Fluid Energy Systems 3(3,0)
ME 606 Statistical Thermodynamics 3(3,0)
ME 611 Advanced Heat Transfer I 3(3,0)
ME 612 Convection Heat Transfer 3(3,0)
ME 621 Viscous Flow I 3(3,0)
ME 628 Gas Dynamics II 3(3,0)
ME 631 Advanced Analytical Methods 3(3,0)
ME 635 Modeling & Simulation 3(2,3)
ME 639 Advanced Metallurgy 3(3,0)
ME 641 Advanced Stress Analysis in Mechanical Design 3(3,0)
ME 645 Advanced Machine Design 3(3,0)
ME 661 Operations Research 3(3,0)
ME 662 Quality Control 3(3,0)
Crosslisted with Stat 662.
ME 663 Topics in Reliability Engineering 3(3,0)
ME 665 System Analysis 3(3,0)
ME 667 Decision Theory 3(3,0)
ME 690 Special Problems 1-5
ME 695 Special Topics 1-3
ME 700-701 Seminar 0-1
ME 790 Thesis 5-7 (as arranged)
ME 791 Thesis Sustaining 0
ME 792 Research or Design Paper 2
ME 793 Engineering Research or Design Paper Sustaining 1
ME 794 Special Problems 1-3
ME 795 Special Topics 1-3
ME 797 Research 1-9

MEDT (Clinical Laboratory Technology)

Undergraduate Courses

MEDT 330 Applied Chemical Instrumentation 4(3,3) S
Principles, practices and evaluation of quantitative instrumental methods of analysis used in agricultural, biological, clinical and engineering studies. P, Chem 232 or consent of instructor. Crosslisted with Chem 330.

MEDT 382 Techniques in Clinical Laboratory Technology 3(2,3) S
Introduction to techniques used in the clinical laboratory including urinalysis, hematology and clinical chemistry.

MEDT 487 Internship Orientation 1(1,0) S
Discussion of internship procedures, licensing examinations and registration requirements.

MEDT 495 Medical Technology Internship
Students are to register for this course during the summer, fall and spring semesters of their internship year. Credit is given by SDSU for coursework completed at affiliated hospital programs. The course descriptions below are common to most hospital programs.

Clinical Microscopy/Urinalysis
Lecture, supervised laboratory instruction, quality control, instrumentation, computer applications and experience in body fluids and urine in regard to chemical and cellular composition. Anatomy and physiology, theory of renal function in health and disease.

Clinical Hematology/Coagulation
Lecture, supervised laboratory instruction, quality control, instrumentation, computer applications and experience in the analysis of cellular elements of the blood and bone marrow, both normal and abnormal, and on the homeostatic mechanisms of the blood.

Clinical Microbiology
Lecture, supervised laboratory instruction, quality control, instrumentation, computer applications and experience in the isolation and identification of pathogenic organisms and their susceptibility to anti-microbial agents. Includes Bacteriology, Mycology, Parasitology, and Virology.

Clinical Serology/Immunology
Lecture on antigen/antibody structure-function-interactions, supervised laboratory instruction, quality control, instrumentation, computer applications, and experience in applying the principles of immunology to serologic diagnosis.

Clinical Chemistry/Radiobioassay/Body Fluids
Lecture, supervised laboratory instruction, quality control, computer applications and instrumentation, and experience in medically oriented biochemistry as applied to normal and abnormal physiology and analysis of body constituents. Includes analyses of special body fluids such as amniotic, synovial, cerebrospinal, gastric and pleural fluids. Includes special procedures utilized for toxicology, endocrinology and radiobioassay.

Clinical Immunohematology
Lecture, supervised laboratory instruction, quality control, instrumentation, computer applications and experience in theory and practice of immunohematology as applied to blood transfusion, component therapy, autoimmune diseases, immunologic diagnostic procedures and blood component preparation and administration.

Specialized Units
Management/Education/Research/Lectures and/or seminars on theory and techniques of laboratory oriented practice; principles of education and teaching methodologies; and research, scientific writing or projects in specialty areas of medical technology.

MET (Manufacturing Engineering Technology)

Undergraduate Courses

MET 211 Introduction to Engineering Materials 3(2,3) F (alternate years)
Properties of materials used in manufacturing and methods of material testing. Computer analysis of test results integrated into written reports will be presented orally.

MET 223 Mechanics for Technologists 3(2,3)
Basic statics, dynamics, and two-dimensional analysis of stress and strain. Laboratory verification of fundamental principles of structural and machine elements and tests of properties of materials. P, sophomore standing and Math 222, Phys 113.

MET 232 Micro-Computers in Industry 2(2,0)
Study and development of applications of the microprocessor/computer in industrial technology; emphasis on operation and Micro-CAD uses in industry.

MET 243 Quality Control 3(3,0) F (alternate years)
History of quality control, quality policies and objectives, economics of quality, reliability and maintain-ability, statistical aids, quality specifications, inspection, acceptance sampling, vendor relations, process control, motivation for quality, quality assurance and quality control engineering developing a "quality management" system through "continuous improvement." P, Math 222.

MET 294 Cooperative Education/Internship/Field Experience 1-3 FSSu
Supervised work experience with a business, industrial firm, or public agency. The work experience must relate to the student's program of study and be performed under institutional and discipline guidelines governing this type of educational experience. P, departmental approval, sophomore standing or higher.

MET 323 Plant Layout and Material Handling 3(3,0)
The principles of shop planning as applied to location and types of shops, flow of materials, selection and equipment, layout of working areas, installation of machinery and tool management. P, 243 or permission of instructor.

MET 331 Applied Fluid Mechanics 3(3,0) F (alternate years)
Basic fluid mechanics, pneumatics, hydraulics, control systems and common industrial circuits. P, 223, Math 222.

MET 332 Fluids Lab 3(1,6) S (alternate years)
Operation and construction of pneumatic system components with application to basic industrial circuits; compressors, plumbing, control valves and actuators. P, 331.

MET 333 Computer Aided Manufacturing (CAM) 3(2,3) S (alternate years)
The basic elements and principles of hardware and software for CAM are outlined. Included are group technology and work-piece classification and coding cellular production design intervals. Students will learn to write programs and prepare manufacturing data systems. Topics include N/C languages, group technology, flexible manufacturing systems, automatic process planning, and adaptive controls. Integrate with a "continuous improvement" program leading to an overall "quality management" system. P, 232, junior level standing.

MET 343 Automated Production Techniques 3(3,0) S (alternate years)
Operation, planning, equipment, tools, and techniques used in mass production and computer-aided manufacturing integrated into a "continuous improvement" program leading to an overall "quality management" system. P, 333.

MET 352 Plant Maintenance 3(3,0)
Plant maintenance areas of responsibility; facilities and equipment maintenance and construction; power and utilities; pollution abatement; plant protection for small, medium, and large industrial plants. P, junior standing.

MET 373 Time and Motion Studies 3(3,0) F (alternate year)
Theoretical principles and practical application of procedures to utilize time and motion studies in industrial applications to promote quality, quantity, safety, and efficiency of production with "continuous improvement" goals. P, 323.

MET 413 Manufacturing Plant Management 3(3,0)
A case-oriented capstone course designed to integrate the technical, managerial, analytical, and communication skills which have been acquired. P, junior standing.

MET 421 Jigs and Fixtures 3(1,6) F (alternate years)
Design and application of jigs and fixtures, selection of tooling materials, tolerance gauges for checking work, stamping die design and mold design. P, ES 225, ES 131.

MET 431 Molding and Processing 3(1,6) S (alternate years)
Designing of molds and selection of plastic materials and processes; characteristics and properties of thermoplastic and thermosetting materials and processing equipment. P, 463.

MET 433 Production and Inventory Control 3(3,0)
Problems and solutions of production situations. Material requirements, estimating. Study of production techniques: industrial production planning, forecasting, inventory control, product flow, material waste and conservation. P, 323, ES 222.

MET 441 Foundry Practices 3(1,6) F
Development of selected metal casting processes through design, pattern, construction and casting. Select casting processes for production applications. Visual and metallurgical analysis of castings. P, junior standing.

MET 463 Industrial Plastics Technology 3(3,0)
Materials and processes of the plastics industry presented. Topics include: thermoplastic and thermosetting plastics processes, Injection and compression molding, casting, reinforcing, and foaming. P, 211.

MET 477 Senior Design 3(1,6) FS (alternate years)
Capstone senior design project. Students write specifications for a design project then build and test their design. Oral presentations and written reports required. P, senior standing or permission of the instructor.

MET 492 Special Problems 1-3 FSSu
Provides the student with the opportunity to identify a problem and develop a hypothesis, gather information which might be used in solving the problem, work on solving the problem, and report actual findings and accomplishments. P, permission of the instructor and General Engineering Department Head.

MET 493 Special Topics 1-3 FSSu
Current selected topic areas in the manufacturing technology field. P, permission of the instructor and General Engineering Department Head.

MET 494 Cooperative Education/Internship/Field Experience 1-3 FSSu
Supervised work experience with a business, industrial firm, or public agency. The work experience must relate to the student's program of study and be performed under institutional and discipline guidelines governing this type of educational experience. P, departmental approval, sophomore standing or higher.

Micr (Microbiology)

Undergraduate Courses

Micr 231 General Microbiology 4(2,4) FS
Principles of basic and applied Microbiology. P, Chem 106 or 112.

Micr 310 Environmental Microbiology 4(2,4) S
Microbiology of water, air and surfaces in man's environment. Standard methods for detecting and controlling pathogens and non pathogens. P, 231.

Micr 311 Food Microbiology 4(2,4) F
Microbiology of fresh and processed meats, dairy products, vegetables and modern convenience foods. Laboratory quality study of food preservation, processing and spoilage. P, 231.

Micr 323 Medical Microbiology 3(3,0) S
Principles of medical microbiology including a survey of the most clinically significant bacterial, fungal, parasitic, and viral diseases in the world, with an emphasis on those most prevalent in North America. Case studies will address: morphology, physiology, and virulence of the microbes and the epidemiology, treatment, and prevention of the diseases they cause. P, 231, Chem 106 or 112.

Micr 324 Medical Microbiology Laboratory 1(0,3) S
Principles of medical microbiology laboratory techniques including study of the most significant bacterial parasites. Laboratory techniques in specimen collection, isolation, identification of common pathogens, as well as treatment and prevention of the diseases they cause via medical case studies. P, 231, 323 or concurrent, Chem 106 or 112.

Micr 332 Microbial Physiology 2(2,0) S
Cytology, nutrition, metabolism, and growth of microorganisms. P, 231.

Micr 333 Microbial Physiology Lab 2(0,4) S
Media preparation, sterilization, microscopy, assay of microbial enzymes, DNA purification. P, 231 and 332 or concurrent with 332.

Micr 390 Undergraduate Seminar 1(1,0) F
Student will explore the various career opportunities in the biological sciences and procedures for employment.

Micr 414 Anaerobic Microbiology 3(2,3) F
Techniques used for the anaerobic cultivation of micro-organisms. P, 231.

Micr 421 Soil Microbiology 3(2,3) S
Microbial species of agricultural soils and biochemical changes brought about by these microorganisms. P, 231. Crosslisted with PS 421.

Micr 422 Immunology 4(3,3) F
Immunology and immunochemistry, mechanisms of immunologic injury, and their application to clinical immunobiology. Serological techniques for detecting and measuring the presence of antigens or antibodies in specimens and production of immune serum. P, 231.

Micr 425 Pathogenesis 3(3,0) S
Lecture/discussion course on principles of medical microbiology including the molecular basis of pathogenesis, host-parasite relationships, and pathology of animal and human diseases. Emphasis on current literature in pathogenesis. P, 231, 323, 324, Chem 106 or 112.

Micr 436 Molecular and Microbial Genetics 4(4,0) F
A basic course in molecular genetics. Examples to illustrate genetic principles are drawn from all forms of life. P, 231 and Bio 371.

Micr 490 Seminar 1(1,0) FS
Familiarization with the Microbiology profession and presentation of topics based on microbiological literature in scientific journals. P, senior status or consent, 231.

Micr 492 Microbiology Problem 1-3 FSSu
Microbiological problems associated with current research or teaching. Practical laboratory experience is encouraged for seniors majoring in Microbiology. 6 credits maximum. P, consent of instructor and senior standing, 231.

Zool 467 General Parasitology 3(2,3) F
(See description in Zoology)

Micr 494-495 Cooperative Education/Internship 1-12 FSSu
Supervised practical experience or internship in Microbiology. Prior arrangements must be made with a staff member to be eligible. A maximum of 4 credits will count toward minimum requirements of major. P, consent of instructor.

Dual Numbered Courses

Micr 424-524 Medical and Veterinary Virology 4(3,4) S (odd years)
Basic course discussing the characterization, structure, and replication of viruses and the pathogenesis of viral disease in man and animals. Laboratory exercises emphasize techniques in virus isolation, characterization, and detection by immunological assays. P, 422 or consent. Crosslisted with Vet 424-524.

Micr 437-537 Systematic Bacteriology 4(2,4) F
Techniques for isolation, identification, classification, and preservation of bacterial cultures are presented. Current topic areas and theory in taxonomy and nomenclature are discussed in detail. P, 231 (or equivalent).

Micr 497-597 Advances in Microbiology 1-4 S
In-depth study of selected areas or specialties within Microbiology to strengthen and expand the current knowledge and technical skills of advanced undergraduate and graduate students in Microbiology. Prerequisites will vary depending upon the area studied. P, 231 and consent of instructor.

Graduate Courses

Micr 713 Industrial Microbiology 4(2,4) F

Micr 722 The Molecular and Cellular Biology of the Immune Response 3(3,0) S (even years)

Micr 726 The Cell Physiology of Signal Transduction--a perspective using leukocyte models 3(3,0) S (odd years)

Micr 738 Microbial Metabolism 4(2,4)S

Micr 742 Graduate Seminar 1(1,0) FS

Micr 782 Microbiology Problem 1-4 FSSu

Micr 790 Thesis 1-7 FSSu

Micr 791 Thesis Sustaining 0 FSSu

Mil (Military Science)

Undergraduate Courses

Mil 101-102 Military Science I

Mil 101 The Army Officer 1 FSSu
Includes the following meaningful for life subjects: The role of the Reserve Officers Training Corps (ROTC), organization of the Army, Army Reserve and National Guard, Leadership and small group process, and marksmanship. Leadership Laboratories include smallbore rifle marksmanship, adventure training such as rappelling, and life saving techniques.*

Mil 102 Military Geography and Leadership Tasks 1 FSSu
Fundamentals of military geography and the use of maps and contemporary leadership awareness. Leadership Laboratories include land navigation using map and compass, military ceremonies and an outdoor leadership and tactics exercise.*

Mil 201-202 Military Science II

Mil 201 Leadership Theory and Application 2** FSSu
This course is designed to provide students with opportunities to apply basic management skills within the context of realistic situations. Each simulation exercise encountered is based on real life problems that require knowledge and skills applicable to management environments. Each module is comprised of practical work exercises designed to elicit behavior that demonstrates ability to apply managerial skills. Leadership Laboratories include principles of military ceremonies, lifesaving techniques, and an outdoor adventure practicum.*

Mil 202 Officer Development and Tactics 2** FSSu
This program evaluates student attributes in 16 leadership dimensions through exercises designed to bring out specific behavior. The course consists of four exercises followed by individual performance feedback and group seminars on each of the leadership dimensions. Leadership Laboratories include military ceremonies, physical development practicum, and an outdoor adventure practicum.*

Mil 295 ROTC Six Week Basic Camp 4 Su
Substitutes for freshman and sophomore on-campus instruction by giving practical experience in a field training environment. Challenges the student physically and mentally. The camp provides a practical introduction to small unit operations. Course grade derived from student's overall camp evaluation results and a paper on the training and leadership experience. Student should be a second semester sophomore or junior with about 2 years remaining before graduation.

Mil 301-302 Military Science III

Mil 301 Military Communication and Human Relations 3(3**) FS
Development of skills necessary to be an effective leader to include an understanding of: communication skills, human relations, organizational structures, power and influence and management skills. It is a practical exercise program designed to develop those skill areas which are important in leadership. A 2.0 academic grade point average is required for enrollment. Laboratory work includes physical fitness, land navigation, leadership in drill and ceremonies, and leadership reaction practical exercises.*

Mil 302 Military Operations and Tactics 3(3**) FS
Application of skills learned in Mil 301 with emphasis on leadership and management of personnel and resources in an outdoor environment. Subjects include: radio and telecommunications, weapons systems, and military skills orientation. A 2.0 academic grade point average is required for enrollment. Laboratory work includes enhanced physical fitness training and evaluation, leadership evaluation and an overnight tactical exercise.*

Mil 401-402 Military Science IV

Mil 401 Military Management and Law 3(3**) FS
The first half of the semester will deal with Army administration and policies, logistics, and terrorism, while the remainder of the semester will include topical information related to the Uniform Code of Military Justice, the Law of War, and practical applications in leadership. Laboratory work includes practical work as a cadet officer trainee within the structure of the cadet corps as well as special projects stressing the leadership dimensions of planning and organizing, administrative control, delegation, influence and decision making. Labs are a continuation of Mil 301 and 302.

Mil 402 Ethics and Professionalism 3(3**) FS
Military ethics and transition to officership are the primary focus of the course. The student will apply experience and course information to accomplish in-class and laboratory practical exercises related to military ethics. This is followed by an in-depth discussion and practical applications to prepare cadets to be effective officers on active duty or the reserve components. Laboratory work is a continuation of Mil 401 with emphasis on conducting a tactical training exercise for the Military Science III students.

Mil 492 Military Science V 1-3
Designed as a special projects course. Students will be permitted to enroll in this class only with the approval of the Professor of Military Science. The PMS will approve the individual proposal and assign credits.

Mil 494 Military Science Advanced Camp and Internship 4 Su
ROTC six week Advanced Camp supplements on-campus instruction by giving practical experience in a field training environment. Provides opportunities to develop and demonstrate leadership capabilities in various situations, with emphasis at the small group level, through problem analysis, decision making, and troop leading experiences. Challenges you physically and mentally and provides a practical introduction to Army life. Course grade derived from student's overall camp evaluation results and a paper on the training, or training management analysis of internship experience.

Mil 495 ROTC Nursing Advanced Camp 3 Su
Clinical experience in a military hospital. Includes a two-week field training exercise followed by a four-week clinical practicum with self study and research. Provides Advanced Course ROTC nursing students leadership experiences in the clinical nursing setting and knowledge of the duties, responsibilities, and expectations of the Army Nurse. With approval of College of Nursing, experience may be substituted for three of required six credits of Nurs 491, Directed Studies in Nursing (See Nurs 491). P, 302.

Military Science Leadership Development Lab

Military Science I and II Laboratories
A series of labs on military-related subjects such as orienteering, recondo, mountaineering, and various physical activities. Schedule to be arranged.

Military Science III Lab
Duties and responsibilities of junior leaders, emphasis on developing confidence, proficiency, and physical fitness.

Military Science IV Lab
Application of leadership principles, stressing responsibilities of the leader and affording experience and developing potential through the planning, conduct, and execution of training managerial experiences.

* Elective course work required within other disciplines such as natural sciences, social science, humanities, and foreign language for scholarship recipients.

**Minimum of 15 hours of laboratories required.

MSTB (Master of Science Teaching Biology)

Graduate Courses

MSTB 701 Darwinism and Scientific Thought 1
MSTB 708 Complementarity of Structure & Function 2
MSTB 711 Animal Development 2
MSTB 712 Cell Heredity 1
MSTB 713 Mendelism and the Chromosome Theory 1
MSTB 714 Developmental Genetics 3

Elective Courses
MSTB 702 Evolution and Evolutionary Theory 1
MSTB 703 Human Cell Physiology 1
MSTB 704 Human Cardiovascular Physiology 1
MSTB 705 Human Hematology 1
MSTB 706 Human Reproductive Physiology 1
MSTB 707 Plant Form and Function 2
MSTB 709 Flora of the Northern Plains 2
MSTB 710 Field Aquatic Ecology 1
MSTB 715 Computer Applications in Biology 2
MSTB 716 Recent Developments in Biology 1
MSTB 717 Processes and Methods of Animal Behavior 2
MSTB 718 Developing Values, Strategies in Biology 2
MSTB 719 Advances in Biotechnology 2
MSTB 793 Special Topics 1 or 2

MSTC (Master of Science Teaching Chemistry)

Graduate Courses

MSTC 702 Environmental Chemistry 2
MSTC 705 Instrumentation in Chemistry 2
MSTC 706 Biological Chemistry 2
MSTC 707 Inorganic Chemistry 2
MSTC 708 Organic Chemistry 2
MSTC 709 Alternative Energies 2
MSTC 710 Lecture Demonstration 2
MSTC 711 Instructional Laboratories 2
MSTC 712 Consumer Chemistry 2
MSTC 720 Atomic Structure and Bonding 2
MSTC 721 Periodic Relationships 1
MSTC 722 Formulas and Reactions 1
MSTC 723 Stoichiometry and Chemical Mathematics 1
MSTC 724 Acids, Bases and Salts 2
MSTC 725 Solutions and Equilibria 2
MSTC 726 Descriptive Chemistry 1
MSTC 793 Special Topics 1 or 2

MSTM (Master of Science Teaching Mathematics)

Graduate Courses

MSTM 793 Special Topics 1-3

Algebra
MSTM 711 Functions and Permutations 2
MSTM 712 Algebraic Structures 2
MSTM 713 Properties of Algebraic Structures 2

Analysis
MSTM 721 Analytic Geometry 2
MSTM 722 Functions, Limits and Continuity 2
MSTM 723 Analysis of Algebraic Functions 2
MSTM 724 Analysis of Transcendental Functions 2

Geometry
MSTM 761 Foundations of Geometry 2
MSTM 762 Advanced Euclidean Geometry 2

Computer Applications
MSTM 741 Mathematics for Science Teachers 1(1,0)
MSTM 744 Discrete Mathematics 2
MSTM 771 Mathematical Applications for the Classroom I 2
MSTM 772 Mathematical Applications for the Classroom II 2
MSTM 773 Mathematical Applications for the Classroom III 2

Probability and Statistics
MSTM 781 Intro to Probability 2
MSTM 782 Statistics (one and two populations) 2
MSTM 783 Statistics (three and four populations) 2

MSTP (Master of Science Teaching Physics)

Graduate Courses

MSTP 701 Mechanics I 1
MSTP 702 Mechanics II 1
MSTP 703 Mechanics III 1
MSTP 704 Vibrations and Waves I 1
MSTP 705 Thermodynamics I 1
MSTP 706 Electricity 1
MSTP 707 Magnetism 1
MSTP 708 Optics I 1
MSTP 709 Relativity 1
MSTP 710 Introduction to Quantum Theory 1
MSTP 711 Quantum Mechanics and the Atom 1
MSTP 712 Physics of Molecules and Solids 1
MSTP 713 Nuclear and Radiation Physics 1
MSTP 714 Astronomy 1
MSTP 715 Classroom Demonstration in Physics 1

Elective Courses
MSTP 716 Electrical Circuits 1
MSTP 717 Meteorology 1
MSTP 718 Energy and the Environment 1
MSTP 719 Solid State Physics 1
MSTP 720 Solid State Electronics 1
MSTP 721 Vibrations and Waves II 1
MSTP 722 Thermodynamics II 1
MSTP 723 Optics II 1
MSTP 724 Computers in the Laboratory 1
MSTP 725 Astronomy II 1
MSTP 726 Careers in Science and Engineering 1
MSTP 727 Recent Developments in Physics 1
MSTP 793 Special Topics 1 or 2

MuAp (Applied Music)

Undergraduate Courses

Selected lessons at the 100 level may be taken for Fine Arts credit as part of the Liberal Studies Core. These courses may be repeated for credit twice.

Individual Instruction in Voice
100-101-102-103 1(1/2,0)FS **200-201-202-203** 1(1/2,0) FS
300-301-302-303 2(1,0) FS **400-402** 2(1,0) FS

Class Instruction in Voice
105-106 1(1,0) FS

Individual Instruction in Keyboard
110-111-112-113 1(1/2,0) FS **210-211-212-213** 1(1/2,0) FS
310-311-312-313 2(1,0) FS **410-412** 2(1,0) FS

Section 1 | Piano
Section 2 | Harpsichord
Section 3 | Organ

Class Instruction in Keyboard
115-116 1(1,0) FS

Individual Instruction in Woodwinds
120-121-122-123 1(1/2,0) FS **220-221-222-223** 1(1/2,0) FS
320-321-322-323 2(1,0) FS **420-422** 2(1,0) FS

Section 1 | Flute
Section 2 | Oboe
Section 3 | Bassoon
Section 4 | Clarinet
Section 5 | Saxophone

Class Instruction in Woodwinds
125-126 1(1,0) FS **225-226** 1(1,0) FS
325-326 2(2,0) FS **425-426** 2(2,0) FS

Section 1 | Flute
Section 2 | Oboe
Section 3 | Bassoon
Section 4 | Clarinet
Section 5 | Saxophone

Individual Instruction in Brass
130-131-132-133 1(1/2,0) FS **230-231-232-233** 1(1/2,0) FS
330-331-332-333 2(1,0) FS **430-432** 2(1,0) FS

Section 1 | Trumpet
Section 2 | French Horn
Section 3 | Trombone
Section 4 | Baritone
Section 5 | Tuba

Class Instruction in Brass
135-136 1(1,0) FS **235-236** 1(1,0) FS
335-336 2(2,0) FS **435-436** 2(2,0) FS

Section 1 | Trumpet
Section 2 | French Horn
Section 3 | Trombone
Section 4 | Baritone
Section 5 | Tuba

Individual Instruction in Percussion
140-141-142-143 1(1/2,0) FS **240-241-242-243** 1(1/2,0) FS
340-341-342-343 2(1,0) FS **440-442** 2(1,0) FS

Class Instruction in Percussion
145-146 1(1,0) FS **245-246** 1(1,0) FS
345-346 2(2,0) FS **445-446** 2(2,0) FS

Individual Instruction in Strings
150-151-152-153 1(1/2,0) FS **250-251-252-253** 1(1/2,0) FS
350-351-352-353 2(1,0) FS **450-452** 2(1,0) FS

Section 1 | Violin
Section 2 | Viola
Section 3 | Cello
Section 4 | Bass Violin
Section 5 | Guitar

Class Instruction in Strings
155-156 1(1,0) FS **255-256** 1(1,0) FS
355-356 2(2,0) FS **455-456** 2(2,0) FS

Section 1 | Violin
Section 2 | Viola
Section 3 | Cello
Section 4 | Bass Violin
Section 5 | Guitar

Accompanying (Pianists only)
181 1(2,0) FS

MuEn (Ensembles)

Undergraduate Courses

Music Organizations are open to all University Students. There are no auditions required for Marching Band and Concert Band. There are auditions for the Symphonic Band, the Concert Choir, University Women's Choir, University Men's Choir, and the Jazz Ensemble.

Membership in the SDSU-Civic Symphony is by instructor consent. Freshmen and Sophomores must register for 100 level of large ensembles; Juniors and Seniors register for 300 level. Small ensembles: Freshmen and Sophomores, 100 level, Juniors and Seniors, 300 level. Students may register for selected ensembles at the 100 level for Fine Arts credit as part of the Liberal Studies Core. Each course may be repeated for credit.

University Women's Choir (Pasquettes)
100-300 1(0,2) FS

Concert Choir
101-301 1-2(0,5) FS

University Men's Choir (Statesmen)
102-302 FS

Civic-University Orchestra
110-310 1(0,2) FS

Marching Band
120-320 1-2(0,5) F

Symphonic Band
121-321 1(0,3) FS

Concert Band
122-322 1(0,2) FS

Opera Workshop

107-207	1-2(0,2) S	**307-407**	1-2(0,2) S

String Ensembles

140	1(0,2) FS	**340**	1(0,2) FS

Woodwind Ensembles

150	1(0,2) FS	**350**	1(0,2) FS

Brass Ensembles

160	1(0,2) FS	**360**	1(0,2) FS

Percussion Ensemble

170	1(0,2) FS	**370**	1(0,2) FS

Jazz Ensemble

180	1(0,2) FS	**380**	1(0,2) FS

Mus (Music)

Undergraduate Courses

Mus 100 Music Appreciation (Topical) 2(2,0) FS
Musical periods and styles for the non-major. Emphasis on music fundamentals for the listener, and music appreciation. Music in the humanities. A humanities elective. May be taken twice for credit if content is distinctly different.

Mus 110 Basic Theory & Musicianship I 4(3,2) F
Emphasis on fundamentals and basic skills: terminology, fundamentals of musicianship, ear training, sight singing, chord structures, score analysis. Introduction to four-part writing.

Mus 111 Basic Theory & Musicianship II 4(3,2) S
Continuation of Mus 110. Continued development of fundamental skills: melodic dictation, sight singing, score analysis, and four-part writing. P, 110.

Mus 130 Music Literature & History I 2(2) F
An introductory course of music cultures of the world. Emphasis on developing a fundamental knowledge of distinctive and unique music of different nations, especially non-Western music. May be taken as humanities elective.

Mus 131 Music Literature & History II 2(2) S
Ancient through Medieval and Renaissance music literature – analysis of style and form, study of historical development and significance, comparison to similar works in other periods of music history. Emphasis on listening and score study. May be taken as humanities elective.

Mus 195 Recital Attendance 0
Required of all music majors each semester enrolled in applied music (student teaching and internship semesters excepted).

Mus 201 History of Country Music 3 S
An in-depth exploration of Country Music, beginning with Scotch-Irish folk music of the late 1600's, through the "New Traditionalists" of the 1990's.

Mus 202 The Music Industry 3(3,0) F
This course examines the many facets of the music industry: music publishing, copyright distribution and merchandising music and the mass media, the recording industry, manufacturing and music management. Music in the marketplace. P, consent.

Mus 210 Intermediate Theory & Musicianship III 4(3,2)F
Continuation of Mus 111. Harmonic and melodic techniques of the Romantic period – analysis, composition, dictation, sight singing and ear training. P, 111.

Mus 211 Intermediate Theory & Musicianship IV 4(3,2) S
Continuation of Mus 210. Integrated study of melodic and harmonic techniques in Romantic and early twentieth century literature – analysis, composition, and score study. Continuation of sight singing, ear training, and dictation. P, 210.

Mus 230 Music Literature & History III 2(2) F
Baroque and Classical Music literature – analysis of style and form, study of historical development and significance, comparison to similar works in other periods of music history. Emphasis on listening and score study. May be taken as humanities elective.

Mus 231 Music Literature & History IV 2(2) S
Romantic Music Literature – analysis of style and form, study of historical development and significance, comparison to similar works in other periods of music history. Emphasis on listening and score study. May be taken as humanities elective.

Mus 260 Conducting Fundamentals 2(1,2) F
Basic principles in conducting - rehearsal and performance. Score reading and preparation. P, 110 and 111. (Concurrent with Mus 210 or 211.)

Mus 270 Pedagogy I 1-2(0-1,2) F
Pedagogical considerations in teaching music. Methods and concepts in specialized areas: Section 1 - Voice; Section 2 - Strings; Section 3 - Keyboard; Section 4 - Clarinet & Flute; Section 5 - Double Reeds & Saxophone; Section 6 - High Brass; Section 7 - Low Brass; Section 8 - Percussion. Voice offered even years only; Keyboard odd years only.

Mus 271 Pedagogy II 1-2(0-1,2) S
Continuation of Mus 270 sections 1-8 as in 270. Voice offered odd years only; Keyboard even years only.

Mus 293 Topics in Music 1-5
Any subject within the discipline of music which may be taught as a group experience for which there is instructor expertise and student interest, but for which there is no regularly scheduled class.

Mus 294 Exploring Music in Western Europe 3(3,0)
An intensive three-week period of rehearsals, performances, lectures, attendance at plays and concerts, educational touring, and travel in a mix of West European countries.

Mus 301 Blues, Jazz & Rock 3(3,0) F
This course examines the origins and developments of three uniquely American musics and their cultural impact upon, and within, American society.

Mus 302 Introduction to the Recording Industry 2(2,0)
This course explores the scope of the record industry, record markets, artists' recording contracts, record production, the recording studio business, and record promotion and distribution. Off-campus speakers will be utilized in their specialty areas, and area recording studios will provide practical support for classroom work. P, 202.

Mus 311 Counterpoint (Advanced Musicianship V) 2-3(3,0)
Analysis and composition in contrapuntal techniques, with a concentration on the music of J.S. Bach. P, 211.

Mus 313 Form & Analysis (Advanced Musicianship VI) 2-3(3) S
Analysis of small and large forms. Concentrated study of selected scores and writing of original compositions. P, 211 or consent.

Mus 351 Music Education I: Elementary Music Concepts 2(1,2) F
An eclectic approach to K-8 music education curriculum, methods and materials.

Mus 361 Music Education II: Conducting 2(1,2) S
Section 1: Instrumental music methods and materials. Emphasis on rehearsal techniques, conducting and study of appropriate materials.
Section 2: Choral music methods and materials. Emphasis on rehearsal and conducting techniques through study of appropriate materials.

Mus 362 Music Education III: Methods and Materials 2(1,2) F
Section 1: Instrumental Music Methods and Materials. Emphasis on lesson, solo and ensemble materials and pedagogy for the school instrumental music teacher. Teaching techniques for individual, class, small and large instrumental music ensembles are offered. Students participate in supervised on-site teaching experiences at the elementary instrumental music and general music class levels.
Section 2: Vocal Music Methods and Materials. Emphasis on choral teaching materials and teaching concepts and techniques for individual, class and ensembles for the school vocal teacher. Students participate in supervised on-site teaching experiences in choral music and general music classes.

Mus 365 Music Education IV: Supervision & Administration of School Music 2(1,2) FS
A goal and objective approach to developing student skills in managing the total school music program, including choral and instrumental at the elementary and high school levels. Organizational and administrative skills are offered with hands-on opportunities for practical application. Units are also offered in music education history and philosophy.

Mus 370 Pedagogy III 1-2(0-1,2) F
Continuation of Mus 271, sections 1-8 as in 270. Voice offered odd years only; Keyboard even years only.

Mus 371 Pedagogy IV 1-2(0-1,2) S
Continuation of Mus 370, sections 1-8 as in 270. Voice offered even years only; Keyboard odd years only.

Mus 391 Directed Studies 1-3
Special projects in music for which there is no course. Projects must be approved by Music Department staff. Consent.

Mus 392 Independent Studies 1-3
Consent. May be used as substitute for music requirement.

Mus 420 Orchestration & Arranging (Advanced Musicianship VII) 2-3(2-3,0) FS
Advanced study and analysis of scores with projects in scoring for a variety of mediums. P, 311, 313 or consent.

Mus 433 Music Literature V: 20th Century Music 2(2) F
This course examines musical developments of the twentieth century in terms of three great cycles: first, the demise of functional tonality (1870-1918); second, the era of exploration, experimentation, and consolidation between the world wars (1918-1945); and third, the post-Hiroshima epoch (1945-present), with its attendant rationalist-anti-rationalist dichotomy.

Mus 465 Music Education V: Instrumental Techniques 2(2,0) FS (Offered even years or on demand.)
Three major technical topics for the prospective music teacher will be covered: Marching Band techniques, Jazz Ensemble techniques, and Instrumental Repair. Emphasis on in-depth development of skills and practical application.

Mus 483 Public Recital 0-1-2 FS
All music majors are required to present a Senior Recital. Students may elect to enroll for Public Recital as follows: 0 credits, 1 credit, or with permission from the Department Head and Applied Instructor, for 2 credits. The latter option requires a research paper on the literature performed, a recital preview with an oral defense of the research paper, and the public performance. Students enrolled in Mus 483 must be concurrently enrolled in 400 level Applied lessons.

Mus 488 Supervised Teaching in Secondary Schools 5(TBA) FS (Second half of semester)
Students may register for 5 hours under SeEd 488 and 5 hours under Mus 488.

Mus 492 Independent Studies 1-3
Consent. May be used as substitute for music requirement.

Mus 493 Topics in Music 1-5
Any subject within the discipline of music which may be taught as a group experience for which there is instructor expertise and student interest, but for which there is no regularly scheduled class.

Mus 495 Internship 3-12
Planned and supervised professional experience which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Dual Numbered Courses

Mus 492-592 Independent Studies 1-3
Consent. May be used as substitute for music requirement.

Mus 493-593 Course Specials 1-5

NFS (Nutrition and Food Science)

Undergraduate Courses

NFS 110 Perspectives in Nutrition 3(3,0)F
Interdependence of the principles of human nutrition and food behavior to health of individuals and groups.

NFS 111 Food and People 3(3,0) FS
Considerations of the role of food and nutrition in the development of human cultures. Study of the cultural, social and economic impacts of food.

NFS 141 Foods: Principles 4(3,3) FS
Scientific investigation of basic foods used to maintain optimum nutrition.

NFS 151 Food Technology 2(2,0)F
Survey of the technology used in the conversion of raw foods into finished food products suitable for human consumption. World and domestic food needs, chemical additives and food safety will be discussed.

NFS 171 Introduction to the Hospitality Industry 2(2,0) F
History, organizational structure, and trends in the hospitality industry. Place of lodging and food service establishments in the state and national economy.

NFS 221 Survey of Nutrition 3(3,0) FS
Fundamentals of nourishing the body properly and the role that food plays in meeting the nutritional requirements of individuals. Designed for the student who lacks a science background but wishes to study human nutrition in some detail.

NFS 251 Meal Management 3(1,4) S
Planning, costing, preparing and serving nutritious meals at different cost levels and for various occasions including ethnic themes. P, 141 or consent.

NFS 261 Food Service Operations 3(3,0)F
Planning, preparing, and evaluating menus. Safe and sanitary use of equipment for quantity food preparation and service. Recipe standardization, menu costing and pricing, and food, beverage and labor cost controls. P, 141 or consent.

NFS 271 Hotel/Motel Operational Management I 3(2,3) S
Functions of Management as applied to the lodging industry, including general management, front office, guest services, controller, marketing and sales. Required research projects and discussions of current industry issues. Lab portion will include on-site workshops as well as field experiences. P, 171 or consent.

NFS 272 Hotel/Motel Operational Management II 3(2,3) F
A continuation of NFS 271, exploring additional lodging functions including housekeeping, property maintenance, and food and beverage operations. Required research projects and discussions of current industry issues. Lab portion will include on-site workshops as well as field experiences. P, 271.

NFS 292 Special Problems 1-3
A program of directed studies in specialized areas not covered by normal class offerings. May be repeated for credit.

NFS 303 Diet Therapy 1(1,0) FS
Discussion of role of nutrition or diet intervention in treatment of patients/clients with particular emphasis on dietary management of pathological conditions. Students will become familiar with methods and materials of therapeutic nutrition. P, 321, concurrent enrollment with Nurs 314.

NFS 321 Human Nutrition 3(3,0) FS
The science of food, the nutrients and other substances therein, their action, interaction, and balance in relation to health and disease and the processes by which the organism ingests, digests, absorbs, transports, utilizes and excretes food substances. P, Chem 108 or 120 or consent.

NFS 322 Assessment Skills in Nutrition 4(2,3) F
Study of medical terminology, nutritional assessment, cultural and therapeutic dietary modifications, interviewing and counseling, documentation in the medical record, and quality assurance. Review of principles of dietetics and the role of the professional dietitian. P, 321 or consent.

NFS 341 Advanced Food Science 4(3,3) F
Study of physical/chemical factors affecting food quality resulting from preparation and processing methods. Students will become familiar with techniques in sensory evaluation and basic principles of food analysis. P, 141 and Chem 120.

NFS 351 Principles of Food Processing 3(2,3) S Odd years
Study of the physical/chemical principles and approaches used in heat processing, freezing, dehydration, and fermentation of foods. Current processing methods will be considered in terms of preparation, processing, packaging, and quality control of food products. P, 151, Chem 106 or 114, or consent.

NFS 360 Food Chemistry 4(3,3) S Odd years
The study of chemical properties of basic food constituents and chemical changes occurring during storage and processing. P, Chem 120 or consent.

NFS 361 Hospitality Industry Law 2(2,0) S
This course presents common and civil law as it relates to the operation of various hospitality industry enterprises. Preventative law is presented to permit managers to be aware of potential legal pitfalls and steps required to minimize legal problems.

NFS 362 Financial Management for the Hospitality Industry 3(3,0) F
This course builds on the student's knowledge of the basic accounting concepts and focuses on the uniform chart of accounts for hotels and restaurants. This course also involves in depth analysis of hospitality industry financial data including the use of industry ratios in case study analyses of profitability operating and solvency. P, 261, 271, Acct 210.

NFS 363 Travel and Tourism Management 3(3,0) S
This course explores the diversity of the travel and tourism industry and its relationship to the hospitality industry. Emphasis will be on research and the awareness of current industry trends. Channels of distribution and destination development will be studied and applied to gain a better appreciation of the interrelationships between travel, tourism and the hospitality industries. P, 171, junior standing or instructor consent.

NFS 371 Food Service Purchasing 3(3,0) S
Purchasing food and supplies for restaurants and institutions. Functions of management as applied to supplier selection, procurement, receipt, storage, and issue, record keeping, and inventory control systems. This course involves an in depth analysis of commodity groups and the development of purchase specifications and quality evaluation. P, 261.

NFS 372 Equipment, Layout & Design 3(2,2) S
Planning food service facilities with emphasis on kitchen layout, food service facilities design, equipment and furniture selection. A study of management factors which affect the human element in food production and service. P, 261.

NFS 381 Quantity Food Production & Service 2(0,6) FS
Management of production and service of quantity food in institutions and commercial establishments. Experience in planning, preparing and serving meals in a variety of food service establishments. P, 261 or concurrent with 261. NFS majors only.

NFS 391 Institution Organization & Management 3(3,0) F
Management principles in food service facilities including organization, personnel policies, job analysis, employee selection, training, evaluation, supervision of production areas.

NFS 422 Advanced Human Nutrition 4(4,0) F
Principles of physiological chemistry and physiology applied to nutrition. P, 321, Zool 221 and 325, Chem 108 or 361 or consent.

NFS 423 Clinical Nutrition 5(4,2) S
Role of nutritional intervention in pathological conditions. P, 422 or consent.

NFS 424 Community Nutrition 3(2,2) S
Application of learning principles, teaching methods and knowledge of nutrition in community nutrition education programs and out-patient nutrition counseling. Introduction to the role of the consultant dietitian. P, 321.

NFS 450 Food Analysis 4(2,6)S Even years
Principles, methods and techniques necessary for quantitative physical and chemical analysis of food products. The analysis of foods will be related to the standards and regulations for the food processing industry. P, 360, Chem 120, or consent.

NFS 451 Advanced Food Processing 4(2,6) F Even years
Characteristics of vegetable and animal products as affected by shipping, storage and processing. Mass and energy transfer in food systems. Processing and waste treatment associated with various classes of food and factors that affect yield and acceptability. Process control and quality assurance in food processing. P, 351, Micr 311, or consent.

NFS 471 Hospitality Management Information Systems 3(3,0) F
Simulated day to day transactions using the computer to assist in management decisions. Use of data files for inventory and production control, food cost accounting. P, CSc 105.

NFS 482 Hospitality Marketing 3(3,0) S
Applied marketing covering case studies in the hotel and restaurant industry. Emphasis on implementing marketing strategies including: demographics, image development, advertising, sales promotion, public relations, administering and controlling a marketing plan. P, Econ 370.

NFS 492 Special Problems 1-3
A program of directed studies in specialized areas not covered by normal class offerings. May be repeated for credit.

NFS 493 Current Topics 1-3 FSSu
In the following and other selected areas: nutrition, clinical dietetics, food service systems management, food science, hospitality industries. P, junior standing in dietetics, food science or restaurant/hotel management and consent.

NFS 497 Professional Practicum 1-12 FSSu
Supervised work or clinical experience in dietetics, food service or hospitality management, nutrition programs or in food industries. P, consent.

Dual Numbered Courses

NFS 490-590 Seminar in Food & Nutrition 1-2
This seminar is designed to explore in depth topics related to the role of nutrition in health promotion and disease prevention in the community.

Graduate Courses

NFS 592 Special Problems 1-3
NFS 593 Current Topics 1-3
NFS 660 Maternal and Infant Nutrition 3(3,0)
NFS 662 Sociocultural Aspects of Nutrition 3(3,0)
NFS 634 Techniques in Nutrition Research 3(1,6)
NFS 725 Nutrition and Human Performance 3(3,0)
NFS 760 Child Nutrition 3(3,0)
NFS 761 Nutrition of the Aged 3(3,0)
NFS 792 Special Problems 1-3
NFS 793 Current Topics 1-3(1-3,0)

Nurs (Nursing)

Undergraduate Courses

Nurs 110 Orientation RN Upward Mobility Program 0
Registered Nurse orientation. P, RN, consent.

Nurs 200 Nursing Workshops 1-3
Special session in specific areas of nursing. Approximately 45 hours of work required for each credit, including lecture, conference, committee and group activity, and outside assignments. Workshops in nursing may range from 1 to 3 weeks. Students limited to 4 credits to apply toward degree. P, consent.

Nurs 201 Medical Terminology 1
Study of definition and use of medical terms common to many health-related disciplines. Enrollment limited to freshmen and sophomores, or with permission of the instructor.

Nurs 206 Professional Nursing 2(2,0)
Overview of professional nursing for the registered nurse. Introduction to the deliberative processes of research and epidemiology used in studying the external environment and the community as client. Conceptual framework of the nursing curriculum.

Nurs 216 Nursing Process 4(2,6)
Deliberative nursing process with emphasis on assessment, nursing diagnosis and basic physical assessment techniques. Simulated laboratory experiences and/or community based experiences in health screening and applications of nursing process. P, registered nurse, 206, Chem 106, Zool 221, Soc 100, Micr 231, Psyc 101.

Nurs 222 Transition to B.S. in Nursing 2(2,0) FS (alternate years)
Provides an individual with licensure as an RN an overview of the baccalaureate requirements with anticipated socialization changes. Emphasis is on self-assessment, learning style inventory, portfolio development and validation options. P, RN licensure.

Nurs 264 Professional Perspectives I 1(1,0) FS (alternate years)
Introduces the profession of nursing within the context of a changing health care system. Focuses on nursing role development with emphasis on educator, provider and researcher roles. Concurrent with 265, 280, 282.

Nurs 265 Health Assessment and Interventions 4(2,6) FS (alternate years)
Introduces beginning assessment skills and interventions for systematic data collection about health. Emphasis on role of nurse as provider in simulated laboratory and health oriented environments. P, admission to Nursing major. P or concurrent with Micr 231, Zool 325, NFS 321, and HDCF Lifespan course. Three credits from Soc 100, 150, 240, 250, or 340. Concurrent with Pha 241, Nurs 264, 280, 282.

Nurs 280 Professional Communication 4(2,6) FS (alternate years
Concentrates on the nursing profession and skills required for communication in professional nursing practice. P, Psyc 101. Concurrent with Nurs 264, 265, 282.

Nurs 282 Health Promotion 2(2,0) FS (alternate years)
Focuses on learning about wholistic health of self, individuals and groups. Wellness and teaching/learning principles are used. Concurrent with Nurs 264, 265, 280.

Nurs 304 Professional Perspectives II 1(1,0) FS (alternate years)
Continuation of professional role development with emphasis on advocate and therapeutic agent roles. Focuses on the multifaceted factors influencing the profession. P, Nurs 264, 265, 280, 282. Concurrent with Nurs 320 and 330. P or concurrent with Stat 341.

Nurs 320 Family as Client: Emerging and Developing 7(4,9) FS (alternate years)
Explores the nurse's role in promoting and maintaining family health. Emphasis on reproductive health and anticipatory guidance related to common and predictable developmental changes of children and families. Clinical application of the concepts will occur in a range of practice environments. P, Nurs 264, 265, 280, 282. Concurrent with Nurs 304, 330.

Nurs 330 Family Health Environment Across the Lifespan 4(2,6) FS (alternate years)
Emphasis on nursing care of individuals and families in a community setting. Home visit process, continuum of care, discharge planning, identification of available community support services and referral are introduced. Health promotion and disease prevention are explored in a variety of environments. P, Nurs 264, 265, 280, 282. Concurrent with Nurs 304, 320.

Nurs 333 Professional Perspectives for RN's 3(3,0) FS (alternate years)
Preparation for professional nursing roles with emphasis on the development of researcher and leader. Addresses issues and trends affecting nursing and the health care delivery system. Students will continue to work on self-development issues and portfolio development. P, Chem 106, 108; Psyc 101, Micr 231, Zool 325, Pha 241, NFS 321, HSc 443, Stat 341; 3 credits from Soc 100, 150, 240, 250, or 340; HDCF Lifespan course; Nurs 222.

Nurs 350 Nursing in the Community 1-6
Community aspects of planning for health needs. Designed for non-credit or variable assignment of credits. May include some practice.

Nurs 356 Therapeutic Communication 4(2,6)
Application of deliberative process with emphasis on psychological assessment, advanced communication skills and promotion of mental health for individuals and groups. Clinical application of content including care of individuals and selected groups in community settings. P or concurrent, 216, registered nurse.

Nurs 364 Professional Perspectives III 1(1,0) FS (alternate years)
Continuation of professional role development with emphasis on coordinator and scholar roles. Focuses on case management and wholistic factors influencing the nurse-client relationship. P, Nurs 304, 320, 330. Concurrent with Nurs 370, 375.

Nurs 370 Acute Health Care I 5(3,6) FS (alternate years)
Focuses on the nursing process to provide care to clients experiencing a wide range of acute health problems with predictable outcomes. P, Nurs 304, 320, 330. Concurrent with Nurs 364, 375.

Nurs 375 Chronic Health Care I 5(3,6) FS (alternate years)
Focuses on the provision of care for clients experiencing a wide range of chronic health problems with predictable outcomes. P, Nurs 304, 320, 330. Concurrent with Nurs 364, 370.

Nurs 380 Family as Client 4(3,3)
Application of deliberative process with emphasis on health status and developmental tasks of individual and family. Clinical experiences in a variety of settings to provide care for families and individuals throughout the life span. P, 356, Chem 108, Zool 325, HDCF 327, 313, NFS 303, 321, Pha 241, Psyc 451, registered nurse.

Nurs 384 Clients with Complex Health Problems 4(3,3)
Application of deliberative process with emphasis on crisis intervention, critical care and chronicity. Clinical experiences in a variety of settings to provide care for clients who are experiencing pathophysiological or psychopathological conditions with unpredictable outcome. P, registered nurse, 356, Chem 108, Zool 325, HDCF 327, 313, NFS 303, 321, Pha 241, Psyc 451.

Nurs 404 Professional Perspectives IV 1(1,0) FS (alternate years)
Continuation of professional role development with emphasis on the collaborator and leader roles. Focus of this course is on the function of change agent and group facilitator as it impacts health care delivery. P, Nurs 364, 370, 375. Concurrent with Nurs 410, 420.

Nurs 410 Adult Health Care II 5(3,6) FS (alternate years)
Expands on previous nursing knowledge and skills to provide care to clients with acute complex health problems with unpredictable outcomes. P, Nurs 364, 370, 375. Concurrent with 404, 420.

Nurs 420 Chronic Health Care II 5(3,6) FS (alternate years(
Expands upon previous knowledge and skills to provide to clients experiencing a wide range of chronic complex health problems with unpredictable outcomes. P, Nurs 364, 370, 375, HSc 443. Concurrent with Nurs 404, 410.

Nurs 422 Women in Health Care Professions 2(2,0)
Women's roles and contributions in health care professions from ancient to modern times. Factors affecting women's activities in these fields. Movements and developments in these fields where women have made significant contributions. Open to nursing and non-nursing students. Elective for junior or senior in nursing or for registered professional nurses. Elective to apply to women's study minor.

Nurs 450 Nursing Physical Assessment 3(3,0)
Theory and clinical application of theory in relationship to diagnosing human responses in health and disease. Emphasizes independent nursing actions in promotion of health, health maintenance, prevention of injury and disease and in determining care for clients in all health settings. P, Senior standing or consent.

Nurs 464 Professional Perspectives V 2(2,0) FS (alternate years)
Synthesis of professional role development. Focus of this course is on leadership and management. P, Nurs 404, 410, 420. Concurrent with 475, 491.

Nurs 475 Community as Client 3(1,6) FS (alternate years)
Focuses on application, analysis and evaluation of community health nursing with emphasis on aggregate populations and communities. Practice experiences are planned in rural/urban community environments. P, Nurs 404, 410, 420. Concurrent with Nurs 464, 491.

Nurs 483 Computer Applications in Health Care 3(3,0)
Capabilities and limitations of computers; basic concepts and principles of system organization and operation; application of computer programs in health diagnosis, treatment and facilities operations; teaching, continuing education and research. P, Math 102 or 113. Open to upper division undergraduate students.

Nurs 490 Seminar in Nursing 1(0,1-2)
Discussion and evaluation of the impact of nursing action in care of patients. Students limited to 4 credits to apply toward degree.

Nurs 491 Directed Study in Nursing 6(2,12) FS (alternate years)
Application and synthesis of reflective decision making within the practice of nursing. Includes a preceptored experience in a selected practicum setting. P, Nurs 404, 410, 420. Concurrent with Nurs 464. 475.

Nurs 492 Special Problems in Nursing 1-3
Open to upper division students by permission. Students limited to 4 credits to apply toward degree. P, consent.

Nurs 493 Special Topics in Nursing 1-4
Study of selected topics in nursing under direction of faculty. Offered on sufficient demand. Senior or consent of instructor.

Nurs 494 Cooperative Education in Nursing 1-4
Opportunity to receive academic credit for work experience related to nursing. Course requirements and amount of credit granted will be determined on an individual basis. Up to four credits may apply toward graduation. P, completion of two semesters of nursing major; permission of department head.

Graduate Courses

Nurs 610 Advanced Nursing Practice: Role Introduction and Issues 3(3,0)
Nurs 623 Physiological Response Patterns in Health and Illness 4(4,0)
Nurs 625 Human Sexuality in Health Care 3(3,0)
Nurs 631 Advanced Assessment Across the Lifespan 2(1,1)
Nurs 635 Death and Dying: Principles and Practices of Care 3(3,0)
Nurs 640 Legal & Ethical Accountability in Health Care 2(2,0)
Nurs 645 Management of Acute and Chronic Pain 3(3,0)
Nurs 655 Health and the Older Adult 2(2,0)
Nurs 665 Health Care for Victims of Abuse 3(3,0)
Nurs 670 Health Policy, Legislation, Economics and Ethics 3(3,0)
Nurs 690 Seminar: Guided Study in Nursing 1-4
Nurs 692 Special Problems 1-3(theory or lab or combination of these)
Nurs 695 Special Topics 1-3 (1-3,0)
Nurs 710 Curriculum Development in Nursing 2(2,0)
Nurs 725 Patient Care Management 3(3,0)
Nurs 760 Health and Communication 4(2,2)
Nurs 765 Complex Health Problems 4(2,2)
Nurs 770 Clinical Nursing Specialization 6(3,3)
Nurs 771 Clinical Specialization for Family Nurse Practitioner 6(3,3)
Nurs 775 Nurse Role Practicum 6-12 (3,9)
Nurs 780 Seminar in Advanced Nursing 1-3(1-3,0)
Nurs 782 Communication in Advanced Nursing Practice 3(2,3)
Nurs 785 Self Care of the Older Adult 3(3,0)
Nurs 790 Thesis in Nursing 1-7
Nurs 791 Thesis Sustaining 0
Nurs 792 Problems in Nursing Research 1-2
Nurs 795 Problems in Nursing Research Sustaining 1

PE (Physical Education)

Undergraduate Courses

PE 101-144 Fitness and Lifetime Activities 0.5-1(0,2) FSSu
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.

101 Aerobics	1.0
102 Aerobics, Water	1.0
103 Archery	0.5
104 Badminton	0.5
105 Baseball	0.5
106 Basketball	1.0
107 Billiards	0.5
108 Bow Hunting, Beginning	0.5
109 Bowling	0.5
110 Camping Skills	1.0
111 Canoeing/Hiking	1.0
112 Cross-Country Skiing	1.0
113 Cross Training	1.0
114 Cycling	0.5
115 Dance, Country	1.0
116 Dance, Jazz	1.0
117 Dance, Social	1.0
118 Dance Variety	1.0

119 Fishing Techniques	1.0
120 Fitness Thru Running	1.0
121 Fitness Thru Walking	1.0
122 Football, Flag	0.5
123 Frisbee, Ultimate	0.5
124 Golf	0.5
125 Racquetball	0.5
126 Recreational Activities	0.5
127 Restricted. P, consent.	1.0
128 Scuba Diving	1.0
129 Soccer	0.5
130 Softball	0.5
131 Springboard Diving	1.0
132 Swim Conditioning	0.5
133 Swim, Beginning (Level 3)	1.0
134 Swim, Intermediate (Level 4)	1.0
135 Swim, Swimmers (Level 5-6)	1.0
136 Tae-Kwon-Do	1.0
137 Tennis	0.5
138 Volleyball	0.5
139 Volleyball, Sand	0.5
140 Weight Training	1.0
141 Weight Training, Advanced	1.0
142 Wrestling - Greco Roman	1.0
143 Special Topics	1.0
144 Special Topics	0.5

PE 170 Fundamental Movement 1(0,3) FS
Defining, analyzing and evaluating fundamental locomotor, non-locomotor (axial) and manipulative skills, progressions in skill development.

PE 200 Skill Concept: Fitness 1(0,3) F
Knowledge and skill necessary to enable students to lead, analyze and prescribe movement skills and activities which are part of lifetime fitness development. P, consent.

PE 201 Skill Concept: Gymnastics 1(0,3) S
Knowledge and skill necessary to enable students to lead, analyze and prescribe movement skills and activities which are part of gymnastics movement. Focus will be on developmentally appropriate activities at the elementary, middle and high school levels. P, consent.

PE 202 Skill Concept: Individual and Dual Activity 1(0,3) S
Knowledge and skill necessary to enable students to lead, analyze and prescribe movement skills and activities involved in participating in individual and dual sport and game activities. Focus will be on activities and lead-ups appropriate for school settings, leading to personal skill development. P, consent.

PE 203 Skill Concept: Team Sport Activity 1(0,3) F
Knowledge and skill necessary to enable students to lead, analyze and prescribe movement skills and activities involved in participating in team sport activities. Focus will be on activities appropriate for school settings, which contribute to personal development. P, consent.

PE 204 Skill Concept: Rhythms and Dance 1(0,3) S
Knowledge and skill necessary to enable students to lead, analyze and prescribe movement skills and activities involved in participating in rhythms and lifetime dance activities. Focus will be on activities appropriate for school settings, which contribute to personal development. P, consent.

PE 205 Skill Concept: Recreational Activities 1(0,2) FS
Emphasis on student planning and leadership of recreational activities involving equipment, developing a resource notebook and gaining an appreciation for the variety of recreational opportunities. Crosslisted with Recr 205.

PE 241 Curriculum in Physical Education 2(2,0) F
Philosophy, theory and application of current curriculum foundations in physical education, including curriculum theory and design, curriculum content, curriculum organization and assessment. P, sophomore standing.

PE 320 Lifeguard Training 2(1,2) FS (alternate years)
The course focuses on skills and knowledge to properly assume responsibilities of lifeguards at swimming pools and non-surf beaches.

PE 321 Water Safety Instructor 1 FSSu
Method of instruction and evaluation of water safety techniques. Participation may lead to American Red Cross Water Safety Instructor's certification. Does not substitute for PE 100. P, consent.

PE 322 Lifeguard Instructor 1(0,2)
Certification as a Lifeguard Instructor will qualify an individual to teach basic water safety, emergency water safety and the lifeguard training course. P, 321, CPR and First Aid Certificate.

PE 334 Assisting Teaching I 1(0,3) FS
Application of movement analysis, prescription knowledge and skills to a team activity setting in a basic physical activity course. P, consent.

PE 336 Assisting Teaching II 1(0,3) FS
Application of movement analysis, prescription knowledge and skills to an individual or dual sport activity setting in a basic physical activity course. P, consent.

PE 342 Recreational Sports Programming/Administration 2(2,0) F
Organization and administration of intramural sports on elementary, secondary, college and university levels. Program planning, facilities, equipment and financing of intramural sports program. P, sophomore standing. Crosslisted with Recr 342.

PE 350 Exercise Physiology 3(2,2) FS
Body processes and exercise; efficiency of muscular work, fatigue and exercise; age, sex and body type as related to exercise; nervous control of muscular activity; effect of exercise on the circulatory system. P, Zool 221, junior standing.

PE 352 Adapted Physical Education 2(1,2) S
Course designed to give the HPER major a better understanding of requirements of special needs students in PE environment. Includes instruction on IEP, writing goals and objectives, working with disabling conditions.

PE 353 Biomechanics 3(3,0) FS
Mechanics and muscular actions related to movement of the human body. P, Zool 221 or 325, junior standing.

PE 354 Prevention & Care of Athletic Injuries 2(1,2) FS
General care and treatment of athletic injuries, conditioning and training, equipment of training room, taping for athletic injuries. P, junior standing. Crosslisted with PT 354.

PE 360 Methods of Elementary School Physical Education 2(1,2) S
Needs, characteristics, capacities of elementary school children (grades K-6); curriculum planning; organizational problems; and methods and materials essential to program progression in movement exploration, dance, games, self-testing. P, sophomore standing.

PE 400 Exercise Testing and Prescription 2(1,2) F
This course is designed to provide the student with the knowledge and skills to assess physical fitness and prescribe individualized exercise programs for healthy populations. P, 350 or consent.

PE 461 Methods of Teaching PE 2(1,2) F
Methods of teaching physical education activities in public schools, with emphasis on curriculum planning and principles of motor learning and development as they apply to structuring appropriate activities. A significant amount of time will be spent learning and practicing specific teaching models used in schools. P, consent.

PE 467-483 Coaching and Officiating 2(1,2) FS
Theory and practice of individual fundamentals and team strategies. Organization and management procedures specific to each sport. Textbook work, lectures, visual aids, demonstrations. Techniques of officiating. P, junior standing.
467 Swimming
469 Softball
470 Basketball
471 Football
472 Baseball

473 Track/Field
474 Wrestling
475 Volleyball
476 Gymnastics
483 Golf

PE 490 Senior Seminar 1 FS
Reports, group discussions and group projects relating to completion of HPER teaching program. P, senior standing, consent. Recommend enrollment semester prior to Professional Semester III for PETE students.

Dual Numbered Courses

PE 450-550 Clinical Exercise Physiology 2(2,0) SSu (alternate years)
This course is designed to provide the clinical exercise physiology student with assessment and prescription techniques appropriate to special populations. P, consent.

Graduate Courses

PE 730 Physical Education Teacher Education 2(2,0)S
PE 731 Curriculum Development in Physical Education 2(2,0) SSu (alternate years)
PE 732 Analysis and Strategies of Teaching and Supervising Physical Education and Sport 3(3,0) Su (alternate years)
PE 733 Middle Level Physical Education 2(2,0) SSu (alternate years)
PE 750 Applied Exercise Physiology 3(3,0)F
PE 751 Laboratory Techniques in Exercise Physiology 2(2,0) SSu (alternate years)
PE 770 Advanced Administration of Interscholastic Athletics 2(2,0) SSu (alternate years)
PE 771 Current Trends in Athletics 3(3,0) FSSu (alternate years)
PE 772 Seminar: Financial Aspects of Sports Management 2(2,0) FSu (alternate years)

Pha (Pharmacy)

Undergraduate Courses

Pha 201 Medication and the Consumer 2(2,0) FS
Principles of drug action, examination of medical and legal aspects of use and misuse of prescription, non-prescription and illicit drugs. Not open to pharmacy students.

Pha 241 Pharmacology 3(3,0) FS
Basics of pharmacology and therapeutics for nurses and others. P, Chem 108, current enrollment in Zool 325.

Pha 310 Introduction to Pharmaceutical Care 3(2,2) F
An introduction to the contemporary practice of pharmacy. Includes the historical basis of the profession, medical terminology, roles of pharmacists, and an introduction to the clinical care setting. P, 3rd year standing.

Pha 311 Professional Communication Skills 3(2,2) S
Current theories and practice, oral and written, in interpersonal and professional communication. P, 3rd year standing, SpCm 101.

Pha 313 Pharmaceutical Calculations 1(1,0) F
Systems of weights and measures and mathematical problems encountered in pharmaceutical practice. P, 3rd year standing.

Pha 323 Pharmaceutical Biochemistry 4(4,0) F
Chemical structure, function, biosynthesis and catabolism of biomolecules in order to understand the biochemical basis of disease and the metabolism and mechanism of action of medicinal agents. P, 3rd year standing.

Pha 324 Biomedical Science 4(4,0) S
Properties, activities, mechanism of action and therapeutic use of biologics (e.g., monoclonal antibodies, vaccines, therapeutic proteins) and technologies involved in their production. P, 3rd year standing, 323.

Pha 331 Pharmaceutics I 3(3,0) F
Theory, preparation and application of pharmaceutical dosage forms and drug delivery systems. P, 3rd year standing.

Pha 332 Pharmaceutics II 4(3,3) S
Theory, preparation and application of pharmaceutical dosage forms and drug delivery systems. P, 331.

Pha 340 Principles of Drug Action I 4(3,3) F
Principles of medicinal chemistry, pharmacology, toxicology and introduction to pharmacotherapy. P, 3rd year standing.

Pha 341 Principles of Drug Action II 4(3,3) S
Principles of medicinal chemistry, pharmacology, toxicology and introduction to pharmacotherapy. P, 340.

Pha 401 Current Topics in Pharmacy 1(1,0) S
Films and discussions on topics of interest not included in more formalized courses. P, 4th or 5th year standing.

Pha 415 Biopharmaceutics and Pharmacokinetics 5(5,0) F
Relationship of the physicochemical properties of drug formulations to the bioavailability of drugs. Application of pharmacokinetics to the safe and effective therapeutic management of the individual patient. P, 331, 332, and 4th year standing.

Pha 425 Pharmaceutical Marketing 2(2,0) F
Marketing functions of the manufacturer, wholesaler and practitioner. P, 4th year standing.

Pha 430 Pharmaceutical Jurisprudence 3(3,0) F
State and federal laws and regulations. P, 4th year standing.

Pha 442 Principles of Drug Action III 6(5,3) F
Principles of medicinal chemistry, pharmacology, toxicology and introduction to pharmacotherapy. P, 4th year standing.

Pha 443 Principles of Drug Action IV 6(5,3) S
Principles of medicinal chemistry, pharmacology, toxicology and introduction to pharmacotherapy. P, 442.

Pha 445 Drug Literature and Research Design 4(3,2) S
Study in critical assessment of the medical literature, the exploration of available resource materials, and introduction of the elements required for performing clinical research. P, 4th year standing.

Pha 450 Drug Distribution Systems 4(2,4) S
Principles of contemporary pharmacy services in institutional and community settings. P, 4th year standing.

Pha 465 Professional Resources Management 4(3,2) S
Professional, economic, and social considerations influencing the organization and management of the delivery of pharmaceutical services. P, 430, 4th year standing.

Pha 491 Directed Studies 1-3(0,3-9) FS
A study of an area of student's interest in which a pharmacy faculty member is competent but which is not covered by the regular courses. P, consent.

Pha 492 Research Problems 1-3(0,3 per credit) FS
Students may elect research problems in one of the pharmaceutical sciences, biopharmaceutics, pharmaceutics, pharmaceutical chemistry, or pharmacology; or in an appropriate area of pharmacy practice. P, consent.

Pha 493 Special Topics 1-3 FS
Organized by an instructor in consultation with the Department Head and a group of students. The course will normally be taught only once or sporadically for a unique group of students.

Pha 520 Clinical Laboratory Monitoring 2(2,0) F*
Monitoring of drug therapy through the use of clinical assessment and laboratory data. P, 5th year standing.

Pha 539 Nutritional Aspects in Pharmacy Practice 2(2,0) S*
Study of the use of nutrition as a therapeutic modality in various disease states. Emphasis on enteral and parenteral products and therapy. P, 4th or 5th year standing.

Pha 554 Hospital Pharmacy 3(2,1) S
Principles of contemporary pharmacy services within hospitals and other health care institutions. P, 4th year standing or consent.

Pha 645 Pharmacotherapeutics: Application to Advanced Practice 4
Current drug therapy principles with emphasis on drugs and pharmacotherapeutics used in Family Nurse Practitioner practice. P, FNP program enrollment.

Pha 700 Directed Studies Clerkship 4

Pha 701 Home Health Care/Hospice Clerkship 4

Pha 702 Indian Health Service Clerkship 4

Pha 703 Pharmacy Administration Clerkship 4

Pha 704 Nutrition Clerkship 4

Pha 705 Clinical Research Clerkship 4

Pha 706 Critical Care Clerkship 4

Pha 707 Infectious Disease Clerkship 4

Pha 708 Surgery Clerkship 4

Pha 709 Nephrology Clerkship 4

Pha 710 Pharmacokinetics Clerkship 4

Pha 711 Oncology Clerkship 4

Pha 712 Nuclear Pharmacy Clerkship 4

Pha 713 Managed Care Clerkship 4

Pha 714 Community Pharmacy 6 FSSu
Clerkship experience at an affiliated site. P, 6th year standing.

Pha 715 Pharmacy Physical Assessment 2(1,2) S
Theory and application of skills for evaluating humans in health and disease.

Pha 716 Institutional Pharmacy 6 FSSu
Clerkship experience at an affiliated site. P, 6th year standing.

Pha 718 Advanced Clinical Lab 3(2,2) F
Study of clinical laboratory methods and tests with emphasis on drug monitoring and problem solving of drug therapy.

Pha 719 Physical Assessment Lab 1(0,3) F
Development and application of skills useful for pharmacists in the assessment of humans in health and disease. P, 5th year standing.

Pha 720 Advanced Medicinal Chemistry 3(3,0

Pha 721 Immunotherapy 2(2,0) S
Study of therapeutic modalities specific to immune-related disorders and drugs. Includes discussion of engineered drugs and the clinical use of biotechnology products.

Pha 722 Therapeutics-The Geriatric Patient 2(2,0) F
Physiological and psychological aspects of aging with special attention to altered drug requirements. P, 5th year standing.

Pha 723 Ethics in Healthcare Practice 2(2,0) F
Overview of ethical principles and theory, with emphasis on the professional-client relationship. P, 5th year standing.

Pha 724 Pharmacoeconomics 2(2,0) FS
The pharmacoeconomic principles used to evaluate medications, with emphasis on the use of therapeutic outcomes to compare cost effectiveness of therapeutic agents. P, 5th year standing.

Pha 725 Topics in Medicinal Chemistry 3(3,0)

Pha 728 Current Issues in Pharmacy Practice 3(3,0) S
Theory and development of pharmaceutical care concepts. Discusses role of a contemporary pharmacy practitioner within the framework of the U.S. health delivery system. Pharmacy ethics is discussed.

Pha 729 Pharmaceutical Marketing 2(2,0) FS
Discussion of the marketing functions of the pharmaceutical manufacturer, the wholesaler, and the pharmacy practitioner. P, 5th year standing.

Pha 730 Advanced Pharmacotherapeutics I 6(5,3) F
Organ-based approach to the use of patient-specific factors for drug therapy in individualized patient situations. Integrates pathophysiology and drug therapy principles.

Pha 731 Advanced Pharmacotherapeutics II 6(5,3) S
Continuation of 730. P, 730.

Pha 732 Therapeutics--Renal/Fluid and Electrolytes 3(3,0) F
Integration of pathophysiology and drug therapy principles to develop patient specific drug regimens in the areas of renal and fluid and electrolytes. P, 5th year standing.

Pha 733 Therapeutics-Gastrointestinal and Nutrition 3(3,0) S
Integration of pathophysiology and drug therapy principles to develop patient specific drug regimens in the areas of gastrointestinal disease and nutrition. P, 5th year standing.

Pha 734 Therapeutics-Endocrine/Reproduction 3(3,0) F
Integration of pathophysiology and drug therapy principles to develop patient specific drug regimens in the area of endocrine and reproductive medicine. P, 5th year standing.

Pha 735 Therapeutics-Infectious Disease 2(2,0) S
Integration of pathophysiology and drug therapy principles to develop patient specific drug regimens in the area of infectious disease principles. P, 5th year standing.

Pha 736 Therapeutics-Neurology/Psychiatry 3(3,0) F
Integration of pathophysiology and drug therapy principles to develop patient specific drug regiment in the areas of neurology and psychiatric medicine. P, 5th year standing.

Pha 737 Therapeutics-Cardiopulmonary 4(4,0) S
Integration of pathophysiology and drug therapy principles to develop patient specific drug regimens in the area of cardiopulmonary disease. P, 5th year standing.

Pha 738 Therapeutics-Hematology/Oncology 3(3,0) S
Integration of pathophysiology and drug therapy principles to develop patient specific drug regimen in the areas of hematology and oncology. P, 5th year standing.

Pha 739 Therapeutics-Rheumatology/Skin/Skeletal 2(2,0) F
Integration of pathophysiology and drug therapy principles to develop patient specific drug regimen in the areas of rheumatology, dermatology, and skeletal diseases. P, 5th year standing.

Pha 740 Advanced Pharmacology 3(3,0)

Pha 741 Drug Utilization and Quality Assurance 1(1,0) S
Exploration of the fundamentals in theory and performance of drug utilization and quality assurance studies within health care. P, 5th year standing.

Pha 742 Adverse Drug Reactions 2(2,0) S
Study of untoward reactions to therapeutic medicinal agents. Includes mechanisms and treatments. P, 5th year standing.

Pha 745 Topics in Pharmacology 3(3,0)

Pha 751 Immunotherapeutics 2(2,0) FS
Therapeutic use and pharmacology of newer immunologic agents, engineered drugs, and biotechnological products. P, 5th year standing.

Pha 752 Drugs of Abuse 2(2,0) FS
Discussion of psychoactive drugs, both legal and illegal, that have potential for abuse. P, 5th year standing.

Pha 753 Women and Children's Health 2(2,0) FS
Principles of drug use in the perinatal period, including pregnancy, nursing, and neonatology, and drug-related issues of particular concern to women's health, and pediatrics. P, 5th year standing.

Pha 755 Research Design and Drug Information 4(3,2) F
Advanced study in critical assessment of the medical literature with emphasis on the elements of scientific research. Studies components of viable research proposals and includes independent work to develop a proposal.

Pha 759 Advanced Pharmaceutics 3
A study of current advanced theories in Pharmaceutics.

Pha 760 Clinical Pharmacokinetics 3(3,0) S
Advanced pharmacokinetic principles, with emphasis on drug dosing on individual patient basis.

Pha 765 Topics in Pharmaceutics 3(3,0)

Pha 770 Pediatrics Clerkship 4

Pha 771 Geriatrics Clerkship 4

Pha 772 Internal Medicine I Clerkship 4

Pha 773 Internal Medicine II Clerkship 4

Pha 774 Ambulatory Care/Family Practice Clerkship 4

Pha 775 Psychiatry Clerkship 4

Pha 780 Seminar 1(0,1)

Pha 784 Seminar 1(0,1) FS
Discussion of current pharmacy and other health care issues and includes developing and delivering a short presentation. P, 5th year standing.

Pha 785 Seminar 1(0,1) S
Continuation of 784, with emphasis on discussion of clinical pharmacy concepts and professional presentations. P, 784.

Pha 790 Thesis in Pharmaceutical Sciences 1-7

Pha 791 Directed Studies 1-3 FS
In-depth study in a subject area compatible with the student's interests.

Phil (Philosophy)

Undergraduate Courses

Phil 100 Introduction to Philosophy 4(4,0) FSSu
Inquiry into some of the basic problems of philosophy leading to an appreciation of the place and value of philosophy in the intellectual community, and intellectual activities of the student.

Phil 200 Introduction to Logic 3(3,0) FSSu
Investigation of informal and formal (symbolic) reasoning to promote thoughtfulness in one's academic and personal life.

Phil 215 Introduction to Social/Political Philosophy 3(3,0) FS
The search for order for society; major political and social theories from Socrates to the present and critical analysis of these theories. The relation of theories of human nature, metaphysics, epistemology, and ethics to the order in society.

Phil 220 Introduction to Ethics 3(3,0) FSSu
Major ethical theories, investigation of some of the problems arising from these theories, and a critical analysis of the validity of these theories in light of the students' ethical intuitions.

Phil 313 Great Philosophers: (Topical) 2-3(2-3,0) FSSu
Explores the thinking of a selected philosopher. Seeks to understand the ideas behind the philosopher's thinking and their implication for the modern world. (May be repeated for a total of 9 hours).

Phil 320 Professional Ethics 3(3,0) S (alternate years)
The study of major normative ethical theories and their application to concrete ethical situations likely to arise in the professional workplace. Emphasis placed on potential conflicts between the goals of the professions and the imperatives of the ethical life, and possibilities for resolution of such conflicts.

Phil 331 Philosophy of Science 3(3,0) FS
An investigation into the nature of science from the perspectives of the scientific disciplines themselves and from the study of the history of scientific development. Inquiry into the structure of scientific method, the scope and limitations of scientific knowledge, and the implications of competing paradigms of scientific world view.

Phil 332 Environmental Ethics
Crosslisted with Rel 332.

Phil 370 Philosophy of Religion 3 FS
Topics such as proofs for the existence of God, religious knowledge, religious language, the nature of God, the nature of the holy, and the nature of religious experience. Crosslisted with Rel 370. No prerequisites.

Phil 383 Bioethics 4(4,0)
Crosslisted with Bio 383.

Phil 423 Early Political Philosophy 3(3,0) FS
Crosslisted with PolS 461.

Phil 424 Modern Political Philosophy 3(3,0) FS
Crosslisted with PolS 462.

Phil 493 Topics in Philosophy 1-5
Selected topics of current interest in the discipline.

Phil 495 Internship 1-12FSSu
Planned and supervised professional experience which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Dual Numbered Courses

Phil 492-592 Special Problems in Philosophy 1-3
Individual guided research culminating in formal research paper or series of essays. May be repeated until 6 credits are earned.

Phys (Physics)

Undergraduate Courses

Phys 101 Survey of Physics 4(3,3) FSSu
Survey of Physics is a one-semester course designed to cover broad topics such as mechanics, states of matter, wave motion, sound, and electricity and magnetism. Focus will be given to development of students' critical thinking skills. Students will be challenged to apply these skills to conceptual-type situations as well as problems that require a fundamental knowledge of basic algebra. Emphasis will also be placed on empowering students to make application of the concepts developed to their own areas of study. P, Math 102 or 113. Credit will not be allowed for both Phys 101 and 111-113 or 211-213.

Phys 111 Introduction to Physics I 4(3,3) FSSu
First semester of a year course, primarily for students in the biological, agricultural, and health sciences. Mechanics, heat, wave motion. P, Math 102 or 113. (Credit will not be allowed in both Phys 111-113 and 211-213)

Phys 113 Introduction to Physics II 4(3,3) FSSu
Continuation of 111. Electricity, light, atomic and nuclear physics. P, 111.

Phys 185 Introduction to Astronomy 3(3,0) FS
Introductory course: moon, sun, planets, constellations, galaxies, stellar evolution, radio astronomy, black holes, instrumentation, use of telescopes for viewing.

Phys 211 University Physics I 4(3,3) FSSu
For students in physical science and engineering, Mechanics and Thermodynamics. P, concurrent registration in Math 224. (Credit will not be allowed in both Phys 111-113 and 211-213.)

Phys 213 University Physics II 4(3,3) FSSu
Continuation of 211. Electricity, waves, and optics. P, 211.

Phys 312 Measurement Theory and Experiment Design 2(1,3) F
Selected experiments from various branches of physics. Emphasis on precision and analysis of experimental error. P, junior standing in physics.

Phys 314 Advanced Laboratory I 1(0,3) S
Selected experiments in classical and modern physics which illustrate the principles and development of physics and emphasize experiment design and data analysis. Extensive use is made of microcomputers for data collection and analysis. P, 312 and 331 or consent.

Phys 331 Introduction to Modern Physics 3(3,0) FSSu
Atomic and nuclear structure with emphasis on impact of 20th century developments on science and engineering. P, 213 or 113 and consent.

Phys 341 Thermodynamics & Statistical Mechanics 3(3,0) F
Thermodynamic systems from macroscopic approach considering first and second laws of thermodynamics and their consequences, and from microscopic approach via kinetic theory of gases and statistical mechanics. P, 331 and Math 225.

Phys 351 Classical Mechanics 3(3,0) S
Newton's Laws, motion in one and three dimensions, central forces, harmonic oscillations, non-inertial reference frames, rotations of rigid bodies, and Lagrangian Mechanics. P, 113 or 213 and concurrent registration in Math 321.

Phys 361 Optics 3(3,0) F
Intermediate course in geometrical and physical optics with principal emphasis on physical optics. Analysis of refraction phenomena, thick lenses, wave nature of light, interference, diffraction, and polarization. P, 213 or 113 with consent and Math 225.

Phys 412 Advanced Lab II 1(0,3) F
Selected experiments in modern physics: gamma ray spectroscopy, half life, beta decay, positron annihilation, neutron capture, bubble chamber events, nuclear statistics, etc.

Phys 421 Electromagnetism 3(3,0) S
Principles of electricity and magnetism, with applications to dielectric and magnetic materials. Development of Maxwell's equations, and applications. P, 213 and Math 321.

Phys 431 Introduction to Astrophysics 3(3,0)S
The study of stars, star clusters and galaxies. This will include application of the principles of atomic structure and radiation laws to the interpretation of stellar and nebular spectra, energy generation by thermonuclear reactions and nucleosynthesis, theoretical and observational aspects of stellar evolution and the constituents and structure of stellar systems. P, 331.

Phys 435 Introduction to Nuclear Engineering 3(3,0) S
Design of nuclear fission and fusion reactors and particle accelerators including discussion of basic nuclear properties, the fission process and reactor control, fusion reactors, environmental effects and nuclear waste management. P, 331 or consent.

Phys 439 Physics of the Solid State 3(3,0) S
Electronic processes with reference to electrical properties of metals, semiconductors and insulators. P, 331 and Math 321.

Phys 464 Senior Design I 1(0,3) FSSu
Capstone senior design project. The student will write the specifications for a design project and complete the initial design phase for this project addressing economic, environmental, social and success criteria. P, senior standing.

Phys 465 Senior Design II 2(1,3) FSSu
Capstone senior design project. The student will construct, assemble, and test the project they designed in Phys 464. P, 464.

Phys 471 Quantum Mechanics I 3(3,0) F
Nature of space, time and particles. Quantization of translatory motion, rotatory motion, vibratory motion, motion in a Coulombic field. Operators, wave packets, potentials, forces. P, 331 or consent and Math 321.

Phys 473 Quantum Mechanics II 3(3,0) S
Atomic and molecular structure in terms of vector model and quantum mechanics. P, 471.

Phys 490 Physics Colloquium 1(1,0) FS
Recent developments in the field of physics, and topics of related interest. Participation required for physics majors for 1 semester during the senior year. P, senior standing.

Phys 492 Special Problems in Physics 1-3 FSSu
Individual study in physics for qualified students at the junior or senior level. The course may be repeated for a maximum of six credits toward the B.S. degree in physics or engineering physics. P, consent.

Phys 493 Special Topics 1-3 FSSu
Special problems. Six total credits may be taken with maximum of 3 credits at one time. P, consent.

Phys 494-495-496 Cooperative Education/Internship/ Field Experience 1-4 FSSu
Planned and supervised professional experience related to physics or engineering physics which takes place outside the formal classroom with private business or industry, or public agencies. P, consent.

Dual Numbered Courses

Phys 433-533 Nuclear and Elementary Particle Physics 3(3,0)F
Radioactivity, nuclear spectra and structure, nuclear models, elementary particle theories and high energy physics. P, 471 or consent.

Phys 441-541 Science of Solids 3(3,0) F
Topics covered to satisfy student interests in areas such as magnetism, semi-conductors, superconductors, ferroelectrics, and devices based on these aspects of solids. The role of defects in solids and strength of materials may also be included. P, 439 or consent.

Graduate Courses

Phys 693 Special Topics 1-3 FSSu
Phys 700 Seminar 0-1 FS
Phys 721 Electrodynamics I 3(3,0) F
Phys 723 Electrodynamics II 3(3,0) S
Phys 743 Statistical Mechanics 3(3,0) S
Phys 751 Theoretical Mechanics 3(3,0) S
Phys 771 Quantum Mechanics I 3(3,0) F
Phys 773 Quantum Mechanics II 3(3,0) S
Phys 775 Tensors & General Relativity 3(3,0)
Phys 779 Group Theory in Quantum Mechanics 3(3,0)
Phys 790 Thesis 5-7 FSSu
Phys 792 Research or Design Paper 2 FSSu
Phys 793 Special Topics 1-3 FSSu
Phys 795 Research or Design Paper Sustaining 1
Phys 797 Research 1-9 FSSu

Plan (Planning)

Dual Numbered Courses

Plan 471-571 Principles of State, Regional and Community Planning 3(3,0)F
Purpose, structure, and dynamics of the planning process. Identification of different types of planning. Inter-dependencies among persons who contribute to the planning process and are trained in separate academic disciplines. Basic techniques employed within different phases of the planning process. P, Enrollment within a minor in planning at the Master's level or consent.

Plan 472-572 Techniques of State, Regional and Community Planning 3(3,0)S
Brief review of basic approaches, procedures and methods employed within different phases of the planning process. Coordination required among persons trained in separate academic disciplines in order to carry out these basic techniques. Exercises in the practical application of selected techniques and review of their applications in ongoing to completed planning efforts. P, 691.

(See also specialized courses in planning within departmental listings in Economics; Education; Engineering; Geography; Horticulture, Forestry, Landscape and Parks; Political Science; and Sociology.)

PolS (Political Science)

Undergraduate Courses

PolS 100 American Government 3(3,0) FSSu
Origins, development and operation of American government at the national level. Concentration on political institutions. (Credit not allowed for both 100 and 101.)

PolS 101 American Government Honors 3(3,0) F
Small group discussion of principles of American government for students with superior high school background. By invitation (credit not allowed for both 100 and 101).

PolS 102 American Political Issues 3(3,0) FSSu
Current major issues in American politics, governmental policies and various alternatives being considered in Congress.

PolS 165 Political Ideologies 3(3,0) SSu
Ideas defending communism, fascism, and democracy, including variations such as democratic socialism, Christian democracy, capitalism, liberalism, New Left, neo-conservatism, liberation theology. Practice of ideology. Concepts of comparative analysis.

PolS 210 State & Local Government 3(3,0) FSSu
Legal status, forms and functions, interrelationships, current trends and suggested reforms.

PolS 253 Current World Problems 3(3,0) F
An examination of several current world problems with a focus on creating world order. Course content varies to accommodate current issues.

PolS 305 Women & Politics 3(3,0) S
Study of the role women play in the American political process as activists as well as voters in the late 20th century. Particular emphasis is placed on barriers women face in gaining access to political power in public and private institutions, and the impact legislation and court decisions have had on the role of women in American society. No prerequisites.

PolS 310 Tribal Government and Politics 3
A comparative examination of the structures and the politics of several contemporary tribal governments and their relationship to both the federal and state governments. Brief examination of modern Indian movements and their impact on politics at both the tribal and federal levels.

PolS 316 SD Legislative Issues 1(1,0) S
Study of the South Dakota legislative process and the issues being considered by the South Dakota legislature. Course involves class trip to Pierre to observe the legislature in action.

PolS 320 Public Administration 3(3,0) FS
U.S. public administration; basic elements of administration: personnel, budgeting, planning, organization and management; and importance of federal executives in shaping public policy. P, 100 (or 101) or consent.

PolS 330 Constitutional Law 3(3,0) F
Structure and jurisdiction of federal judiciary. Legal basis of American federalism. Constitutional powers of American Presidency, U.S. Congress and state governments as interpreted through U.S Supreme Court decisions. Reasoning of the Court and evolutionary nature of American constitutional law. P, 100 (or 101) or consent.

PolS 331 Civil Rights and Liberties 3(3,0) S
Individual First Amendment guarantees, constitutional rights of the accused in the criminal process and equal protection of the law as interpreted through U.S. Supreme Court decisions. P, 100 (or 101) or consent. Crosslisted with CJus 331.

PolS 341 European Democratic Governments 3(3,0) F
Comparative study of selected governments of West Europe, especially Britain, France, Germany and Italy; decision- making institutions; political culture; political parties.

PolS 343 Russian Politics 3(3,0) F
Study of government, politics, and some aspects of society in Russia and the region; emphasis on current politics.

PolS 345 Canada 3(3,0) S
Political institutions and patterns; The Constitution and federalism; Quebec and Canada; U.S. - Canadian relations.

PolS 347 Latin American Politics 3(3,0) S
Comparative analysis of mainly larger Latin American countries. Political institutions, social movements and patterns of change, political culture, civil-military relations, development strategies.

PolS 350 International Relations 3(3,0) S
How nations/states behave and why they behave as they do in their relations with each other.

PolS 352 European Union 3(3,0) F
An interdisciplinary offering which examines integration theory and the structures and politics of the European Community. The theme of the course's content will vary from offering to offering in order to accommodate the availability of cooperating instructors from other disciplines. Crosslisted with EurS 301.

PolS 428 Personnel & Budgetary Administration 3(3,0) S
Contemporary personnel and budgetary systems in the public sector. Role of the civil servant in government and society, and the political and technological factors which influence the budget. P, 100 (or 101).

PolS 432 The American Presidency 3(3,0) F
The Presidency in the American political system, its powers and limitations, and the role individual presidents have played in its development in the 20th century. P, 100 (or 101) or consent.

PolS 433 Administrative Law and Government 3(3,0) F
Meaning and historical development of administrative law, legislative and judicial controls, the administrative process and remedies against improper administrative acts.

PolS 435 Political Parties and Campaigns 3(3,0) S
U.S. political parties; functions, organization, techniques and significance of parties; varieties of state and local systems; and behavior of the electorate and interest groups.

PolS 438 The Legislative Process 3(3,0) F
Congress and state legislatures: functions, organization, leadership, procedures, and participants. Influence of chief executives, bureaucracies, interest groups, and political parties. P, 100 (or 101) or 210 or consent.

PolS 446 China & Asian Politics 3(3,0) S
Historical factors and events contributing to present governmental structures, ideologies, and political issues in the area. Emphasis on China and Japan.

PolS 454 International Law and Organizations 3(3,0) F (even years)
An examination of the rules and principles accepted by the members of the community of nations and some of the organizations that they create under these rules and principles.

PolS 461 Early Political Philosophy 3(3,0) S
Types of political theory in historical development. Basis on which these theories rest and the explanatory power of the various thought structures. Includes Plato, Aristotle, Machiavelli, and Hobbes. Crosslisted with Phil 423.

PolS 462 Modern Political Philosophy 3(3,0) F
Same approach as 461. Major political theorists after Hobbes including Locke, Rousseau, Mill, Marx, Nietzsche, and others. Crosslisted with Phil 424.

PolS 490 Seminar in Political Science 1-2-3(1-2-3,0)
Selected Political Science fields. May be repeated until 6 credits are earned.

PolS 492 Special Problems 1-3
Individual guided research. May be repeated until 6 credits are earned.

PolS 493 Topics in Political Science 1-5
Study of current issues or concerns in political science.

PolS 495 Internship in Political Science 1-12 FSSu
Approximately one credit for each week spent in internship projects off-campus. Written reports and/or a final oral examination will be required. Application for permission to register must be made prior to registration. Non-Political Science majors must show appropriate background. Credits do not count toward meeting the minimum requirements in the major or minor. May be repeated until 12 credits are earned. Graded P or F.

Dual Numbered Courses

PolS 460-560 Topics in Political Science 1-4
An intensive examination of significant political themes, issues, or problems. Topics will include, but are not limited to, the following: Republics and Self-Government; The Constitution and Civil Liberties; Parties, Elections and Campaigns; Presidential-Congressional Relationships.

Graduate Courses

Consent required of those students not majoring or minoring in Political Science.

PolS 592 Special Problems 1-2-3(1-2-3,0) FSSu

PR (Park Management)

Undergraduate Courses

PR 101 Parks and Society 3(3,0) F
Introduction to park and recreation resource management including fundamentals governing public park and recreation agencies. Includes administrative organization, history, types and benefits of parks.

PR 202 Outdoor Recreation Resource Management 3(2,2) S (alternate years)
Development and management of outdoor recreation areas and resources including planning, administration, and management practices as they relate to parks, forests, land and water resources, wildlands, and private areas. Analysis of participation trends, opportunities, and resource supply. P, 101 or consent.

PR 300 Park Operations and Facility Management 3(2,3) F (alternate years)
Principles and practices of park operations and facility management including planning, fiscal and personnel management, regulations, liability, visitor safety and control, and the maintenance and protection of natural resources, equipment, and related facilities. P, 101, 202 or consent.

PR 301 Park Interpretation 3(2,3) F (alternate years)
Principles and methods employed to promote resource awareness and communicate information about natural, cultural, and managerial features of parks and recreation areas to park visitors and resource users. The planning, development and use of interpretive techniques and media such as personal services, public relations, publications, audio-visual programs, exhibits, and environmental education activities. P, 101, 202 or by consent.

PR 302 Commercial Recreation Areas 3(3,0) S (alternate years)
Factors represented by commercial recreation areas to include history, trends, supply, demand, relationships to tourism, management, development and technical assistance. P, 101, 202 or by consent.

PR 303 Forest Ecology and Management 3 F (alternate years)
The basics of environmental factors which control the growth of trees and forests and how forests in North America are managed.

PR 401 Advanced Park Management 3(2,2) S (alternate years)
Current philosophies, advanced techniques, and synthesis of park management principles. P, 101, 202, 300 and 301 or by consent.

PR 492 Special Problems 1-2 FS
Directed independent study into specific problems or topics related to park and recreation resource management. Maximum of 4 credits. P, consent.

PR 493 Special Topics 1-4 FS
Special course offering to address specific topics of current interest to students and professionals in the field of park and recreation resource management.

PR 494-495-496 Cooperative Education/Internship/Field Experience in Park Management 1-12 FSSu
Select either (a) or (b):
(a) Field Work Experience. Summer work experience with department approved park or recreation system, agency, or institution. One credit per semester or equivalent time unit.
(b) Professional Internship. A supervised on-the-job practical experience program for selected Park Management students. P, Junior standing and must have completed 2 years of the Park Management curriculum, or consent of adviser. 3-12 credits per semester.

Prtg (Printing Management)

Undergraduate Courses

Prtg 111 Basic Presswork 3(2,3) F
Concentrated study of the offset lithographic principles and their applications. Areas covered include all production stages, from image generation through presswork and bindery.

Prtg 112 Introduction to Graphic Arts 3(2,2) F
Basic reproduction processes, their history, development and scope. The nature and position of the industry in society.

Prtg 114 Desktop Publishing 3(2,3) FS
Basic principles, techniques, and technology of electronic layout and production. Areas covered include publishing cycle, planning, designing, color, working with print shops.

Prtg 211 Typography 3(2,2) F
Discussion and practical experiences in the concepts of design and layout and their relation to commercially printed products.

Prtg 212 Bindery, Finishing, and Distribution 3(2,2) S
Bindery, finishing, and distribution equipment, paper handling and control, automatic systems, imposition, and delivery functions.

Prtg 213 Reproduction Photography 4(2,3) S
In-depth study of high contrast process camera photography. Subject matter studied includes line and halftone negatives, PMT, special effects, posterizations, and duotones.

Prtg 314 Sales, Promotion and Marketing 3(3,0) S
Promotion, sales, advertising, circulation, practices and theory of marketing in advertising and graphic arts.

Prtg 315 Advanced Presswork 3(2,3) S
Continuation of Basic Presswork. Comprehensive study of the reproduction of high quality halftone work and four color process printing. Imposition, film assembly techniques, operation of small and large offset presses, and maintenance will be covered.

Prtg 411 Estimating 3(3,0) S
Cost finding, variables in production, man and machine hour rate determination. Individual plant pricing system development and use, including computers.

Prtg 412 Production Problems 1-4 FSSu
Individual problems in production or management. May be repeated to a total of four credits. P, consent.

Prtg 415 Tone and Color Reproduction 3(2,3) S
Study of the nature of light and color and their interrelationship. Reproduction of four color separations using the color scanner. Other areas include color correction, undercolor removal and addition, gray component replacement, and unsharp masking.

Prtg 495 Internship 1-4
Supervised experience in printing. P, consent of department program coordinator.

PS (Plant Science)

Undergraduate Courses

PS 101 Opportunities in Plant Science 1(1,0) F
An introduction to the diversity of disciplines within the Plant Science Department; an overview of career opportunities; resume development; and career goal setting for professions within the plant sciences.

PS 103 Crop Production 3(2,2) FS
Practices and principles; crop distribution; growth processes; response to environment. Grain and forage crops, including their distribution, use, improvement, growth, harvesting, and marketing.

PS 213 Soils 3(2,3) FSSu
Development and classification of soils; physical, biological, and chemical properties; management aspects, including water, fertility, and erosion; soils in the environment. P, Chem 106.

PS 223 Principles of Plant Pathology 3(2,2) F
Principles underlying cause, spread, symptomology, diagnosis, and control of plant diseases. Principles exemplified by detailed study of specific diseases. Laboratory stresses diagnosis and experimental elucidation of principles. P or concurrent registration in, Bio 103 or 153 or Bot 201.

PS 243 Geology 3(3,0) FS
Geologic processes, including rock weathering, work of wind, ground water, streams, glaciers, lakes, oceans, volcanism, mountain formation, origin of earth, minerals, and rocks. P, 213 or consent.

PS 244 Geology Lab 1(0,3) Su
One week of hands on travel and study. The course will begin with the study of glacial geology of eastern South Dakota. The class will then travel to west central South Dakota where sedimentary formations will be observed. In the Black Hills of western South Dakota metamorphic and igneous rock formations will be studied. Mountain building and mountain leveling processes will be observed and discussed. P, 243, or concurrent registration in 243, or consent.

PS 303 Seed Technology 2(1,2) F
Seed testing; history, testing methods, and seed testing organizations. Seed development, maturation, anatomy, physiology, dormancy, and aging processes. Identification and classification of crop and weed seeds. P, 103 or Ho 111, Bot 201 recommended, or consent of instructor.

PS 305 General Entomology 3(2,2) F
An introduction to the general biology and classification of insects. Course emphasis placed on taxonomy, methods of identification, and ecological role of insects. Students will become familiar with basic insect anatomy and morphology, classification at the order level with exemplary families that include taxa of agricultural or environmental interest, and acquire an ability to sight recognize particular species that have agricultural, environmental, wildlife, and human and livestock health importance. Field trips and a collection are required.

PS 307 Insect Pest Management 3(2,2) S
Covers the major insect pests of the Northern Great Plains with emphasis on field biology, recognition, field scouting, and economic thresholds. Pest management strategies of insects affecting row crops, small grains, hayland and rangeland will be included. Pesticide application methods and safety are included.

PS 308 Grain Grading 2(1,2) S
Grain grading, crop and weed seed identification. Grain market grading and quality determinations. Plant identification of field crops and weeds of major importance in the United States. P, 103, and 303 recommended, or consent of instructor.

PS 310 Soil Geography & Land Use Interpretation 3(2,2) F (even years)
Relationship of soil characteristics and soil classification to land use interpretations. Laboratory exercises involve field and laboratory procedures used in soil survey investigations. Field trip. P, 213 or Geog 132 or consent of instructor. Crosslisted with Geog 310.

PS 312 Grain & Seed Production & Processing 2(2,0) S (even years)
Distribution, adaptation, and culture of grain crops. Production and harvesting of seed crops. Seed processing, cleaning procedures, machinery, conditioning drying, storage, and marketing; production of certified and hybrid seed crops. P, 103 or Ho 111, or consent of instructor.

PS 313 Forage Crops & Pasture Management 3(2,2) F
Grasses and legumes; their establishment, management, and use for hay, pasture, and silage. P, 103, or consent of instructor.

PS 320 Crop Judging 1 or 2 (0,3) F
Advanced course in seed and plant identification of crops and weeds, seed analysis and grain grading. Students are expected to enroll in Grain Grading (PS 308) the preceding spring semester and to enroll in PS 320 during the fall semester to compete in regional and national contests. P, 103, and 308 or consent of instructor.

PS 321 Soil Judging 1(0,3) FS
Practical experience in evaluating the physical and chemical properties of soils important in soil judging and in making land use decisions. Soil forming factors, soil classification, land use interpretations, and soil morphology. Participation in regional intercollegiate soil judging contests and field trips. May be repeated for a maximum of 3 credits. P, 213, 310 recommended, or consent of instructor.

PS 323 Soil Fertility & Fertilizers 3(3,0) S
Soil fertility management and its effects on the growth of crops, including evaluation, uptake and utilization of specific ions by plants, use of fertilizer elements to alter soil fertility, importance of crop residue management to maintain and improve productivity, and chemical composition of fertilizers and their characteristics. P, 213, or consent of instructor.

PS 333 Diseases of Field Crops 3(2,2) S (odd years)
Extensive survey of diseases affecting major food, fiber, and oilseed crops of the world. Emphasis is on diagnosis and disease management strategies. P, 223, or consent of instructor.

PS 334 Diseases of Horticultural Crops 3(2,2) F (odd years)
Diagnosis and control of horticultural crop diseases. Emphasis is placed on diagnostic skills. Crops covered include shade trees, fruit crops, vegetables, bedding plants, tropicals, and turf. P, 223 or consent of instructor.

PS 343 Weed Science 3(2,2) F
Fundamentals of mechanical, cultural, biological and chemical weed control practices and factors affecting control. Herbicide classification and mechanism of action. Plant and seed identification of common weeds of North Central States and their interaction with desirable plants. P, 103 or Ho 111, and Chem 120, or consent of instructor.

PS 362 Environmental Soil Management 3(2,2) S
Management systems designed to maintain soil productivity and environmental quality are examined. Soil problems important in production systems and environmental management including compaction, erosion, and nonpoint pollution are analyzed based on underlying environmental and agronomic principles. Computer simulation models are used and applied to soil problems. P, 213, or consent of instructor.

PS 373 Rural Real Estate Appraisal 3(2,2) F
Principles and practices of rural real estate appraisal. Principles of soils valuation and their application for farmland appraisal. Cost, market data, and income approaches to farmland and building appraisal. Tax loan and other specialized rural appraisal procedures. Half-day field trips to area farms are required. P, 213 and AgEc 271, or consent of instructor. Crosslisted with AgEc 373.

PS 375 Water Quality in Agriculture 3(3,0) S (even years)
An integration of a wide variety of topics intended to give students an introduction to the complex interactions between water supplies, demands, and water quality. P, Chem 106 and Bio 101 or 151, or consent of instructor. Crosslisted with Bio 375.

PS 383 Principles of Crop Improvement 3(2,2) F
Evaluation of crop species, reproduction in crop plants, use of genetic variability, traits of interest, breeding programs, designs and management. Heritability, plant introduction, vegetative propagation, hands-on lab demonstrations. P, Bio 371 or consent. Crosslisted with Ho 383.

PS 421 Soil Microbiology 3(2,3) S
Effects of soil environmental factors on soil microbial activity; diversity of soil microbes; plant-microbe interactions; biochemical changes and effects due to soil microbes. Crosslisted with Micr 421. P, Micr 231 or consent.

PS 433 World Crop & Soil Resources 3(3,0) F (even years)
Survey of the grain, root, sugar, beverage, oil, rubber, vegetable, and fiber crops grown in the world. Factors influencing crop production and soil formation on a global scale. P, 103 or 213 or Geog 132. Crosslisted with Geog 433.

PS 483 Irrigation — Crop & Soil Practices 3(3,0) S (even years)
Problems of irrigated agriculture. Soil salinity and salt- affected soils, water quality, management of irrigated crops; cropping systems; water, fertility requirements of irrigated agriculture, water movement, storage, and release in soils. P, 213 and Math 102.

PS 490 Undergraduate Seminar 1(1,0) FS
Review of literature and original investigations in field crops, entomology, plant pathology, and soils with written and oral reports.

PS 492 Special Problems 1-4 FSSu
Assigned readings, research, and written reports. Limit of four hours for B.S. degree. P, consent.

PS 493 Special Topics in Plant Science 1-3 FSSu
Qualified students may investigate special topics under supervision of department staff in selected areas. P, consent.

PS 494 Cooperative Education/Internship in Plant Science 1-2 FSSu
Planned and supervised professional experience related to the plant sciences which takes place outside the formal classroom with private business, industry, or public agencies. Provides practical experience to supplement classroom training and reinforce career objectives. Written and oral reports required. Application for permission to register must be made prior to the experience. May be repeated for a maximum of 4 credits. P, consent of department program coordinator.

Dual Numbered Courses

PS 412-512 Soil Chemistry 3(3,0) S (odd years)
Chemical interactions which influence transport, transformation, and plant availability of nutrients, biocides, and wastes/toxins in soils; sorption phenomena, chemical equilibria, ion selectivity, and more. P, 213 and Chem 120 or consent.

PS 415-515 Mycology 3(2,3) F (odd years)
Comprehensive taxonomic survey of the Kingdom Fungi; reproductive biology, physiology, genetics, and ecology of fungal organisms; relationship of fungi to human affairs. Crosslisted with Bio 415-515.

PS 420-520 Biological Control of Arthropods 3(2,2) F (odd years)
Introduction to the principles of biological control of arthropod pest populations through the use of natural enemies, including parasites, parasitoids and predators. Topics will include the history, theory, and practice of biological control, and relevant aspects of the genetics, ecology and behavior of natural enemies. P, 305 or equivalent, or consent of instructor.

PS 431-531 Applied Insect Ecology 3(2,2) S (odd years)
An introduction to the principles of insect ecology and their application to pest management tactics. Ecological factors that affect pest and beneficial insects in agricultural environments will be examined. Topics include trophic relationship, population dynamics, sampling and life-table analysis, environmental heterogeneity and dispersal. P, 305 or equivalent, or consent of instructor.

PS 446-546 Agroecology 3(3,0) S (odd years)
Agroecology uses the science of ecology to study agricultural systems and solve agricultural problems using comparisons between altered and unaltered ecosystems. Including: nutrient cycling, energy flow, hydrology, climatology, species diversity, and population dynamics. Field trips required. P, 213 and Bio 101 or consent.

PS 453-553 Advanced Genetics 3(3,0) F (even years)
Procedures in genetic studies as they relate to molecular and classical genetic applications. P, Bio 371. Crosslisted with Bio 453-553.

PS 462-562 Procaryotic-Eucaryotic Molecular Biology I 2(2,0) F
Charge, Partitioning Migration of Molecules; Protein Structure, Enzymes; DNA Structure and Properties, Procaryotic and Eucaryotic Conjugation, Transduction and Transformation; DNA Replication and Repair; Genetic Recombination; RNA Structure and Properties; RNA Replication and Repair; mRNA Synthesis and Processing; Kinetics; Chromosomes and Chromosome Replication. P, Micr 436, Chem 361, or consent. Crosslisted with Bio 462-562.

PS 463-563 Procaryotic-Eucaryotic Molecular Biology I Laboratory 2(0,6) F
Isolation of plasmids; restriction analyses; DNA transfers and hybridization analyses; bacterial, transformations of eucaryotic cells; amplification of DNA utilizing polymerase chain reactions (PCR); restriction fragment length polymorphism (RFLP) analyses; mRNA isolation; generation and amplification of bacteriophage cDNA libraries. P, Micr 436, Chem 361, or consent of instructor. Crosslisted with Bio 463-563.

PS 464-564 Procaryotic-Eucaryotic Molecular Biology II 2(2,0) S
Structure of the nucleus; endocytosis; genome of mitochondria and chloroplasts; cell growth and division; cancer; immune system; pattern formation; homeoboxes; intracellular transport; gene expression and regulation. P, 562-662 or consent of instructor. Crosslisted with Bio 464-564.

PS 465-565 Procaryotic-Eucaryotic Molecular Biology II Laboratory 2(0,6) S
Screening recombinant DNA libraries; DNA sequencing; analysis of proteins; detection of proteins; RNA transfer and hybridization analyses; use of nucleic acid and protein databases. P, 562-662, 563-663, or consent of the instructor. Crosslisted with Bio 465-565.

Graduate Courses

PS 700 Special Topics 1-6(1-3 per credit) FSSu
PS 704 Virus & Bacterial Diseases of Plants 4(2,4) F (even years)
PS 713 Host-Plant Pathogen Interactions 3(2,2) S (odd years)
PS 720 Insect Anatomy and Physiology 3(2,2) S (odd years)
PS 721 Integrated Crop Pest Management 3(3,0) S
PS 722 Behavioral Management of Insects 3(2,2) F (even years)
PS 732 Field Studies in Pedology 2 Su (even years)
PS 733 Advanced Soil Genesis 3(3,0) S (even years)
PS 741 Crop Breeding Techniques 1(0,3) Su (even years)
PS 743 Physical Properties of Soils 3(3,0) F (even years)
PS 744 Soil N, P, & K 3(3,0) S (odd years)
PS 745 Soil Secondary/Micronutrients 2(2,0) S (even years)
PS 746 Plant Breeding 3(3,0)
Crosslisted with Ho 746.
PS 753 Genetics of Plant Disease Resistance 3(3,0) S (even years)
PS 754 Chemical Properties of Soils 3(3,0) F (odd years)
PS 756 Quantitative Genetics 3(3,0) S (even years)
PS 761 Taxonomy of Insects 4(3,3) F (odd years)
PS 763 Environmental & Physiological Aspects of Crop Production 2(2,0) S (odd years)
PS 773 Cytogenetics 3(2,3) F (odd years)
Crosslisted with Bio 773.
PS 780 Advanced Special/Research Problems 1-2 FSSu
PS 781 Graduate Seminar 1(1,0) FS
PS 783 Crop-Water Relationships 2(2,0) F (odd years)
PS 790 Thesis, MS. 1-7 FSSu
PS 791 Thesis Sustaining, MS. 0 FSSu
PS 797 Soil and Plant Analysis 3(2,2) F (odd years)
PS 890 Dissertation, Ph.D. 1-7 FSSu
PS 891 Dissertation Sustaining, Ph.D. 0 FSSu

Psyc (Psychology)

Undergraduate Courses

Psyc 101 General Psychology 3(3,0) FSSu
Concepts of development, learning, motivation, emotion, frustration, personality, and other basic behavioral processes. Prerequisite for all courses in psychology except 102.

Psyc 102 Introduction to Psychology 4(4,0) F
Fundamentals of behavior, including maturation, physiological processes, sensation and perception, learning, motivation, emotion and frustration, personality, abnormal processes, and methods of investigation. P, major or minor in psychology or consent of instructor. Prerequisite for all courses in psychology taken by majors except transfers who have taken Psyc 101. Note: credit will not be given for both Psyc 101 and 102.

Psyc 202 Advanced General Psychology 3(3,0) FS
Contemporary research related to psychological concepts expounded in Psyc 101 and 102. P, 101 or 102.

Psyc 301 Sensation and Perception 3(3,0) S
Examination of processes of sensation and perception including sensory mechanisms, cognitive analysis of sensory information, and attentional, motivational and conditioning effects on perception. P, 101 or 102.

Psyc 302 Psychological Investigations 3(3,0) F
Methods of investigating human and animal behaviors. P, 101 or 102, Stat 341.

Psyc 303 Experiments in Psychology 3(3,0) S
Review of representative past research in experimental psychology and execution of class laboratory projects. P, 302 or consent.

Psyc 305 Simple Learning & Conditioning 3(3,0) F
Traditional conditioning experimentation and phenomena, primarily as revealed through animal research. Principles of reinforcement and factors which influence the conditioning process are discussed in detail. P, 101 or 102.

Psyc 306 Human Learning & Cognitive Behavior 3(3,0) S
Traditional human learning experimentation and human cognitive behavior such as perceptual-motor skills, verbal learning and behavior, transfer of training, concept formation, memory, natural language behavior, information processing, etc. P, 101 or 102.

Psyc 315 Research Methods in Psychology 3(3,0) S
Overview of research methodology and literature for Psychology majors in the Applied or Psychological Services curricula. P, 101 or 102, Stat 341.

Psyc 324 Psychology of Aging 3(3,0) F (alternate years)
Focuses on theories, research and practice concepts relevant to psychological factors in the aging process. Topics covered include cognition, personality, and death and dying.

Psyc 327 Child Psychology 3(3,0) SSu
Physical, social, emotional and intellectual aspects of child development. May be counted as an education elective. P, 101 or 102.

Psyc 331 Business & Industrial Psychology 3(3,0) F
Application of psychological principles to such problems as employee selection, supervision, job satisfaction, work efficiency and human engineering. P, 101 or 102.

Psyc 356 Psychological Assessment 3(3,0) F
Diagnosis and classification by interview and observation techniques, and by intellectual achievement and aptitude, temperament and personality tests. Familiarization at the level of the professional assistant. P, 101 or 102.

Psyc 357 Psychological Therapies 3(3,0) S
Traditional and contemporary methods of psychotherapy. Interviewing techniques and the professional assistant's role. P, 101 or 102.

Psyc 358 Behavior Modification 3(3,0) S
Principles of learning applied to human behavior modification. P, 101 or 102.

Psyc 362 Theories of Personality 3(3,0) S
Major personality theories, including psychoanalytic, stimulus-response and constitutional formulations. P, 101 or 102.

Psyc 366 Psychological Gender Issues 3(3,0) S
This course surveys the current theoretical and research issues in the development of gender and explores the impact of gender on the lives of women and men. Topics include societal and biological influences on psychological development, achievement motivation, sex roles, stereotyping, socialization, sexuality, and personality. P, 101 or 102.

Psyc 409 History & Systems of Psychology 3(3,0) S
Origins and channels of psychological thought, from the British empiricists through major contemporary developments. P, 101 or 102.

Psyc 411 Physiological Psychology 3(3,0) F
Role of physiological mechanisms in behavior. Nervous, biochemical and muscular systems that control or modify human and animal adjustment. P, 101 or 102.

Psyc 414 Drugs and Behavior 3(3,0) S
Effects of psychoactive drugs on human behavior. History of social drug use. P, 101 or 102.

Psyc 441 Social Psychology 3(3,0) F
Basic principles, concepts and methods utilized in analyzing individual and group interactions. P, 101 or 102.

Psyc 442 Health Psychology 3(3,0) F (alternate years)
Provides an overview of research and theory on the psychological issues involved in health, focusing on wellness as well as on illness. The mechanisms underlying health and illness are examined. Interventions designed to implement healthy lifestyles and to manage illness and disability are presented. P, 101 or 102

Psyc 451 Abnormal Behavior 3(3,0) FSSu
Causative factors, symptoms and treatment of major forms of abnormal behavior, including neurosis, psychosis and the psychophysiologic disorders. P, 101 or 102.

Psyc 490 Psychology Seminar 1(1,0) F
Current employment trends and developments within the profession. Required of all majors. P, senior standing or consent.

Psyc 492 Problems in Psychology 1-3 FSSu
Independent investigations. May be repeated for a total of 6 credits. P, 101 or 102, consent of a supervising staff member.

Psyc 493 Topics in Psychology 1-5
Selected topics of current interest in the discipline.

Psyc 495-496 Internship/Field Experience (Topical) 3-12 FSSu
Planned and supervised professional experience which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator. Will not count toward minimum credit requirements in the major.

Dual Numbered Courses

Psyc 460-560 Topics in Psychology: (Topical) 1-4
An intensive examination of significant psychological issues, themes, or problems. May be repeated as topic changes for a total of 8 credits. P, 101 or 102.

Graduate Courses

Psyc 592 Special Problems in Psychology 1-4 FSSu
P, 101 or 102.

PT (Physical Therapy)

Undergraduate Courses

PT 120 Community Health 2(2,0) FS
See HSc 120.

PT 142 Intro to Physical Therapy &Occupational Therapy 1(1,0) F
Introduces students to the professions of physical and occupational therapy.

PT 212 Contemporary Health Problems 2(2,0) FS
See HSc 212.

PT 250 First Aid 2(1,2)
See Hlth 250.

PT 354 Prevention & Care of Athletic Injuries 2(1,2) FSSu
See PE 354.

PT 492 Special Problems in Sports Medicine 1-3
P, consent.

PT 496 Field Experience 1-12 FSSu
See HPER 496.

Rang (Range Science)

Undergraduate Courses

Rang 205 Introduction to Range Management 3(2,3) F
Basic principles and application of range science including ecosystem structure, function and management. Water and nutrient cycles, energy flow, plant physiology, grazing management and grazing systems will be discussed. Identification and management of important range plants in the Northern Great Plains are included. Range improvements such as seeding, fertilization, brush control and prescribed burning will be introduced. Desirable antecedent*, Bio 101 or 311.

Rang 210 Range Plant Identification 2(1,3) F
Instruction and practice in the recognition of important native and introduced range plants of North America.

Rang 321 Wildland Ecosystems 3(3,0) S (Even years)
Structure, function and multiple-use management of the major wildland ecosystems of North America. Ecological concepts and renewable resource management strategies will be examined. Desirable antecedents, 205, Bio 101, 103.

Rang 325 Natural Resource Measurements 3(2,3) F (Even years)
Principles of sampling, field sampling methods, analysis of data and problem solving. Emphasis will be placed on measurement of important plant, animal and climatic attributes and on factors important in interpretation of that information. Field trips required. P, Stat 341. Desirable antecedent, 205.

Rang 400 Judging Teams 1
Section 4–Range Plant ID 1(0,2) S
Instruction and practice in identification of important range plants of North America.

Rang 415 Range Improvements and Grazing Management 3(3,0) F (Odd years)
Management of rangelands for various products with emphasis on grazing animals. Planning and application of grazing systems, fire management, mechanical treatments, seedings and fertilization will be included. Two weekend field trips will be required.

Rang 421 Range Ecology Field Trip 3(3,0) Su (Even years)
Two week extended field trip to study major range ecosystems of the Great Plains and Rocky Mountains. Management problems of private ranches, public lands, wildlife refuges, and mining lands will be studied. Course scheduled independent of regular Summer Session. P, consent of instructor. Special fee required.

Rang 494-495-496 Cooperative Education/Internship/ Field Experience 1-12 FSSu
Supervised experience in range management activities for exposure to range management problems and solutions, evaluation of career objectives and final career planning. P, consent of program coordinator.

* All courses listed with desirable antecedents will be taught assuming subject matter knowledge in those desired courses.

Dual Numbered Courses

Rang 491-591 Research Problems in Range Science 1-3 FSSu
Investigation of problems in Range Science with results submitted as a technical paper.

Rang 492-592 Special Topics 1-3 FSSu
Advanced study of one or more selected topics in Range Science including Grassland Fire Ecology and Grazing Management.

Recr (Recreation)

Undergraduate Courses

Recr 205 Skill Concept: Recreational Activity 1(0,2) FS
Emphasis on student planning and leadership of recreational activities involving equipment, developing a resource notebook and gaining an appreciation for the variety of recreational opportunities. Crosslisted with PE 205.

Recr 260 Recreation Leadership 2(2,0) S
Philosophy and interpretations of leadership as it relates to recreational activities.

Recr 330 Therapeutic Recreation 3(3,0) F (odd years)
Theoretical and philosophical foundations of therapeutic recreation, behavioral, therapeutic use of activity; recreative interaction-intervention techniques; survey of major services and agencies. P, HPER 180.

Recr 342 Recreational Sports Programming and Administration 2(2,0) F
Organization and administration of intramural sports on elementary, secondary, college, and university levels. Program planning, facilities, equipment and financing of intramural sports program. P, sophomore standing. Crosslisted with PE 342.

Recr 350 Recreation Facilities and Area Design 3(3,0) F (even years)
An introduction to the principles and practices of planning, financing, management and maintenance of recreation facilities. P, junior or senior standing.

Recr 395 Practicum in Recreation 1-3 FSSu
Practicum in a supervised recreational experience with a strong emphasis on leadership and supervisory responsibilities. Required of Public Recreation majors before the internship. P, consent.

Recr 414 Current Issues in Recreation 3(3,0) S
Individual reports and group discussions on recent research and management developments in recreation; employment opportunities and procedures for employment. Taken before the internship. P, consent.

Recr 440 Administration of Leisure Services 3(3,0) S
Organization and administration of community recreation, program planning and recreational program areas. P, junior or senior standing, HPER 180.

Recr 491 Independent Study in Recreation 1-9 FSSu
Designed to help students learn about areas of recreation for which there are no courses. P, consent.

Recr 495-496 Recreation Internship/Field Experience (Topical) 1-12 FSSu
Planned and supervised professional experience related to recreation administration which takes place outside the formal classroom with public agencies, governmental units or private business. P, consent and 2.4 GPA.

Rel (Religion)

Rel 213 Introduction to Religion 3(3,0) FS
An introduction to the academic study of religion, focusing on the variety of methods which can be used to facilitate discussion about religion issues in a public and pluralistic setting.

Rel 224 Old Testament 3(3,0) F
The history, writings and selected theological themes of the Old Testament.

Rel 225 New Testament 3(3,0) S
The history, writings and selected theological themes of the New Testament.

Rel 237 Religion in American Culture 3(3,0) FS
Examines both the diversity of religious expression and tradition found within American culture (from Adventism to Zen) and the impact of American culture upon those traditions. Religious dimensions of selected features of the American enterprise: popular culture; politics; construction of the landscape; war and peace; social conflict; race, ethnicity, and gender.

Rel 238 Native American Religions 3(3,0) S
A survey of Native American religious traditions and their relation to both traditional and contemporary cultures. Focus on ritual, myth and practice in traditional settings, as well as forms of religious resurgence in the 20th century.

Rel 331 Feminism and Theology 3(3,0) S
A critical examination of traditional theological areas from the perspective of feminist theologians. Areas covered include women in the Bible, Church history, and the contemporary Church.

Rel 332 Environmental Ethics 3(3,0) F
Focus on contemporary and traditional efforts to think about the environment in moral terms, with attention to practical issues illustrating the role of moral reflection in the shaping of public policy. Crosslisted with Phil 332.

Rel 351 World Religions I 3(3,0) F (alternate years)
Hinduism, Buddhism, Judaism, and New Religions. May not be taken for credit by students who have received credit for Rel 350 (formerly 338).

Rel 352 World Religions II 3(3,0) F (alternate years)
Chinese Religions, Japanese Religions, Islam and Tribal Religions. May not be taken for credit by students who have received credit for Rel 350 (formerly 338).

Rel 360 Moral and Ethical Perspectives on Death and Dying 3 FSSu
Attitudes and issues that focus on death and dying in society, the religious and moral dimensions of these attitudes and issues. P, 213 or Phil 100, or consent of instructor.

Rel 370 Philosophy of Religion 3 FS
Topics such as proofs for the existence of God, religious knowledge, religious language, religious pluralism, and the nature of religious experience. Crosslisted with Phil 370. No prerequisites.

Rel 493 Topics in Religion 1-5
Selected topics of current interest in the discipline.

Rel 495 Internship 1-12FSSu
Planned and supervised professional experience which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Graduate Courses

Rel 592 Special Problems in Religion 1-3

RTVF (Radio, Television, and Film)

Undergraduate Courses

RTVF 130 Intro to Radio & TV 3(3,0) F
History, structure, regulation, and financial support; potentialities and limitations; public responsibilities, impact on society. Crosslisted with MCom 130.

RTVF 144-445 Radio, Television, and Film Activities 1(0,3) FSSu
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent.
Section I: Radio. P, consent of instructor.
Section II: Television. P, consent of instructor.
Section III: Film. P, consent of instructor

RTVF 160 Introduction to Film 3(3,0) F
Film as art; themes and inventions; films and society; introduction to the camera.

RTVF 330 Writing for Radio & TV 2(1,2) S
Preparation of continuities such as commercials, public service announcements, talks, interviews, drama, documentaries, and educational programs. Crosslisted with MCom 330.

RTVF 331 Television Production 3(2,3) FS
Experience in the production and direction of television programs. Includes preparation and presentation of talks, interviews, discussion, extension and community services for TV broadcast. Crosslisted with MCom 331.

RTVF 332 Radio News Reporting 3(2,3) FS
Crosslisted with MCom 332.

RTVF 333 Television News Reporting 3(2,3) FS
Crosslisted with MCom 333.

RTVF 335 Broadcast Programming 3(3,0) S
Program types and essentials of effective structure. Audience characteristics and preferences. Managerial problems. Special consideration of agricultural, commercial, and educational broadcast requirements. Crosslisted with MCom 335.

RTVF 360 Film Narrative 3(3,0) S
Myths, values and beliefs as expressed in selected films; forms, styles, and directors.

RTVF 431 Advanced Television Production 3(2,3) S (alternate years)
Integration of various aspects of broadcasting techniques and production.

RTVF 492 Special Problems 1-2 FSSu
Directed research. May be repeated for a total of 6 undergraduate credits. P, consent.

RTVF 493 Topics in Radio, TV and Film 1-5
Selected topics of current interest in the discipline.

Dual Numbered Courses

RTVF 437-537 Educational & Corporate TV 3(3,0)
(Offered on Demand)
Educational broadcasting with practical work in preparation and presentation of educational and instructional materials for radio, TV, and film and their use in the classroom. Crosslisted with MCom 437-537.

RTVF 464-564 Film Studies 3(3,0) (alternate years)
Film art forms, artists and critics. Viewing and making films. Emphasis on major film theories.

Graduate Courses

RTVF 762 Special Problems in Radio, TV, or Film 1-2 FSSu
RTVF 792 Research Methods in Communications 3(3,0)

Russ (Russian)

Undergraduate Courses

Russ 101-102 Introductory Russian I-II 4(4,0) FS
Fundamentals of language, enabling the student to understand, speak, read and write simple Russian. Emphasis on practical usage.

Russ 201-202 Intermediate Russian I-II 3(3,0) FS
Aims of First Year Russian continued. More intensive drill of both grammar and conversation. Emphasis on conversation, grammar review, and the short story. P, 101-102.

Russ 381 Workshop in Russian 1-4(1-4,0)
Skills acquired in basic Russian will be drilled intensely. Designed for students preparing for study in Russia. P, 202 or consent.

SeEd (Secondary Education)

Undergraduate Courses

SeEd 287 Practicum & Professional Lab 2(1,1) FS
Introduction to effective instructional procedures. Observation and work experience in elementary, junior high, and senior high schools.

SeEd 314 Supervised Clinical/Field Experience 1(0,2)
Supervised students will observe and practice various teaching strategies in lab setting, middle schools, and high schools. P, 287, EdFn 338 or VTE 405, VTE 287 or FCS 293.

SeEd 400 Curriculum and Instruction in Secondary Schools 3(3,1) FS
Planning units and semester plans for use in student teaching. Includes goal-setting and evaluation/ measurement methods.

SeEd 405 Audio-Visual Methods & Materials 1(1,2) FS
Media used in instruction and communication. Emphasis on developing materials for use in the classroom. Small group laboratory sessions correlate with large group demonstration/ lectures. You will also become familiar with the operation of audio-visual equipment. Education elective.

SeEd 410 Social Foundations, Management, & Law 2(2,0) FS
Focus on management strategies and models as vehicles for maintaining an effective learning environment. Law and foundations relevant to the classroom teacher.

SeEd 412 Methods of Teaching Social Studies in Secondary Schools 3
Designed for prospective teachers of social studies. Course focuses on theories, methods, processes, organization patterns and materials used for teaching social studies and the individual disciplines of economics, geography, history, political science, psychology and sociology. Course includes focus on practice teaching in classroom settings using models of instruction most appropriate for social studies. Required for majors in all of the social sciences. Strongly recommended for social science minors.

SeEd 416 Strategies in Science Teaching 3(3,0) F
Theories, methods, applications, and training common to all sciences and scientific behavior. Emphasis will be given to individual science majors who plan to teach in Biology, Chemistry, Physics, and General Science. Required of all science majors. Strongly recommended for Science minors.

SeEd 420 Teaching Special Needs Students 1
Explores educational and legal perspectives involved in teaching students with special needs in the content area classroom. Instructional and classroom management strategies will be addressed. P, Admission to Professional Semester III.

SeEd 450 Teaching of Reading 3(3,0) FS
Designed for secondary content teachers. Basic principles of reading and comprehension, and practical experience in relating principles to everyday demands of the content classroom. A special emphasis upon content instruction which meets the reading/comprehending abilities of individual students. P, EdFn 338, junior standing, education student. Required for certification.

SeEd 488 Supervised Teaching Internship 10
Assigned in the individual student's major, or if appropriate, the teaching minor. An experiential application of teaching pedagogy and content for an extended period of time. Application must be made through the Placement Supervisor. P, Professional Semester I courses, Professional Semester II courses, acceptance and admittance into the Teaching Internship Program. Written permission of Department Head required.

SeEd 491 Directed Studies in Selective Topics 1-9 FSSu
A student who is interested in studying a certain topic or acquiring a particular skill in which a faculty member is competent but which is not covered by regular courses at SDSU, may undertake a program of directed study. The work will be planned and implemented by the student and the instructor, with department head approval. Written permission of Department Head required.

SeEd 492 Problems in Education 1-3
Selected studies and activities to meet the needs of undergraduate students. Written permission of Department Head required.

SeEd 493 Undergraduate Course Specials: (Topical) 1-5 FSSu
Ten or more students who wish to study a topic in which a faculty member is competent but which is not covered by regular courses at SDSU may propose a Special. The duration, subject matter, amount of credit and mode of grading will be planned by the instructor and students, under the general supervision of the head of the department in whose discipline and under whose supervision the Special will be taught. If more than one department is involved, a committee composed of the various department heads and the dean will exercise these supervisory duties. In such cases the Special will be crosslisted. The project will require the approval of the faculty of the department or departments affected.

SeEd 494-495-496 Cooperative Education/Internship/ Field Experience 1-12
Planned and supervised professional experience related to Secondary Education which takes place outside the formal classroom with private business or industry, or public agencies. Written permission of Department Head required.

Dual Numbered Courses

SeEd 481-581 Workshop 1-3 FSSu
Special areas in secondary education are comprehensively explored in an intensive time framework. Designed to increase specific skills and understanding in a current area.

SeEd 490-590 Special Topics 1-3 FSSu
Advanced courses taught on demand covering such topics as questioning techniques, classroom management, systematic observations of teaching, school policy making, changing roles in education, computer applications, etc.

Graduate Courses

SeEd 672 Motivation and Discipline 3 FSu
SeEd 682 Seminar 1-3(1-3,0) FSSu
SeEd 691 Problems 1-3 FSSu
SeEd 740 Secondary School Curriculum 3(3,0) FSu
SeEd 789 Internship in Education 1-6(0,6) FSSu
SeEd 792 Research Problems in Education 2(2,0) FSSu

Soc (Sociology)

Undergraduate Courses

Soc 100 Introduction to Sociology 3(3,0) FSSu
Comprehensive study of society, with analysis of group life, and other forces shaping human behavior.

Soc 150 Social Problems 3(3,0) FS
Present day problems in American society, such as racism, sexism, ageism, alcoholism, drug addiction, physical and mental health, war and environmental issues—their significance and current policies and action.

Soc 233 Introduction to Leadership 1(1,0) F
Learn basic skills and theory necessary to be an effective leader. Areas such as time and conflict management, communication skills, motivation, self-analysis are stressed.

Soc 240 Sociology of Rural America 3(3,0) FS
Rural society, rural communities, population composition and trends, social processes; social participation in rural organizations and agencies; and changing relationship between country and city in contemporary society.

Soc 250 Marriage 3(3,0) FS
Courtship and marriage period given special emphasis. Mate selection problems, adjustments in marriage, reproduction, child-parent relations, divorce, and later years of marriage.

Soc 270 Introduction to Social Work 3(3,0) FS
History of social work methods, social services to children, family, aged, public welfare clients, mentally ill, and the criminal justice system.

Soc 292 Special Problems 1-3 FS
Individualized instruction of an independent nature. P, major or minor, freshman or sophomore, and consent. (Limit of 6 hours of Special Problems toward major.)

Soc 301 Intermediate Sociology 3(3,0) FS
Advanced principles of sociology: development of a sociological perspective, conceptual framework and elements of sociological theory and analysis. P, 100.

Soc 309 Research Methods I 3(3,0) FS
Method for data manipulation and presentation; discussion of principles for selection of analysis techniques; index and scale construction; tabular presentation and interpretation; and oral and written report development.

Soc 310 Research Methods II 3(3,0) FS
The research process; selection and formulation of research problems; concepts, propositions and scientific theories; elementary research design; data collection procedures and computer applications. Course research projects when possible. P, 100, 309.

Soc 325 Domestic Violence 3(3,0) S
A seminar focusing on the problems associated with violent behaviors in American households. Special attention will be devoted to the structural, cultural and social-psychological factors contributing to the abuse and battering of family members. In addition, the use of force as a problem solving mechanism will be examined.

Soc 330 Self and Society 3(3,0) F
Focus of attention on the nature of social interaction and the dynamic social activities taking place. Includes examination of self-concept, self-attitudes as well as the perception and interpretation of others. P, 100.

Soc 340 Urban Sociology 3(3,0) S
Patterns of urban growth, demographic and ecological processes, institutions, folkways, dynamics of social class, and social problems of modern city and urban fringe areas.

Soc 350 Ethnic and Racial Groups 3(3,0) S
Intergroup relations. Particular focus on ethnic and racial groups in the U.S. and Upper Midwest. Cross-Cultural Comparisons.

Soc 351 Criminology 3(3,0) FS
Nature and causes of crime. Theories of punishment. Agencies and methods of arrest, conviction, and segregation of criminals. Jails, prisons and reformatories. Probation and parole.

Soc 353 Sociology of Work 3(3,0) F
Focus on human behavior in work environments. Topics include social organization of work; managing human resources; management – labor relations; role of pay and benefits; problems of personnel adjustment; and work related social tensions and conflict.

Soc 354 Victimology 3(3,0) (on demand with sufficient enrollment)
An up-to-date examination of the victim-offender relationship, including: characteristics of those victimized; forms of victimization; the role of the victim in contributing to their own injuries and losses; and, state and federal programs designed to ameliorate physical, emotional and economic suffering.

Soc 362 Population Problems 3(3,0) FS
Theories of population: factors involved in birth rate, death rate, and migrations. Social consequences of population change; problems of population composition and population policy.

Soc 370 Social Policy 3(3,0) F
Development of social welfare legislation; current trends and issues in, and implementation and administration of social policy in a variety of practice areas.

Soc 382 The Family 3(3,0) FS
Development of the family as a social institution with emphasis on comparative family systems and the contemporary American family from the standpoint of social class, ethnic background and family crises.

Soc 383 Sociology of Sex Roles 3(3,0) S
Female and male roles in relation to one another in a changing world are the focus of this course. The nature of sex roles, their origin, and their variations over time and across cultures are examined.

Soc 401 Sociological Theory 3(3,0) FS
Introduction to the classics in social theory, various schools of social thought, and modern developments in the discipline. Introduction to the major ideas of the classical and modern theorists, the social environment in which they wrote, and the implications of their contributions. P, 100 and 301 or consent.

Soc 453 Industrial Sociology 3(3,0) S
An investigation of industrial societies with attention given to social trends creating industrialization, the development of organizations, the evolution of work-roles, international relations between industrial and non-industrial nations, and the future of industrial societies.

Soc 471 Social Work Skills & Methods I 3(3,0) S
Basic concepts and methods common to all social service practice; focus on developing interactional skills. P, 270, to be taken prior to internship.

Soc 490 Seminar 1-3(1,0) FSSu (on demand)
Focus will vary in areas of sociology, anthropology, teaching and research, and by option. Can be repeated. P, 100.

Soc 492 Special Problems 1-3 FSSu
P, major or minor and junior or senior standing and prior consent of instructor. (Limit of 6 hours of Special Problems toward major.)

Soc 493 Topics in Sociology 1-3 FS (on demand)
Selected topics of current interest in Sociology. Subject areas vary from semester to semester based on general interest appeal.

Soc 494-495-496 Cooperative Education/Internship/ Field Experience 1-12 FSSu
Planned and supervised professional experience related to Sociology which takes place outside the formal classroom with business, industry, private/public agencies. Credit will not count toward meeting minimum requirements of the major or minor. May be repeated until 12 credits are earned. Graded P or F. P, major, consent of department program coordinator, minimum GPA of 2.2 to enroll in program.

Dual Numbered Courses

Soc 402-502 Social Deviance 3(3,0) F
This course will examine the nature of negatively evaluated behaviors and the process by which customs, rules and normative structure of society are constructed. A primary goal of the course is the development of a coherent interpretation of contemporary theories and empirical investigations of social deviance. P, undergraduate or graduate and consent of instructor.

Soc 433-533 Leadership & Group Organization 3(3,0)
Emergence of leadership patterns. Emphasis on group dynamics, small groups, and leadership in management. P, undergraduate or graduate and consent of instructor.

Soc 451-551 Juvenile Delinquency 3(3,0) FS
Causes of delinquency; patterns of delinquent behavior; Juvenile and alternative solutions currently in operation throughout the US which attempt to reduce the incidence of juvenile delinquency.

Soc 452-552 Sociology of Corrections 3(3,0) F (alternate years)
An examination of the history of adult and juvenile treatment and punishment. Emphasis is upon contemporary community based treatment as well as traditional prison-based incarceration. The process of sentencing, particularly the role of the PSI is covered. Special attention is devoted to internship and career possibilities in the corrections arena.

Soc 460-560 Advanced Criminology 3(3,0) F (alternate years)
A variable topics course concentrating on the most current trends and issues in the field of Criminology. The class is a lecture-discussion seminar format. Topics regularly covered in past seminars have been: terrorism, middle and upper level drug use and dealing, computer crime, organized crime, crime in corporate America, and ethnic-group criminal activities.

Soc 480-580 Sociology of Law 3(3,0)S (alternate years)
This course focuses on the relationship between law and society. Topics focus on the organization of law in society, law and social control, law as a method of conflict resolution, law as a mechanism of social change, law as a profession, and methods of inquiry in research. The course will also look at alternative dispute resolution techniques, for example mediation. Comparative, and cross-cultural materials will be used throughout the class to emphasize diversity in law. P, 351.

Graduate Courses

(see department for schedule of offerings)

Soc 620 Social Organization 3(3,0)
Soc 621 Social Stratification 3(3,0)
Soc 630 Social Change 3(3,0)
Soc 640 Rural Community Planning 3(3,0)
Soc 709 Evaluation Research 3(3,0)
Soc 710 Research Methods 3(3,0) S
Soc 711 Qualitative Research Methods 3(3,0) F
Soc 712 Sociological Theory I 3(3,0) F
Soc 713 Sociological Theory II 3(3,0) S
Soc 714 Theory Construction 3(3,0)
Soc 716 Symbolic Interaction 3(3,0)
Soc 720 Profession of Sociology 3(3,0) S
Soc 762 Demographic Resources and Materials 3(3,0)
Soc 764 Modern Demographic Theory 3(3,0)
Soc 766 World Population Issues 3(3,0)
Soc 780 Special Problems 1-3(1-3,0) FSSu
Soc 781 Internship in Planning 1-6 FSSu (Pass/Fail)
Soc 790 Thesis, M.S. as arranged 1-5 (Pass/Fail)
Soc 791 Thesis Sustaining 0 FSSu
Soc 792 Seminars 1-4 (On demand) FSSu
Soc 890 Dissertation, Ph.D. as arranged (Pass/Fail)
Soc 891 Dissertation Sustaining 0 FSSu

Span (Spanish)

Undergraduate Courses

Span 101-102 Introductory Spanish I-II 4(4,0) FS
Fundamentals of Spanish are introduced to aid students in learning to understand, speak, read, and write simple Spanish. Hispanic culture is discussed. Classwork may be supplemented by work in the language laboratory.

Span 201-202 Intermediate Spanish I-II 3(3,0) FS
Aims of First Year Spanish continued. Students work more intensively on the development of all skills and on their knowledge of the Hispanic world. Students planning to receive a Spanish major or minor are encouraged to take 311-312 concurrently. P, 102 or equivalent.

Span 283 Applied Spanish (Topical) 1-3(1-3,0)
Practical Spanish useful in diverse situations, such as conversation, foreign travel, commerce, the theatre, etc. Topics will vary. May be repeated for a maximum of nine (9) credits. P, 102 or consent. Classwork may be supplemented by work in the language laboratory.

Span 311-312 Spanish Composition & Conversation 2(2,0) FS
Intensive practice in composition and conversation. Classwork may be supplemented by work in the language laboratory. P, 202 or concurrent.

Span 353-354 Spanish Literature 3(3,0)
Introduction to Spanish literature through reading and discussion in Spanish of recognized works. P, 202 or consent.

Span 355-356 Spanish American Literature 3(3,0)
Introduction to Spanish American literature through reading and discussion in Spanish of recognized works. P, 202 or consent.

Span 383 Business Spanish 2-3 (2-3,0)
An introduction to the Spanish language of everyday business dealings and an overview of practical and relevant information necessary for people doing business in Spanish-speaking countries. P, 312 or consent.

Span 411-412 Spanish Advanced Composition & Conversation 2(2,0)
Development of all language skills to achieve greater accuracy and fluency. P, 312 or consent.

Span 433-434 Spanish Culture and Civilization 1-3(1-3,0)
Study of the daily life-ways and significant accomplishments of Spain in the past and present.

Span 435-436 Spanish American Culture and Civilization 1-3(1-3,0)
Study of the daily life-ways and significant accomplishments of Spanish American countries in the past and present.

Span 443 Advanced Spanish Grammar 3(3,0)
In-depth study of traditional grammar as well as an introduction to linguistics as it applies to Spanish. Practical application. Strongly recommended for future teachers and bilingual secretaries. P, 202.

Span 476 20th Century Spanish Literature 3(3,0)
Major movements and works. Reading, writing and discussions in Spanish. Topics vary. P, 353-354 or consent.

Span 484 20th Century Spanish American Literature 3(3,0)
Major movements and works. Reading, writing and discussions in Spanish. Topics vary. P, 355-356 or consent.

Span 492 Special Problems 1-3(1-3,0)
Readings and discussions in Spanish as directed by the instructor. May be repeated for credit. P, 202 and consent of the instructor.

Span 493 Topics in Spanish 1-3(1-3,0)
Special courses designed to complement the existing curriculum. Will be offered only when student demand and staff availability warrant.

SpCm (Speech Communication)

Undergraduate Courses

SpCm 101 Fundamentals of Speech 3(3,0) FSSu
Required of all students unless granted advanced placement. Emphasis on skill development in research, organization, style, delivery, and listening necessary for effective oral communication.

SpCm 201 Interpersonal Communication 3(3,0) FS
Current theories and practice in interpersonal communication; stress verbal and non-verbal activity.

SpCm 210 Individual Contest Events 2(2,0) F (alternate years)
Introduction to and performance of Extemporaneous Speaking, Original Oratory, and Lincoln-Douglas Debate. Judging and tournament operation experience are included.

SpCm 281 Forensic Activities 1(0,3) FS
Active participation in the intercollegiate Forensics program. Activities include competitive debate, oral interpretation, and public speaking. Workshops and non-competitive public performances may also be included. A minimum of 4 performances is required. May be repeated for a total of 8 credits. P, consent of the Director of Forensics.

SpCm 315 Public Speaking 3(3,0) FS
Theory and practice of public speaking, including speaking for special occasions. P, 101 or consent of instructor.

SpCm 322 Argumentation and Debate 3(3,0) S(alternate years)
Focuses on theories of argumentation and debate practice.

SpCm 334 Discussion 3(3,0) FS
Nature, values, and limitations of discussion. Theory and practice.

SpCm 340 Oral Interpretation 3(3,0) FS
The oral interpretation of literature in a non-competitive setting. Includes the study of prose, poetry, and drama for oral performance. Includes methods of analysis, interpretation, delivery techniques, and preparation leading to the public oral performance of literature.

SpCm 375 Teaching of Speech 3(3,0) F (alternate years)
Problems of the speech teacher. Curriculum, instructional materials, and methods.

SpCm 442 Group Performance of Literature 3(3,0) S (alternate years)
Various styles of Reader's Theatre are studied. Includes solo and group performance of multiple literary selections. P, 340 or consent.

SpCm 492 Special Problems 1-2 FSSu
Directed research. May be repeated for a total of 6 undergraduate credits. P, consent.

SpCm 493 Topics in Speech Communication 1-5
Selected topics of current interest in the discipline.

Dual Numbered Courses

SpCm 416-516 Rhetorical Criticism 3(3,0) FSu (alternate years)
Critical evaluation of American speakers from Colonial to contemporary. P, consent.

SpCm 452-552 General Semantics 3(3,0) F (alternate years)
Relations between symbols; human behavior in reaction to symbols including unconscious attitudes, linguistic assumptions; and the objective systematization of language. Crosslisted with Ling 452-552.

Graduate Courses

SpCm 700 Instructional Methods in Communication 3
SpCm 707 Speech/English/Drama for Teachers 1-3
SpCm 766 Rhetorical Theory 3(3,0) F (alternate years)
SpCm 790 Thesis 1-7 FSSu (Pass/Fail)
SpCm 791 Thesis Sustaining 0 (Pass/Fail)
SpCm 792 Special Problems in Oral Interpretation 1-2 FSSu
SpCm 794 Special Problems in Public Address 1-2 FSSu

Stat (Statistics)

Undergraduate Courses

Stat 341 Statistical Methods I 3(3,0) FSSu
Concepts in probability, data description, distributions, sampling, statistical inferences (parametric and non- parametric). P, Math 113 or 102.

Stat 381 Mathematical Statistics 4(4,0) FS
Statistical methods and probability, especially in engineering and physical sciences. Common single and multiple variable densities and moment generating functions. Applications of random sampling to hypothesis testing, confidence limits, correlation, and regression. P, Math 225 or consent. Crosslisted with Math 381.

Stat 442 Analysis of Variance 3(3,0) S
Data interpretation, hypothesis testing and modeling with analysis of variance and regression. P, 341 or 381.

Dual Numbered Courses

Stat 441-541 Statistical Methods II 3(3,0) FS
Stat 445-545 Nonparametric Statistics 3(3,0) F
Stat 481-581 Statistics for the Physical Sciences 3(3,0) FS

Graduate Courses

Stat 662 Quality Control 3(3,0) FS
Crosslisted with ME 662.

Stat 751 Interpretation of Statistical Software Output 2(2,0) S
Stat 761 Experimental Design 3(3,0) S
Stat 791 Special Topics in Statistics 1-3, 6 max/student

Thea (Theatre)

Undergraduate Courses

Thea 100 Introduction to Theatre 3(3,0) FS
Background of theatrical arts: production, plays, history, and theory.

Thea 131 Acting 3(3,0) FS
Basics of acting.

Thea 135 Theatre Activities — Acting 1(0,3) FSSu
Credit earned by active participation in acting roles. May be repeated for a total of 8 credits. P, consent.

Thea 145 Theatre Activities—Technical Theatre 1(0,3) FSSu
Credit earned by backstage and crew work. May be repeated for a total of 8 credits. P, consent.

Thea 195 Theatre Activities — Special Projects 1(0,3) FSSu
Credit earned by completing selected theatre projects. May be repeated for a total of 8 credits. P, consent.

Thea 240 Stage Costuming 2(2,0) F (alternate years)
Historic, aesthetic, and functional elements of costume design.

Thea 241 Stagecraft 3(2,3) FS
Theory and practical experience in theatre production. Lab work on two major theatre productions.

Thea 243 Make-up for the Stage 2(2,0) F
Principles and application of stage make-up.

Thea 351 Directing 3(3,0) F
Play directing. Theory and practice.

Thea 355 Children's Theatre 3(3,0) S (alternate years)
Children's theatre as an art form. Students become proficient in organization, design, and presentation of a children's theatre program. P, 131 or 100.

Thea 397 Theatre Arts Management 3(3,0) F (alternate years)
Emphasis on theory and practice of Arts Management as an important feature of the Theatre Arts discipline. Students will become proficient in the organization, promotion, budgeting, and operation of a performing arts program. P, 100, 131.

Thea 435 History of the American Musical 3(3,0) S (alternate years)
History and development of American Musical Theatre from 1866 to the present. P, consent.

Thea 441 Scene Design 3(3,3) S (alternate years)
History of set design, planning and designing for stage.

Thea 445 Lighting for Stage & TV 3(2,3) F (alternate years)
Theatre and TV lighting. Lab and production participation.

Thea 455 Advanced Acting 3(0,6) S (alternate years)
Textual analysis, movement and acting styles for the theatre. P, consent.

Thea 490 Summer Theatre 5(0,15) Su
Credit earned by participation with Prairie Repertory Theatre Company. May be repeated to a total of 10 credits, but only 5 may be applied to a minor. P, consent.

Thea 492 Special Problems 1-2 FSSu
Directed research. May be repeated for a total of 6 undergraduate credits. P, consent.

Thea 493 Topics in Theatre 1-5
Selected topics of current interest in the discipline.

Dual Numbered Courses

Thea 410-510 Dramatic Literature 3(3,0) F (alternate years)
Analysis of important drama through present day.

Thea 460-560 History of Theatre 3(3,0) S (alternate years)
Periods, theatres, and representative dramatic literature from the classical to the present day.

Graduate Courses

Thea 792 Special Problems 1-2 FSSu

Vet (Veterinary Science)

Undergraduate Courses

Vet 101 Animal Care and Welfare 1(1,0) FSSu
Training course in the care and handling of animals.

Vet 103 Introduction to Veterinary Medicine 1(1,0) F
Information will be provided concerning various aspects of veterinary medicine including: pre-veterinary education requirements, veterinary colleges, professional opportunities in veterinary medicine, and allied fields associated with veterinary medicine, governmental regulations, animal welfare, future trends, and other topics. Pass/fail.

Vet 223 Anatomy & Physiology of Livestock 4(3,3) FS
General principles of anatomy and physiology are applied to all animals and avians, as well as humans. Important facets are discussed in relation to application to other disciplines. P, Chem 120.

Vet 403 Animal Diseases & Their Control 3(3,0) F
This course will discuss the various factors that contribute to the development of animal disease and how these factors can be manipulated to prevent or control disease. Infectious and non-infectious diseases of livestock, poultry, and wildlife will be addressed with emphasis on prevention and control.

Vet 494-495-496 Cooperative Education/Internship/Field Experience 1-3 FSSu
Consent of department head required.

Dual Numbered Courses

Vet 424-524 Medical and Veterinary Virology 4(3,4) S (Odd years)
Basic course discussing the characterization, structure, and replication of viruses and the pathogenesis of viral disease in man and animals. Laboratory exercises emphasize techniques in virus isolation, characterization, and detection by immunological assays. P, Micr 422 or consent. Crosslisted with Micr 424-524.

Vet 490-590 Problems in Veterinary Science 1-3 as arranged FS
Consent of department head required.

Graduate Courses

Vet 723 Systemic Physiology 4 S (alternate years)

Vet 792 Special Problems 1-4 FSSu
Consent of department head required.

Vet 793 Special Topics 1-4 FSSu
Consent of department head required.

VTE (Vocational Technical Education)

Undergraduate Courses

VTE 287 Practicum in Vocational Education 1
Introduction to effective instructional practices and the roles of the vocational educator in competency-based vocational education: agriculture or home economics. Observation and field experience in middle school and/or high school vocational classroom.

VTE 405 Philosophy of Vocational Technical Education 2(2,0) FS
Overview of vocational-technical and practical arts education, its place in the community school; organization and characteristics of instructional programs at secondary, post-secondary and adult levels in agriculture, home economics, business and office, industrial, health, and distributive education; career education; legislation; and current trends and issues. For prospective teachers and guidance personnel. P, sophomore in education.

Dual Numbered Courses

VTE 473-573 Problems 1-4
Directed reading and research in selected individual topics.

VTE 490-590 Special Topics 1-3
Advanced courses taught on demand covering such topics as computer applications, state and federal rules and regulations, new curriculum development, etc.

Graduate Courses

VTE 625 Development of Vocational Education Thought & Practice 3(3,0) Su

VTE 700 Technology in Vocational Education 3

VTE 710 Curriculum Design in Vocational Education 3

VTE 720 Entrepreneurship in Vocational Education 3

VTE 730 Cooperative Education Coordination Techniques 3

VTE 731 Administration & Supervision of Vocational Education 3(3,0) Su

VTE 743 Special Topics 1-3

VTE 751 Curriculum in Home Economics Education 2
Crosslisted with FCSE.

VTE 761 Evaluation in Home Economics 2
Crosslisted with FCS.

VTE 776 Curriculum in Agricultural Education 2
Crosslisted with AgEd.

VTE 782 Seminar 1-3

VTE 789 Graduate Internship 1-3

VTE 790 Thesis in Vocational Technical Education 5

VTE 791 Thesis Sustaining in Vocational Technical Education 0

VTE 792 Research Problems 2

VTE 793 Problems 1-3

WEL (Wellness)

Undergraduate Courses

WEL 100 Skills for Healthy Living 1(1,0)
Interdisciplinary survey of topics pertaining to health and physical activity. Lecture topics will include cardiovascular fitness, strength and flexibility, nutrition and weight control, stress management, drug and alcohol use/abuse, and sexually transmitted diseases. Laboratories are experiential in nature and will apply the theories and concepts presented in the lectures. Students must register for WEL101-119 when registering for WEL 100.

WEL 101-119 Skills for Healthy Living Labs 1(0,2)
Students must register for WEL 100 when registering for wellness lab (WEL 101-119).

101 Aerobics
102 Racquet Activities
103 Road Work
104 Dance
105 Running and Walking
106 Cross Training
107 Court Activities
108 Field Activities
109 Water Conditioning
110 Strength Training
111 Circuit Weight Training
112 Cardiovascular Training - Wellness Center
113 Outdoor Activities
114 Walking/Hiking
115 Individual Activities
116 Challenge Activities
117 Mind-Body
118 Restricted
119 Special Topics

WL (Wildlife & Fisheries Sciences)

Undergraduate Courses

WL 110 Environmental Conservation 2(2,0) FS
Ecological approach to conservation; man's past and present impact on world environments; wise use of natural resources, including soil, water, air, forests, rangelands, energy, wildlife, and fisheries.

WL 220 Introduction to Wildlife and Fisheries Management 2(2,0) F
An introduction to the basic principles used in the management of wildlife and fish populations. The course is directed toward the presentation of general concepts.

WL 230 Wildlife and Fisheries Techniques 3(3,0) S (even years)
Techniques involved with the collection and analysis of wildlife and fisheries population and habitat information and data are the primary contents of the course. P, 220.

WL 292 Research Problems 1-3 FSSu as arranged
Individualized instruction on specific research problems. P, consent of instructor.

WL 363 Ornithology 4(3,3) S
Identification of game and non-game bird species; life histories, habits, and special structural and physiological adaptations of various groups. Introduction to the ecology of native and introduced game birds of North America.

WL 367 Ichthyology 3(2,3) F
Characteristics and relationships of fish; adaptations, modifications, and ecological relationships; identification of common game and non-game fishes; economic and recreational importance of various groups. Special reference to fishes of the north-central and northern Great Plains states.

WL 370 Limnology 3(2,3) F (even years)
Physical, chemical, and biological characteristics of water bodies. Analysis of factors and processes that operate in freshwater systems. Methods of measuring and evaluating these factors and processes. P, one semester of chemistry.

WL 411 Principles of Wildlife Management 4(3,2) F
Application of ecological principles to the management of wild birds and mammals. History and development of wildlife management as a science; characteristics of, and factors affecting wildlife populations; techniques and theory of management; wildlife conservation. P, 363, Zool 355, or consent.

WL 412 Principles of Fisheries Management 3(2,3) S
Fisheries management as a science with emphasis on freshwater game fishes and freshwater ecosystems. Fish life histories, food habits, length-weight relationships, and age and growth characteristics. Methods of study of fish habitat, fish populations, and yield. Managing lakes, streams, and ponds for fish production. P, 367 or consent.

WL 420 Wildlife Law and Enforcement 3(2,3) S (odd years)
Evolution of laws relating to fish and wildlife, enforcement of wildlife law, federal versus state jurisdiction, types of violations, native hunting and fishing rights, and other topics. Guest speakers from state, federal, and local law enforcement agencies. P, junior-senior standing.

WL 430 Human Dimensions in Wildlife and Fisheries 3(2,3) S (even years)
Interactions between various publics, resource management agencies, and the wildlife and fisheries resource are studied. Topics such as public attitudes and expectations; agency structure, administration, and policy; tangible and intangible values of fish, wildlife, and their habitats; the consumptive and non-consumptive resource user as agency clientele; and the philosophy and ethics of resource use and management are included.

WL 490 Undergraduate Seminar 1(1,0) FS
Individual reports and group discussions of recent research and management developments in wildlife, fisheries, and related fields; employment opportunities and procedures for employment. Required of majors; each student allowed two credits toward graduation. Taken fall semester of sophomore year and spring semester of senior year.

WL 492 Research Problems 1-3 as arranged FSSu
Individualized instruction on specific research problems. P, consent of instructor.

WL 494-495-496 Cooperative Education/Internship/ Field Experience 1-12, FSSu
Planned and supervised professional experience related to wildlife and fisheries conservation which takes place outside the formal classroom and is associated with federal, state, or private operations.

Dual Numbered Courses

WL 415-515 Upland Game Ecology and Management 3(2,3) F (even years)
Upland game birds and mammals as components of ecosystems. Effects of farming; industry; social change; technology; and federal, state, and private programs on game and non-game species. Techniques for individual species management. P, 411 or consent.

WL 417-517 Large Mammal Ecology and Management 3(2,3) S (even years)
Big game life histories and distributions. Relationships of nutrition, reproduction, interspecific competition, and predation to management of big game habitat and harvest. Techniques for research and management of big game. P, 411 or consent.

WL 419-519 Waterfowl Ecology and Management 3(2,3) F (odd years)
Analysis of ecological and socio-economic factors affecting waterfowl habitat and waterfowl populations. State and federal programs affecting wetland drainage and wetland preservation. Field inspection of waterfowl production habitat in the north-central states. P, 411 or consent.

WL 421-521 Grassland Fire Ecology 3(2,3) F (even years)
The course is designed to describe the ecological effects of fire on grassland ecosystems. It also provides insight into the history of fires, the people who used them and why, the parts of a fire, how fires behave in relation to fuel and weather, and the conducting and safety of prescribed burns. P, consent.

WL 423-523 Fish Culture 3(2,3) F (odd years)
Extent and potential for aquaculture. Emphasis placed on culture methods of important commercial and sport fishes and invertebrates of North America. P, consent of instructor.

WL 493-593 Special Topics in Wildlife & Fisheries 1-3 credits FSSu
Students may secure small-group instruction in a variety of special topics. Contact department head concerning planned special topics. P, graduate or senior undergraduate and consent.

Graduate Courses

WL 613 Advanced Fisheries Management 3(2,3) F (even years)
WL 711 Aquatic Ecology 2(1,3) F (odd years)
WL 712 Wetland Ecology and Management 3(2,3) F (odd years)
WL 713 Animal Population Dynamics 3(2,3) F (even years)
WL 714 Fish Structure and Function 3(2,3) S (odd years)
WL 715 Wildlife Research Design 3(2,3) S (odd years)
WL 717 Advanced Limnology 3(2,2) S (even years)
WL 718 Ecology of Aquatic Invertebrates 3(2,3) F (even years)
WL 790 Thesis in Wildlife 1-7 credits FSSu
WL 791 Thesis Sustaining 0 FSSu
WL 792 Graduate Seminar 1(1,0) FS
WL 793 Research Problems 1-3 FSSu

WmSt (Women's Studies)

Undergraduate Courses

WmSt 101 Introduction to Women's Studies 3
Exploration of women's issues in both historical and contemporary contexts, including introduction to feminist theory.

WmSt 300 Topics in Women's Studies 3
An interdisciplinary examination of women's issues within a larger framework, e.g., the Social Sciences, the Humanities and Fine Arts, and the Natural Sciences. (May be repeated for credit when the topic is different.)

WmSt 492 Special Problems in Women's Studies 1-3
In depth study in a topic area in which the student has taken the course offered or in a topic area in which there is currently no course available. Three credits required for minor. May be repeated for a total of six credits. P, 101 and consent of supervising faculty.

Zool (Zoology)

Undergraduate Courses

Zool 221 Anatomy 3(2,3) FSSu
Structure of various systems of the body as basis for physiology. Models and charts are used with references to skeletons. Injected and embalmed rats are used for a limited amount of dissection.

Zool 301 Animal Behavior 3(3,0) S
Animal behavior from many aspects, including communication, social organization, orientation, imprinting, courtship and mating, agonistic behavior, control systems, and the evolution of behavior patterns. P, Bio 101 or 151 or consent.

Zool 325 Mammalian Physiology 4(3,3) FS
Basic cell physiology. Neural, hormonal and neuroendocrine control systems. Coordinated body functions. P, 8 credit hours of Chemistry and Zool 221 or consent.

Zool 355 Mammalogy 3(2,2) F
Identification of game, furbearing, and small mammals; taxonomy of these groups, life histories and habits, preparation of study skins and skeletons; special reference to those occurring in Northern Great Plains areas. P, Bio 101 or 151.

Zool 357 Invertebrate Zoology 4(3,2) S
Phyla of invertebrate animals, emphasis on taxonomy, morphology, ecology, phylogenic relationships, and economic importance. Some field work. P, Bio 101 or 151.

Zool 365 Vertebrate Zoology 4(3,3) F
Structure and ways of life of the vertebrate classes. General anatomy, organ systems, and special characteristics of each class of vertebrates as well as detailed classification of the major taxa down to the family level. P, Bio 101 or 151.

Zool 383 Embryology 4(2,4) S
Classical and current concepts of embryology. Introduction and elementary aspects of embryological development in the animal kingdom. P, Bio 101 or 151. Bio 371 desirable antecedent.

Zool 441 Vertebrate Histology 4(2,5) F
Microscopic study of cells and fundamental tissues. Structures of organs and systems are stressed to integrate structure and function. P, Bio 101 or 151.

Zool 467 General Parasitology 3(2,3) F
The broad field of animal parasitology, including protozoa, helminths, and arthropods. Emphasis on identification, life histories, control, and economic and medical importance. Laboratory includes morphology and identification of representative groups of parasites, as well as techniques of diagnosis of parasitic disease. P, Bio 101 or 151.

Zool 492 Special Problems 1-4 FSSu
Independent study in specialized area of zoology. Objectives, scope of work and plan of study specified by instructor and student(s). P, Bio 101 or 151 and consent of instructor and department.

Zool 493 Special Topics in Zoology 1-5 FSSu
(As arranged) Qualified students may investigate special topics under supervision of department staff in the following and other selected areas: Human Genetics, Principles of Animal Taxonomy, Helminthology, Herpetology.

Graduate Courses

Zool 782 Special Problems 1-4 FSSu
Zool 797 Special Topics in Zoology 1-5 FS

Services and Facilities

Advocacy Office

The purpose of the Advocacy Office is to promote diversity and work to eliminate discrimination at SDSU. SDSU is committed to maintaining an environment which respects individual dignity and encourages members of the campus community to achieve their maximum potential, free from discrimination and harassment. Students and staff are encouraged to contact the Advocacy Officer with questions and concerns relating to diversity issues on campus, discrimination/harassment prevention information, reporting discrimination, and complaint procedures.

The Advocacy Officer, Ms. Saila Gandhi, can be reached at 605-688-6361 or in Room 217 of the Administration Building.

Agricultural Experiment Station

The research function of the College of Agriculture and Biological Sciences results from carefully designed experiments providing a base of new knowledge and service to the citizens of South Dakota.

This new knowledge is effectively used by farmers, ranchers, homemakers, by industry, in the campus classroom, and in extension education programs throughout the state. Courses in the College of Agriculture and Biological Sciences and in the College of Family and Consumer Sciences are especially strengthened by this new knowledge. State, area, and county extension specialists in Agriculture and Family and Consumer Sciences have immediate access to this information.

Much of the Agricultural Experiment Station research is done at Brookings. However, a considerable amount is conducted at six field stations and at the West River Agricultural Research and Extension Center at Rapid City. Field stations are maintained to conduct research designed to solve local or special purpose problems. Beyond this, research on farms and ranches, in wildlife areas, in streams and reservoirs, and with cooperating businesses and institutions results in research being conducted in nearly every county of the state.

Research may be grouped in the following subject matter areas: livestock, crops and soils, community and public affairs, animal health, fertilizers, garden and orchard, home and consumer, water resources and irrigation, forestry, insects, farm machinery, marketing, business management, farm buildings, pollution, range and grass, fisheries, plant diseases, wildlife, sociology, and biostress in plants, animals, and humans.

Research is financed by state and Federal appropriations, industry grants, and Federal and state grants. Research results are published in Experiment Station or Extension bulletins, journals of scientific societies, and a quarterly publication, Farm and Home Research. Many of these publications are available from the County Extension Office or the Experiment Station Bulletin Room on campus.

For information contact the Director, Agricultural Experiment Station, South Dakota State University, Box 2207, Brookings, SD 57007-0291.

Animal Disease Research and Diagnosis

There is an Animal Disease Research and Diagnostic Laboratory (ADRDL) that is totally integrated with the Veterinary Science department located on campus. State general funds and user fees pay for the laboratory's operation. This laboratory provides knowledge and diagnostic assistance in the areas of animal health, food safety, and public health to livestock industries for the benefit of all South Dakota citizens.

Career and Academic Planning Center

I. Introduction

Planning for the type of career you want after graduation should begin with your first advising session at SDSU. The Career and Academic Planning (CAP) Center, located in Medary Commons, supports the following services to assist you with that planning.

II. College of General Registration

The College of General Registration is for students who would like to explore their interests and abilities and the majors at SDSU before declaring a major. At SDSU, each student is assigned to an academic adviser who is responsible for providing guidance intended to help them investigate, identify, and accomplish their academic and career plans. Students in the College of General Registration are assigned to advisers who are specially trained to help them decide about their academic goals. Students from all colleges and majors are welcome to consult with CAP Center staff about their academic plans if they need special academic advising assistance.

III. Career Planning Services

If you're looking for assistance in selecting a major, planning for a career or finding a job, the CAP Center is the place for you. Through this office you can visit with a career counselor; take an interest/skill inventory; or participate in career development workshops. The CAP Center's Career Resource Library provides information on more than 21,000 careers, major employers in the United States, various academic majors at SDSU, and the employment status of SDSU graduates. The College of General Registration in conjunction with the College of Education and Counseling offers Academic and Career Exploration, a one credit class for students who desire help in exploring the world of work.

IV. Experiential Education Program

The University's Experiential Education (Field Experience, Cooperative Education and/or Internships) Programs provide the student an opportunity to integrate classroom study with periods of planned and supervised professional work experience with cooperating businesses, industry, and governmental agencies.

Experiential education offers you the opportunity to have a planned and supervised professional work experience in your chosen field. To explore Experiential Educational opportunities you should first contact your academic adviser and your major department head. If you need additional experiential education information and help, contact the CAP Center.

Experiential Education can provide you with an opportunity to apply and extend classroom learning, enhance self confidence, improve interpersonal relationships, develop maturity and independence, and experience early career exposure. The program can also provide you an opportunity to earn while you learn through paid career-relevant employment opportunities.

Students are generally eligible to participate in experiential programs after completion of their sophomore year provided they have achieved a minimum grade point average of 2.0. Academic credit is generally offered for experiential education. The length and nature of the experience and other related academic assignments are considered in determining credit.

V. Employment Services

The CAP Center is the place to go for help in your search for part-time, summer, intern, or full-time employment. The staff at the Career and Academic Planning Center offer workshops and individual assistance to help you prepare a resume, develop interview skills, improve your job hunting strategies, and contact employers. Over 150 companies recruit on campus each year. In addition, the CAP Center annually receives between 6,000 and 8,000 job vacancy notices. These openings are published in a weekly job vacancy listing called "Job Notes." Students may also establish a professional reference file at the Career and Academic Planning Center. Finding the best employment opportunities takes time and effort. The CAP Center staff can help you spend your job search time wisely.

VI. Academic Support Services

Staff at the CAP Center instruct a two credit course designed to help students become more effective learners. The course is called "Mastering Lifetime Learning Skills" (EdFn 143) and is offered each semester. In addition, students searching for tutoring assistance, or who have concerns about test anxiety may make individual appointments with professional staff in the office.

Computing Services

General microcomputer access for the campus is provided through nine major microcomputer laboratories with 16 to 36 computers in each center. Five of these laboratories are used as instructional facilities for scheduled classes. Most of the microcomputers in these major laboratories are MS-DOS compatible, however, the College of Education and Counseling and Journalism Department both have major laboratories with Apple Macintosh computers. Some Apple Macintosh computers are available at other locations as well.

In addition to these microcomputer laboratories, there are eight smaller departmental facilities to meet special instruction and research needs. Microcomputer access is also provided in five residence hall facilities on campus, two of which also provide terminal access to the IBM mainframe computer for student use. Microcomputers are being added to other classrooms and laboratories on an annual basis.

IBM mainframe computer terminals and printers accessible to students, faculty and staff are housed in Scobey Hall, Harding Hall, Agricultural Hall, Crothers Engineering Hall, Animal and Range Sciences, and the Briggs Library, plus through terminal emulation at most microcomputer laboratories.

Monitors are available at all major microcomputer laboratory locations to assist computer users with technical difficulties. Student Computing Services provides a daily help phone service, consulting in the Briggs Library and NFA laboratories, and computer seminars.

The Academic Computer Technology Services (ACTS) department and Computing Services provide microcomputer training and other seminars for faculty and staff. ACTS also maintains a library listing sources of academic support software to assist faculty in integrating computer technology into the curriculum. A computer user services center is provided for all students, faculty and staff who may need to use Apple Macintosh computers with a laser printer, CD-ROM player, or Windows compatible computers with a laser printer, plotter, scanner or CD-ROM player.

A minicomputer is used by the College of Engineering for computer aided design and other engineering instruction and research applications.

Computing Services coordinates planning and implementation of campus-wide local area networks and management of access into state and national computer networks.

Cooperative Extension Service

The overall mission of the Cooperative Extension Service is to disseminate and encourage the application of research-generated knowledge and leadership techniques to individuals, families and communities in order to improve agriculture and strengthen the South Dakota family and community. The Cooperative Extension Service is the off-campus informal educational function of the College of Agriculture and Biological Sciences and the College of Family and Consumer Sciences.

The service extends the SDSU campus to every community and the advantages of higher education to all people. Through its extension agents and specialists, the Cooperative Extension Service disseminates the findings of research and encourages the application of knowledge to solution of problems encountered in everyday living, across the entire state. Much of the economic progress of farmers and ranchers can be traced to this unique type of non-formal, out-of-school learning opportunity provided them for more than 75 years by SDSU in cooperation with the U.S. Department of Agriculture and with county governments.

Approximately fifty percent of the funds supporting Cooperative Extension educational programs are appropriations to SDSU by the Legislature, and 50 percent come from Federal appropriations. Extension program emphasis is constantly changing to meet the needs and opportunities of people who help determine instructional needs.

The following broad areas of educational programming describe the scope for this service:

1. Agricultural product marketing.
2. Agricultural production practices for large and small producers.
3. The business of farming and ranching.
4. Agricultural, natural resource, and environmental management.
5. Farm/home safety, health, and nutrition.
6. Family and community resiliency.
7. Agriculture and community vitality.
8. Enhancing quality of life for elderly South Dakotans.
9. Human resource development.
10. Strengthening family relationships and roles.
11. Youth development.

The Extension staff is dedicated to the task of assisting individuals and groups to meet the challenges of change in farming, ranching, marketing, the home, state and nation. They use the press, radio, TV, satellite, interactive audio-visual, educational publications, group methods, and individual contacts to inform and teach. Resident students are encouraged to become acquainted with Extension staff members on campus and take advantage of the information available in Extension publications to enrich their regular course of study. Extension also offers rewarding career opportunities for college graduates in Agriculture, Family and Consumer Sciences, Natural Resources, and the Social Sciences.

For information contact Mylo A. Hellickson, Associate Dean, College of Agriculture and Biological Sciences; Director, Cooperative Extension Service, South Dakota State University, Box 2207, Brookings, SD 57007.

Crime Reports

South Dakota State University publishes an annual report each Fall in compliance with the Campus Security Act of 1990. The report which describes policies, enforcement, statistics, and prevention and information programs is distributed to all staff and students at registration time and is also available upon request from the office of the Dean of Student Affairs.

Endowed Chairs

An endowed chair is a prestigious faculty position supported entirely by private contributions. Individuals appointed to serve in such positions will be renowned in their fields of expertise and will add a special dimension of quality to the academic environment at South Dakota State University.

Nutrition

An endowment fund established by the late Dr. Ethel Austin Martin, a 1916 SDSU graduate, has, for two decades, maintained an ongoing program of visiting professorships in human nutrition and will support in perpetuity an endowed chair to be entitled the ETHEL AUSTIN MARTIN-EDWARD MOSS MARTIN CHAIR of HUMAN NUTRITION.

The Chair of Human Nutrition will be established at SDSU to ensure scholarly instruction in the broad aspects of the science of nutrition. This will be a continuing campus position with faculty rank filled by a nutrition scientist selected for qualifications in the science of nutrition, and for understanding, skill and experience in advancing the multidisciplinary approach to nutrition education. This position will be funded solely by the endowment.

The Visiting Professorships will continue to be conducted periodically as a major multidisciplinary function of the Chair Program. Typically, visiting professorships are for a period of days or weeks.

Programs supported by the Ethel Austin Martin endowment have no administrative affiliation with any one college or department of SDSU. The program is administered directly under the Vice President for Academic Affairs.

Dairy Science

The Chair in Cheese Chemistry and Technology in Dairy Science has been established in recognition and in memory of Alfred Gonzenbach and the late Alfred Nef for their contributions to the cheese industry and economic development through establishment of Valley Queen Cheese Factory, Inc., in Milbank.

The Alfred Chair was created on July 1, 1991, and is funded by the SA Education Foundation in Watertown.

The Alfred Chair will be a continuing campus position with faculty rank filled by a dairy/food scientist with experience in cheese chemistry and technology. The addition of the Alfred Chair, a prestigious faculty appointment, is expected to maintain national prominence of the SDSU Dairy Science Department in the dairy processing profession.

Engineering and Environmental Research Center (EERC)

The EERC, established in 1986, exists to serve the University, citizens, and industry in South Dakota. Six complementary research and/or technology transfer programs make up the EERC. Thus, the knowledge gained from one program often supports or strengthens another program. The six programs are: Engineering Extension; Office of Remote Sensing; South Dakota Space Grant Consortium; Transportation Technology Transfer Service; University/Industry Technology Service; and Engineering Experiment Station.

The EERC may undertake projects directly or use project teams composed of students, university faculty, and non-university experts. These teams may be discipline-specific or interdisciplinary. The EERC has an on-line expertise database to identify potential faculty and industrial consultants. Another database contains information on the manufacturers and processors in South Dakota.

The mission of **Engineering Extension** is to assist the private and public sectors of the state with their technical needs for the purpose of economic development. Three programs satisfy these needs:

1) Occupational safety and health surveys of the workplace for any South Dakota employers who request the service.

2) Training workshops and seminars to update skills regarding technical needs and to certify individuals who are required to work under specific government regulations, e.g., asbestos.

The **Office of Remote Sensing** (ORS) uses multispectral remotely sensed imagery and geographic information systems (GIS) for natural resource studies and mapping projects in South Dakota and throughout the world.

The mission of the **South Dakota Space Grant Consortium** (SDSGC) is to develop South Dakota's aerospace research and manufacturing infrastructure.

The **South Dakota Transportation Technology Transfer Service** (T^3S) assists local governments with technology and information needed to operate their transportation related agencies.

The **University/Industry Technology Service** (UITS) links University resources to industry, business and government to solve technological problems and enhance economic development in South Dakota.

The **Engineering Experiment Station** (EES) is responsible for enhancing and coordinating research within the College of Engineering.

For information, contact Dennis Helder, Director, Engineering and Environmental Research Center, South Dakota State University, Box 2220, Brookings, SD 57007-0199; phone (605) 688-4184.

Fees and Refunds

Application Fee – Non-refundable charge assessed all applicants for initial admission unless you have previously attended South Dakota State University or another South Dakota public university.

Activity Fee – A fee charged per semester to cover health, student union and other university services, such as: admission to plays, athletic events, athletic facilities, and partially funded judging, music and forensic programs.

University Support Fee – A fee assessed per credit to replace expendable supplies, defray cost of maintenance, repair and replacement of equipment, testing and other instruction related costs. Also, to assist in providing services that benefit students which are not funded from other sources.

Late Charge – If you do not pay tuition and fees during the regular established payment periods, you will be assessed a late charge. If you fail to satisfy financial obligations when due, you will be administratively withdrawn from the University.

Field Trip Charge – Students enrolled in selected courses that involve field trips may be assessed for transportation, group admission, and entry fees. The amount charged will vary per course.

Special Expenses for Education Students – Education students enrolled in selected Education courses are assessed a fee of $100 per semester for Junior Field Experience, $200 per semester for Senior Student Teaching, and $100 one-time fee for Master's Level Internships.

Special Expenses for Engineering Courses – A fee of $11.85 per credit hour is charged for courses in the College of Engineering. This fee applies to Mathematics and Computer Science courses as well.

An Engineering/Science Lab Fee of $18.50 per designated course is charged to all lab classes in engineering, mathematics, and selected sciences. These funds are used for supplies and materials and to purchase equipment.

Special Expenses for Nursing Students – Uniforms must be purchased by second year nursing students. Transportation must be provided by the student in Community Health Nursing and selected independent experiences. Nursing majors enrolled in more than 2 credits of nursing courses are assessed a major fee of $268.30 for the Undergraduate program, $123.80 for the RN Upward Mobility program, and $123.80 for the Graduate program. Students enrolled in the Family Nurse Practitioner program are assessed a fee of $438.60 per semester.

Special Expenses for Pharmacy students – Pharmacy majors are assessed a major fee of $258 for semesters 7-9, and $299 for semester 10. Students in the Pharm.D. program are assessed a major fee of $516 for semesters 5-8 and $722.40 for semesters 9-12.

Tuition, Living, and Other Expenses

(As of 11/27/95)

All charges and procedures listed are subject to change pending Board of Regents action.

	Resident*	Non-Resident
TUITION AND FEES		
Tuition — undergraduate on-campus per semester credit	$51.50	$140.00
graduate on-campus per semester credit	77.50	196.00
University Support Fee per credit	23.74	23.74
Activity Fee — per semester, per credit (limit 12 cr.)	12.38	12.38
See accompanying text for the descriptions of fees for Engineering courses (including Mathematics courses), lab fees, and special expenses for Nursing, Pharmacy, and Education students.		

* For residency information, contact the Admissions Office. For Minnesota-South Dakota reciprocity information, contact the Reciprocity Officer, Dean of Student Affairs Office.

CAMPUS ROOM AND BOARD COSTS		
Meal Plan, per semester		
Classic	$488.65	$488.65
Gold	542.50	542.50
Platinum	595.00	595.00
Every Meal Plan	775.80	775.80
Residence Hall Rent, per semester (includes phone)		
Single occupancy	774.00	774.00
Double room	578.00	578.00

INITIAL PAYMENTS REQUIRED FOR NEWLY ENROLLING STUDENTS		
Application fee (nonrefundable)	$15.00	$ 15.00
Residence Hall Advance Payment (Part of room rent)	50.00	50.00
General Deposit (paid first semester, covers breakage, traffic fines, etc., and is refundable after graduation or withdrawal)	60.00	60.00
First time international student charge		100.00

TYPICAL EDUCATION EXPENSES FOR FULL TIME UNDERGRADUATE FOR ONE SEMESTER		
Tuition — 16 credits	$ 824.00	$2,240.00
University Support & Activity Fees — Health Service, Union, Students' Association	528.40	528.40
Books and supplies (estimate)	300.00	300.00
Meal Plan	488.65	488.65
Residence hall rent	578.00	578.00
	$2,719.05**	$4,135.05**

** Expenses will be higher if a student takes course work requiring lab fees or special discipline fees. See accompanying text.

PAYMENT PROCESS

On registration day each student makes a partial payment of charges ranging from $100 to $1,700 dependent primarily on number of credit hours registered, residency status, and campus housing. Final fee payment will be made approximately four weeks later.

General Deposit – If you carry 9 or more state support credit hours or are living in a residence hall, you must pay a $60 general deposit. Charges for laboratory breakage, damage to equipment or facilities, damage or loss of military uniforms, library or traffic fines, outstanding balances of tuition and fees or financial aid repayment may be levied against this deposit. The unused portion of the deposit will be refunded to you by mail within 75 days following graduation or 75 days after the beginning of the next semester if you do not return to the University.

Indebtedness – If you are indebted to the University and do not satisfy financial obligations when due, you may be denied admission to the University. You may be administratively withdrawn from the University after notice from the University and you will not be permitted to register or receive a transcript of grades until the indebtedness is paid. This applies to your indebtedness to the University for tuition, fees, required deposits and board, financial aid, but not to student organizations.

Refunds

A petition process does exist for students or parents who feel that individual circumstances warrant exception from the published refund policy. Contact the Registrar, Adm 208, for information.

Food Service and Room Rent Refunds – A charge of 10 percent of the total semester's rent is made for each week or part of a week. No refund made after tenth week. Meal Plan will be refunded according to purchasing power remaining.

Financial Aid – All students receiving financial aid who are considering withdrawal should consult the Financial Aid Office about the detailed refund procedures. There are four procedures in particular that you should know about. First, you may be required to document your class attendance and if you have not attended class you will be required to repay the full amount of the aid received. Second, if you are a loan recipient you are required to have exit loan counseling. Third, when calculating a refund, the student's term expenses are determined. If the student has not paid the total expenses (unpaid charges), the student may not get a refund and may owe money to the student aid program and/or to SDSU. The financial aid office uses the fair and equitable refund policy to determine if a refund is due. As applicable, refunds are returned in the following order: 1) Unsubsidized Federal Stafford Loan; 2) Federal Stafford Loan; 3) Federal PLUS Loan; 4) Federal Perkins Loan; 5) Federal Pell Grant; 6) Federal SEOG; 7) Other Title IV Aid Programs; 8) Other federal, state, or institutional student financial assistance programs; and 9) student. If the student had a cash disbursement from student aid, as applicable, repayment is due in the following order: 1) Federal Perkins Loan; 2) Federal Pell Grant; 3) Federal SEOG; 4) Other non-loan Title IV Programs; 5) Other federal, state, private, or institutional student financial aid programs.

Fourth, if you are a **first-time SDSU student receiving federal financial aid,** you are subject to a different refund schedule. If you withdraw within the first 60% of the enrollment period, you are eligible for a prorated refund rather than the refund schedule in this section which applies to all other students.

Schedule of Refunds For Tuition and Per Credit Hour Fees

Complete Withdrawal

Standard Semester	% of Non-Standard Semester (In Class Days)	Refund
Up to 2 weeks	0% to 13%	100%
>2 to ≤3 weeks	14% to 20%	50%
>3 to ≤4 weeks	21% to 26%	25%
>4 weeks	>26%	0%

Dropped Courses

A student receives a 100% refund of tuition and per credit hour fees for dropped courses in the first two weeks of a standard semester or the first 13% of instruction of a non-standard semester.

Federal Financial Aid Refund Examples

Example A: Student withdrawing during the time period when school is assessing 50% tuition and fees. Student lives off-campus so only institutional semester charges are tuition and fees. Student received a Federal Unsubsidized Stafford Loan. The semester charges for tuition and fees total $1,240.

Step One - Unpaid Charges	
Total Institutional Costs	$1,240
Total Aid Paid to Institution Costs	- 0
Scheduled Cash Payment	$1,240
Student's Cash Paid	- 1,240
Unpaid Charges	$ 0
Step Two - Amount Retained	
Total Institutional Costs	$1,240
% Allowed to Retain	x .50
Initial Amount Retained by School	$ 620
Unpaid Charges	- 0
Amount Retained	$ 620
Step Three - Refund Amount	
Total Paid to Institution Costs	$1,240
Amount Retained	- 620
Refund Amount Returned to SFA Programs	$ 620

The $620 will be refunded to the Federal Stafford Loan.

Example B: First-time SDSU student so the Pro Rata Refund Policy is used. The semester charges total $2,500. Student received a Federal Pell Grant of $250 and a Federal Stafford Loan of $1,200 for the semester. Student withdrew during the time period of a pro rata refund of 70% of the tuition and fees, room, and board charges. The student made a $450 cash payment at registration.

Step One - Unpaid Charges	
Total Institutional Costs	$2,500
Total Aid Paid to Institution Costs	- 1,450
Scheduled Cash Payment	$1,050
Student's Cash Paid	- 450
Unpaid Charges	$ 600
Step Two - Refund Amount	
Pro Rata Institutional Costs	$2,500
% Allowed to Refund	x .70
Initial Refund Amount	$1,750
Unpaid Charges	- 600
Actual Refund Returned to SFA Programs	$1,150

The $1,150 will be refunded to the Federal Stafford Loan.

Financial Assistance

General Information

Approximately 80% of the SDSU students attending full-time receive some type of financial assistance to help pay their educational costs. Financial assistance includes both need-based financial aid (Federal/State grants, loans, work) as determined by the Free Application for Federal Student Aid, and other financial aid (scholarship, agency assistance, etc.) not based on need. Financial need is defined as the portion of educational costs not covered by family contributions. Educational costs are determined by the Financial Aid Office and family contribution is calculated from information on the Free Application for Federal Student Aid.

The SDSU award policy gives priority for some federal financial aid programs to students completing the Free Application for Federal Student Aid before March 15. However, the largest financial aid programs, the Federal Pell Grant and the Federal Stafford Loan, do not have priority processing dates. Students must reapply for financial aid every academic year. Please contact the Financial Aid Office for summer financial aid procedures.

Need-Based Financial Aid Programs

I. General eligibility requirements

A. Admission in an SDSU degree program.
B. Enrolled as a full-time student to receive full award.
C. United States citizen or eligible non-citizen.
D. Cannot be in default on a federal student loan or owe a refund to a federal student grant program.
E. Financial aid transcripts must be sent to SDSU Financial Aid for all post-secondary schools previously attended.
F. Selective Service laws require male students born after December 31, 1959, to be registered with Selective Service.
G. Maintain Satisfactory Progress as described in detail in the SDSU Satisfactory Progress Standards (sent to all financial aid recipients and available upon request for others). Satisfactory Progress is the measurement of a student's academic performance (credits completed and cumulative grade point average) toward the completion of the student's degree program. Students not meeting Satisfactory Progress Standards will have their federal financial aid eligibility suspended.

II. Financial aid programs

SDSU participates in all of the federal financial aid programs. Specific information is available in the "SDSU Financial Aid," The U.S. Department of Education's "The Student Guide," and other financial aid materials. An SDSU Financial Aid award letter identifies the specific awards and other information is enclosed for the financial aid recipient.

A. Grants are gift aid based on financial need.
   1. Federal Pell Grant awards are determined by a federal formula for the student's first bachelor degree.
   2. Federal Supplemental Educational Opportunity Grant awards are based on Pell Grant eligibility and available funds.
   3. State Student Incentive Grants are available only to South Dakota residents. A separate application is mailed to the selected recipient who is typically a student not receiving other grants or has very high financial need after other gift aid is considered.
B. Loans provide an opportunity to borrow money for educational expenses. Loans must be repaid. Loan recipients are required to attend Entrance Loan Counseling sessions.
   1. The Federal Stafford Loan Program is the largest financial need-based loan program. The Federal Stafford Loan is processed with financial institutions. The federal government pays the interest while the student is in school and during deferment periods. Interest and repayment begin six months after half-time enrollment ends; the interest rate is a variable rate, not to exceed 8.25%.
   2. The unsubsidized Federal Stafford Loan can be used by students who are not eligible for full need-based financial aid as determined by the Free Application for Federal Student Aid. Independent students may apply for extended unsubsidized Federal Stafford Loans if eligible. The student pays the interest on unsubsidized loans.
   3. The Federal PLUS (Parent Loan for Undergraduate Students): The parent processes a loan application for the student and makes a monthly payment beginning 60 days after the PLUS check is disbursed. Interest rate is variable, not to exceed 9%.
   4. The Federal Perkins Loan is an SDSU award based on financial need and SDSU award policy. Interest (5%) and repayment begin nine months after half-time enrollment ends.
   5. The Nursing Student Loan is for nursing majors based on financial need and SDSU award policy. Interest (5%) and repayment begin nine months after half-time enrollment ends or ending the nursing degree program.
   7. The Health Professions Student Loan is for pharmacy majors based on financial need and SDSU award policy. Interest (5%) and repayment begin 12 months after full-time enrollment ends or ending the pharmacy degree program.
C. Work opportunities may provide part-time employment for students.
   1. The Federal Work Study financial aid awards are based on financial need and SDSU award policy. Most jobs are on-campus. There are some community service job opportunities.
   2. Other employment opportunities may be available through the Job Location and Development Program as part of the Career and Academic Planning Services and South Dakota Job Service.

III. Scholarships

The SDSU scholarship programs have increased yearly with additional scholarships for new, continuing, and transfer students. SDSU awards over 1,400 scholarships to undergraduate students. There are approximately 400 new-freshmen student scholarships. A single scholarship application available from SDSU or from your high school needs to be completed and returned to the SDSU Financial Aid Office before January 25 for priority consideration for the academic scholarships.

A. Selected new freshmen scholarships.
   1. Renewable scholarships, upon meeting academic standards, include: Dan Bocklund Memorial; Stephen F. Briggs; Dick Clarin; Earl F. Ferguson; Philip and Viola May; Henrietta Nichols; LaVerne Noyes; and National Merit Semi-Finalists.
   2. Valedictorian Scholarships are for all students entering SDSU upon their high school graduation with a number one class rank and who do not receive other SDSU academic scholarships.
   3. Leaders for Tomorrow scholarships are for students meeting criteria of high school academic rank and college entrance test scores, and who do not receive other SDSU academic scholarships.
   4. Many general, departmental, and talent awards are also available.
B. Upper class student scholarships are awarded by the college/department based on a student's academic record through a competitive scholarship application process. Selected scholarships are the Wilbur Allen; Amdahl; F.O. Butler; William and Byrne Griffith; Hilda Hasslinger; Lackey; Larson Manufacturing; H.B. Mathews; Matthew Tiernan; and many others.
C. Talent and participation scholarship awards are available by contacting the specific areas:
   4H: County Agents or Program Leader, SDSU
   Air Force ROTC: Professor of Aerospace Studies, SDSU
   Army ROTC: Professor of Military Science, SDSU
   Music: Music Department, SDSU
   Theatre: Theatre Department, SDSU
D. Local and national scholarship information and applications may be available through your high school, various organizations and groups.

IV. Financial assistance may also be available through various agencies including Vocational Rehabilitation and other special services agencies.

V. SDSU is fully accredited for Veterans Assistance benefits for qualified students.

VI. Please contact the SDSU Financial Aid Office, Box 2201, Administration 106, Brookings, SD 57007. Phone (605) 688-4695 for specific applications, forms, and information.

Instructional Media & Telecommunications

The Instructional Media Center (IMC) at SDSU provides faculty, staff, and students access to state-of-the-art technologies.

The IMC is located in Pugsley Center Room 101. Service areas include Instructional Technologies, Media Development, and Telecommunications. In addition to the Pugsley facilities the IMC operates a Technical Support Center in the Rotunda for Arts and Science.

Instructional Technologies provide audio visual, video, multimedia, and related equipment in support of classroom instruction, meetings, and other University functions.

The Rotunda for Arts and Science is a modern classroom building. Instructional technology support is provided via projection on large rear-projection screens in each room. IMC personnel support users and operate a service center in the Rotunda.

Media Development includes a professional Photo Lab, Presentation Graphics, Video Production, and Multimedia Production. The Photo Lab is a full service lab with in-house processing of all black and white services as well as production and processing of color slides. Video production produces instructional and informational videotape resources.

Presentation Graphics are enhanced using computer based programs. High Resolution slides and transparencies along with other graphics make this service one of the most complete in South Dakota.

Instructional Telecommunications. SDSU operates state-of-the-art two way interactive video telecommunication facilities. The facilities are connected to the South Dakota Rural Development Telecommunications Network allowing SDSU to extend educational opportunities across South Dakota. The media center also provides satellite uplink and downlink services and facilities.

For additional information an any of the above services, please contact the Instructional Media Center, PC 101, 688-6312.

Intercollegiate Athletics

South Dakota State University is a charter member of the North Central Intercollegiate Athletic Conference and offers competition in nine sports for women and ten sports for men. Competition for both women and men is governed by the National Collegiate Athletic Association (NCAA). Women may compete in cross country, indoor and outdoor track and field, volleyball, basketball, swimming, golf, tennis, and softball. Men may compete in cross country, indoor and outdoor track, football, basketball, swimming, golf, tennis, wrestling, and baseball. South Dakota State has claimed 123 conference championships (140 men, 19 women) and success has not been confined to one or two sports. The Jacks are one of two current league members with at least one championship in each of the sports sanctioned by the NCC in men's competition. Recently, SDSU claimed the conference all-sports championship for women, while placing third in the men's all-sports race. In addition, the SDSU women's basketball team has made successive trips to the NCAA Midwest Regional Championship game, while the SDSU wrestling team has competed in every NCAA Division II national tournament. National prominence is also recognized in baseball, competing in the regional tournament each of the past four seasons, cross country, winning five national titles in men's competition and two for women, while the women's golf team has been a consistent participant in nationals. In addition, the SDSU men's basketball team claimed the NCAA College Division basketball championship in 1963 and was runner-up in 1985.

Intramurals and Recreational Sports and Sports Clubs

The purpose of the intramural program is to provide the opportunity for all activity-fee-paying women and men students, both undergraduate and graduate, to participate in organized and informal sports as regularly as their time and interests permit. From informal settings such as open swim and gyms, to league play in traditional sports such as football, basketball, softball, and volleyball, it is hoped that the individual will develop a good and lasting attitude toward physical activity and the worthy use of leisure time. Activities are organized on an individual, team, and club basis, and leagues are established for women, men, and co-rec., and residence hall, independent, and organizational groups, thereby providing for the interests and needs of all students. Opportunities for students include managing and participating, with employment opportunities supervising and officiating. Sport clubs offer specialized participation ranging from a social setting on campus, to instructional programming, to competition with clubs from other universities within the region. All program offerings are governed by an elected intramural council, and activities are scheduled and supervised by the intramural staff. Since there is inherent risk of injury involved with all physical activities, it is recommended that participants have their own medical insurance.

Library, Hilton M. Briggs

Library services and collections are housed in the spacious three-level Briggs Library, which is named for President Emeritus Hilton M. Briggs. Library collections consist of more than 500,000 bound volumes, 350,000 government documents, and additional holdings of microtext, maps, newspapers and pamphlet materials.

More than 3,300 journal titles are received currently. Bibliographic access to journal holdings is provided through a strong collection of published indexes and abstracts and by the availability of searching of online and CD/ROM databases.

Book and periodical holdings are conveniently available on open stacks for use by students and faculty during the 98 hours per week the library is open.

A wide variety of other resources and equipment also are available in the library including a microcomputing laboratory, photocopiers, typing and conference rooms, individual study carrels, a resource room for the visually impaired, and several informal study lounge areas. Special collections of archival, local history, and curriculum materials also are maintained within the library building.

In addition to local holdings, the library provides access to a wide variety of resources through electronic networks including OCLC, CARL/Uncover, Dialog, FirstSearch, and Internet.

Hilton M. Briggs Library also is a founding member of the South Dakota Library Network, which provides electronic access to the holdings of 44 academic, public, school and special libraries of South Dakota. Using this system, students and faculty at any one of the cooperating libraries can initiate computer searches of the entire database of approximately 2.75 million volumes which are available through interlibrary loan to students at any member institution.

McCrory Gardens

McCrory Gardens is nationally recognized as one of the top ten small ornamental display gardens in the U.S. It is operated by the Department of Horticulture, Forestry, Landscape and Parks. McCrory Gardens has grown to its present stature primarily through donations by Friends of McCrory Gardens, professional associations, and corporate donations. Primary goals are teaching, public education, and ornamental research. It is composed of a 20 acre public display area and a 45 acre arboretum.

Museums/Collections

The South Dakota Art Museum holds in its permanent collection significant bodies of work by noted artists Harvey Dunn, the son of South Dakota pioneers, and Oscar Howe, a Yanktonai Sioux. The museum also houses notable collections of Native American tribal art, works by South Dakota artists, works by contemporary American artists and a complete collection of the world famous Marghab embroidered linens. A portion of the permanent collection is always on display along with temporary exhibitions which change monthly. The South Dakota Art Museum is one of only two museums in South Dakota which is accredited by the American Association of Museums.

Northern Great Plains Water Resources Research Center (NGPWRRC)

The Northern Great Plains Water Resources Research Center is a research center within the College of Engineering. The mission of the Center is to enhance the habitability and economic development of the Northern Great Plains through multidisciplinary research of the region's vast water and related land resources. The Center supports this mission through the conduct of engineering and related research on significant issues affecting water resources by focusing on various disciplines in higher education such as agriculture, health and social sciences, law, chemistry, and biology in partnership with engineering, to assure a critical mass of researchers working to foster multi- and interdisciplinary work on the conservation, development, management and use of water and related land resources.

Residential Life — Housing and Food Service

The Director of Residential Life administers programs and facilities for all on-campus housing. Housing staff members will assist you with questions regarding nearly any area of the University. Complete information and policies are printed in Residence Hall Information and Family Student Housing Information booklets. The Residential Life Office is located in Wecota 115. The telephone number is 605-688-5148.

Residence Halls – Residence Halls at SDSU are living/learning centers where students are challenged to develop as individuals, as well as to study and to meet other students. All unmarried students are required to enter into Residence Hall and Food Service contracts with the University. Students who have completed four semesters of full time enrollment at an institution of post high school education or who are two or more years beyond graduation from high school are excused from these requirements. Release from the residence hall obligation must be requested in writing and postmarked on or before June 30 for Fall Semester and November 30 for Spring Semester in order to avoid a monetary penalty. Currently, University residence hall facilities rent for $1,156 - $1,548 per academic year. Usually, two students are assigned to each room. However, some rooms are available for rent as single rooms, generally by students not required to live on campus. Students who do not reside in on-campus facilities may seek off-campus housing assistance from the personnel of the Students' Association Off-Campus Housing Assistance Office. The Off-Campus Housing Assistance Office is located in USU 062. The telephone number is 605-688-5916.

Residence Hall Advanced Payment – A residence hall information, application, and contract booklet is sent to students after they are admitted to the University. The booklet includes detailed information regarding the residency requirement and residence hall and food service facilities and services. A $50 Advance Housing Payment (AHP) must accompany all applications/contracts for residence hall space. The $50 AHP will appear as a credit on the student's final fee slip. Any person, whose written request for release from the residency requirement is postmarked on or before June 30 for Fall Semester or November 30 for Spring Semester, who is released from the residency requirement, will have the $50 Advance Housing Payment refunded. Any person, whose written notice of cancellation is postmarked on or before June 30 for Fall Semester or November 30 for Spring Semester, will have the $50 Advanced Housing Payment refunded. Any person, whose application or contract is canceled at their request after these dates, will be assessed a monetary penalty.

Family Student Housing – 80 unfurnished, one-bedroom apartments and 8 unfurnished, two-bedroom apartments are available for rent on campus. Currently, rent for the one-bedroom apartments ranges from $180.60-$245.00 per month. Rent for the two-bedroom apartments is $299 per month. Each apartment includes a refrigerator, stove, and all utilities. Admission to the University, a spouse and/or at least one dependent who will reside in the apartment with you, and enrollment in a set number of credit hours are required before a student can be assigned. Contact Residential Life Office personnel for more information.

Apartment Residence – 4-single-bedroom apartments for single students are available in Berg and Bailey Halls. These new buildings opened in 1994. Rent, including all utilities, modern kitchen appliances, and air conditioning, is $235/person per month unfurnished and $245/person per month with furnished bedrooms. Both 9 and 12 month contracts are available and a security deposit equal to one month's rent is required when a contract is signed. Contact Residential Life Office personnel for more information..

Food Service – The University Food Service is committed to providing a food service program at SDSU that is both economical and of the highest quality. SDSU's food service program utilizes a computer-based, declining cash balance system, uniquely designed to help students manage their individual food service accounts. Resident students select the meal program which best meets their particular eating needs and assume responsibility to plan their food purchases accordingly. Students may use their account at any campus dining facility during posted operation hours. Complete information about the food service program hours, costs, and discounts is included with residence hall information and is printed in the University Food Service brochure distributed at registration. All SDSU students living in residence halls, except those students who are not required to live on campus and who reside in specified residence hall areas, are required to purchase at least a Base meal plan. Other students, faculty, and staff may voluntarily purchase a discounted food program at established rates either at registration or at the University Food Service office.

Student Activities

The Department of Student Activities includes the management of the University Student Union and co-curricular programming for students to develop leadership abilities, increase cultural awareness, and provide recreational activities.

Services provided by the Department include the Leisure Skills Center (billiards, video arcade, banner making, rental of camping and cross country ski equipment, off-campus housing), Information Exchange (check cashing, fax service, ticket sales), Technical Services (lighting, staging, and sound for events), and Central Reservations. The Student Enrichment Programs office provides advisement and support for the University Program Council (which includes Arts, Community Service, Concerts, Hobo Day, Lectures and Forums, Publicity and Graphics, Recreation and Travel, Showcase, and Special Events), the Greek system, and all student organizations; as well as the coordination of the New Student Orientation Program.

Other student organizations and services housed in the Union are the COLLEGIAN/JACKRABBIT publications, Students' Association, KSDJ 90.7 (the campus radio station), and Student Legal Services. The Grand Market Place, Jack's Place, Walder Dining Room, the Bookstore, meeting rooms, and Volstorff Ballroom are also found in the University Student Union.

For information, phone 688-6127, or for Central Reservations (room/space reservations) call 688-4022.

Student Affairs Division

The Student Affairs Division provides services and activities which are designed to help you gain the greatest benefit from your university education. The following departments and programs are included in Student Affairs: Admissions, Disabled Student Services, Financial Aids, Food Service, Health and Counseling Services, International Student Affairs, Native American Advising, Records, Residential Life, Student Activities, and Veterans Affairs. If you have questions or need information about any of these areas, contact the Dean of Student Affairs office in Room 318, Administration Building, telephone number (605) 688-4493. The specific programs and services offered by the departments are listed below and elsewhere in this catalog.

Admissions – Questions concerning enrollment information, admission and transfer evaluation should be directed to Admissions Office, Room 200, Administration Building, South Dakota State University, Box 2201, Brookings, SD 57007-0649, telephone number (605) 688-4121.

Records – The Office of the Registrar maintains official records on enrollment, biographical student data, grades, credits, and degrees conferred; administers registration and assesses tuition and fees; prepares and sends transcripts when written, signed requests are received from students; processes enrollment verifications; checks athletic eligibility; prepares semester schedules and assigns classrooms; supplies reports and analysis of enrollment, grades and other scholastic matters; coordinates with college deans the procedure for clearing candidates for graduation and submitting candidate lists; and assists with the graduation ceremonies. The Registrar's Office is in Room 208, Administration Building, Box 2201, telephone number (605) 688-4121.

Financial Aid – Student financial assistance programs, including federal and state financial aid, scholarships, and governmental agency awards (BIA, Veterans Administration, Vocational Rehabilitation, etc.) are administered by the Student Financial Aids Office in Room 106, Administration Building, telephone (605) 688-4695.

Disabled Student Services – Assistance is available for students with a wide range of disabilities. Services include assisting in: acquisition of taped materials, facility accommodations, course scheduling assistance, classroom accommodations, referral to other service agencies, advising and other services. The Disabled Student Services Adviser is located in the Dean of Student Affairs Office, Administration Building 318, telephone (605) 688-4496.

International Student Affairs – This office, directed by the International Student Adviser, administers policies and provides a broad range of support services relative to the nonimmigrant status of international students and scholars. Services include processing of admission applications, interpretation of immigration regulations, advising, outreach, handling official documents, and maintaining records. An extensive orientation program is conducted by the office prior to registration each semester. The purpose of the office is to facilitate the attainment of the educational goals of students from countries other than the U.S. For further information, contact the office at Room 312, Administration Building, SDSU, Brookings, SD 57007, telephone (605) 688-4122.

Native American Student Advising – SDSU provides an adviser for Native American students to aid them in their adjustment to university life. The adviser assists students in the areas of financial aid, academic planning, and personal concerns, as well as providing information about Native Americans to the college and area community. The Native American adviser may be contacted at (605) 688-4126, Administration Building 318 for further information.

Veterans Affairs – SDSU is a fully accredited university eligible to provide GI Bill educational assistance for qualified veterans and dependents. Eligible dependents and veterans should contact the Veterans Service Office, Room 108, Administration Building, South Dakota State University, Box 2201, Brookings, SD 57007, telephone number (605) 688-4700, for application forms and information concerning their benefits.

South Dakota resident veterans who served between June, 1950, and May, 1975, and who have no remaining VA benefits may qualify for tuition assistance through a South Dakota state program. To determine eligibility, veterans should contact the Financial Aid Office, Room 106, Administration Building, or telephone (605) 688- 4702.

SDSU is also approved for processing a state program which provides reduced tuition for South Dakota National Guard students. Please direct questions about this program to the Registrar's Office, Room 208, Administration Building, South Dakota State University, Box 2201, Brookings, SD 57007-0498. The student is responsible for submitting a national guard tuition assistance application to the Records Office prior to the Drop/Add deadline of each semester they seek benefits.

If you are interested in social activities you are invited to become a member of the SDSU Vets Club.

Counseling Service – SDSU provides an on-campus counseling service offering personal, confidential assistance to students. Adjustment to university life, personal decision making, conflict resolution, self-concept issues, and goal setting are common issues which the Counseling Center staff is prepared to address. These and other services are provided by appointment through one-to-one counseling or group counseling. Specific services addressing stress management, eating disorders, sexuality concerns, alcohol/drug problems, and abuse issues are available. Most services provided at the Counseling Center are available at no cost to students. Additional or specialized services are provided by referral when necessary. Call 688-6146, West Hall 112, for further information.

Drug and Alcohol Programs – SDSU, through the Department of Student Health and Counseling Services, provides alcohol and drug abuse information and prevention programs to the campus community. Medical treatment and counseling services are available to students and referrals to other agencies are available to everyone on campus. Call 688-6146 or 688-4157 for information.

Health Service – All usual medical outpatient services are provided on an appointment basis, including GYN examinations and sexuality services. Many of the services, including the office visit and medical consultation, are prepaid by the Activity Fee required of all students. When medically indicated, appropriate referral may be arranged.

Laboratory and pharmacy services, allergy injections, immunizations, and physical examinations are provided on-site on a fee-for-service basis. All enrolled fee-paying students are eligible to receive services. Health Service will assist students in meeting Board of Regents immunization compliance regulations for measles and rubella. A supplemental hospitalization, accident and sickness insurance program, approved by the Board of Regents, is available for all students. Non-U.S. citizens are required to purchase the BOR insurance plan. The Health Service is located on the second floor of West Hall and is open from 8:00 a.m. to 5:00 p.m. Monday through Friday when school is in session during fall, spring, and summer. When Student Health Service is closed students may go to the Brookings Hospital emergency room for care. Any bills incurred are the responsibility of the student.

You may call 688-5588 for further information, a medical appointment, or medical record assistance.

Health Education and Prevention Services – The Health Education and Prevention Services are a separate, but integrated, program sponsored by Student Health and supervised by the Director of Student Health. The program emphasizes awareness, prevention, and response to sexual assault and date rape. Closely related issues of alcohol/drug abuse, STD's (including HIV/AIDS), and unplanned pregnancies are addressed. In addition to program presentations for students and faculty, the Health Educator also trains and supervises student peer educators who are available to present awareness and prevention programs on the above topics for student organizations, classes when requested by the instructor, residence hall student staff training, and at new student orientation. The Health Educator is available for victim assistance and response in case of sexual assault or violence. A close working relationship is maintained with other community agencies involved in prevention and response to violence and sexual assault. Confidentiality is assured at all times for the student/victim. Individuals with questions or personal concerns are asked to call the Health Educator at 605-688-5312 for assistance or information.

Water Resources Research Institute (WRRI)

The Water Resources Institute was conceptualized in 1964 through the Water Resources Act and began services on October 8, 1964, as an administrative unit of South Dakota State University. In September, 1990, WRI was placed under the administrative authority of the College of Agriculture and Biological Sciences. The mission of WRI is to provide the leadership in coordinating the research and training at South Dakota State University and other affiliated educational institutions and agencies across the state in the broad area of water resources. It administers the funds received from the U.S. Department of Interior, as made available through the Water Resources Research Act of 1984 and from the state of South Dakota. Funds received through these sources targeted for research are directed toward solving state, regional, and national water problems. Graduate research training, technology transfer, and information transfer are services which are provided through the Institute.

The Water Resources Institute also houses the Water Quality Laboratory. This laboratory serves the needs of the people of the state by providing analytical services for determination of inorganic constituents (and some pesticides) in water. Both the Institute and the Laboratory are housed on the second floor of the Agricultural Engineering Building.

Wellness Center

The Wellness Center is an on-campus fitness center, located in the Stanley J. Marshall HPER building, offering exercise facilities and programs to students and members of the region. The Center offers aerobics, free weights, a 1/8 mile indoor run/walk track, machine weights, racquetball, and a 25 yard indoor swimming pool. Classes are offered in smoking cessation, weight control, and stress management. Students become members upon payment of their student activity fee.

Logos, Seals, Caricatures (Official Symbols)

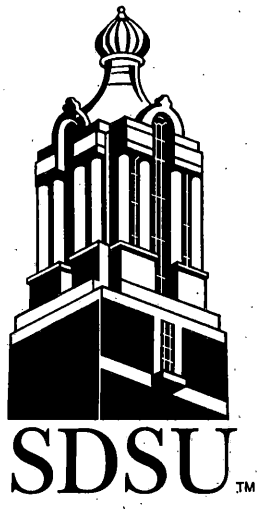
Official Name:
South Dakota State University or **SDSU** (no periods)

Official School Colors:
PMS Blue 287 and **PMS Yellow 109**

Athletic Team Name:
Jackrabbits or **Jacks**

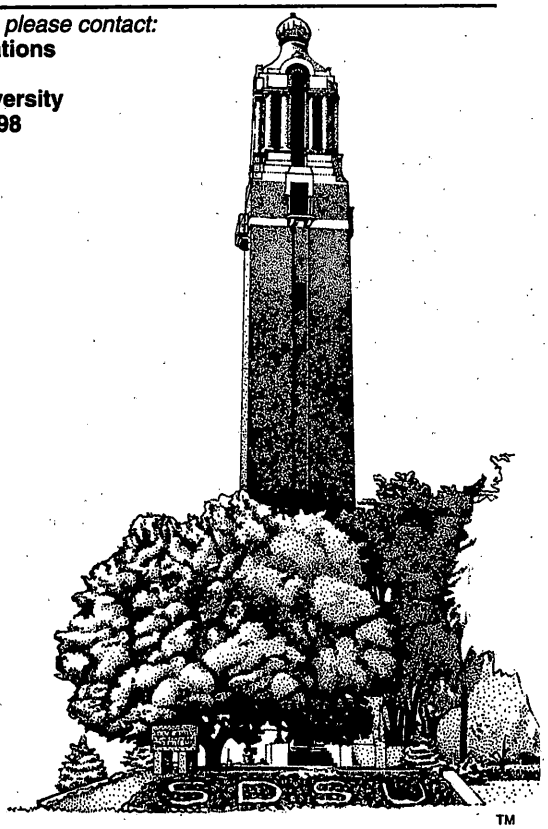
For information on usage, please contact:
Office of University Relations
Box 2230
South Dakota State University
Brookings, SD 57007-1498

(605) 688 6161
FAX (605) 688-6357



Official SDSU Logo
(as of May 1994)

Official SDSU Seal



The Coughlin Campanile occupies
a central focus on campus

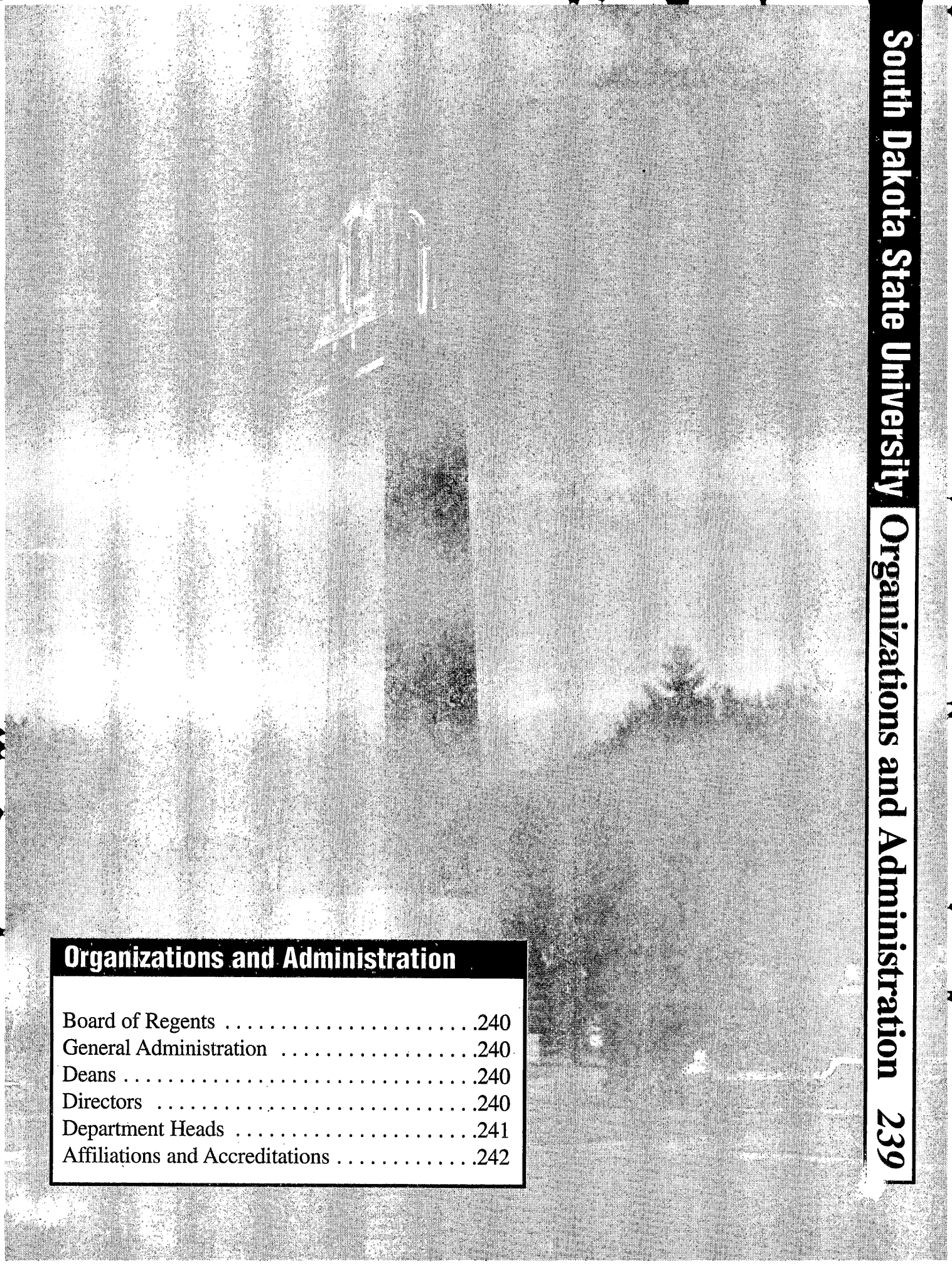
The "spirit" of Hobo Days (Homecoming)
is represented by "Weary Willie"

Official SDSU Alumni Logo

Offical SDSU Athletics Logo

Offical SDSU Athletics Logos

SDSU Athletics mascot is the Jackrabbit



Organizations and Administration

Organization and Administration

The Board of Regents. Control of the educational institutions of the state is vested in the Board of Regents.

The Faculty consists of the President, the Vice Presidents, the Deans and other administrative officers, teachers and researchers with rank of instructor or above. The faculty is responsible in general for academic standards and procedures and programs, including recommending to the Regents the candidates for degrees. Faculty business is conducted by the Academic Senate, an elected body through which faculty express concerns for the welfare of the University and the University community, develop and disseminate communications, contribute to formation of general University policy, and perform those duties and functions allocated to or assumed by the faculty.

Board of Regents

Honorable Bob Brancel
(Term expires March 31, 1997)
Pierre

Honorable David Gienapp
(Term expires March 31, 1997)
Madison

Honorable Max Gruenwald
(Term expires March 31, 1997)
Milbank

Honorable Cathy Hall
(Term expires March 31, 1999)
Aberdeen

Honorable James Hansen
(Term expires March 31, 2001)
Pierre

Honorable James Hart
(Term expires March 31, 1998)
Miller

Honorable Pat Lebrun
(Term expires March 31, 1999)
Rapid City

Honorable Karl H. Wegner
(Term expires March 31, 1998)
Sioux Falls

Honorable Jason Glodt
Student Regent
Spearfish

Honorable Robert T. (Tad) Perry
Executive Director
Pierre

General Administration

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Robert T. Wagner, Ph.D.
Vice President for Academic Affairs
Carol J. Peterson, Ph.D.
Vice President for Administration
Michael P. Reger, Ph.D.
Assistant Vice President for Academic Affairs
Edward P. Hogan, Ph.D.
Registrar
Ranny B. Knutson, M.Ed.

Deans

College of Agriculture and Biological Sciences
David A. Bryant, Ph.D., Dean
W. Eugene Arnold, Ph.D., Associate Dean and Director of Academic Programs
Mylo A. Hellickson, Ph.D., Associate Dean and Director of Cooperative Extension Service
Fred A. Cholick, Ph.D., Associate Dean and Director of Agricultural Experiment Station
College of Arts and Science
Herbert E. Cheever, Jr., Ph.D., Dean
Allen R. Branum, Ph.D., Assistant Dean
College of Education and Counseling
Darrell Jensen, Ph.D., Dean
College of Engineering
Duane E. Sander, Ph.D., Dean
Virgil G. Ellerbruch, Ph.D., Assistant Dean
College of General Registration
Gail Dobbs Tidemann, Ph.D., Acting Dean
College of Family and Consumer Sciences
Laurie Stenberg Nichols, Ph.D., Dean
College of Nursing
Roberta K. Olson, Ph.D., Dean
College of Pharmacy
Danny L. Lattin, Ph.D., Dean
Graduate School
Christopher P. Sword, Ph.D., Dean
Library
Stephen P. Marquardt, Ph.D., Dean
Student Affairs
Robert Tomlinson, Ed.D., Dean
Robert Burke, Ph.D., Associate Dean

Directors

Admissions
Dean M. Hofland, Ed.D.
Alumni Association
Chaddron C. Kono, B.S.
Budget/Finance
Wesley G. Tschetter, M.B.A.
Chief Business Officer
Jerome C. Fiedler, M.Ed.
Computing Services
Delmar R. Johnson, M.Ed.
Diagnostic Laboratory
John U. Thomson, D.V.M.
Financial Aid
Jay A. Larsen, M.Ed.
HPER/Athletics
Fred M. Oien, Ed.D.
Instructional Media
Gary L. Sheeley, M.Ed.
International Programs
Harriet P. Swedlund, M.S.
Physical Plant
Richard C. Waldner, A.A.
Residential Life
John R. Evans, M.S.
South Dakota Art Museum
Lynda Clark Crabtree, M.A.
SDSU Foundation/Development
Orin Dahl, M.Ed., M.S.
Student Activities
Marysz Palczewski Rames, M.A.
University Bookstore
Gary G. Burdick, B.A.
University Relations
Jennifer Crickard, M.A.
Water Resources
Fred A. Cholick, Ph.D.

Department Heads (by college)

Agriculture and Biological Sciences
Animal and Range Sciences
James R. Males, Ph.D.
Biology and Microbiology
Charles R. McMullen, Ph.D.
Dairy Science
John G. Parsons, Ph.D
Economics
Ardelle A. Lundeen, Ph.D.
Horticulture, Forestry, Landscape and Parks
Peter R. Schaefer, Ph.D.
Plant Science
Dale J. Gallenberg, Ph.D.
Rural Sociology
James L. Satterlee, Ph.D.
Veterinary Science
John U. Thomson, D.V.M.
Wildlife and Fisheries Sciences
Charles G. Scalet, Ph.D.

Arts and Science
Aerospace Studies
LTC Kevin J. Graber, M.S.
Chemistry and Biochemistry
Laurence I. Peterson, Ph.D.
Communication Studies and Theatre
Michael R. Schliessmann, Ph.D.
English
George A. West, Ph.D.
Foreign Languages
Karen Cárdenas, Ph.D.
Geography
Roger K. Sandness, Ph.D.
Health, Physical Education and Recreation
Fred M. Oien, Ed.D.
History
Rodney E. Bell, Ph.D.
Journalism and Mass Communications
Richard W. Lee, Ph.D.
Military Science
LTC Jan Griesenbrock, M.S.
Music
Corliss L. Johnson, D.M.A.
Philosophy and Religion
Robert V. Burns, Ph.D.
Political Science
Robert V. Burns, Ph.D.
Psychology
Kenneth Hillner, Ph.D.
Visual Arts
Norman Gambill, Ph.D.

Education and Counseling
Counseling and Human Resource Development
Richard L. Roberts, Ph.D.
Educational Leadership
Ralph L. Erion, Ph.D. (Acting)
Undergraduate Teacher Education
Paul Theobald, Ph.D.

Engineering
Agricultural Engineering
Ralph Alcock, Ph.D.
Civil and Environmental Engineering
Dwayne A. Rollag, Ph.D.
Computer Science
Gerald E. Bergum, Ph.D.
Electrical Engineering
Lewis F. Brown, Ph.D. (Acting)
General Engineering
Jerry Sorensen, M.Ed. (Acting)
Mathematics and Statistics
Kenneth L. Yocom, Ph.D.
Mechanical Engineering
Donell P. Froehlich, Ph.D.
Physics
Warren W. Hein, Ph.D.

Family and Consumer Sciences
Apparel Merchandising and Interior Design
Sandra J. Evers, Ph.D.
Human Development, Consumer and Family Sciences
Mary Kay Helling, Ph.D.
Nutrition and Food Science
Marilyn A. Swanson, Ph.D.

Nursing
Graduate Nursing
Barbara S. Heater, Ph.D.
Research and Special Projects
William J. McBreen, Ph.D.
Undergraduate Nursing
Roberta K. Olson, Ph.D. (Acting)
West River Nursing
Penny Powers, Ph.D.

Pharmacy
Clinical Pharmacy
Brian L. Kaatz, Pharm.D.
Pharmaceutical Sciences
Gary S. Chappell, Ph.D.

Affiliations and Accreditations

The University holds institutional membership in a number of educational associations. The National Association of State Universities and Land-Grant Colleges promotes the aims expressed in the Morrill Act of 1862, and in the subsequent acts of Congress relating to Land-Grant Colleges.

The North Central Association of Colleges and Schools is the regional accrediting agency. Its purpose is to maintain high standards of instructional work and educational programs. The University is accredited through the doctoral level.

The Athletic Training Program is accredited by the National Athletic Trainers Association.

The Departments of Agricultural, Civil, Electrical, and Mechanical Engineering are accredited by the Accreditation Board for Engineering and Technology.

The bachelor's and master's degree programs in the College of Nursing are accredited by the National League for Nursing.

The Chemistry Department is accredited by the American Chemical Society.

The dietetic program is accredited by the American Dietetic Association.

The curriculum in Home Economics is accredited by the American Association of Family and Consumer Sciences.

The curriculum in Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communication.

The Music Department has full membership in the National Association of Schools of Music.

Preparation of secondary teachers at both the undergraduate and graduate levels is accredited by the National Council for Accreditation of Teacher Education.

The M.S. in Counseling and Human Resource Development program is accredited by the Council for Accreditation of Counseling and Related Educational Programs.

The curriculum in Pharmacy is accredited by the American Council on Pharmaceutical Education.

The Agricultural Systems Technology program is accredited by the American Society of Agricultural Engineering.

The Early Childhood Education program is accredited by the National Association for Education of Young Children.

The Animal Disease Research and Diagnostic Laboratory is accredited by the American Association of Veterinary Laboratory Diagnosticians.

The University also holds membership in the American Council on Education, the National Education Association, the American Association of University Women, the American Association of Colleges of Pharmacy, the American Society for Engineering Education, the Association of Accredited Schools and Departments of Journalism, the National League for Nursing, the American Association of Colleges of Nursing, the American Library Association, Associated Western Universities, Council of Graduate Schools in the U.S., National Association for Foreign Student Affairs, and several others which are concerned with more limited phases of college work. Through the Board of Regents, the University also participates in the Western Interstate Commission for Higher Education (WICHE).

In 1977 the South Dakota Art Museum became the first South Dakota museum of any kind to be accredited by the American Association of Museums, and it is now one of only two accredited museums in the state.

UNIVERSITY STAFF

As of March 1996

The number immediately after the title of a member of the staff indicates the year when the person was first employed as a regular member of the university staff, the number following, if there is one, is the year of appointment to present rank.

GENERAL ADMINISTRATION

Robert T. Wagner, President, Professor of Rural Sociology, Graduate Faculty, 1970, 1985; B.A., Augustana College, 1954; M.Div., Seabury Western Theological Seminary, 1957; S.T.M., 1970; Ph.D., SDSU, 1972; L.H.D., Augustana College, 1994.

Carol J. Peterson, Vice President for Academic Affairs, Professor of Nursing, Graduate Faculty, 1977, 1987; Diploma in Nursing, Methodist Kahler School of Nursing, 1960; B.S., University of Minnesota, 1963; M.Ed., 1964; Ph.D., 1969.

Michael P. Reger, Vice President for Administration, Assistant Professor, of Education, Graduate Faculty, 1979, 1993; B.A., Western Illinois University, 1970; M.S., 1972; Ph.D., Ohio State University, 1983.

Edward P. Hogan, Assistant Vice President for Academic Affairs, Professor of Geography, Graduate Faculty, 1967, 1991; B.S., St. Louis University, 1961; M.A., 1962; Ph.D., 1969.

Robert Tomlinson, Dean of Student Affairs, 1994; B.S., Indiana State University, 1968; M.Ed., Mississippi State University, 1974; Ed.D., 1979.

Dean M. Hofland, Director of Admissions and Special Projects, 1963, 1984; B.S., SDSU, 1958; M.Ed., 1963; Ed.D., University of South Dakota, 1970.

Ranny B. Knutson, Registrar, 1968, 1985; B.A., Huron College, 1968; M.Ed., SDSU, 1973.

Stephen P. Marquardt, Dean of Libraries, Professor of Library Science, Graduate Faculty, 1996; B.A., Grand Valley State University, 1969; M.A., Western Michigan University, 1976; M.L.S., 1977; Ph.D., St. Louis University, 1984.

Wesley G. Tschetter, Director of Finance and Budget, 1982, 1985; B.S., SDSU, 1969; M.B.A., University of South Dakota, 1971.

Richard C. Waldner, Director of Physical Plant, 1965, 1994; A.A., South Dakota State University, 1975.

ACADEMIC DEANS

David A. Bryant, Dean of the College of Agriculture and Biological Sciences, Professor of Animal and Range Sciences, Graduate Faculty, 1987; A.A., Lower Columbia College, 1963; B.S., Washington State University, 1966; M.S., Texas Technical University, 1967; Ph.D., University of Arizona, 1971.

Herbert E. Cheever, Jr., Dean of the College of Arts and Science, Professor of Political Science, Graduate Faculty, 1968, 1992; B.S., SDSU, 1960; M.A., University of Iowa, 1962; Ph.D., 1967.

Darrell Jensen, Dean of the College of Education and Counseling, Professor of Education Administration, Graduate Faculty, 1971, 1981; B.S., Northwest Missouri State University, 1959; M.A., Drake University, 1965; Ph.D., University of Iowa, 1971.

Danny Lattin, Dean of the College of Pharmacy, Professor of Pharmaceutical Sciences, Graduate Faculty, 1995; B.S., University of Kansas, 1965; Ph.D., University of Minnesota, 1970.

Laurie Stenberg Nichols, Dean of the College of Family and Consumer Sciences, Professor of Human Development, Consumer and Family Sciences, Graduate Faculty, 1994; B.S., SDSU, 1978; M.S., Colorado State University, 1984; Ph.D., Ohio University, 1988.

Roberta K. Olson, Dean of the College of Nursing, Professor of Nursing, Graduate Faculty, 1994; B.S., SDSU, 1964; M.S.N., Washington University, 1968; Ph.D., St. Louis University, 1984.

Duane E. Sander, Dean of the College of Engineering, P.E., Professor of Electrical Engineering, Graduate Faculty, 1967, 1990; B.S., South Dakota School of Mines and Technology, 1960; M.S., Iowa State University, 1962; Ph.D., 1964.

Christopher P. Sword, Dean of the Graduate School, Director of Research, Professor of Microbiology, Graduate Faculty, 1976; B.S., Loyola Marymount University, 1951; Ph.D., University of California, 1959.

Gail Dobbs Tidemann, Acting Dean of the College of General Registration, Associate Professor of Human Development, Consumer and Family Sciences, Graduate Faculty, 1986, 1991; B.S., Jacksonville University, 1977; M.A., University of Alabama, 1978; Ph.D., 1986.

DISTINGUISHED PROFESSORS

Robert V. Burns, Distinguished Professor and Head of Political Science, Head of Philosophy and Religion, Graduate Faculty, 1970, 1994; B.S., SDSU, 1964; M.A., University of Missouri, 1966; Ph.D., 1973.

William Costello, Distinguished Professor of Animal and Range Sciences, Graduate Faculty, 1965, 1991; B.S., North Dakota State University, 1954; M.S., Oklahoma State University, 1960; Ph.D., 1963.

Donald P. Evenson, Distinguished Professor of Chemistry, Graduate Faculty, 1981, 1996; B.A., Augustana College, 1964; Ph.D., University of Colorado, 1968.

Charles F. Gritzner, Distinguished Professor of Geography, Graduate Faculty, 1980, 1995; B.A., Arizona State University, 1958; M.A., Louisiana State University, 1960; Ph.D., 1969.

Margaret J. Hegge, Distinguished Professor of Nursing, Coordinator of Research, Graduate Faculty, 1969, 1990; B.A., Gustavus Adolphus College, 1969; M.Ed., SDSU, 1972; Ed.D., University of South Dakota, 1983; M.S., University of Minnesota, 1984.

Ruth W. Redhead, Distinguished Professor Emerita of Foreign Languages, 1962, 1993; B.Ed., University of Vermont, 1945; M.A., University of Minnesota, 1954; Ph.D., 1971.

Richard C. Wahlstrom, Distinguished Professor Emeritus of Animal and Range Sciences, 1952, 1988; B.S., University of Nebraska, 1948; M.S., University of Illinois, 1950; Ph.D., 1952.

Charles L. Woodard, Distinguished Professor of English, Graduate Faculty, 1975, 1992; B.S., Dakota State College, 1964; M.A., University of Nebraska, 1966; Ph.D., University of Oklahoma, 1975.

Leon J. Wrage, Distinguished Professor of Plant Science, Extension Specialist, 1969, 1994; B.S., SDSU, 1961; M.S., 1964.

FACULTY, STAFF

Mary E. Aamot, 4-H Specialist, Professor of Extension, 1967, 1995; B.A., Mount Marty College, 1965; M.A., SDSU, 1976; Ed.D., University of South Dakota, 1985.

Wallace G. Aanderud, Professor Emeritus of Economics, 1963, 1985; B.S., North Dakota State University, 1950; M.S., 1960; Ph.D., Oklahoma State University, 1963.

David B. Aaron, Assistant Professor of Physics, 1986; B.S., SDSU, 1975; M.S., University of Wisconsin, 1981.

John D. Ackman, Assistant Professor of Communication Studies and Theatre, 1978; B.S., SDSU, 1978; M.F.A., University of Montana, 1984.

Dwight L. Adams, Professor Emeritus of Military Science, 1962, 1973; B.B.A., University of Georgia, 1959.

Dwight W. Adamson, Associate Professor of Economics, Graduate Faculty, 1989, 1995; B.A., Washington State University, 1976; M.A., 1983; Ph.D., 1988.

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Ralph Alcock, Professor and Head of Agricultural Engineering, Graduate Faculty, 1981, 1989; B.S., Chelsea College, 1966; M.D.Ag.E., West Scotland Agricultural College, 1967; G. Dip. Ed., West Australian Institute of Technology, 1978; M.S., Rutgers University, 1980; Ph.D., Reading University (England), 1988.

Ruth A. Alexander, Professor Emerita of English, 1952, 1990; B.A., Michigan State University, 1945; M.A., University of Minnesota, 1947; Ph.D., Michigan State University, 1952.

Herbert R. Allen, Professor Emeritus of Economics, 1963, 1987; B.S., Iowa State University, 1950; M.S., 1952; Ph.D., SDSU, 1968.

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Arthur W. Anderson, Professor Emeritus, Extension Economist, 1947, 1985; B.S., University of Minnesota, 1938; M.S., 1942.

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Hratch Berberian, Associate Professor of Music, 1967, 1970; B.M.E., Cesar Franck School of Music, France, 1953; M.M., Boston Conservatory of Music, 1963.

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Jerry A. Berg, Supply Clerk, Military Science, 1989; B.S., SDSU, 1974.

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Robert K. Berg, Jr., Manager, SESD Experiment Station Farm, Assistant Professor, 1993; B.S., Oklahoma State University, 1981; M.S., 1982; Ph.D., Iowa State University, 1987.

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Peter J. Bergmann, Research Assistant in Wildlife and Fisheries Sciences, 1990; B.A., Gustavus Adolphus College, 1989; M.S., SDSU, 1992.

Gerald E. Bergum, Head of Computer Science, Professor of Mathematics, Graduate Faculty, 1970, 1987; B.S., University of Minnesota, 1958; M.S., University of Notre Dame, 1962; Ph.D., Washington State University, 1969.

Charles R. Berry, Jr., Adjunct Professor of Wildlife and Fisheries Sciences, Graduate Faculty, 1985, 1991; B.S., Randolph-Macon College, 1967; M.S., Fordham University, 1970; Ph.D., Virginia Polytechnic Institute, 1976.

Cheryl K. Beste, Executive Secretary, Development, 1973, 1994; A.A., SDSU, 1972.

Martin K. Beutler, Associate Professor of Economics, 1986, 1992; B.S., Utah State University, 1980; M.S., 1982; Ph.D., Purdue University, 1986.

Dennis D. Bielfeldt, Assistant Professor of Philosophy and Religion, Graduate Faculty, 1995; B.S., SDSU, 1977; M.A., University of Iowa, 1984; Ph.D., 1987.

Sheri J. Bierman, Research Associate in Animal and Range Sciences, 1995; B.S., University of Nebraska, 1993; M.S., 1995.

Joye Ann Billow, Professor of Pharmaceutical Sciences, Graduate Faculty, 1972, 1987; B.S., Temple University, 1966; Ph.D., 1972.

Mark Binkley, Instructor/Academic Development Specialist, 1985, 1990; B.S., SDSU, 1978; M.Ed., 1986.

Carol Birch, Instructor of Nursing, 1990; B.S., Loyola University, 1979; M.S., Northern Illinois University, 1981.

Carl P. Birkelo, Associate Professor of Animal and Range Sciences, Graduate Faculty, 1988, 1994; B.S., California State University, 1976; M.S., Colorado State University, 1984; Ph.D., 1988.

John H. Bischoff, Assistant Professor in Water Resources Institute, 1979, 1990; B.S., SDSU, 1977; M.S., 1983.

George A. Black, District Extension Supervisor, Assistant Professor, 1977, 1984; B.S., SDSU, 1961; B.D., North American Baptist Seminary, 1964; M.Div, 1975; M.Ed., SDSU, 1984.

Judy K. Blauwet, Adjunct Lecturer in Nursing, 1990; B.S.N., Creighton University, 1972; M.P.H., University of Minnesota, 1989.

Charles H. Blazey, Professor Emeritus of Health Science, 1965, 1987; B.S., State University of New York, 1950; M.S., 1960; D.Ed., University of Oregon, 1971.

Bruce H. Bleakley, Associate Professor of Microbiology, Graduate Faculty, 1991, 1995; B.S., Michigan State University, 1978; M.S., 1981; Ph.D., University of Florida, 1986.

Norman B. Bliss, Adjunct Professor of Geography, 1994; B.S., University of California, 1967; M.S., University of Washington, 1970; Ph.D., University of Pennsylvania, 1978.

Anthony G. Bly, Research Associate in Plant Science, 1990; B.S., SDSU, 1988; M.S., 1992.

Arvid A. Boe, Professor of Plant Science, Graduate Faculty, 1976, 1991; B.A., Pacific Lutheran University, 1972; M.A., University of South Dakota, 1976; Ph.D., SDSU, 1979.

Mark A. Boetel, Research Associate in Plant Science, 1986; B.S, SDSU, 1986; M.S., 1989.

Susan Boettcher, Research Associate in Horticulture, Forestry, Landscape and Parks, 1992; B.S., SDSU, 1986; M.S., University of Kentucky, 1989.

Donald L. Boggs, Extension Beef Specialist, Associate Professor of Animal and Range Sciences, 1988, 1991; B.S., University of Illinois, 1975; M.S., Kansas State University, 1977; Ph.D., Michigan State University, 1982.

Joseph J. Bonnemann, Assistant Professor Emeritus of Plant Science, 1955, 1992; B.S., SDSU, 1951; M.S., 1964.

Boyd J. Bonzer, Associate Professor Emeritus of Animal and Range Sciences, 1948, 1985; B.S., SDSU, 1942; M.S., 1959.

Jacqueline K. Bonneville, Residence Hall Director, 1994; B.B.A., University of Minnesota, 1994.

James M. Booher, Professor of Health, Physical Education and Recreation, Graduate Faculty, 1967, 1983; B.A., Nebraska Wesleyan University, 1965; R.P.T., School of Physical Therapy, Mayo Clinic, 1967; M.S., SDSU, 1969; Ph.D., University of Utah, 1976.

Robin Bortnem, Research Associate in Plant Science, 1985; B.S., SDSU, 1984; M.S., 1989.

Julie Bostic, Adjunct Instructor of Nursing, 1994; B.S., SDSU, 1979; M.S., 1993.

Clyde L. Bowen, Internal Auditor, 1991; B.S., Northeast Missouri State University, 1961; M.B.A., Saint Ambrose College, 1990.

Roxann K. Boysen, Instructor of Nursing, 1989; L.P.N., Worthington Community College, 1974; A.A., University of South Dakota, 1979; B.S., SDSU, 1989; M.S., 1995.

Patriciann F. Brady, Assistant Professor of Nursing, 1985, 1993; B.S.N., Carlow College, 1966; M.A., University of South Dakota, 1979; M.S., SDSU, 1985; Ed.D., University of South Dakota, 1989.

Burton L. Brage, Professor Emeritus of Plant Science, 1950, 1990; B.S., University of Minnesota, 1946; Ph.D., 1950.

Bruce E. Brandt, Professor of English, Graduate Faculty, 1979, 1989; B.A., University of Denver, 1969; M.A., 1971; Ph.D., Harvard University, 1977.

Allen R. Branum, Assistant Dean of the College of Arts and Science, Professor of Psychology, Graduate Faculty, 1970, 1994; B.S., Montana State University, 1966; M.A., University of Montana, 1968; Ph.D., 1971.

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Robert M. Brinker, Assistant Regional Director of Aerospace Studies, 1995; B.S., SDSU, 1994.

Mark Brinkman, Research Associate in Plant Science, 1990; B.S., Sioux Falls College, 1990; M.S., SDSU, 1992; Ph.D., 1995.

Rhonda Steichen Britzman, Sioux Falls Student Affairs Coordinator, 1981, 1993; B.S., SDSU, 1980; M.Ed., 1982.

Kalyn A. Brix-Davis, Research Associate in Plant Science, 1988, 1995; B.S., Iowa State University, 1988; M.S., SDSU, 1991.

April Brooks, Assistant Professor of History, 1993; B.A., Hunter College, 1966; M.A., Tulane University, 1968; Ph.D., 1974.

Ella Mae Brooks, Assistant Professor of Nursing, 1995; B.S., University of Nebraska, 1979; B.S.N., Creighton University, 1981; M.S.N., University of Central Arkansas, 1988; Ph.D., University of Tennessee, 1995.

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William S. Wadsworth, Jr., Professor Emeritus of Chemistry, 1963, 1970; B.S., Trinity College, 1950; M.S., 1952; Ph.D., Pennsylvania State University, 1955.

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Bradley Woldt, Assistant Professor of Psychology, 1995; B.A., SDSU, 1988; M.A., University of Montana, 1991; Ph.D., 1993.

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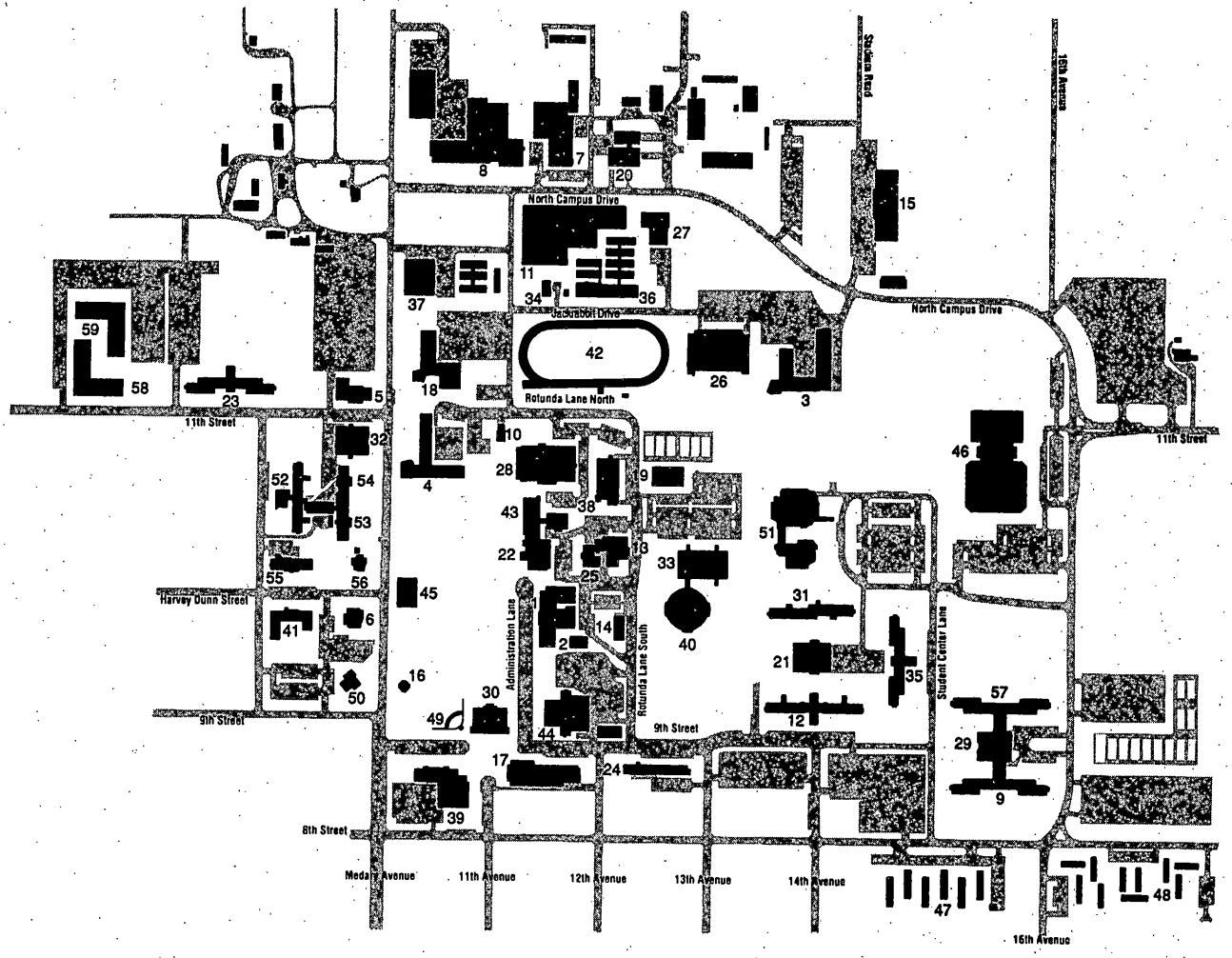
South Dakota State University Campus Map 262



1 Administration Building
2 Agricultural Communications Center
3 Agricultural Engineering
4 Agricultural Hall
5 Agricultural Heritage Museum
6 Alvilda M. Sorenson Family Resource and Management Center
7 Animal Disease Research and Diagnostic Laboratory
8 Animal Science Complex
9 Binnewies Hall
10 Biology Annex
11 Northern Plains Biostress Laboratory
12 Brown Hall
13 Central Heating Plant
14 Communications Center
15 Coughlin-Alumni Stadium
16 Coughlin Campanile
17 Crothers Engineering Hall
18 Dairy Microbiology
19 DePuy Military Hall
20 Foundation Seed Conditioning Plant
21 Grove Hall
22 Guilford C. Gross Pharmacy Building
23 Hansen Hall
24 Harding Hall
25 Heat/Power Laboratory
26 H.M. Briggs Library
27 Horticulture-Forestry
28 Intramural Building
29 Larson Commons
30 Lincoln Music Hall
31 Mathews Hall
32 Medary Commons
33 Nursing-Home Economics
34 Physiology Laboratory
35 Pierson Hall
36 Plant Science Building
37 Plant Science Seedhouse
38 Printing and Journalism Building (includes U.S. Postal Service)
39 Pugsley Continuing Education Center
40 Rotunda for Arts and Science
41 Scobey Hall
42 Sexauer Field
43 Shepard Hall
44 Solberg Hall
45 South Dakota Art Museum
46 Stanley J. Marshall Health, Physical Education and Recreation Center
47 State Court
48 State Village
49 Sylvan Theatre
50 Tompkins Alumni Center
51 University Student Union
52 Waneta Hall
53 Wecota Hall
54 Wenona Hall
55 West Hall
56 Woodbine Cottage (President's Residence)
57 Young Hall
58 Berg Hall
59 Bailey Hall

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