

**SOUTH
DAKOTA
STATE
UNIVERSITY**

2002-2004

*A Land-Grant University
established in 1881*



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**SOUTH DAKOTA
STATE UNIVERSITY**

**GENERAL CATALOG
2002 - 2004**



SDSU www3.sdstate.edu

FREQUENTLY CALLED NUMBERS

General Numbers

Admissions	605-688-4121 or 605-1-800-952-3541
Ag Experiment Station	605-688-4149
Agricultural Heritage Museum	605-688-6226
Alumni Office	605-697-5198
Athletic Ticket Office	605-688-5422
Board of Regents	605-773-3455
Bookstore	605-688-4163
Campus Police	605-688-5117
Computing Services	605-688-6136
Cooperative Extension Service	605-688-4792
Disability Services	605-688-4504
Financial Aid Office	605-688-4695
Graduate School	605-688-4181
Health Services	605-688-4157
Information Exchange	605-688-6127
International Programs	605-688-4913
Jackrabbit Ticket Office	
Library	605-688-5107
Multicultural Affairs Office	605-688-6129
Personnel	605-688-4128
Physical Plant	605-688-4136
Placement Office/CAP Center	605-688-4153
Registrar	
(on-campus)	605-688-6195
(off-campus)	605-688-6397
Transcripts (ordering)	605-688-6637

Research Office	605-688-4181
Residential Life	605-688-5148
SDSU Dining Services	605-697-2550
SDSU Foundation	605-697-7475
South Dakota Art Museum	605-688-5423
Student Activities	605-688-4960
Student Affairs Dean	605-688-4493
Student Health	605-688-5588
Theatre Box Office	605-688-6425
University Police Department	605-688-5117
University Relations	605-688-6161
USDSU Sioux Falls	605-367-5640

Administrative Numbers

President's Office	605-688-4111
Vice President for Academic Affairs	605-688-4173
Vice President of Administration	605-688-6157
College of Agriculture and Biological Sciences	605-688-4148
College of Arts and Science	605-688-4723
College of Education and Counseling	605-688-4321
College of Engineering	605-688-4161
College of Family and Consumer Sciences	605-688-6181
College of General Studies and Outreach Programs	605-688-4153
College of Nursing	605-688-5178
College of Pharmacy	605-688-6197

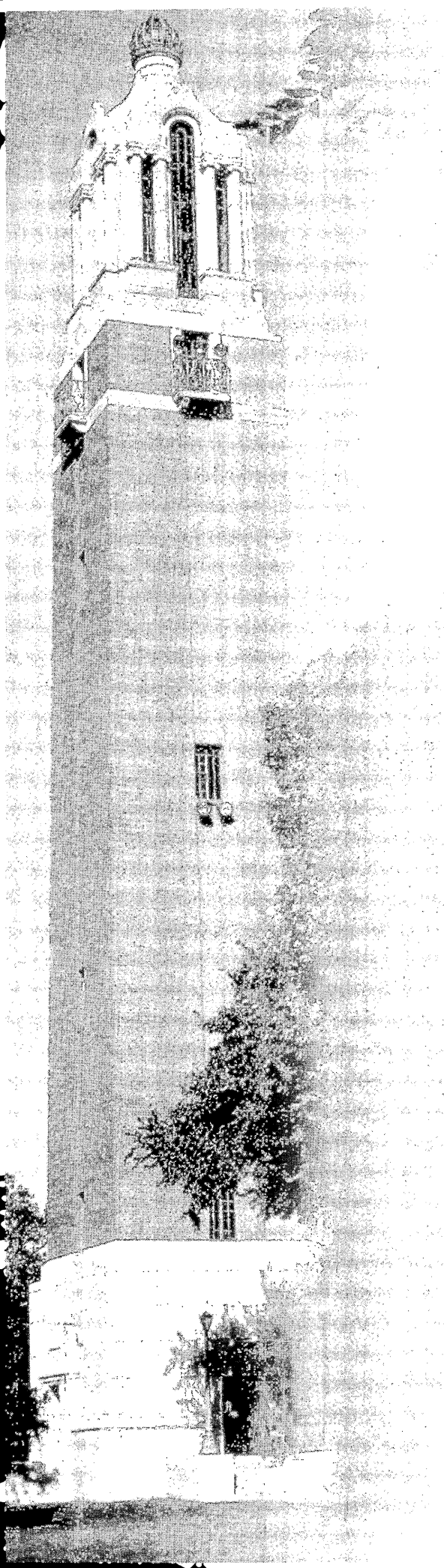
SOUTH DAKOTA STATE UNIVERSITY NON-DISCRIMINATION POLICY

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 Equal Opportunity Office in Personnel Services, ADM 324, Phone: 605-688-4128.

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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 (renamed College of General Studies and Outreach Programs in 2001) was established to provide assistance to students who are undecided as to major, are preprofessional, or who want a one, two, or four 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. On July 1, 1996, the College of Home Economics became the College of Family and Consumer Sciences to align with the national professional organization (AAFCS), and to reflect a newer, more up-dated image.

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. The mission of South Dakota State University is to serve through teaching, research, and extension activities as the State’s land grant institution. Our first goal is undergraduate and graduate education from the freshman to the doctoral level achieved through selected high quality academic, professional, extra-curricular and recreational programs. Our second goal is to conduct nationally competitive strategic research, scholarly and creative activities. Our third goal is the transfer of knowledge, especially to the citizens of South Dakota, through the Cooperative Extension Service and other outreach entities.

The University fulfills these goals through the following activities: delivering approved undergraduate programs; delivering approved graduate programs; engaging in scholarship and creative activities in all of its academic disciplines; providing public service through a variety of approved centers and organizational units; providing continuing education by delivering credit and non-credit offerings to locations across state, region, and world; and delivering coordinated outreach programming as a conduit for the University’s service goal.

In order to achieve these three primary goals the University also has other contributing goals. 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 and the culture of others. South Dakota State University 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 and seeks to prepare a graduate with a global perspective. 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 accountability the University 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. A strong foundation of general education for all graduates in all majors.
2. Learning in the fields of agriculture; engineering and engineering technology; consumer and family sciences; liberal arts; pharmacy; nursing; teacher and counselor education; basic physical, biological, and social sciences; humanities and arts at the undergraduate and graduate levels.
3. Research and scholarship in agriculture; engineering and engineering technology; consumer and family sciences; liberal arts; nursing; pharmacy; teacher and counselor education; basic physical, biological and social sciences; humanities and arts at the undergraduate and graduate levels.

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

Educational Objectives

The 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 satisfactory human relationships. Ideally, upon graduation, SDSU students will have attained intellectual autonomy with capabilities 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. Graduates 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, graduates should seek to foster understanding and harmony among their fellow citizens of this diverse nation and world.

Specific objectives that flow from this broad educational objectives are:

Intellectual and professional competence is attained when a graduate:

1. Has developed knowledge and skills – including those of clear oral and written expression, evaluative listening and information literacy – 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.
4. Is competitive in academic preparation nationally and internationally.

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 relationship to this code.
3. Is change-able, that is able to embrace change in positive and constructive ways.

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 she/he believes.
3. Demonstrates social responsibility.

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

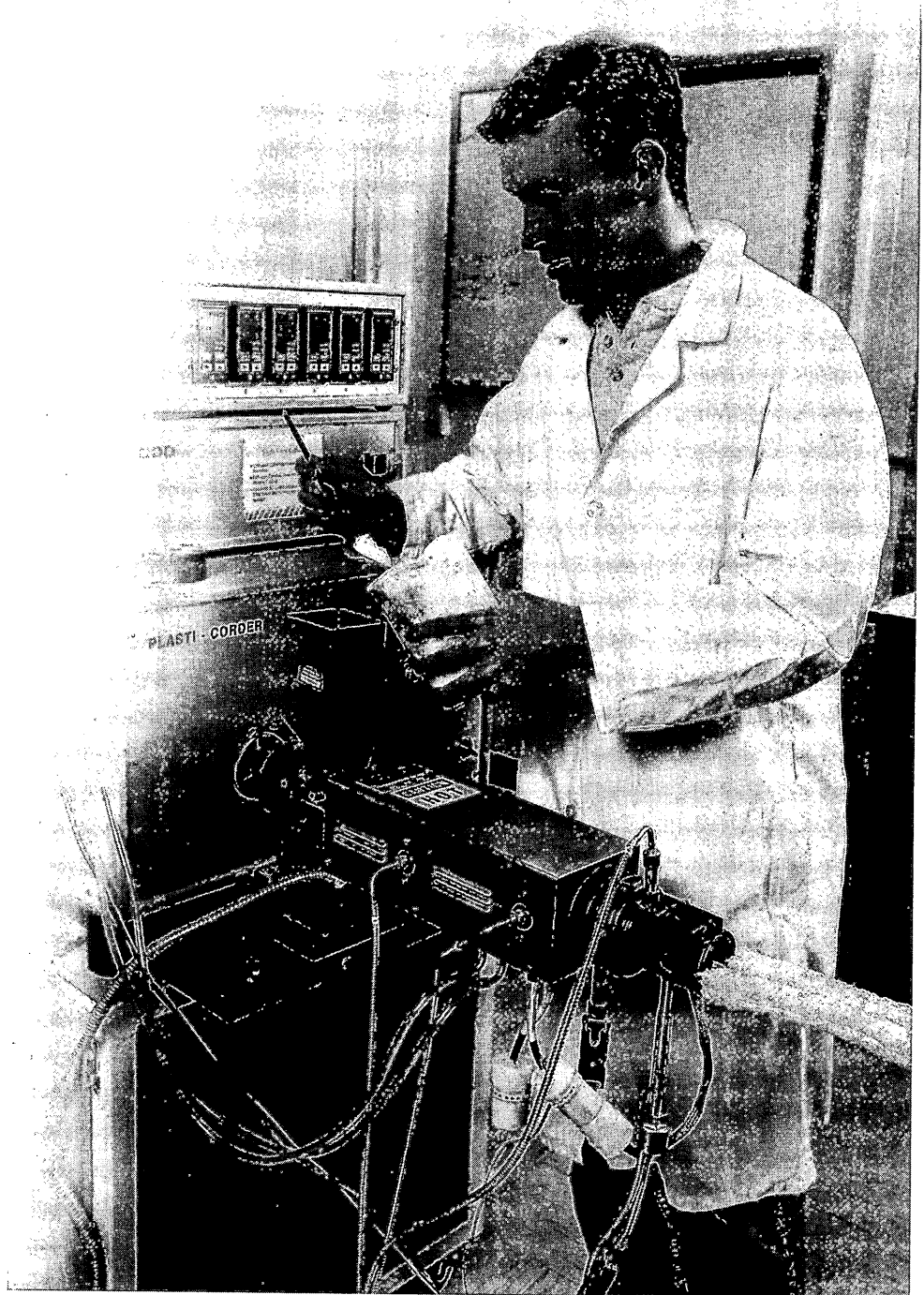
1. Is globally informed and prepared for a diverse world.
2. Supports the dignity of human beings in his/her own and other cultures by respecting their social amenities, rights, abilities, and racial, religious and cultural attributes.
3. Respects the fellowship of many by following the principle of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

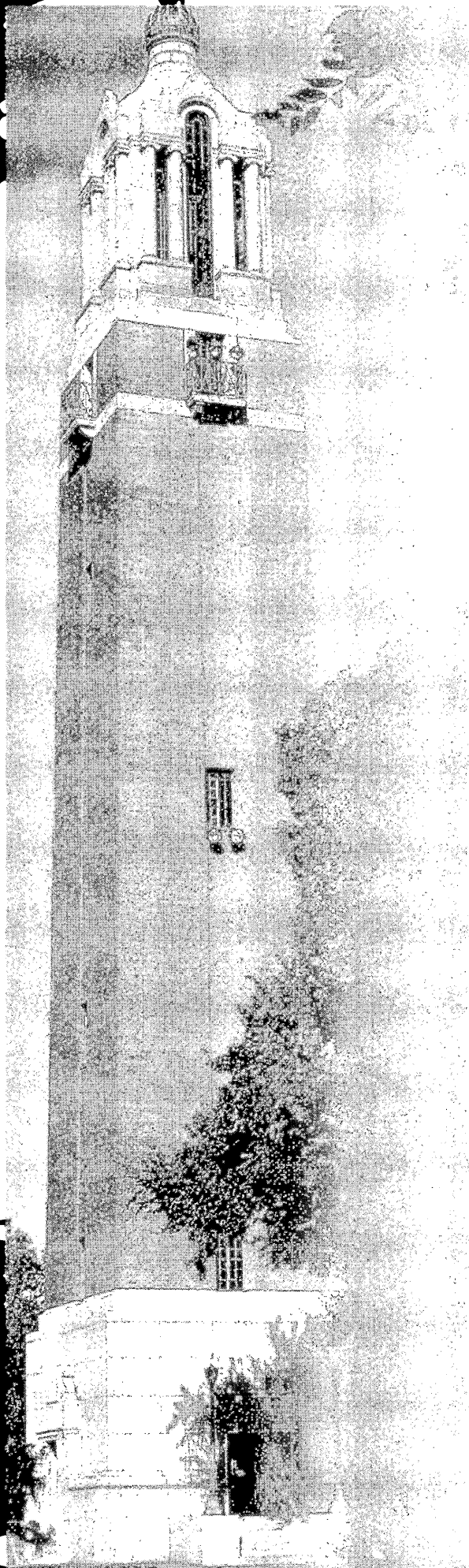
Research Program

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 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 Dean of Research and Sponsored Programs, South Dakota State University, Box 2201, Brookings, South Dakota 57007-1998.





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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

\$20 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.

Official High School Transcript

Official Report of ACT

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 from the issuing institution 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.

Questions regarding admission can be sent to:

South Dakota State University
Admissions Office
Box 2201
Brookings, SD 57007
(605) 688-4121
1-800-952-3541 (Toll Free)
e-mail: sdsu_admissions@sdstate.edu
www3.sdstate.edu

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.

Freshman Admission

For admission to a **baccalaureate degree program**, students must meet requirements A and B:

A. Graduate in the top 60% of their high school graduating class,

OR

Achieve an ACT composite score of 18 (SAT-I score of 870) or above,

OR

Earn a cumulative GPA of at least a 2.6 on a 4.0 scale.

AND

B. 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 18 or above

or AP English score of 3 or above

3 years of Advanced Mathematics¹

or ACT Math sub-test score of 20 or above

or AP Calculus score of 3 or above

3 years of Laboratory Science²

or ACT Science Reasoning sub-test score of 17 or above

or AP Science score of 3 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 3 or above

½ year of Fine Arts

or AP Fine Arts score of 3 or above

It is expected that students will have basic keyboarding skills and will have experience in using computer word processing, database packages, using the Internet, or other computer applications. These expectations can be met by high school coursework or demonstrated by some other means.

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.

Applications from students with deficiencies are reviewed on an individual basis.

Admission to **associate degree (two-year) programs** is granted if you meet one of the following criteria:

Rank in the top 60% of your high school graduating class,

OR

Achieve an ACT composite score of 18 or above,

OR

Earn a cumulative GPA of at least 2.6 on a 4.0 scale.

Students enrolled in the two-year programs who have not met the minimum high school course requirements may enter a bachelor's program only after they have satisfactorily completed:

At least 15 credit hours of the system general education requirements with a 2.0 GPA

AND

Met university minimum progression standards.

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.

Students who Transfer to Baccalaureate Programs

- A. Transfer students who have completed 24 or more semester 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 Engineering, 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 Freshman admission requirements as outlined above.

Students who Transfer to Associate Programs

Students under 21 years of age transferring into associate degree programs with fewer than 12 transfer credit hours must meet the associate degree admission requirements. Students with 12 or more transfer credit hours with a GPA of at least 2.0 may transfer into associate degree programs at the discretion of the University.

Former Students

Former SDSU students who want to reapply for admission must submit another admission application and official transcripts from all colleges attended since leaving SDSU. Former students will be admitted upon review of all college level coursework. 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.

Non-High School Graduates, including Home Schooled Students

Applicants who are under 21 years of age who did not graduate from high school must:

Obtain an ACT composite score of 18, ACT English sub-test score of 18 or above, Math sub-test score of 20 or above, Social Studies/ Reading and Science Reasoning sub-test scores of 17 or above

OR

Complete the General Equivalency Diploma (GED) with the total cumulative standard test scores for all five tests totally 2250 with no standard score below 410.

Non-Traditional Students

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

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. Special students are not eligible to receive federal financial aid.

Concurrent High School Students

High school juniors and seniors may take not more than two courses per semester if they meet the concurrent admission requirements, submit a high school transcript and concurrent admission application, and provide documentation of high school and parental 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 coursework taken at other institutions. This coursework 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/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/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. 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 Board of Regents approval articulation agreements.) 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 transcribed 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

Technical Institute courses are designed to prepare students to enter the workforce for careers requiring less than a baccalaureate degree. Acceptance of these courses for credit at the South Dakota public universities is strictly the function of the receiving institution. Students who wish to transfer credits to a South Dakota public university for programs other than the Bachelor of Applied Technical Science degree should contact the Admissions Office of that desired university for an evaluation of their program objectives and technical institute transcript. An individual evaluation of course credits will be made by the receiving public university in accordance with institutional and Board of Regents policy.

South Dakota State University has established articulation plans with several technical institute programs. Articulation agreements also have been established with tribal colleges, regional community colleges, other colleges and universities, and selected international educational institutions. College deans assist students in determining the status of articulated courses.

Correspondence Credit

South Dakota State University 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 unless such courses are taken from a South Dakota Board of Regents institution.

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 \$20.00

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.

International Students have a separate application packet. Complete applications must arrive by: June 1 to be considered for fall admission; October 1 for spring admission, for applicants outside the United States.

Applications not meeting the deadline requirement for one semester will remain active and when complete will be considered for the next semester. Contact the International Student Affairs Office for the application packet and further information: International Student Affairs, ADM 312, SDSU, Brookings, SD 57007. Phone: (605) 688-4122; e-mail sdsu_intlstud@sdstate.edu or fax (605) 688-5951.

Policy for Transfer of International Undergraduate Credit

College level and advanced secondary level courses taken at international 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 international 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 international 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 international 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 international 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.

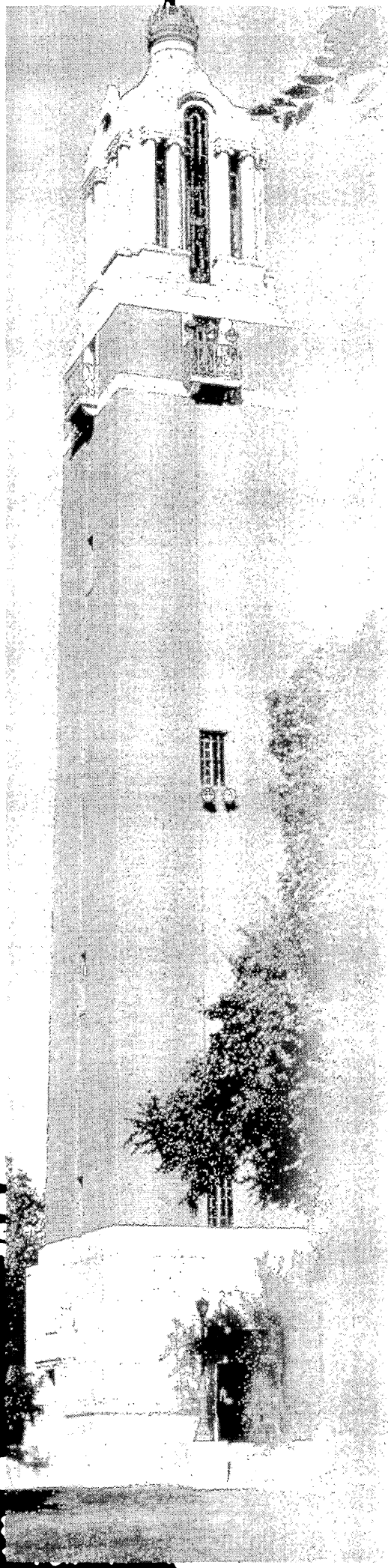
Testing will be conducted prior to enrollment. Results will be used to determine whether a student needs to complete one or more support courses in English as a Second Language in addition to regular academic classes. The courses are designed to better prepare students for their academic program in general 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, ADM 312, SDSU, Brookings, SD 57007, Phone: (605) 688-4122. E-mail: sdsu_intlstud@sdstate.edu

Residency Requirements

In order to establish residency for tuition purposes you must live in South Dakota for twelve consecutive months immediately preceding the first scheduled day of classes of the semester. Attendance at a college or university controlled by the Board of Regents does not count in determining the twelve month period of residence.

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



**ACADEMIC
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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/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.

Proficiency Examinations

The South Dakota Board of Regents has selected the Collegiate Assessment of Academic Proficiency (CAAP) examination to be administered at all Regental universities. Baccalaureate degree-seeking students will sit for the exam on completion of 48 passed credits at the 100 level or above, and associate degree-seeking students will sit for the exam on completion of 32 passed credits at the 100 level or above. Enrolled students who have already earned a baccalaureate degree are exempt from the requirement. **All degree-seeking students are required to take the proficiency examination during the first semester in which they become eligible.** A student who chooses not to

take the examination will not be allowed to register for two academic terms (fall, spring, or summer) at any Regental institution.

Students failing to achieve the minimum scores established by the South Dakota Board of Regents on one or more components will be allowed to retest the failed part(s) and must do so within one year. Students who do not score at or above the cutoff **will be required to develop a remedial plan in conjunction with their advisers.** The proficiency examination will be offered each spring and fall. For further information contact the Director of Academic Evaluation and Assessment at 688-4217.

Information Technology Literacy

A 15-minute Information Technology Literacy Examination is administered to students as freshmen and again with the proficiency examination. The ability to locate, evaluate and select relevant information from a variety of sources is essential for academic success. This 32 multiple choice exam is designed to determine information

literacy. There is no required score at the freshman level, but the scores are kept and compared with scores on the same exam when it is taken with the proficiency examination. At that point, students are required to pass with a 70% and will be required to remediate until a passing score is achieved. Successful completion is required for graduation.

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 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 Excelsior College Examinations, and the Advanced Placement Program (AP). The CLEP exams are administered at SDSU. You are charged a testing fee for each of the testing programs.

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.

University CLEP Policies

A grade given at, or transferred to this university may not be raised by examination for university credit. A CLEP examination may not be taken for a lower level course if a student has completed or is currently enrolled in an upper-level course in the same subject. A CLEP examination may not be taken if a student is receiving a failing grade or

has received a failing grade in the same subject. A CLEP examination may not replace a failed grade.

A student may not attempt a CLEP examination in a subject attempted by enrollment in that course if the student drops the course after the point in the semester when the course would appear on the transcript with a ‘W’ indicating withdrawal.

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 (Undergraduate Students Only)

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

Honors Designation (Undergraduate Students Only)

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.

Modern Language Credit

Students who enter the University with a background in modern language may begin their language study at the level most appropriate to them. Students are encouraged to take the modern language placement test to determine their level of competence. No student will be allowed to enroll in a modern 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, only a maximum of 16 credit hours can be achieved for courses not taken.** In order to receive credit, the student needs to go to the Academic Evaluation and Assessment Office and pay the required fees.

Students who have studied modern language other than those

offered by the Department of Modern Languages may petition to have that study satisfy their B.A. Modern Language requirement. No credit will be given for competency in a modern language if it is the student's native language.

Modern Language students planning to study abroad on their own or with a group should contact the Modern Language Department for details about transferring credits (grades) to SDSU. The institute or university chosen by the student must be acceptable to the Modern Language Department before leaving the country. Arrangements to obtain transcripts from the foreign institute must be completed before the student departs for his/her studies. Credits will not be accepted if the student does not make the appropriate arrangements with the Department prior to leaving for study in another country. Further information is available in the Modern Language Office in NFA 121.

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. Grades may also be accessed via telephone (interactive voice response) by calling 688-5180, or by the Web at: <https://wa-sdsu.state.sd.us/webadvisor/>

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)

AU	Audit
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. When a course is repeated, only the most recent grade is calculated into the cumulative grade point average.

LR Lab grade linked to recitation grade.

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 115	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, AU, IP, CR, EX, LR, P, NR, TR, W grades.

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

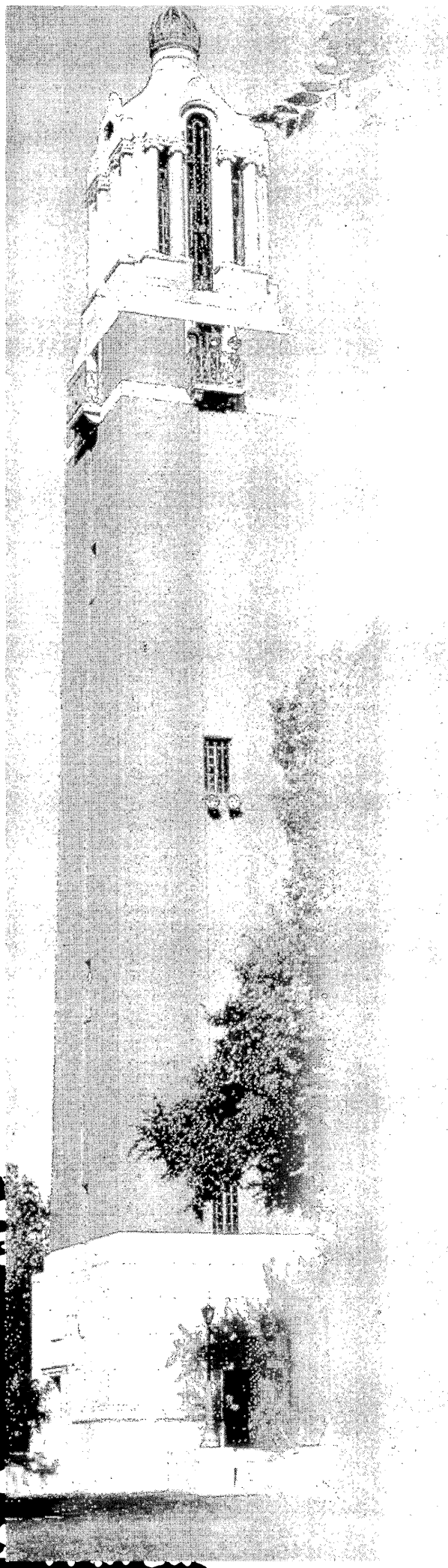
This policy applies only to undergraduate coursework. The Graduate School uses both grades in computing the GPA.

You should notify the Registrar's Office, ADM 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 Audit/Pass/Fail Form 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 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.....21

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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 meet the following Minimum Grade Point Average Standard: Freshman — 1.80; Sophomore — 1.90; Junior — 2.00; Senior — 2.00. To graduate, a student must have a CGPA (Cumulative Grade Point Average) and IGPA (Institutional Grade Point Average) of 2.00. (See Resident Requirements under General Degree Requirements).

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. **Probation.** At the end of the first term in which a student's CGPA does not meet the minimum GPA standard, he/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.

3. **Continued Probation.** Students on academic probation, whose Semester Grade Point Average (SGPA) is equal to or above the GPA standard, and whose CGPA is still below the GPA standard are placed on "continued probation" for one more term.
4. **Suspended.** Students on academic probation whose CGPA and SGPA fall below the GPA standard will be suspended. Students on continued probation whose CGPA is below the GPA standard will be suspended. Readmission may be possible on a "continued 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/her college. **If one has been on a suspended status twice, he/she will not ordinarily be permitted to enroll again.**

Academic Honesty

South Dakota State University has taken a strong and clear stand regarding academic dishonesty. The consequence of academic dishonesty ranges from disciplinary probation to expulsion. The full policies are found in Chapter 1 of the Student Code (01:10:23:01 - 1:10:23:04) within the Student Policy Manual. A student charged with

academic dishonesty who wishes to appeal that charge may follow the Appeals Procedure outlined in Chapter 2 of the Student Policy Manual (Academic Appeals and Classroom Standards) or contact the Vice President for Academic Affairs Office, ADM 230, 688-4173.

Attendance

Policy: It is the practice at South Dakota State University that faculty determine the specific attendance policy for courses under their direct supervision and instruction. Attendance procedures must be stated in written form and distributed to students at the beginning of each semester. Any exceptions to the faculty member's written attendance policy such as medical concerns, disabilities, or approved university-related activities must be negotiated between the student and faculty member prior to the absence whenever possible. If arrangements are unable to be negotiated with a faculty member, or at the department or college levels, students may contact the office of the Vice President for Academic Affairs.

Policy Implementation: The faculty and administration will honor officially approved absences where individuals or groups are absent in the interest of the University. Absences for verified medical reasons, death of family member or significant other, or other verified extenuating circumstances judged acceptable by the instructor or the institution will also be honored. Students with excused absences will be given equivalent opportunities for obtaining grades as students who were in attendance. Should excused absences be excessive, the faculty member may recommend withdrawal from the course or a grade of incomplete.

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 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 general education core 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

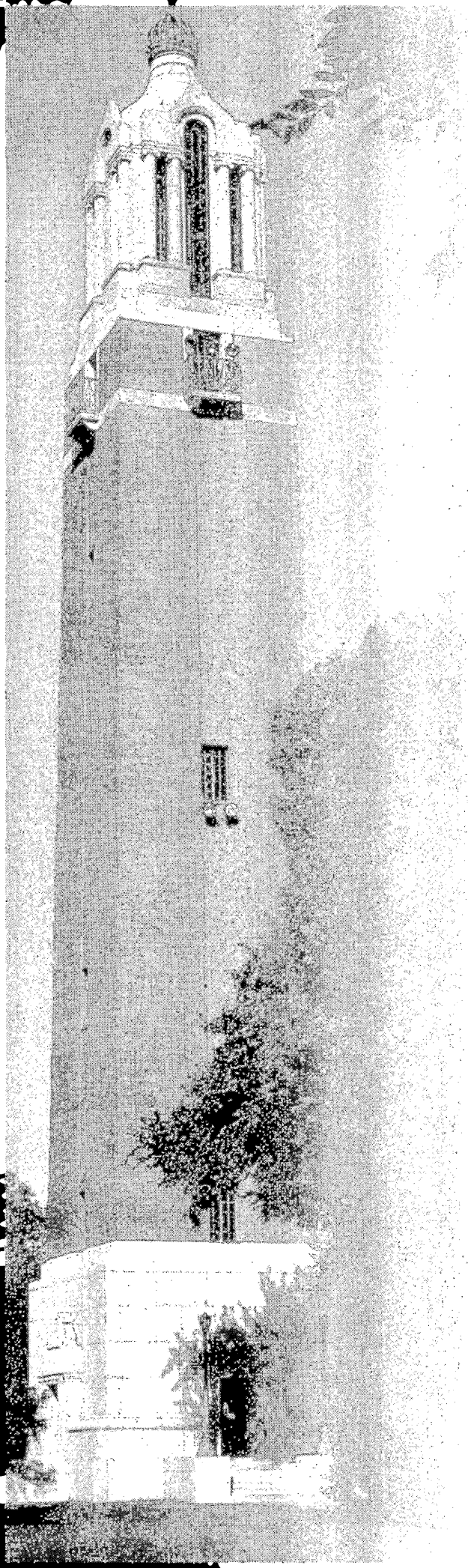
Each student is advised by a member of the faculty. Classes consistent with your plan of study and properly adjusted as to the amount of work are arranged by the adviser and subject to approval by the dean.

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 the dean of the student's college. 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.....25

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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 presenting an Audit/Pass/Fail form to the Registrar's Office, ADM 208.**

Auditing courses by graduate and undergraduate students will be a matter of record (recorded on their academic transcript). An AU grade is given for Audit. This grade does not calculate into the semester or cumulative grade point average. 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. Dropping or adding courses should be discussed with your faculty adviser. See your semester course schedule for drop-add procedures.
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% of term.
3. Courses may be dropped without charge during the first 10% of term.
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.**

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 when a course is repeated, only the most recent grade is calculated into the cumulative GPA.

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

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

Major Changes

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 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 Registrar's Office, ADM 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 transcribed 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.

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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 workload 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 and definition of immediate and lifelong 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 and implementing 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. The academic adviser assists the student in achieving educational goals.

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 advisees 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.
9. Retention. Support student through advising to increase probability of degree completion.

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.

Equal Opportunity questions and concerns can be directed to the Equal Opportunity Officer in Personnel Services (ADM 324; telephone 605-688-4128; Fax 605-688-5822).

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. The Coordinator for Disability Services 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**.

The Coordinator will also be responsible for the effective integration of ADA procedures, Title IX, Sections 503 and 504 of the Rehabilitation Act of 1973, as amended. The Coordinator also serves as the personal contact for employees, students, and visitors seeking information concerning the provisions of the ADA and their respective duties and rights provided therein. The Office of Disability Services is located in West Hall 110, Telephone (605) 688-4504, TTD (605) 688-4394, Fax (605) 688-4032.

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, Spring Semester, and Summer 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. 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.

E. 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 Programs, MEC 121, SDSU, Box 511, Brookings, SD 57007; 605-688-4153.
E-mail: joann_sckerl@sdstate.edu

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/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/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/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/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/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 SDSU's Equal Opportunity Officer (Phone: 605-688-4128, ADM 324). Confidentiality will be maintained to the maximum extent possible in resolving the problem. If a complainant chooses to exercise his/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 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 most departmental offices (ordered from Stores). The Application For Trip Permit form 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 must be approved by the Office of the Vice President for Academic Affairs **prior** to the trip.

B. Students on university-approved trips (excluding a ski trip, a rodeo club trip, or interscholastic athletics) are covered by a secondary accident-medical insurance policy. 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 permit. 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.

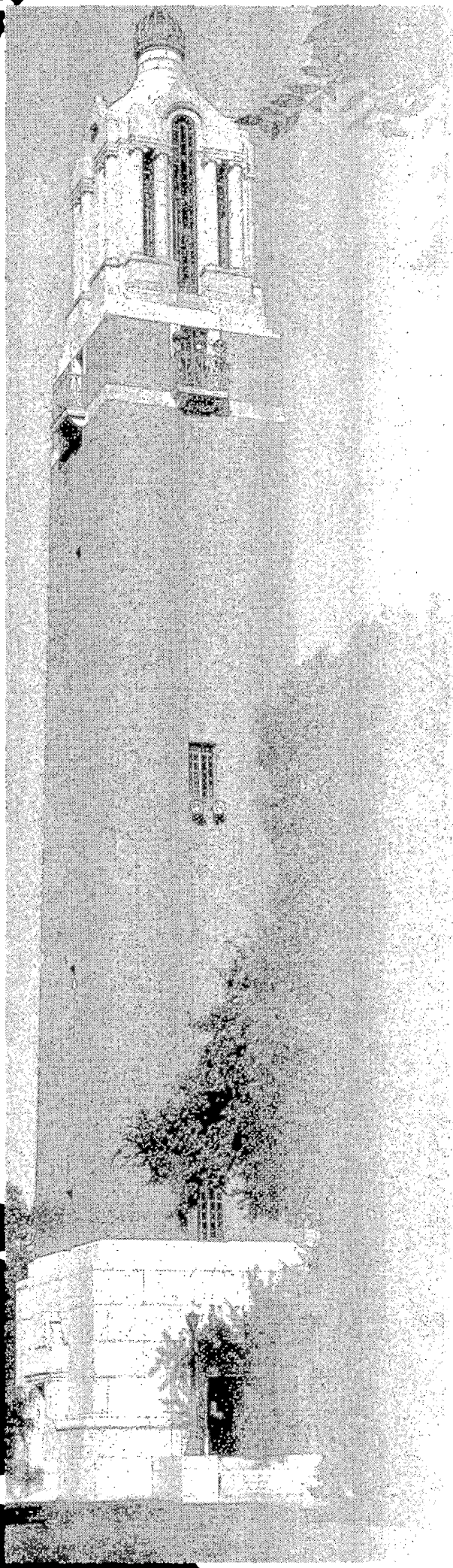
University-Sponsored Student Athletic Trip Regulations

A. A written notification of all athletes participating in any off-campus event must be submitted to the Health, Physical Education and Recreation (HPER) Office **prior** to leaving for the off-campus athletic event. This notification must include the names of all students, mode of transportation, date and time of departure and return, and number of class days that will be missed due to the event.

B. Athletes on University-approved athletic trips should have their own primary insurance coverage. The University provides secondary coverage for costs over primary limits or for athletes who do not have primary 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 must have liability insurance.

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

D. If there are any changes in personnel going on a trip or changes in trip dates, these **changes must be registered with the HPER Office before the trip.**



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General Degree Requirements

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** for the baccalaureate degree (see individual professional college requirements) and **64 semester credit hours** for the associate degree.

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 coursework taken at SDSU. If a course is repeated, F95 or later, only the last grade received will be included in the calculation of the CGPA and IGPA.

C. Resident requirement. A "course in residence" is a course offered by SDSU at any of its approved sites using any approved method of

delivery. Courses that are a part of a formal collaborative agreement among Regental institutions are considered to be "in residence." The minimum number of credit hours that must be earned in residence are 32 credits for the baccalaureate degree and 16 credits for the associate degree. The number of the last credit hours earned preceding completion of the degree that must be earned in residence are 16 of the last 32 credits for the baccalaureate degree and 8 of the last 16 credits for the associate degree. The minimum number of credit hours in the discipline that must be completed in residence is 50 percent. Credits earned by examination are not counted as resident credit unless an exception has been made because of special program features. A student must have 20 upper division level credits, 14 of which need to be at SDSU.

D. Completion of University core requirements as described below.

E. Completion of all college and major field requirements.

General Education Core

Qualities of mind, approaches to knowledge, and personal commitments to be promoted by the SDSU undergraduate general education core requirements.

1. **Higher Order Thinking Skills.** Our graduates should be able to reason well, to recognize the relationships which exist among ideas, to recognize when reason and evidence are sufficient, to explore the legitimacy of institution, and to subject inert data to the probing analysis of the mind. The graduate will be capable of dealing with all aspects of critical thinking (inquiry, analysis, synthesis, judgment, imagination, creativity, and others).
2. **Literacy.** Our graduates should be able to read, write, and speak effectively in many different environments. They should be able to manage information effectively and be good listeners.
3. **Numeracy.** Our graduates should be able to use concepts involving sophisticated responses to arguments and propositions which depend on mathematics, numbers and statistics. They should understand data and mathematical reasoning.
4. **Natural Science Understanding.** Our graduates should understand the scientific method and fundamental principles of physical and biological sciences. They should understand the intellectual and philosophical context of scientific observation, research, and debate including the implications of science on humans, social structures, and on the political world.
5. **Social Science Understanding.** Our graduates should have a scientific understanding of human characteristics, including the elements of responsibility and freedom, in spatial, temporal, behavioral, cultural, and institutional contexts.
6. **Humanities Understanding.** Our graduates should have an awareness of what it means to be human and acquaintance with approaches of human nature, ethical reasoning, and ultimate meaning as developed in history, literature, philosophy, religion, languages, and the humanities. Graduates should learn to thoughtfully make choices, assume responsibility for decisions, and have a rationale for their decisions.
7. **Aesthetic Understanding.** Our graduates should be aware of, appreciate, and participate in the arts (music, painting, sculpture,

architecture, photography, and other forms) as modes of expressing and understanding the human spirit and of expressing beauty. Graduates should be able to use fine arts to see, hear, and appreciate the importance of disciplined creativity on the shared social fabric that holds a culture together.

8. **International and Multicultural Experience.** Our graduates should appreciate ethnic diversity in the United States and throughout the world. Knowledge and appreciation of ethnic diversity by SDSU students means that they be educated to live and work, now and after graduation, with people from a variety of cultures, ethnic groups, places and abilities.
9. **Commitment to Wellness.** Our graduates should recognize the wisdom of a holistic approach to personal wellness. Wellness is developed in physical, spiritual, emotional, interpersonal, intellectual, and vocational dimensions.
10. **Citizenship.** Our graduates should actively acknowledge that no person stands alone. A responsible person in a democratic society volunteers (time and talents) to serve for the betterment of the community, the state, the nation, and all humankind.
11. **Land Stewardship.** Our graduates should have an understanding and appreciation of the fundamental role that land (including soil, water, organisms, and rock) plays in society and our obligations as stewards of the land.

The 40 credit hour general education core at SDSU is composed of 30 credits common to the Regental System and 10 credits of Institutional Graduation Requirements (IGRs) unique to SDSU.

NOTE: Other than for System General Education Goal #7, 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.

System General Education Core (Gen Ed) for Baccalaureate Degree: 30 credits

(Effective for new degree-seeking students Fall 1999 and later)

SYSTEM GOAL #1:

Gen Ed: Written Communication

Students will write effectively and responsibly and understand and interpret the written expression of others.

Criteria

Courses meeting this goal will collectively require students to:

- 1) write logically and persuasively;
- 2) use a variety of rhetorical strategies (e.g. expository, argumentative, descriptive);
- 3) read critically the writing of others;
- 4) view writing as a process requiring planning, drafting, and revising;
- 5) write for a variety of audiences, including academic audiences;
- 6) incorporate formal research and documentation into their writing;
- 7) use standard English;
- 8) use computer technology for basic communication-related tasks such as word processing and research.

Credit Hours 6

Courses

- Engl 101 Composition I, 3 credits
- Engl 201 Composition II, 3 credits
- Designated writing courses in majors

SYSTEM GOAL #2:

Gen Ed: Oral Communication

Students will communicate effectively and responsibly through speaking and listening.

Criteria

Courses satisfying this goal will require students to:

- 1) plan and create speeches for a variety of audiences and settings;
- 2) develop speaking competencies including choice and use of topic, supporting materials, organizational pattern, language, presentational aids, and delivery as appropriate to topic, audience, occasion, purpose, and communicator;
- 3) develop listening competencies including listening with literal and critical comprehension to ideas, perspectives, and emotions in messages.

Credit Hours 3

Courses

- Spcm 101-101A Fundamentals of Speech and Lab, 3 credits
- Spcm 215 Public Speaking, 3 credits
- Spcm 222 Argumentation and Debate, 3 credits

SYSTEM GOAL #3:

Gen Ed: Social Sciences

Students will understand the structures and possibilities of the human community through study of the social sciences.

Criteria

Courses in Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology meeting this goal will collectively require students to:

- 1) learn and apply the basic concepts, terminology, and theories of the social sciences;
- 2) examine the origin and evolution of human institutions;
- 3) examine human behavior in different spatial, temporal, cultural, and/or institutional contexts;
- 4) examine the allocation of human or natural resources within societies;
- 5) apply social science concepts and theories to contemporary issues in a responsible manner.

Credit Hours 6 (in 2 disciplines)

Courses

- * Anth 210 Cultural Anthropology, 3 credits
- * Anth 220 Physical Anthropology, 3 credits
- CJus 201 Introduction to Criminal Justice, 3 credits
- Econ 201 Microeconomics Principles, 3 credits
- Econ 202 Macroeconomics Principles, 3 credits
- * Geog 200 Introduction to Human Geography, 3 credits
- * Geog 210 World Regional Geography, 3 credits
- Geog 212 Geography of North America, 3 credits
- Geog 219 Geography of South Dakota, 3 credits
- HDFS 141 Individual and the Family, 2 credits
- HDFS 210 Lifespan Development, 3 credits
- Hist 151-152 U.S. History to/since 1877, 3 credits each
- PolS 100 American Government, 3 credits
- PolS 102 American Political Issues, 3 credits
- * PolS 165 Political Ideologies, 3 credits
- PolS 210 State and Local Government, 3 credits
- * PolS 253 Current World Problems, 3 credits
- Psyc 101 General Psychology, 3 credits
- Psyc 102 Introduction to Psychology, 4 credits
- Soc 100 Introduction to Sociology, 3 credits
- * Soc 150 Social Problems, 3 credits
- * Soc 240 Sociology of Rural America, 3 credits
- Soc 250 Marriage and the Family, 3 credits
- * Course meets requirement for Goal #7 Cultural Diversity.

SYSTEM GOAL #4:

Gen Ed: Humanities and Arts

Students will understand and appreciate the human experience through arts and humanities.

Criteria

Courses in History, Literature, Philosophy, Religion, non-English languages, Art, Music and Theatre meeting this goal will require students to:

- 1) develop knowledge of the range of values, beliefs, and ideas embodied in the the human experience;
- 2) understand and interpret basic concepts and theories of the humanities and arts;
- 3) develop creative sensitivity and aesthetic understanding,
OR
- 4) understand and interpret formal and stylistic elements of the literary or fine arts,
OR
- 5) demonstrate foundational competency in reading, writing, and speaking a non-English language.

Credit Hours 6

(in 2 disciplines or in a sequence of modern language courses)

Courses

- Art 111-112 Drawing I and II, 3 credits each
- Art 121 Design I, 3 credits
- Art 123 Three Dimensional Design, 3 credits
- * ArtH 100 Art and Design Appreciation, 3 credits
- * ArtH 211-212 Survey of World Art and Architecture/Western Traditions in Art and Architecture, 3 credits each
- * Engl 210 Introduction to Literature, 3 credits
- * Engl 211-212 World Literature I and II, 3 credits each

- * Engl 221-222 British Literature I and II, 3 credits each
 - Engl 240 Juvenile Literature, 3 credits
 - Engl 241-242 American Literature I and II, 3 credits each
 - * Engl 248 Women in Literature, 3 credits
 - * Engl 249 Literature of Diverse Cultures, 3 credits
 - * Engl 250 Science Fiction, 3 credits
 - * Engl 256 Literature of the American West, 3 credits
 - Engl 268 Literature, 3 credits
 - * Fren 101-102 Introductory French I and II, 4 credits each
 - * Germ 101-102 Introductory German I and II, 4 credits each
 - * Hist 121-122 History of Western Civilization to/from 1650, 3 credits each
 - * Lak 101-102/AIS 101-102 Introductory Lakota I and II, 4 credits each
 - Mus 100 Music Appreciation, 2 credits
 - Mus 110 Basic Theory and Musicianship I, 4 credits
 - Mus 111 Basic Theory and Musicianship II, 4 credits
 - * Mus 130-131 Music Literature and History I and II, 2 credits each (*I only)
 - * Mus 201 History of Country Music, 3 credits
 - * Mus 203 Blues, Jazz, and Rock, 3 credits
 - Mus 230-231 Music Literature and History III and IV, 2 credits each
 - Phil 100 Introduction to Philosophy, 3 credits
 - Phil 200 Introduction to Logic, 3 credits
 - * Phil 215 Introduction to Social/Political Philosophy, 3 credits
 - * Phil 220 Introduction to Ethics, 3 credits
 - * Rel 213 Introduction to Religion, 3 credits
 - Rel 224 Old Testament, 3 credits
 - Rel 225 New Testament, 3 credits
 - * Rel 237 Religion in American Culture, 3 credits
 - * Rel 250 World Religion, 3 credits
 - RTVF 160 Introduction to Film, 3 credits
 - * Span 101-102 Introductory Spanish I and II, 4 credits each
 - Thea 100 Introduction to Theatre, 3 credits
 - Thea 131 Acting, 3 credits
- * Course meets requirement for Goal #7 Cultural Diversity.

SYSTEM GOAL #5:

Gen Ed: Mathematics

Students will understand and apply fundamental mathematical processes and reasoning.

Criteria

Courses meeting this goal will require students to:

- 1) use mathematical symbolism and mathematical structure to model and solve problems;
- 2) communicate in mathematical terms;
- 3) order and analyze quantitative information to make judgements of real world situations.

Credit Hours 3

Courses

- Math 102 College Algebra, 3 credits
- Math 104 Finite Math, 4 credits
- Math 115 Precalculus, 5 credits
- Any math course with 102 as a prerequisite or that builds on Math 115.



SYSTEM GOAL #6:

Gen Ed: Natural Sciences

Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

Criteria

Courses in Biology, Chemistry, Physics, Earth Science, and Physical Geography meeting this goal will require students to:

- 1) participate in scientific inquiry in a laboratory experience;
- 2) gather and critically evaluate data;
- 3) demonstrate an understanding of fundamental principles of natural sciences;
- 4) explore the development of ideas through time;
- 5) understand the implications science has for the modern world.

Credit Hours 6

Courses

Bio 101-102 Biology Survey I/Laboratory, 3 credits
Bio 103-104 Biology Survey II/Laboratory, 3 credits
Bio 151/152 General Biology I/Laboratory, 4 credits
Bio 153-154 General Biology II/Laboratory, 4 credits
Bio 200-200A Biological Diversity/Laboratory, 4 credits
Bot 201-202 General Botany/Laboratory, 3 credits
Chem 106-106L Chemistry Survey/Laboratory, 4 credits
Chem 108-108L Organic and Biochemistry/Laboratory, 4 credits
Chem 112-112L General Chemistry I/Laboratory, 4 credits
Chem 114-114L General Chemistry II/Laboratory, 4 credits
Chem 120-120L Elementary Organic Chemistry/Laboratory, 4 credits
Geog 131-131A Physical Geography I/Laboratory, 4 credits
Geog 132-132A Physical Geography II/Laboratory, 4 credits
Phys 101-102 Survey of Physics/Laboratory, 4 credits
Phys 111-112 Introduction to Physics I/Laboratory, 4 credits
Phys 113-114 Introduction to Physics II/Laboratory, 4 credits
Phys 185 Introduction to Astronomy, 3 credits
Phys 211-212 University Physics I/Laboratory, 4 credits
Phys 213-214 University Physics II/Laboratory, 4 credits
PS 213-213A Soils/Laboratory, 3 credits
PS 243-244 Geology/Laboratory, 4 credits

SYSTEM GOAL #7:

Gen Ed: Cultural Diversity

Students will understand and be sensitive to cultural diversity so that they are prepared to live and work in an international and multicultural environment.

Criteria

Courses meeting this goal require students to:

- 1) explore global issues and/or diverse philosophical, ethical, and religious views;
- 2) explore social and aesthetic values of different cultures;
- 3) examine the contributions of different cultures from a historical perspective.

Credit Hours

Students are required to select 6 credit hours that provide a global and/or cultural diversity perspective. These 6 credit hours can be chosen from those completed to satisfy the social science and humanities/arts requirements listed above where the courses substantially address cultural diversity and/or global issues. Courses in the social sciences (Goal #3) and humanities/arts (Goal #4) meeting this goal are indicated by an asterisk. Academic credit students receive for an international experience to broaden their global perspective may meet Goal #7.

Skanned #2

System General Education Core (Gen Ed) for Associate Degree Programs

1. Associate of Arts Degree

This program requires the same 30 credits of System General Education as required in the Baccalaureate Degree.

2. Associate of Science Degree

The general education component of all Associate of Science programs shall consist of a minimum of 15 credit hours as specified in Board of Regents policy 2:7(3).

Required Courses from the System General Education Core List for Associate of Science degrees:

Composition (Goal #1), 3 credits
Social Science (Goal #3), 3 credits
Humanities and Arts (Goal #4), 3 credits
Mathematics (Goal #5), 3 credits
Natural Science (Goal #6), 3 credits (6 recommended)

Policies Applicable to System General Education Core (Gen Ed)

Guidelines for Baccalaureate and Associate Degrees

1. The System General Education Requirements will be effective for students entering in Fall 1999.
2. Only 100/200 level courses will be included. Exceptions based on student background may be made utilizing the established university academic appeal process.
3. Honors courses equivalent to identified System General Education courses will meet the System requirements.
4. Transfer: System General Education Requirements successfully completed at the sending South Dakota Regental institution will be accepted towards meeting these requirements at the receiving South Dakota Regental institution.

Additional Guidelines for Baccalaureate Degrees

1. The 15 hours of System General Education Requirements specified below must be completed within the first 48 hours as preparation for the Proficiency Examination:
2. Transfer students with more than 18 credit hours entering from outside the Regental System must complete the above specified 15 credit hours of general education within the first 30 credit hours taken at a Regental institution.
3. All System General Education Requirements (30 credits) must be completed within the first 64 hours. A list of program exceptions at SDSU are:

Course Requirements	Credit Hours
Composition (Goal #1)	3
Social Science (Goal #3)	3
Humanities and Arts (Goal #4)	3
Mathematics (Goal #5)	3
Natural Science (Goal #6)	3
Total	15

- Agricultural and Biosystems Engineering
- Civil Engineering
- Electrical Engineering
- Mechanical Engineering
- Engineering Physics – Mechanical Engineering Emphasis and Electrical Engineering Emphasis
- Physics – Professional Physics Specialization and Science Teaching Emphasis
- Nutrition and Food Science – Dietetics Specialization

Additional Guidelines for Associate Degrees

1. The 15 hours of System General Education Requirements specified below must be completed within the first 32 hours as preparation for the Proficiency Examination:

Course Requirements	Credit Hours
Composition (Goal #1)	3
Social Science (Goal #3)	3
Humanities and Arts (Goal #4)	3
Mathematics (Goal #5)	3
Natural Science (Goal #6)	3
Total	15



SDSU Institutional Graduation Requirements (IGRs) for Baccalaureate Degree: 10 credits

– also referred to as SDSU Core –

(Effective for new degree-seeking students Summer and Fall 2000 and later)

IGR GOAL #1:

SDSU Core: Goal 1, Wellness

Students will recognize the value of a holistic approach to personal wellness.

Criteria:

Courses and/or approved educational experiences will emphasize and require students to:

- 1) articulate and demonstrate knowledge related to a personal wellness in physical, spiritual, and emotional dimensions;
- 2) articulate and demonstrate knowledge related to personal wellness in social, intellectual, and occupational dimensions.

Credit Hours: Minimum of 2 credit hours

Courses:

GS 143 Mastering Lifetime Learning Skills, 2 credits

→ Wel 100 Skills for Healthy Living, 2 credits

IGR GOAL #2 (BUILDS ON SYSTEM GOAL 3):

SDSU Core: Goal 2, Human Community

Students will broaden their understanding of structures and possibilities of the human community.

Criteria:

Courses and/or approved educational experiences will require students to:

- 1) recognize relationships which exist among ideas;
- 2) understand human characteristics, including the elements of responsibility and freedom, in spatial, temporal, behavior, cultural, and institutional contexts.

Credit Hours: Minimum of 2 credit hours

(credits different from those used for Goal #3 in the system-wide general education requirement)

Courses:

Air 101/101A Aerospace Studies 100/Lab, 1 credit
Air 201/201A Aerospace Studies 200/Lab, 1 credit
AIS 100 Introduction to American Indian Studies, 3 credits
Anth 421 Indians of North America, 3 credits
Econ 301 Intermediate Microeconomics, 3 credits
Econ 302 Intermediate Macroeconomics, 3 credits
EurS 301 Topics in European Society, 3 credits
Hist 467 American Foreign Relations, 3 credits
LAAS 302 Latin American Societies, 3 credits
Mil 101 Introduction to ROTC, 1 credit
Mil 102 Introduction to Leadership, 1 credit
Mil 201 Self/Team Development, 2 credits
Mil 202 Individual/Team Military Tactics, 2 credits
NFSH 111 Food and People, 3 credits
PolS 341 European Democratic Governments, 3 credits
PolS 343 Russian Politics, 3 credits
PolS 345 Canada, 3 credits
PolS 347 Latin American Politics, 3 credits
PolS 352 European Union, 3 credits
PolS 432 The American Presidency, 3 credits
PolS 435 Political Parties and Campaigns, 3 credits
PolS 438 The Legislative Process, 3 credits

Psyc 202 Advanced General Psychology, 3 credits
Psyc 306 Human Learning and Cognitive Behavior, 3 credits
Psyc 324 Psychology of Aging, 3 credits
Psyc 327 Child Psychology, 3 credits
Psyc 362 Theories of Personality, 3 credits
Psyc 366 Psychological Gender Issues, 3 credits
Psyc 441 Social Psychology, 3 credits
Psyc 451 Abnormal Behavior, 3 credits
Soc 340 Urban Sociology, 3 credits
Soc 350 Ethnic and Racial Groups, 3 credits
WL 430/430A Human Dimensions in Wildlife and Fisheries/Laboratory, 4 credits

Other courses from the System General Education Core that can be used to meet this goal **if the credits** have not been used to meet a System General Education goal are as follows:

Anth 210 Cultural Anthropology, 3 credits
Anth 220 Physical Anthropology, 3 credits
CJus 201 Introduction to Criminal Justice, 3 credits
Econ 201 Microeconomic Principles, 3 credits
Econ 202 Macroeconomic Principles, 3 credits
Geog 200 Introduction to Human Geography, 3 credits
Geog 210 World Regional Geography, 3 credits
Geog 212 Geography of North America, 3 credits
Geog 219 Geography of South Dakota, 3 credits
HDFS 141 Individual and the Family, 2 credits
HDFS 210 Lifespan Development, 3 credits
Hist 151 U.S. History to 1877, 3 credits
Hist 152 U.S. History since 1877, 3 credits
PolS 100 American Government, 3 credits
PolS 102 American Political Issues, 3 credits
PolS 165 Political Ideologies, 3 credits
PolS 210 State and Local Government, 3 credits
PolS 253 Current World Problems, 3 credits
Psyc 101 General Psychology, 3 credits
Psyc 102 Introduction to Psychology, 3 credits
Soc 100 Introduction to Sociology, 3 credits
Soc 150 Social Problems, 3 credits
Soc 240 Sociology of Rural America, 3 credits
Soc 250 Marriage, 3 credits

IGR GOAL #3 (BUILDS ON SYSTEM GOAL 4):

SDSU Core: Goal 3, Human Spirit

Students will understand what it is to be human and ways of expressing and understanding the human spirit.

Criteria:

Courses and/or approved educational experiences will emphasize understanding and modes of expressing ideas, creative processes, and critical human encounters. These may emphasize either ideas and attitudes expressed in words or thoughts and feelings expressed through the arts. These courses and/or approved educational experiences will require students to:

- 1) use fine arts to see, hear, and appreciate the importance of a discipline's creativity on the shared social fabric that holds a culture together, and to express their own creativity.

OR

- 2) use the humanities to gain an appreciation of the different ways in which people have attempted to understand and express the human condition.

Credit Hours: Minimum of 2 credit hours

(credits different from those used for Goal #4 in the system-wide general education requirement)

Courses:

Art 212 Figure Drawing, 3 credits
Art 231 Painting I, 3 credits
Art 241 Sculpture I, 3 credits
Art 251 Ceramics I, 3 credits
Art 281 Printmaking I, 3 credits
Danc 130 Dance Fundamentals, 1 credit
Danc 240 Multicultural Dance Activities, 1 credit
EurS 300 Topics in European Culture, 3 credits
Hist 401/Rel 401 History of Western Religious Thought I, 3 credits
LAAS 301 Latin American Cultures, 3 credits
ML 134 Foreign Cultures, 3 credits
MuAp 100 Individual Instruction Voice, 1 credit
MuAp 110 Individual Instruction Keyboard, 1 credit
MuAp 120 Individual Instruction Woodwinds, 1 credit
MuAp 130 Individual Instruction Brass, 1 credit
MuAp 140 Individual Instruction Percussion, 1 credit
MuAp 150 Individual Instruction Strings, 1 credit
MuEn 100 Pasquettes (Women's Chorus), 1 credit
MuEn 101 Concert Choir, 1 credit
MuEn 102 Statesmen (Men's Chorus), 1 credit
MuEn 110 Civic-University Orchestra, 1 credit
MuEn 120 Marching Band, 1-2 credits
MuEn 121 Symphonic Band, 1 credit
MuEn 122 Concert Band, 1 credit
MuEn 180 Jazz Ensemble, 1 credit
Phil 423/PolS 461 Political Philosophy, 3 credits
PolS 462/Phil 424 Modern Political Philosophy, 3 credits
Rel 238 Native American Religions, 3 credits
Rel 331 Feminism and Theology, 3 credits
Rel 360 Moral and Ethical Perspectives on Death and Dying, 3 credits
Rel 370 Philosophy of Religion, 3 credits
Rel 401/Hist 401 History of Western Religious Thought I, 3 credits

Other courses from the System General Education Core that can be used to meet this goal **if the credits** have not been used to meet a System General Education goal are as follows:

Art 111 Drawing I, 3 credits
Art 112 Drawing II, 3 credits
Art 121 Design I, 3 credits
Art 123 Three Dimensional Design, 3 credits
ArtH 100 Art and Design Appreciation, 3 credits
ArtH 211 Survey of World Art and Architecture, 3 credits
ArtH 212 Western Traditions in Art and Architecture, 3 credits
Engl 210 Introduction to Literature, 3 credits
Engl 211 World Literature I, 3 credits
Engl 212 World Literature II, 3 credits
Engl 221 British Literature I, 3 credits
Engl 222 British Literature II, 3 credits
Engl 240 Juvenile Literature, 3 credits
Engl 241 American Literature I, 3 credits
Engl 242 American Literature II, 3 credits
Engl 248 Women in Literature, 3 credits
Engl 249 Literature of Diverse Cultures, 3 credits
Engl 250 Science Fiction, 3 credits
Engl 256 Literature of the American West, 3 credits
Engl 268 Literature, 3 credits
Fren 101 Introductory French I, 4 credits
Fren 102 Introductory French II, 4 credits
Germ 101 Introductory German I, 4 credits
Germ 102 Introductory German II, 4 credits
Hist 121 History of Western Civilization to 1650, 3 credits
Hist 122 History of Western Civilization since 1650, 3 credits
Lak 101/AIS 101 Introductory Lakota I, 4 credits
Lak 102/AIS 102 Introductory Lakota II, 4 credits
Mus 100 Music Appreciation, 2 credits
Mus 110 Basic Theory and Musicianship I, 4 credits
Mus 111 Basic Theory and Musicianship II, 4 credits
Mus 130 Music Literature and History I, 2 credits
Mus 131 Music Literature and History II, 2 credits
Mus 201 History of Country Music, 3 credits
Mus 203 Blues, Jazz and Rock, 3 credits
Mus 230 Music Literature and History III, 2 credits
Mus 231 Music Literature and History IV, 2 credits
Phil 100 Introduction to Philosophy, 4 credits
Phil 215 Introduction to Social/Political Philosophy, 3 credits
Phil 220 Introduction to Ethics, 3 credits
Rel 213 Introduction to Religion, 3 credits
Rel 224 Old Testament, 3 credits
Rel 225 New Testament, 3 credits
Rel 237 Religion in American Culture, 3 credits
Rel 250 World Religion, 3 credits
RTVF 160 Introduction to Film, 3 credits
Span 101 Introductory Spanish I, 4 credits
Span 102 Introductory Spanish II, 4 credits
Thea 100 Introduction to Theatre, 3 credits
Thea 131 Acting, 3 credits

IGR GOAL #4 (BUILDS ON SYSTEM GOAL 6):

SDSU Core: Goal 4, Natural Sciences

Students will understand the fundamental principles of the sciences and apply scientific methods to investigate the natural world. Students will gain a more complete understanding of the scientific method and its applications through additional study.

Criteria:

Courses and/or approved educational experiences will require students to:

- 1) participate in scientific inquiry;
- 2) gather and critically evaluate data by current methods;
- 3) demonstrate an understanding of fundamental principles of natural sciences;
- 4) fully explore the development of ideas through time; and
- 5) understand the implication science has for the modern world

Credit Hours: Minimum 2 credit hours

(credits different from those used for Goal #6 in the system-wide general education requirements)

Courses:

Anth 220 Physical Anthropology, 3 credits
Bio 105 Human Biology, 3 credits
Micro 231-232 General Microbiology/Laboratory, 4 credits
NFSH 221 Survey of Nutrition, 3 credits
PS 103-103A Crop Production/Laboratory, 3 credits

Stat 281 Introduction to Statistics, 3 credits
WL 110 Environmental Conservation, 2 credits
WL 220 Introduction to Wildlife and Fisheries Management, 3 credits

Other courses from the System General Education Core that can be used to meet this goal **if the credits** have not been used to meet a System General Education goal, are as follows:

Bio 101-102 Biology Survey I/Laboratory, 3 credits
Bio 103-104 Biology Survey II/Laboratory, 3 credits
Bio 151-152 General Biology I/Laboratory, 4 credits
Bio 153-154 General Biology II/Laboratory, 4 credits
Bio 200-200A Biological Diversity/Laboratory, 4 credits
Bot 201-202 General Botany/Laboratory, 3 credits
Chem 106-106L Chemistry Survey/Laboratory, 4 credits
Chem 108-108L Organic and Biochemistry/Laboratory, 4 credits
Chem 112-112L General Chemistry I/Laboratory, 4 credits
Chem 114-114L General Chemistry II/Laboratory, 4 credits
Chem 120-120L Elementary Organic Chemistry/Laboratory, 4 credits
Geog 131-131A Physical Geography I/Laboratory, 4 credits
Geog 132-132A Physical Geography II/Laboratory, 4 credits
Phys 101-102 Survey of Physics/Laboratory, 4 credits
Phys 111-112 Introduction to Physics I/Laboratory, 4 credits
Phys 113-114 Introduction to Physics II/Laboratory, 4 credits
Phys 185 Introduction to Astronomy, 3 credits
Phys 211-212 University Physics I/Laboratory, 4 credits
Phys 213-214 University Physics II/Laboratory, 4 credits
PS 213-213A Soils/Laboratory, 2-3 credits
PS 243-244 Geology/Laboratory, 3-4 credits

IGR GOAL #5:

SDSU Core: Goal 5, Stewardship

Students will understand the fundamental relationship between the environment and society and the land-grant philosophy of stewardship.

Criteria:

Courses and/or approved educational experiences meeting this goal will emphasize characteristics of the Land-Grant University mission and the relationship between society and the environment. These courses and/or approved educational experiences will require students to:

- 1) develop an ethic, a set of principles for wise use of the environment;
- 2) develop knowledge and skills to analyze the impact of individuals, families, communities, organizations or societies on their environment;
- 3) develop knowledge or skills related to the stewardship of land, air, water, and organisms.

Credit Hours: Minimum of 2 credit hours

Courses:

AgEc 421 Farming and Food System Economics, 3 credits
AgEc 479 Agricultural Policy, 3 credits
Anth 421 Indians of North America, 3 credits
Bio 311 Principles of Ecology, 3 credits
Bio 383 Bioethics, 4 credits
Engl 256 Literature of the American West, 3 credits
EnvM 275 Introduction to Environmental Science, 3 credits
GE 231 Technology and Society, 3 credits
Hlth 443/HSc 443 Public Health Science, 3 credits
Phil 332/Rel 332 Environmental Ethics, 3 credits
Phil 383 Bioethics, 4 credits
PS 362-362A Environmental Soil Management/Lab, 2-3 credits
Rang 205-205A Introduction to Range Management/Lab, 3 credits
Rang 215 Introduction to Integrated Ranch Management, 3 credits
Soc 340 Urban Sociology, 3 credits
WL 110 Environmental Conservation, 2 credits
WL 220 Introduction to Wildlife and Fisheries Management, 3 credits

Clarification of "Educational Experiences" Alternative

Educational Experiences (EdEx) are an option for meeting SDSU's IGRs. The Educational Experiences will parallel the guideline for credit which is that 45 hours of experience is needed per credit hour earned. Proposals describing Educational Experiences will be presented by departments and approved by the SDSU General

Education Core Committee to assure that the criteria of the goals are being accomplished by the Educational Experiences. These Educational Experiences are not to be designed to meet the needs of an individual student, but rather to meet the needs of groups of students of a department/major, throughout the University.

SDSU Institutional Graduation Requirements NOT Required for Associate Degree Programs

The SDSU Institutional Graduation Requirements (IGRs) do not apply to either the Associate of Arts degree or the Associate of Science degree programs.

Transfer Students

Fraction of Credits

Transfer courses that are in the core areas 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 5 1/3 credits of Social Science credit towards goal #3, that student will have met the 6 credit minimum for that goal. If only 5 credits or fewer have been transferred, then the student must take additional credits from the list of Goal #3 courses in the University Catalog to equal the minimum of 6 credits that is required. Total credits toward graduation must include specific College requirements.

Wellness Requirement

The Wellness requirement (IGR #1) needs to be satisfied by transfer students with documented equivalent courses to GS 143, Wel 100 or two (2) credits of PE 100. If equivalencies cannot be established, the transfer student will be expected to meet the requirement of two (2) credits of Wellness.

Military students with approved documentation (DD214, CCAF, AARTS, or SMART transcripts) will be granted Wel 100 for 2 credits. If these students have already received Wel 100 credit, they receive 2 credits of PE 100 for the documented military experience.

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 bulletin.

Information Technology Literacy (ITL) Requirement

Information technology literacy refers to the ability to locate information from multiple sources, to evaluate and select relevant portions of that information, and to organize, effectively use, and

communicate the information in various formats.

SDSU has established the following goals and expectations in ITL for all graduates:

Goal 1:

Understand how information is defined and distributed:

- Recognize categories of resources that are most relevant;
- Distinguish when to use electronic and when to use traditional resources;
- Comprehend knowledge generation and publication.

Goal 2:

Locate information from a variety of sources:

- Seek a variety of resources, both electronic and traditional;
- Select appropriate resources;
- Appreciate the value of different types of resources.

Goal 3:

Develop skills in using information technologies:

- Negotiate information networks effectively;
- Apply emerging and traditional resources to academic work;
- Communicate via e-mail and other electronic and traditional methods;
- Use computers to support:
 - Problem solving
 - Data collection
 - Information management
 - Communications
 - Presentations
 - Decision-making

Goal 4:

Critically analyze and evaluate information:

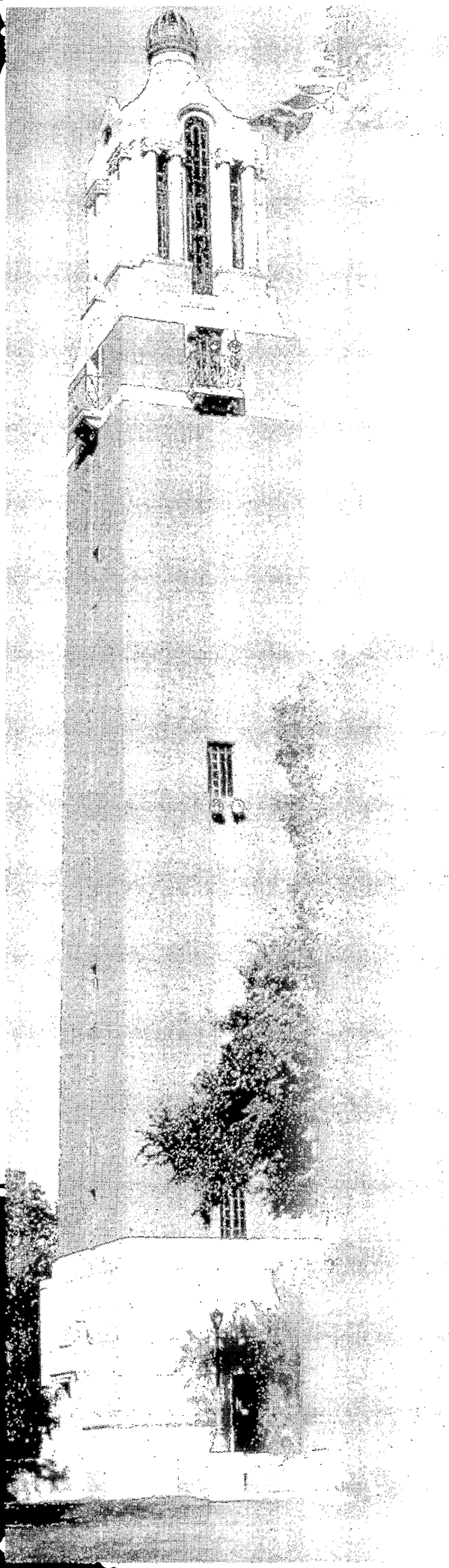
- Analyze and critically evaluate the resources of a search for:
 - Accuracy
 - Reliability
 - Relevance
 - Timeliness
 - Authority
 - Comprehensiveness
- Distinguish among facts, viewpoints, interpretations and opinions

Goal 5:

Understand ethical, legal and sociopolitical aspects of information and its technologies:

- Respect intellectual property rights and accurately cite references;
- Apply principles of honesty in use of information;
- Use technology ethically and with respect for others.

You should consult your department regarding how these goals and expectations are accomplished within your specific program of study.



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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 terminal 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.S.) degree program in General Agriculture and (A.A.) in General Studies.

Bachelor's Degree

The bachelor's degree is the academic title conferred on a student by the University for satisfactory completion of a prescribed 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 field of study or profession. The curricular structure of a bachelor's degree program includes a system general education core curriculum, institutional graduation requirements, support courses, major courses, and electives.

At SDSU the credits required for the bachelor's degree range from 128-138. The degrees offered are:

- Bachelor of Arts (B.A.)
- Bachelor of Science (B.S.)
- Bachelor of Science in Education (B.S.E.D.)
- Bachelor of Music Education (B.M.E.)
- Bachelor of Applied Technical Science (B.A.T.S)

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 graduate 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. SDSU offers a professional doctorate in Pharmacy, that is the Pharm.D. degree.

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.

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*Art Education		
*Fine Arts (painting/printmaking, ceramics/sculpture, general)		
Athletic Training (B.S.).....	A&S.....	76, 129
Atmospheric, Environmental and Water Resources (Ph.D.).....	Grad.....	See Graduate Bulletin
Aviation.....	EDUC.....	76, 130
Biological Sciences (Ph.D.).....	Grad.....	See Graduate Bulletin
Biology (E) (B.S., M.S., minor).....	ABS/BS, A&S.....	76, 131-133
*Cellular/Molecular		
*Ecology		
*Organismal		
*Pre-Professional		
Biostress Center of Excellence.....	ABS.....	77, 133
Botany (minor).....	ABS/BS.....	77, 133
Business (minor).....	A&S.....	134
Business Area Studies.....	ABS.....	77, 134
Career and Technical Education (B.S., B.S.E.D.).....	EDUC.....	107, 135
*Aviation Specializaion		
Chemistry (B.S., M.S., Ph.D., minor).....	A&S, Grad.....	78, 135-137
*Chemistry - ACS Certified		
Civil Engineering (B.S.).....	ENGR.....	79, 137-138

Key to Units Administering Individual Curriculums

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

All Authorized Majors, Minors and Specializations

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Communication Studies and Journalism, (M.S.).....	Grad.....	See Graduate Bulletin
Communication Studies and Theatre (E) (B.A., B.S., minor).....	A&S.....	80, 139-142
*Radio, TV and Film		
*Speech Communications		
*Speech Education		
*Theatre		
Computer Science (B.S., minor).....	ENGR.....	80-81, 142-143
Construction Management (B.S.).....	ENGR.....	84-85, 144
Consumer Affairs (B.S., minor).....	FCS.....	92, 144-145
Counseling and Human Resource Development (M.S.).....	Grad.....	See Graduate Bulletin
Criminal Justice (minor).....	A&S.....	81, 145
Curriculum and Instruction (M.Ed.).....	Grad.....	See Graduate Bulletin
Dairy Manufacturing (B.S.).....	ABS/Ag.....	81, 146
Dairy Production (B.S.).....	ABS/Ag.....	81, 146-147
*Business		
*Science		
Dairy Science (M.S.).....	Grad.....	See Graduate Bulletin
Early Childhood Education (B.S.).....	FCS.....	92, 147-151
*Cooperative Program with BHSU, DSU, NSU, and USD		
*Birth to Age 5		
*Birth to Age 8		
Economics (B.A., B.S., M.S., minor).....	A&S.....	82, 152-154
*Business Economics		
Education (preparation for teaching certification — secondary education).....	EDUC.....	107
Educational Administration (M.Ed.).....	Grad.....	See Graduate Bulletin
Electrical Engineering (B.S.).....	ENGR.....	83-84, 154-155
Electronics Engineering Technology (B.S.).....	ENGR.....	84-85, 155-156
Engineering (M.S.).....	Grad.....	See Graduate Bulletin
Engineering Physics (B.S.).....	ENGR.....	103-104, 156-157
English (E) (B.A., M.A., minor).....	A&S.....	86, 157-158
*English Education		
Entomology (M.S.).....	Grad.....	See Graduate Bulletin
Environmental Management (B.S.).....	ABS/BS.....	86, 159-160
European Studies Program.....	A&S.....	87, 160
Family and Consumer Sciences (M.S.).....	Grad.....	See Graduate Bulletin
Family and Consumer Sciences Education (B.S.).....	FCS.....	92, 160-161
Food and Biomaterials Engineering.....	ABS.....	87, 161
French Studies (B.A., minor).....	A&S.....	98, 161-162
General Agriculture (A.S, B.S.).....	ABS/Ag.....	88, 162
General Registration (undecided majors).....	GS, Non-Degree.....	65
General Studies (A.A.).....	A&S.....	88, 163
Geographic Information Sciences (B.S., minor).....	A&S, ENGR, Grad.....	88-89, 163
Geography (E) (B.S., M.S., minor).....	A&S.....	89, 163-164
German (E) (B.A., minor).....	A&S.....	98, 164-165
Gerontology (minor).....	FCS & NURS, Grad.....	89, 165
Graphic Design.....	A&S.....	108, 165-166
Health Education (minor).....	A&S.....	166
Health, Physical Education, and Recreation (E) (B.S., M.S.).....	A&S.....	89, 167-168
*Teaching Specialization		
Health Promotion (B.S.).....	A&S.....	90, 168-169

Key to Units Administering Individual Curriculums

A&S	College of Arts and Science	GS	College of General Studies and Outreach Programs
ABS/Ag	College of Agriculture and Biological Sciences, Agriculture Curriculum	NURS	College of Nursing
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All Authorized Majors, Minors and Specializations

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History (E) (B.A., B.S., minor).....	A&S.....	90, 169-170
*Teaching Specialization		
Honors College.....	VPAA	90-91, 170
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*Business		
*Production		
*Science		
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*Foodservice Management		
*Hotel and Hospitality Management		
Human Development and Family Studies (B.S.).....	FCS	92, 173-174
Human Development, Child and Family Studies (minor).....	FCS	92, 174
Industrial Management (M.S.).....	Grad.....	See Graduate Bulletin
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*Advertising		
*Broadcast Journalism		
*News-Editorial		
Landscape Design (B.S.).....	ABS/Ag	91, 178-179
Latin American Area Studies Program	A&S	93, 179
Liberal Studies (B.S.).....	GS	94, 180
Manufacturing Engineering Technology (B.S.).....	ENGR	84-86, 180
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*Teaching Specialization		
Mechanical Engineering (B.S.).....	ENGR.....	94-95, 182-183
Medical Technology (see Clinical Laboratory Technology, pp. 78, 138-139)		
Microbiology (B.S., M.S., minor).....	ABS/BS, A&S	96, 183-185
*Applied/Environmental		
*Infectious Disease		
*Molecular Biology		
Military Science (minor).....	A&S	96-97, 186
Modern Language	A&S	97, 186
*Business-Economics		
*Teaching Specialization in German, Spanish, French Studies		
Music (B.A., minor).....	A&S	98-99, 186-187
Music Education (B.M.E.).....	A&S	98-99, 187-188
Music Merchandising (B.S.).....	A&S	98-99, 188
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*Accelerated Program		
*Basic Program		
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Nutrition, Food Science and Hospitality (B.S., minor)	FCS.....	101-102, 189-191
*Dietetics		
*Food Science		
*Nutritional Sciences		
Park Management (B.S.).....	ABS/Ag	91, 192-193
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Key to Units Administering Individual Curriculums

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All Authorized Majors, Minors and Specializations

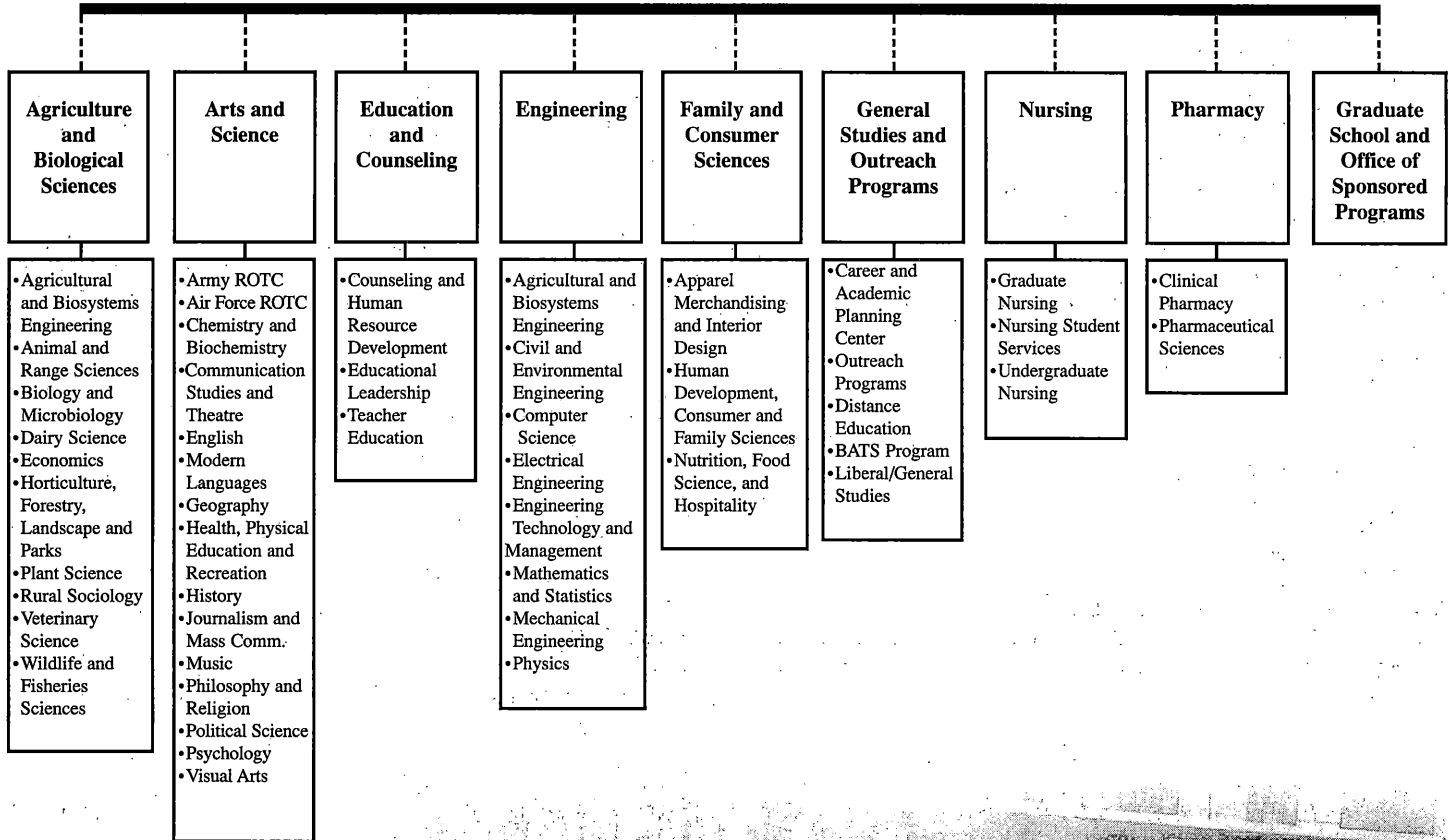
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*Science Education		
Planning (minor).....	Grad.....	See Graduate Bulletin
Plant Pathology (M.S.).....	Grad.....	See Graduate Bulletin
Political Science (B.A., B.S., minor).....	A&S.....	105, 197
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*Applied		
*Pre-professional		
*Psychological Services		
*Teaching		
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*Range Livestock Production		
*Rangeland Ecology and Habitat Management		
*Rangeland Resource Conservation		
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Rural Sociology (M.S.).....	Grad.....	See Graduate Bulletin
Sociology (E) (B.A., B.S., Ph.D., minor).....	A&S.....	106-107, 203-205
*Human Resources		
*Human Services		
*Social Work		
Spanish (E) (B.A., minor).....	A&S.....	98, 205
Teaching Minors.....	EDUC.....	107, 206
Biological Science		
General Science		
Language Arts		
Physical Science		
Social Science		
Visual Arts (see Art, pp. 108, 165-166, 207-210)		
Wildlife and Fisheries Sciences (B.S., M.S.).....	ABS/BS.....	109, 210-211
Women's Studies (minor).....	A&S.....	109, 211
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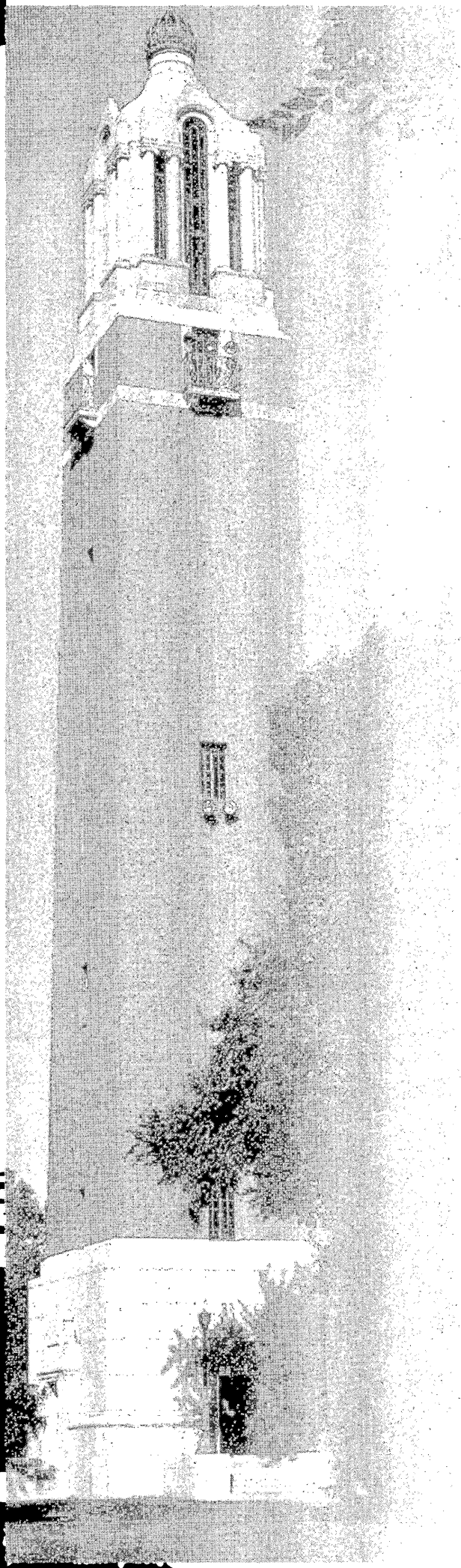
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Pre-Occupational Therapy (2-4 years).....	A&S.....	102
Pre-Optometry (2-4 years).....	GS.....	102, 191-192
Pre-Physical Therapy (4 years).....	A&S.....	103
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Key to Units Administering Individual Curriculums

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Organizational Structure of South Dakota State University





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Introduction

The academic program in the College of Agriculture and Biological Sciences is two-fold: one deals with the fields of agriculture and the other biological sciences. 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 South Dakota and the region 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 Cooperative 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. The biological sciences are also an integral part of all departments that deal with plant and animal sciences. Many future microbiologists, 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 departments of health, colleges and universities, park services, fish and wildlife agencies, etc., are all demanding educated individuals capable of assuming responsible positions in society.

Many graduates also go on to graduate and professional schools in areas such as medicine, veterinary science, dentistry, optometry, etc.

Departments/Units

Agricultural and Biosystems Engineering

(Ag Systems Technology)

Animal and Range Sciences

Biology and Microbiology

Biostress Center of Excellence

Chemistry and Biochemistry

Dairy Science

Economics

Horticulture, Forestry, Landscape and Parks

Plant Science

Rural Sociology

Veterinary Science

Wildlife and Fisheries Sciences

Ag-Bio Communications Unit

Agricultural Experiment Station

Animal Disease Research & Diagnostic Lab

Cooperative Extension Service

Youth Development/4-H

Water Resources Institute

Biostress Center of Excellence

The **mission** of the Biostress Center of Excellence is to provide a coordinated focus on excellence in education for Agriculture and Biological Science undergraduates by using a series of selected courses, a multicultural or international experience, and a capstone activity. The Biostress Center of Excellence will prepare agriculture and biological science professionals to promote economic vitality and development, sustainable agriculture, environmental stewardship, and an improved quality of life for the people of South Dakota, the region, and beyond.

The Biostress Center will produce graduates possessing a mastery of communication and social skills with the appropriate technologies in the selected disciplines. Graduates of the Center will have developed and enhanced their skills in communication, public relations, team building and dynamics, leadership, technology transfer, critical thinking, and interpersonal relations to meet the demands of the 21st Century work environment.

Degrees Offered

Associate of Science

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, Education, and Extension Service (CSREES)

Programs

One of the hallmarks of the College of Agriculture and Biological Sciences is its diversity with 10 teaching departments, 20 different majors, many specializations, and hundreds of different courses from which to choose. The College offers a Bachelor of Science in Agriculture, Bachelor of Science in Biological Sciences, and an Associate of Science at the undergraduate level.

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 specialization, you should report to the director of Academic programs for your adviser reassignment.

Agriculture and Biological Sciences 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	Agricultural and Biosystems Engineering
Agronomy	Agriculture	Plant Science
Animal Science	Agriculture	Animal and Range Sciences
Biology	Biological Science	Biology and Microbiology
Dairy Manufacturing	Agriculture	Dairy Science
Dairy Production	Agriculture	Dairy Science
Environmental Management	Biological Science	Biology and 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 and Microbiology
Park Management	Agriculture	Horticulture, Forestry, Landscape and Parks
Pre-Veterinary Science	Pre-Veterinary	Veterinary Science
Range Science	Agriculture	Animal and Range Sciences
Wildlife and Fisheries Sciences	Biological Science	Wildlife and Fisheries Sciences

Agriculture and Biological Sciences Curricula

Degree Requirements

Students enrolled in the College of Agriculture and Biological Sciences must complete the System General Education Core (pages 35-37) and SDSU Institutional Graduation Requirements (pages 39-41). Specific requirements for each Bachelor of Science degree also include:

Bachelor of Science in Agriculture

Group 1 Courses in Agriculture. A minimum of 11 credits from at least four courses listed below must be completed. Some departments require all or specific courses while others leave the selection entirely to the student and the adviser.

ABS 203, Global Food Systems	3
ABS 381, Multicultural Agricultural/Biological Science	
Experience	2-4
ABS 382, International Multicultural Agricultural/Biological	
Science Experience	2-3
ABS 475, Integrated Natural Resource Management.....	3
AgEc 271, Farm and Ranch Management.....	4
AgEc 354, Agricultural Marketing and Prices	3
AS 101, Introduction to Animal Science.....	3
AS 233, Applied Animal Nutrition.....	4
AS 241, Meat: Production to Consumption.....	3
AST 202, Construction Techniques and Materials.....	2
AST 213, Agricultural Industry and Outdoor Power.....	3
AST 262, Environmental Safety and Society	2
AST 333, Soil and Water Mechanics	3
AST 342, Electricity for Farm and Home	3
DS 130, Introduction to Dairy Science.....	3
DS 231, Dairy Foods	3
Ho 111, Introduction to Horticulture.....	3
La 201, Introduction to Landscape Design.....	3
Micr 311, Food Microbiology	4
PR 101, Parks and Society.....	3
PR 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

The 30 credit Board of Regents **General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details.

The BOR General Education requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (SDSU Core)**. See pages 39-41 for details.

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Three specializations are possible under the B.S. in Agriculture. These specializations are Business, Science, and Production.

Business Specialization

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 specialization since these activities are becoming significant business enterprises. **Students selecting this specialization will complete the general requirements listed for B.S. in Agriculture plus the following requirements to complete their work for a Bachelor of Science degree.** The more specific requirements are listed under the appropriate specialization in each departmental curriculum.

Course	Credits
Acct 210, Principles of Accounting I.....	3
BAdm 360, Organization and Management	3
Econ 201, Microeconomics Principles.....	3
Econ 202, Macroeconomics 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 and 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 281, Introduction to Statistics

Science Specialization

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 specialization will complete the general requirements listed for the B.S. in Agriculture plus the following additional requirements.** The more specific requirements are listed under the appropriate specialization 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 Specialization

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 specialization. This specialization 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 Group I courses in Agriculture are required by the College.** The more specific requirements beyond the core are listed under the appropriate specialization in each departmental curriculum.

Bachelor of Science in Biological Science

Bachelor of Science in Biological Sciences

A minimum of 33 credits from the natural sciences is required for the degree. Significant flexibility is provided to the student and the adviser. Refer to departments offering the degree for specific course listings.

Secondary Education Courses

Students planning to teach at the secondary 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 details.)

Additional Requirements

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

1. The requirements of one of the College's majors must be met. Specific requirements are listed under each program of study.
2. 25 semester credits must be upper division (300 and above). Math 125 and 225 Calculus II and III may be counted as five credits toward the total.

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.



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, four 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
Geography

Health, Physical Education and Recreation
History
Journalism and Mass Communication
Military Science
Modern Languages

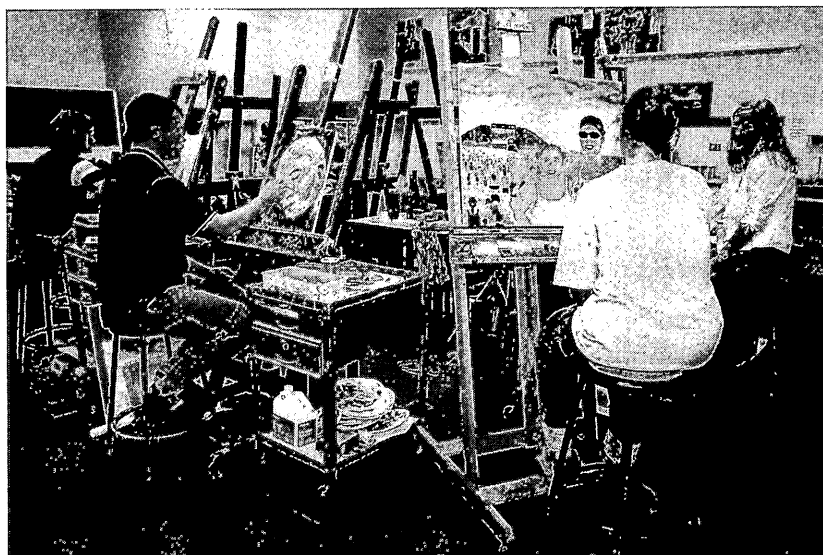
Music
Philosophy and Religion
Political Science
Psychology
Visual Arts

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.



Programs

Degree Requirements

The Bachelor of Science, Bachelor of Arts, and Bachelor of Music Education degrees are offered by the Arts and Science College. Students enrolled in the College of Arts and Science must complete the System General Education Core (Gen Ed), pages 35-37, and SDSU Institutional Graduation Requirements (SDSU Core), pages 39-41. Specific requirements for each degree also include:

Bachelor of Science

Natural Science*	14
With 6 credits from Biological Sciences	
With 8 credits from Physical Sciences	
Social Sciences	12
(Gen Ed Goal 3, p. 35), and	
Human Community (SDSU Core Goal 2, p. 39)	
Humanities (Gen Ed Goal 4, p. 36, and SDSU Core Goal 3, p. 40)	8

* Bachelor of Science students in the Arts and Science College must complete at least 6 credits from the System General Education (Gen Ed) Natural Science list, pages 35-37 and 2 credits from the Institutional Graduation Requirements (SDSU Core), page 41. Bachelor of Science students must take a total of 14 science credits.

Biological Science credits that may meet the 6-credit requirement are:

Bio 101-102	3
Bio 103-104	3
Bio 105	3
Bio 151-152	4
Bio 153-154	4
Bio 200-200A	4
Bot 201-202	3
DCom 112	3
HPER 252-252A	2
Micr 231-232	4
NFSH 221	3
PS 103-103A	3
WL 110	2
WL 220	3
Zool 221-222	3
Zool 325-325A	4

Physical Science credits that may meet the 8-credit requirement are:

Chem 106-106L	4
Chem 108-108L	4
Chem 112-112L	4
Chem 114-114L	4
Chem 120-120L	3-4
Geog 131-131A	4
Geog 132-132A	4
Phys 101-102	4
Phys 111-112	4
Phys 113-114	4
Phys 185	3
Phys 211-212	4
Phys 213-214	4
PS 213-213A	2-3
PS 243-244	3-4

Students may count 5 credits of Math courses (Math prefix, listed on pages 35-37) that are in addition to the System General Education (Gen Ed) requirement of 3 credits toward the Physical Science requirement.

Bachelor of Arts

Modern Language* (completion of 201, 202 in one language)	6
Human Spirit (SDSU Core Goal 3, p. 40) from discipline other than a modern language)	6
Social Sciences	8
(Gen Ed Goal 3, p. 35) and	
Human Community, (SDSU Core Goal 2, p. 39)	

* International students whose native language is not English may substitute 14 credits in "American Culture" courses for the modern 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

Hist 368, History of the American Indians or Anth 421, Indians of North America	3
Soc 150, Social Problems	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. 33 semester credits must be upper division (300 and above).

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 Theatre in Madison and Brookings.

Music Groups. The Music Department sponsors a variety of vocal and instrumental groups. Membership may be 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 and 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.

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 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 works closely with 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 of 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.

Departments

Counseling and Human Resource Development
Educational Leadership
Teacher Education

Degrees Offered

Bachelor of Science in Education - Career and Technical Education
Master of Education*
Master of Science*

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

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 coursework at the graduate level designed for school administrators, counselors, classroom teachers, specialized school workers, and related occupations.
4. Cooperate with the South Dakota Department of Education and Cultural Affairs 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 of South Dakota and throughout the United States.
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. Also these individuals should have an adequate general education background, usually attained in the first two years of college, along with a major in the subject they expect to teach.

In addition, the College recommends that coursework in subjects outside of the major be pursued. Many teachers are required to teach in more than one area of specialization. Therefore, additional coursework, along with the major, will enhance their preparation.

Expertise in directing one or several extra-curricular activities may also be beneficial.

Students should see their education advisers early in order to plan the necessary coursework.

Teacher preparation is also available such as English, History or Chemistry, and a number of other disciplines. The degree is earned in a subject matter discipline with teacher education as a 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 Department of Education and Cultural Affairs

Programs

The College of Education and Counseling's chief undergraduate purpose is teacher education in the following areas: Agricultural Education, Art, Aviation, Biology, Chemistry, Computer Science, Economics, English, Family and Consumer Sciences Education, Journalism, Modern Language – German and Spanish and French Studies, Geography, Health and Physical Education, History, Mathematics, Music – Instrumental and Vocal, Physics, Political Science, Psychology, Sociology, Speech, and Career and 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. – Curriculum and Instruction
2. M.Ed. – Educational Administration
3. M.S. – Counseling and Human Resource Development

For further information consult the Graduate Bulletin.

For a statement of specific requirements for the different administrators' certificates, the student should write the South Dakota Department of Education and Cultural Affairs or consult with the Dean of the College of Education and Counseling.

Career and Technical Education

The Bachelor of Science in **Career and Technical Education** prepares students to teach in high school, multi district, or post secondary vocational programs. People who have completed a technical specialty at one of the area's technical schools, or have occupational experience, or plan to complete a technical specialty at SDSU are eligible for this program. To attain certification, students must meet the certification requirement of the State Department of Education and Cultural Affairs. Individuals completing the Aviation specialty must meet FAA requirements.

Many students who enroll in this program currently teach technical education, but do not hold a baccalaureate degree. Classes are offered through a combination of delivery methods including on-campus, off-campus, telecommunications and via the Dakota Digital Network (DDN). For more information please contact the undergraduate department of teacher education.

Admission to K-12 Teacher Education

(in 22 various subjects)

The coursework for teacher education is divided into three professional semesters. In addition, once one has finished the professional sequence, he/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/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. hold an overall GPA of 2.5 or higher,
4. completed Psyc 101, Soc 100, or Soc 150,
5. met competency requirements:
English: a grade of "C" or above in Composition I 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. have 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 one special methods course* in a major field, the South Dakota Indian Studies requirement, and the computer proficiency 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

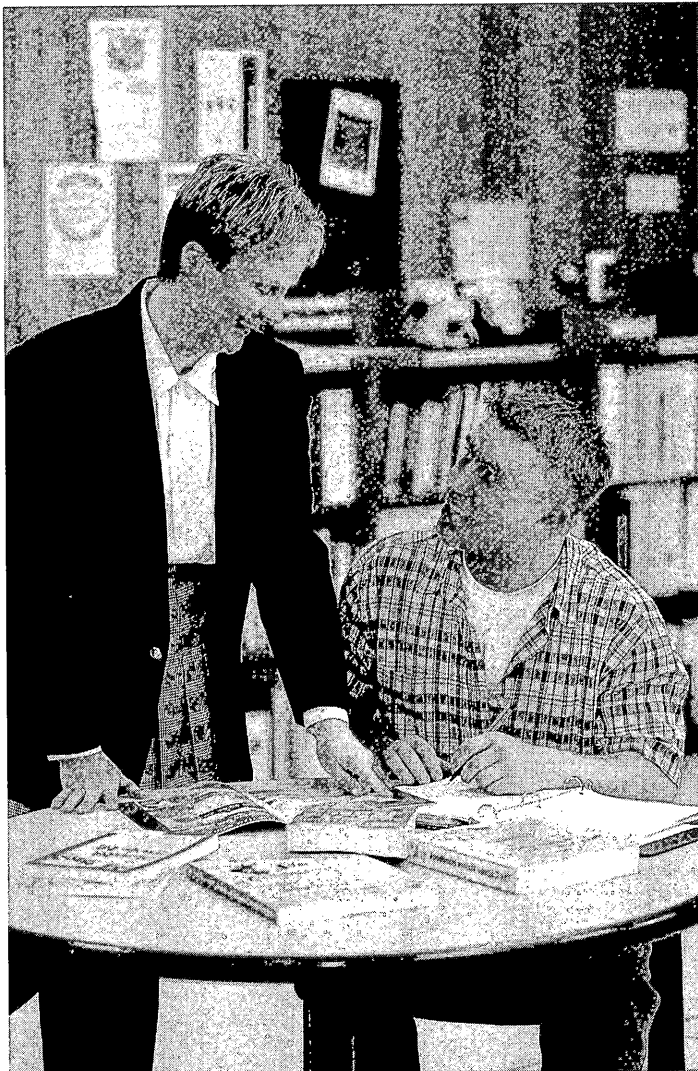
- completed all competency plans and/or other activities prescribed by the Admissions and Scholastic Standards Committee,
5. have recommendations on file in the Education Office from both the major adviser and the content methods instructor (these recommendations must include the student's GPA in their major),
 6. meet with the Placement Supervisor of the Office of Field Experiences before October 1 (for those student teaching in Spring) or February 1 (for those student teaching in Fall) and complete an Application for Student Teaching (rather than wait for these deadlines, it is advisable to complete this application at least one semester before Professional Semester III), *and*
 7. hold 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. satisfactory student teaching recommendations from both the cooperating teacher(s) and university supervisor,
 3. 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 Certifying Officer in the College of Education and Counseling.



Professional Semester I

(Sophomore or Junior Year)

	F		S
EdFn 338, Foundations of American Education	2	or	2
EdFn 475, Human Relations	3	or	3

Professional Semester II

(Junior or Senior Year)

	F		S
EPsy 302, Educational Psychology	3	or	3
SeEd 450, Teaching Reading in the Content Area	2	or	2
SeEd 314, Supervised Clinical Experience	1	or	1

Professional Semester III

(Senior Year)

	F		S
SeEd 400, Curriculum and Instruction in Secondary and Middle Schools	4	or	4
SeEd 410, Social Foundations, Management and Law ...	2	or	2
SeEd 488, 7-12 Student Teaching			
EIEd 488, K-8 Student Teaching.....	8	or	8

Students in K-12 areas such as HPER, Art, Modern Language, and Music split their student teaching credits between SeEd 488 and EIEd 488.

In addition, the following courses must be completed prior to entry into Professional Semester III:

Special Methods (varies by content area)	3	or	3
SeEd 420, Educating Secondary Students with Disabilities	1	or	1
EdFn 365, Computer Based Technology and Learning	2	or	2
EdFn 427, Middle School Philosophy and Application	2	or	2

Teaching Certificates

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

Placement Service

Placement information is available through the Career and Academic Placement (CAP) Center on the SDSU campus.

Introduction

Engineering programs have been a vital part of SDSU since 1881, and graduates of the College of Engineering programs have extended the bounds of science and improved our way of life in many ways. The College has a rich history and long tradition of providing outstanding graduates who are well prepared for exciting careers in engineering, science, and technology. The eight academic departments of the College of Engineering offer a broad range of major and minor programs, each with its unique features that ensure the student of both depth and breadth in their field of study.

Mission

The missions of the College of Engineering are to provide a rigorous, practical education for our students oriented toward problem solving; to conduct world-class research with a regional emphasis; and to provide technical assistance to existing and emerging business, industry, and government.

Facilities

The facilities of the College of Engineering are excellent and include numerous hands-on instructional laboratories that are equipped with state-of-the-art equipment. The extensive laboratory learning experience reinforces the underlying theory taught in the lecture courses. The College of Engineering also provides computer laboratory facilities and areas for students to study and socialize.

Admission

A student pursuing the Bachelor of Science degree in Civil Engineering, Electrical Engineering, or Mechanical Engineering initially enrolls as a pre-engineering major. Admission to these professional programs requires the successful completion of the one-year pre-engineering program, with acceptance based on cumulative grade point average (CGPA) and class standing.

Scholarships

The College of Engineering supports many of its students with academic scholarships. Students apply for these scholarships in the winter and awards are made for the following academic year. Individual departments within the College of Engineering also offer their own department-specific scholarships, which have their own application and review process. Information on the extensive scholarship opportunities for students can be found on the web sites for both the College of Engineering and the specific academic program of interest.

Academic Advising

Each student is assigned an academic adviser who provides valuable assistance with professional career and personal advice, course planning and scheduling. The adviser is a faculty member

from the student's major and is therefore familiar with the student's field, as well as all curricular requirements for graduation. Students should meet with their adviser at least twice per semester for assistance with their progress and course planning. Students may request a change in their academic adviser by contacting their department office.

Importance of Humanities/Arts and Social Science Electives

The College of Engineering recognizes the importance of the general education component of undergraduate education, and the need for this component to complement the technical content of an education in engineering, mathematics, science and technology. This connection is important for producing well-rounded graduates who will continue to meet the present and future needs of society. SDSU's eleven General Education Core proficiencies, outlined in the General Education Core section of this catalog, are of great professional importance to all graduates in the College of Engineering. By choosing their electives to meet the requirements of the seven goals of the System General Education Core, and the five goals of the Institutional General Education Core, our students connect their general education component to their technical curriculum and thus strengthen their professional competence.

Cooperative Education

Students are encouraged to seek part-time (or full-time in the summer) employment opportunities that provide professional work experience in their chosen field of study. They can receive credit for this experience through Cooperative Education. Such experience serves to reinforce the student's interest in their chosen field and also adds to their employment credentials upon graduation. A formal work plan must be submitted to, and approved by, the department head for the student's declared major, prior to the work experience. The work plan must also be approved by the work-site supervisor. A formal policy describing the requirements and procedure for applying for Cooperative Education credit may be found in each academic department.

Student Opportunities

SDSU is located in the heart of the I-29 corridor and South Dakota's principle manufacturing and high tech industries. Consequently, the faculty and programs of the College of Engineering enjoy a close professional relationship with many of the local and regional employers of its graduates. Besides permanent employment in the region, there are many other opportunities for students including part-time technical work, student internships, and student research assistant positions. There are also numerous student professional organizations and honor societies in the College of Engineering.

Departments/Units

Agricultural and Biosystems Engineering
Civil and Environmental Engineering
Computer Science
Electrical Engineering
Engineering Resource Center
Engineering Technology and Management
(Electronics Engineering Technology, Construction Management,
Manufacturing Engineering Technology)
Mathematics and Statistics

Mechanical Engineering
Physics
Polytechnic Center of Excellence
Northern Great Plains Water Resources Research Center

For further information on a specific department/degree, please refer to the sections entitled Department and Program Descriptions; Major and Minor Requirements; and Course Descriptions.

Degrees Offered

Bachelor of Science
Master of Science*
Doctor of Philosophy*

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

Accreditations

The programs in Agricultural and Biosystems Engineering, Civil Engineering, Electrical Engineering and Mechanical Engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). The College of Engineering has offered engineering programs accredited by EAC/ABET since they first began accrediting engineering programs in 1936.

The College has been actively engaged in complying with the newest EAC/ABET accreditation criteria known as Engineering Criteria 2000. Each of the EAC/ABET accredited engineering programs has developed Program Educational Objectives that meet the unique needs of its profession and constituents. These Program Educational

Objectives are statements that describe the expected accomplishment of graduates during their first few years after graduation. In order to achieve these Program Educational Objectives, the EAC/ABET programs have also developed Program Outcomes. These are statements that describe what students are expected to know and are able to do by the time of graduation. By achieving these Program Outcomes, students are ensured that they are equipped to achieve the Program Educational Objectives. Ongoing assessment is used to ensure that the programs achieve their objectives and outcomes and are continuously improved.

Programs

The College of Engineering offers the following degrees: Bachelor of Science in Agricultural and Biosystems Engineering, Civil Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Engineering Physics, and Physics; Bachelor of Science in Construction Management, Electronics Engineering Technology, and Manufacturing Engineering Technology; Bachelor of Science in Arts and Science with a major in 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

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www3.sdstate.edu/Academics/CollegeOfFamilyand
ConsumerSciences

Introduction

The College of Family and Consumer Sciences offers eight dynamic majors and six minors. Subject matter is applied in nature, meaning it takes “pure” knowledge and applies it to individual/family lives and their circumstances. Simply put, our fields of study lead to careers that deal directly with people and their needs. For example, dietetics is the study of the human diet with special emphasis on establishing healthy eating patterns as well as dietary needs for those with illness or special health-related conditions. Another major, apparel merchandising prepares graduates to work in the world of retail with a focus on people’s clothing needs and choices.

The interdisciplinary nature of the eight majors is emphasized. Through coursework, students become aware of the need to understand the relationships that exist between each of the majors. For example, students become aware of the associations between early childhood development and establishing positive food habits. They also come to understand that making wise consumer decisions can facilitate strong family relations.

Graduates from the College work in diverse careers which span business, education, government and non-profit or community agencies.

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 outreach 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 specializations in Child and Family Studies, Family Financial Planning, or Nutrition and Food Science.

Departments

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

Degrees Offered

Bachelor of Science
Master of Science*

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

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 seven credits of core courses which provide content and experiences for understanding these inter-relationships and interactions.

The College is organized into three departments offering eight majors and several specializations.

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)

Family and Consumer Sciences Curricula		
Department	Major Field	Specializations
Apparel Merchandising and Interior Design	Apparel Merchandising Interior Design	
Human Development, Consumer and Family Sciences	Human Development and Family Studies Family and Consumer Sciences Education Consumer Affairs Early Childhood Education	Birth to 5 Birth to 8 Cooperative Elementary Education Certification – BHSU, DSU, NSU, USD
Nutrition, Food Science and Hospitality	Nutrition and Food Science Hotel and Foodservice Management	Dietetics Food Science Nutritional Sciences Foodservice Management Hotel and Hospitality 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 each 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 bulletin.

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

- AM 172, Introduction to Apparel Merchandising
- CA 150, Early Experience in Consumer Affairs
- ECE 150, Early Experience
- HDFS 141, Individual and the Family
- HDFS 150, Early Experience
- HDFS 210, Lifespan Development
- ID 150, Introduction to Interior Design I
- NFSH 110, Perspectives in Nutrition
- NFSH 111, Food and People
- NFSH 151, Food Technology
- NFSH 171, Introduction to Hospitality and Tourism

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

All 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 and often required.

Graduate Program in Family and Consumer Sciences

Those pursuing the M.S. degree in Family and Consumer Sciences 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. Web address: www3.sdstate.edu/Academics/GraduateSchool/GraduateBulletinPDFFile/

General Studies and Outreach Programs

Gail Dobbs Tidemann, Dean
 MEC 123, 605-688-4153
 Box 511, Brookings, SD 57007-0298
 E-mail: gail_tidemann@sdsstate.edu

Introduction

Students enrolling in the College of General Studies and Outreach Programs elected to explore their abilities, interests and educational alternatives before declaring a major. Other students are interested in pursuing their own areas of interest through the flexibility offered in the Liberal Studies degree program. Through General Studies, a student will receive assistance that helps them make wise major/career choices. Most undeclared major students who enroll in General Studies will

transfer to a degree granting college before they reach sophomore status. Pre-professional General Studies students usually transfer to degree programs in their sophomore year and maintain their pre-professional status as a secondary designation. The College also provides advising and general support to students enrolled in distance education and to students pursuing a Bachelors in Applied Technical Science.

Departments/Units

The College of General Studies and Outreach Programs does not have a departmental administrative structure. Student service programs are organized and delivered with the following programmatic emphasis:

Academic Development, Career Development, Employment Development, and Outreach Programs.

Degrees Offered

The College of General Studies serves students in the following categories: undeclared pre-majors, pre-chiropractic, pre-law, pre-medicine, pre-dentistry, pre-physician assistant, pre-ministerial, pre-mortuary science, pre-optometry, special non-degree seeking students, and students admitted in the academic success program. The College

also offers the A.A. in General Studies, B.S. in Liberal Studies and Bachelor of Applied Technical Science degree (BATS) in General Supervision, Industrial Supervision, Industrial Sales, General Technology, and Applied Agriculture.

Accreditations

The College of General Studies and Outreach Programs activities are covered by the institutional accreditation through the Higher Learning Commission and North Central Association.

Programs

Undeclared Majors

General Studies allows students to begin college work without declaring a major through its program for undeclared students or pre-majors.

Students who enroll under this classification are assisted in planning a basic college program and are encouraged to explore various fields of study. Academic advisers help students explore their interests, aptitudes and abilities. The College of General Studies offers a one credit course titled "GS 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. Students would work with their academic adviser to plan a program to meet their own interests and needs. General Studies pre-major 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
GS 101, Academic and Career Exploration	1	or	1
Engl 101, Composition I	3	or	3
Math 102, College Algebra (or prescribed math course) ...	3	or	3
SpCm 101, Fundamentals of Speech	3	or	3
GS 143 Mastering Lifetime Learning Skills	2	or	2

Humanities Core Courses	3	or	3
Social Sciences Core Courses	3		3
Biological or Physical Science Core Courses	3-4		3-4
Interest Area Courses	3		3

Pre-Professional (<http://www.sdsstate.edu/preprof>)

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

Students who wish to qualify for admission to the professional schools of medicine, dentistry, optometry, law or others that require pre-professional education, may wish to start in the College of General Studies. While enrolled in General Studies, 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. Students should consult the catalog of the professional institution they plan to attend for adjustments in these programs. Nearly all of the professional school exams are now administered on campus.

Information about pre-professional programs is included in the department and program descriptions and the major and minor requirements section.

Graduate School

David Hilderbrand, Dean
ADM 130, 605-688-4181
Fax: 605-688-6171
Box 2201, Brookings, SD 57007-1998
E-mail: david_hilderbrand@sdstate.edu

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.

Web address: www3.sdstate.edu/Academics/GraduateSchool

Departments

The Graduate School operates as one unit.

Degrees Offered

The Master of Science, Master of Arts, 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 (joint with the University of South Dakota); Chemistry; and Sociology. A cooperative Ph.D. program with Iowa State University is available in Agricultural Engineering.

Programs

See the separate Graduate Bulletin.

This may be obtained by contacting:

Graduate School
South Dakota State University
Box 2201
Brookings, SD 57007-1998

Telephone:

605-688-4181

E-mail:

SDSU_GradSchool@sdstate.edu

Internet:

www3.sdstate.edu/academics/graduateschool

Nursing

Roberta K. Olson, Dean
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1-888-216-9806
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E-mail: roberta_olson@sdstate.edu

Introduction

The mission of the College of Nursing is to improve health and quality of life in the state, region and nation through education of nurses and other health care professionals; provision of expertise to consumers, providers and health systems; and research to improve nursing and health care.

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

Departments

Graduate Nursing
Nursing Student 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)
Commission on Collegiate Nursing Education (CCNE)

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 accredited by the the Commission on Collegiate Nursing Education. The College is a member agency in the American Association of Colleges of Nursing.

Candidates for graduation in the standard 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

Three types of undergraduate curricula lead to the Bachelor of Science with a major in nursing: one for standard students, one for RNs who are academically prepared at the associate degree or diploma level and now seek a bachelor's degree, and the accelerated option for

students with non-nursing academic degrees who wish to obtain a degree in nursing. 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 standard and the accelerated programs 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. They also have the foundation for advanced study in nursing.

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. The Master of Science degree program offers the following specializations; family nurse practitioner, nurse educator, nurse administrator, practitioner, and psychiatric nurse practitioner, clinical nurse specialist, and neonatal nurse.

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

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www3.sdstate.edu/academics/collegeofpharmacy/

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 lifelong learners. 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

Bachelor of Science Degree 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 coursework 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 and pharmaceutical care principles 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 coursework, 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 with a B.S. in Pharmaceutical Sciences or Doctor of Pharmacy degree.
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. For pharmacy courses (Pha prefix) repeated at SDSU, only the repeated grade will be used to calculate the pharmacy GPA. For pharmacy courses repeated at another college of pharmacy, a grade of "C" will be used to calculate the pharmacy GPA in place of the grade received for the corresponding course at SDSU (grades of "D" or "F" for pharmacy courses from other pharmacy programs do not satisfy the course requirement.)
4. Students enrolled in the professional program may transfer a maximum of six credits of Pha prefix courses.
5. Students must receive a grade of "C" or better to meet the requirement of each 700 level course.

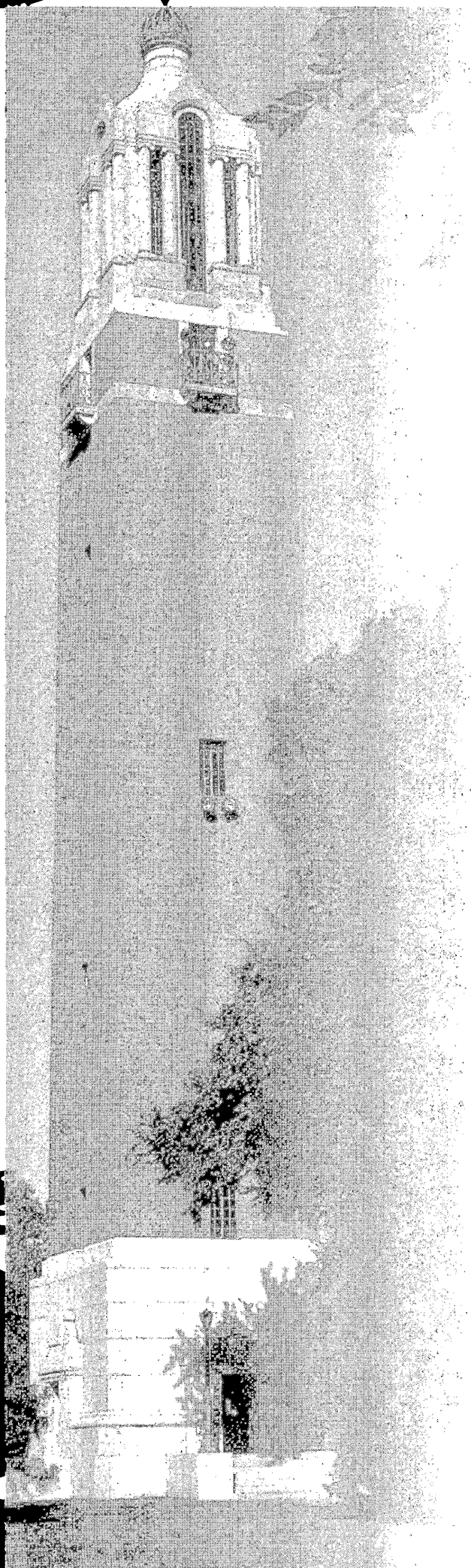
Career Opportunities

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 is a pharmacy fraternity for men and women, and Kappa Epsilon is a pharmacy fraternity for women. 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.





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Department and Program Descriptions

Aerospace Studies (Air)

(Air Force ROTC)

Lieutenant Colonel Richard C. Runchey

Department of Aerospace Studies

DePuy Military Hall 004

605-688-6106

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Faculty

Lieutenant Colonel Runchey, Professor of Aerospace Studies, Head; Assistant Professors, Major Trotter, Major Lorang.

Programs

The Air Force Reserve Officer's Training Corps (AFROTC) program is conducted by the Department of Aerospace Studies. The purpose of this leadership development program is to enable qualified undergraduate and graduate students to become commissioned officers in the United States Air Force. AFROTC learning experiences will be of long range value whether one pursues a military or civilian career.

The aerospace studies curriculum is divided into two courses of instruction. The General Military Course (GMC) is a one-credit academic course and laboratory taken each semester during the freshmen and sophomore years. The Professional Officer Course (POC) is a three-credit academic course and laboratory taken each semester during the junior and senior years. Additional curriculum options are available to accommodate freshmen students pursuing undergraduate degrees that normally require five years to complete and to accommodate undergraduate and graduate students who have one, two, or three years remaining to complete their degrees. All students pursuing a commission will also attend field training at a designated Air Force base during a summer, normally between their sophomore and junior years.

Upon graduation and completion of the AFROTC curriculum, each student is commissioned a second lieutenant in the United States Air Force. The initial Air Force assignment options for second lieutenants include the following:

1. Enter the Air Force and complete the designated technical training prerequisite to the lieutenant's assigned specialty; e.g., flight training, research and development, management, support functions, etc.
2. Apply for a delay in entering active duty for the purpose of pursuing an advanced degree.
3. Enroll in one of several Air Force-sponsored graduate study programs while serving with full pay as a commissioned officer.

Upon entering the Air Force, newly commissioned second lieutenants incur an active duty commitment of four years. Those competing and selected for navigator and air battle management specialties incur a six year commitment; those selected for pilot training incur a ten year commitment.

Professional Development and Flight Orientation Programs

Air Force ROTC cadets have the opportunity to participate in numerous Professional Development Training programs during the summer months of each academic year. Some of these include visits to Air Force installations in the U.S. and overseas, shadow programs with active duty officers in all Air Force specialties, foreign language immersion, parachuting, flying gliders, observing spacelift operations, medical and nurse orientation programs, Army Airborne training, combat survival, etc. Flight orientation is conducted year round at Air

Force and Air National Guard facilities and with local aviation programs and Civil Air Patrol squadrons.

Tuition Assistance

All Air Force ROTC courses are tuition free for all students. All Air Force ROTC cadets who are South Dakota residents and who are not on an Air Force scholarship receive a 50% tuition reduction for all courses taken during four semesters of their junior and senior years.

Air Force ROTC Scholarships.

Air Force ROTC scholarships ranging from one to four years are available for qualified undergraduate and graduate students in all academic degrees. These scholarships pay full tuition and fees at SDSU, \$510 per year for textbooks, and a monthly stipend of \$250 per month for freshmen rising to \$400 per month for seniors. Non-scholarship students enrolled in the sophomore-level AFROTC course may qualify for the General Military Course Incentive that provides \$1,500 in tuition and fees and \$300 per month during the spring semester of the sophomore year. All non-scholarship students in the Professional Officer Course who are on contract with Air Force ROTC may qualify for the Professional Officer Course Incentive (POCI) that provides \$3,000 per year in tuition and fees, \$450 for textbooks, and a monthly stipend of \$350 to \$400.

Minor in Aerospace Studies

Satisfactory completion of the four-year Air Force ROTC program, 16 credits, constitutes a minor in aerospace studies in the College of Arts and Sciences.

Agricultural Business

(See Economics)

Agricultural and Resource Economics

(See Economics)

Agricultural and Biosystems Engineering (ABE)

Van Kelley

Department of Agricultural and Biosystems Engineering

Agricultural Engineering 107

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<http://www.abs.sdstate.edu/ae/>

Faculty

Associate Professor Kelley, Head; Professors Anderson, Hellickson, Ullery, Werner; Professors Emeriti Chu, DeBoer, Durland, Wiersma; Associate Professors Adelaine, Hamburg, Julson, Muthukumurappan, Pohl; Assistant Professors Campbell, Schipull, Stange; Assistant Professors Emeriti Bender and Pahl.

Programs

Agricultural and Biosystems 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 and drainage, water resources development, machine dynamics and design, machine vision, agricultural power, electrical power utilization, properties and 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 interested engineers and students in other colleges.

The mission of the Agricultural and Biosystems Engineering Department is to provide a professional education at the undergraduate and graduate levels for engineers and technologists that serve agricultural, biological and environmental industries and to conduct research and provide technological leadership in engineering design and management for the agricultural community and its affiliated industries.

The Program Educational Objectives are:

1. To produce engineers that become competent in methods of analysis involving use of mathematics, fundamental physical and biological sciences, engineering sciences, and in the computational skills needed for the practice of agricultural and biosystems engineering.
2. To produce engineers that develop design skills, including abilities necessary to think creatively, to formulate problem statements, to communicate effectively, to synthesize information, and to evaluate and implement problem solutions.
3. To produce engineers that become capable of addressing issues of ethics, safety, professionalism, cultural diversity, globalization, environmental impact, and social and economic impact in engineering practice.
4. To produce engineers that will contribute to agricultural profitability through the development, adoption and proper use of improved and safer engineering technologies, production systems and management practices.

Engineering design is taught throughout the academic program beginning with the freshman ABE 122 course and culminating in a two semester, senior capstone design experience via the ABE 411 and ABE 422 courses. Senior students are members of design teams which design, build, test and demonstrate engineered products. Design projects solicited from industry provide students with relevant "real world" design experience.

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

Experiential Education Programs are available in the department. Students are encouraged to supplement their formal instruction with internships (can receive graduation credit) and extra curricula activities.

For Agricultural Systems Technology courses and curriculum, as offered by the Agricultural and Biosystems 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)

Ralph Matz

Extension Program Coordinator

Agricultural Hall 130

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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 Educators, 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)

Van Kelley

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Agricultural Engineering 107

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Faculty

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Programs

Agricultural Systems Technology graduates serve the increasingly complex agricultural industry and production agriculture in a wide variety of ways. These individuals must have a sound fundamental knowledge of the agricultural industry and especially of the technical, mechanical and energy related aspects of both the agricultural and biological sciences. This background needs to be combined with a solid understanding of the interactions between agriculture and society.

The Agricultural Systems Technology program at South Dakota State University provides students with the knowledge, managerial, leadership, interpersonal and communication skills to be highly successful. While the Agricultural Systems Technology program prepares you for success in a variety of agribusiness careers, it will also prepare you to be a better farmer/rancher.

Agronomy

(See Plant Science)

Air Force ROTC

(See Aerospace Studies)

American Indian Studies Program (AIS)

Lowell Amiotte
American Indian Studies
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An inter-college program of American Indian culture studies. Coursework 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 United States 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)

Don Boggs
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Animal Science Complex 103A
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Faculty

Professor Boggs, Head; Distinguished Professors Emeriti Costello, Wahlstrom; Professors Held, P. Johnson, Larson, McFarland, Marshall, Pritchard, Pruitt, Thaler; Professors Emeriti Bailey, Carlson, Dearborn, Dinkel, Gartner, Gee, J. Johnson, Kohler, Kortan, Lewis, Libal, Luther, Minyard, Morgan, O'Connell, Plumart, Romans, Slyter; Associate Professors, Miller, Wulf; Associate Professors Emeriti Bonzer, Bush, McCarty, McCone; Assistant Professors Bruns, Campbell, Clapper, Daniel, Dunn, Maddock, Patterson, Smart, Stein, Tjardes, Walker, Wright; Instructor Kruse; Adjunct Professor Britzman, Specker.

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 specializations: (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. Students interested in veterinary medicine should consider a dual major in Pre-Veterinary Medicine and Animal Science/Science specializations.

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 specializations which allows emphasis in a major area of the field: (a) Rangeland Resource Conservation, (b) Range Livestock Production, or (c) Rangeland Ecology and Habitat Management.

Apparel Merchandising and Interior Design (AM, ID)

Jane E. Hegland
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Faculty

Associate Professor Hegland, Head; Professors Emeriti Kamstra, Semeniuk, Stoflet, Associate Professor Isham; Associate Professor Emeriti Yost; Assistant Professors Lyons, Strickler, Nussbaumer, Rowland, Stofferan.

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 495 and ID 495) a student must have 90 semester credits and a 2.2 GPA. Consult your adviser for assistance and current information.

Apparel Merchandising (AM)

The Apparel Merchandising program at SDSU is a broad based, non-specialized program that gives students problem-solving experiences in all the major related areas. It provides educational experiences and skill development to enable graduates to successfully obtain entry-level employment in any part of the nation. It seeks and enables the involvement of local and regional retail professionals in order to enrich the program and maintain currency with regional practices. Issues of national and international importance to apparel merchandising students are included in courses and activities so they will graduate with an awareness of the challenges and opportunities in their professional futures.

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 Dr. Susan Strickler for further information.

Minor in Apparel Merchandising

Eighteen 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 Interior Design program at SDSU is a broad based, non-specialized program that gives students problem-solving experiences in all major areas of design practice, e.g., commercial, residential, and hospitality. It provides educational experiences and skill development to enable graduates to successfully obtain entry-level employment in any part of the nation. It seeks and enables the involvement of local and regional design professionals in order to enrich the program and maintain currency with regional practices. Issues of national and international importance to interior designers are included in courses and activities so that students will graduate with an awareness of the challenges and opportunities in the world of their professional futures.

The mission of the Interior Design program is to promote awareness and knowledge of the contributions of interior design to the health, safety, and well being of people. A program of instruction will be offered to enable graduates to achieve professional status in the field. The faculty maintain currency in their fields of knowledge, uses of technology and understanding of recent issues to inform their students, regional professionals, and citizens of the state and region.

Trends at the international, national, regional, and local levels are taken into account in the development and planning of curriculum and student experiences. Specifically, projects are assigned that involve sustainable design, multiple-chemical-sensitivity, and a selection of other special-needs client categories. Uses of the computer, software, and on-line resources are consciously incorporated into most course experiences. Project components reflect the increased documentation and technical data expected by clients. Distinctions among client types with regard to conventional, individualized, and forward styling are part of project programming. The general education criteria for cultural diversity assists in addressing the trend for increased cultural sensitivity in design solutions.

A 280 hour practicum is a program requirement.

Minor in Interior Design

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

Applied Technical Science, Bachelor of (BATS)

Gail Dobbs Tidemann

College of General Studies and Outreach Programs

Medary Commons 121

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This program allows students with an Associate of Applied Science degree earned at one of South Dakota's four technical institutes to build upon the technical skills and knowledge gained in the associate degree program to continue their education and earn a Bachelor of Applied Technical Science from South Dakota State University. The program promotes career advancement by providing an expanded knowledge base for professionals in technical disciplines and developing employees with both technical and organizational skills. Students who wish to enroll in the BATS program must have completed an Associate of Applied Science degree and meet university admissions requirements. Five areas of emphasis are available in this program: Applied Agriculture, General Technology, Industrial Sales, Industrial Supervision, and General Supervision.

Army ROTC (MIL)

(See Military Science)

Art (Art)

(See Visual Arts)

Athletic Coaching Certification

Jason Liles

Department of Health, Physical Education and Recreation

Physical Education Center 263

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Some states, including 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. SDSU does require an American Sports Education Program Workshop for those interested in obtaining coaching certification.

Athletic Training (AT)

Jim Booher

Department of Health, Physical Education and Recreation

Physical Education Center 265

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Athletic Training Major

The athletic training major is accredited by the Commission of Accreditation of Allied Health Education Programs. 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 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. Additional minimum requirements for admission include successful completion ("C" or better) of AT 164, Zool 221 and PE 354, and a minimum cumulative GPA of 2.75. The number of students accepted into the program each year 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.

Aviation Education (AvEd)

Jim Crehan

College of Education and Counseling

Wenona Hall 108A

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<http://learn.sdstate.edu/Aviation>

Program

South Dakota State University offers a Bachelor of Science in Education degree in Career Technical Education with specialization in Aviation Education. This four-year degree program requires a student to obtain pilot certification from the private pilot through flight instructor certificates. In addition, courses are available to obtain the certified flight instructor instrument, multi-engine, and multi-engine instructor ratings. For students meeting requirements, the Airline Transport Pilot rating is also available.

Students attend classes on campus for general education and flight theory courses, while flying with one of three flight contractors located at Brookings, Sioux Falls, and Rapid City airports to obtain flight certificates and ratings.

Departmental consent is required for registration in flight training courses. Additional costs are associated with flight training to cover costs of aircraft use and individual flight instruction. Students enrolled in this program are eligible for financial aid through the University and other supplemental sources.

This program prepares students for positions as professional flight instructors, as well as providing the capability for graduates to obtain teacher certification in career technical education at the high school and community levels. The flight experience gained in this program also enhances the opportunity for graduates to meet minimum flight experience requirements for consideration for hire by regional airlines, air freight operators, corporate aviation, charter aviation operators, and other aviation industry positions.

The degree includes courses in safety, human factors, teaching methodologies, curriculum development and other courses recognized by our industry advisory council, and potential employers, as courses

which prepare the best future employee. Students are expected to complete the flight instructor certificate by the end of the junior year, then have the opportunity to instruct incoming students during their senior year, with the intent of graduating with the highest level of flight instruction experience possible.

Biology (Bio)

Tom Cheesbrough

Department of Biology and Microbiology

Agricultural Hall 304

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<http://www.abs.sdstate.edu/bio>

Faculty

Professor Cheesbrough, Head; Professors Gibbons, Granholm, Hildreth, Hutcheson, Kayongo-Male, Larson, McMullen, Peterson, Reese, Ruffolo, Sutton, Westby, Whalen; Professors Emeriti Baker, Chen, Hartel, Huggins, Morgan, Myers, Pengra, Taylor; Associate Professors Bleakley, Erickson, Gibson, Troelstrup; Associate Professor Emeritus Morrill; Assistant Professors Gilmanov, Pedersen, Wake, Young; Instructors McCutcheon, Willgohs; Adjunct/Joint faculty E. Butler (Igne), J. Butler (USFS), Chase (Vet.Sci.), Diggins (Augustana), Evenson (Chem.), Fennell (HFLP), Francis (Vet.Sci.), German (WRI), Henning (DS), Johnson (PS), Majerle (Chem.), McFarland (ARS), Nelson (Vet.Sci.), Reidel (NGIRL-USDA), Rietz (Brookings Medical Clinic), Specker (FFS), West (Chem.).

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 specialization depending upon their particular interest and needs: (1) Ecology, (2) Organismal Biology, (3) Molecular and Cellular, and (4) Pre-professional. A minimum GPA of 2.0 must be maintained in the major and chemistry courses.

The **Ecology specialization** prepares a student for careers in environmental science and ecosystem modeling.

The **Organismal Biology specialization** provides the student with a broad, classical background in the emphasis areas of General Biology, Botany and Zoology. This training prepares them to work in a wide range of careers.

The **Molecular/Cellular specialization** trains students for professions that utilize genetics, cell biology and biotechnology.

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

Biostress Center of Excellence

Charles McMullen
Biostress Center of Excellence
Agricultural Hall 156
605-688-5133
e-mail: academic.program@abs.sdstate.edu

Faculty

Professor McMullen, Director; Distinguished Professor Malo, Professors S. Clay, Janssen, Marshall, Pruitt, Rickerl, Thaler; Associate Professors Cumber, Kronberg; Assistant Professor Van Der Sluis.

Program

The Biostress Center of Excellence Program provides a coordinated focus on excellence to continue developing students' lifelong learning skills and undergraduate education in the College of Agricultural and Biological Sciences. Courses addressing global food systems, multicultural and international experiences, as well as traditional courses, are utilized as part of the developmental process that culminates with a capstone experience. A plan/project is developed during the capstone experience that requires students to apply acquired skills to address issues or concerns confronting agriculture and the rural community. The Biostress Center of Excellence aids in the preparation of professionals to promote economic vitality and development, sustainable agriculture, environmental stewardship, and an improved quality of life for the people of South Dakota, the region, and beyond. Graduates have conceptual and experiential abilities within their major. Areas of emphasis include leadership, agricultural ethics, communication, and group dynamics with the goal of becoming active community, civic, and industry leaders.

The educational outcomes for the Biostress Center of Excellence are illustrated in its goals.

Goals

1. Graduates will be technically and academically competent in their major.
2. Graduates will have enhanced skills in interpersonal relationships, team dynamics, diversity (multicultural/global) understanding, and group processes needed to become community and industry leaders.
3. Graduates will have enhanced communication, public relations, and computer technology skills.
4. Graduates will have skills for lifelong learning and technology transfer.
5. Graduates will use appropriate analytical and problem-solving skills to analyze agricultural and rural community concerns and to develop economically and environmentally viable solutions through a collaborative, multidisciplinary team approach. Graduates will have advanced skills in use of technology to access and interpret relevant information. Graduates will have the ability to integrate course and technical materials to develop an economically feasible and culturally sensitive plan for a given set of resources, issues, and concerns.

Program Admission

Students accepted into the Biostress Center of Excellence must have completed a minimum of 96 credit hours, have a cumulative GPA of 3.0, completed a formal application, and have taken the required building courses (see listing of courses in the Requirements section of this bulletin).

Botany (Bot)

Tom Cheesbrough
Department of Biology and Microbiology
Agricultural Hall 304
605-688-6141
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<http://www.abs.sdstate.edu/bio>

The Department of Biology and Microbiology offers a **Botany emphasis** as an option for those seeking a degree in Biology with a specialization in Organismal Biology. 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. The department also offers a **Botany minor** for those wishing to augment their knowledge in the area of plant biology. See Biology Requirements section for curriculum.

Business Area Studies

Richard Shane
Department of Economics
Scobey Hall 136
605-688-4141
e-mail: janet_wilson@sdstate.edu
<http://econnet.sdstate.edu/dept/index.asp>

See Economics for Business Specialization

There are numerous courses particularly useful as adjuncts to majors such as agribusiness; agricultural and resource economics; agricultural systems technology; agronomy; animal science; apparel merchandising; computer science; construction management; consumer affairs; dairy manufacturing; dairy production; economics; horticulture; hotel and foodservice management; industrial management; interior design; music management; park management; printing management; pharmacy; range science; and engineering. See the listing of courses in requirements section of this bulletin.

Chemistry/Biochemistry (Chem)

James A. Rice

Department of Chemistry and Biochemistry

Shepard Hall 121

605-688-5151

e-mail: james_rice@sdstate.edu

<http://www3.sdstate.edu/Academics/ArtsandScience/ChemistryandBiochemistry>

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

Faculty

Professor Rice, Head; Professors Evenson, Grove, Hilderbrand, Jensen, Matthees, Sellers, Utecht, West; Professors Emeriti Emerick, Gehrke, Hecht, Olson, Palmer, Rue, Spinar, Wadsworth; Associate Professors, Majerle, Shore; Assistant Professors Cole-Dai, Halaweish, Miller, Sergeev; 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 a more extensive chemistry background without majoring in chemistry. Third, you can major in chemistry by choosing one of the following curricula.

Chemistry

The American Chemical Society (ACS) 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 413, 7-12 Science Methods, is a requirement to be certified to teach high school chemistry.

Emphases

The ACS certified specialization offers optional emphases in biochemistry, environmental chemistry and chemical physics. These emphases are developed through the selection of elective courses and undergraduate research experiences that provide expertise appropriate to one of these three areas.

Minor in Chemistry

A minor in chemistry is offered for students wanting extensive chemistry coursework without majoring in chemistry. A grade of "C" or better in all courses proposed for the minor 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. See Graduate Catalog or contact the Department for details.

Clinical Laboratory Technology (MedT) also known as Medical Technology

Deborah Pravecek, Coordinator

Medical Directors of Affiliated Schools of Medical Technology: Askae Qalbani, M.D., Mercy Medical Center, Sioux City, IA; John Barlow, M.D., Rapid City Regional Hospital, Rapid City, SD; 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; 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), Mercy Medical Center, Sioux City, IA.; Sr. Rose V. Brown, MT (ASCP) Penrose-St. Francis Health Services, Colorado Springs, CO.

The medical technologist is an indispensable member of the modern health team. He/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/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 an educational experience that provides scientific background in the chemistry and the biological sciences required for entrance into the clinical training program. The professional internship program, a 12 month experience 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.

(Pre-) Chiropractic

Kathie Erdman

College of General Studies and Outreach Programs

Medary Commons 122

605-688-4153

e-mail: kathie_erdman@sdstate.edu

Area of Study

The pre-chiropractic program is designed to ensure all the prerequisites are completed in preparation for applying to a chiropractic college. Chiropractic colleges require a minimum of 90 semester credits in specific areas: General Biology, General & Organic Chemistry, Physics, Humanities and Social Sciences, and Communications. The completion of a degree is highly recommended, but not required in all states. The College of General Studies and Outreach Programs provides advising services to assist each student in developing a plan and selecting a major best suited to his/her goals.

Civil and Environmental Engineering (CEE)

Vernon R. Schaefer, P.E.

Department of Civil and Environmental Engineering

Crothers Engineering Hall 120

605-688-5427

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<http://www3.sdstate.edu/Academics/CollegeOfEngineering/CivilandEnvironmentalEngineering/>

Faculty

Professor Schaefer, Head; Professors DeBoer, Schaefer, Selim, Sigl; Professors Emeriti Dornbush, Hassoun, Rollag; Associate Professors Reid, Tiltrum, Ting; Assistant Professors Burckhard, Emmons, Schmit, Wehbe.

Programs

Civil Engineering includes the location, design, construction, and the operation and maintenance of 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 infrastructure facilities essential in modern life.

The Civil and Environmental Engineering Department's mission is to provide a highly respected, rigorous, practical education for our students, oriented toward problem solving through the integration of education, research and lifelong learning. In fulfillment of this mission the department has established the following program educational objectives.

1. To educate engineering professionals capable of applying principles of science and engineering to the solution of current and future problems in the field of civil engineering.
2. To educate engineering professionals motivated toward continued intellectual and professional growth through lifelong learning related to current technological developments and professional practices in civil engineering.
3. To educate engineering professionals motivated to become professional, ethical, global, and pluralistic leaders and contributors to society.
4. To educate engineering professionals to contribute to the development of our local and state economies.

The program's mission and educational objectives are accomplished by providing undergraduate students with an educational program that will result in graduates who have:

- a. an ability to apply knowledge of mathematics, science, and engineering.
- b. an ability to design and conduct experiments, as well as to analyze and interpret data.
- c. an ability to design a system, component, or process to meet prescribed objectives.
- d. an ability to function on multi-disciplinary teams.
- e. an ability to identify, formulate, and solve engineering problems.
- f. an understanding of professional and ethical responsibility.
- g. an ability to communicate effectively.
- h. the broad education necessary to understand the impact of engineering solutions in a global and societal context.
- i. a recognition of the need for, and an ability to engage in lifelong learning.
- j. a knowledge of contemporary issues.
- k. the skills to apply the tools and techniques of modern engineering practice.

Additionally, the program strives to assist students in developing a commitment to high standards of professional conduct by maintaining a strong, active ASCE Student Chapter Program; encouraging seniors to take the Fundamentals of Engineering (FE) examination; and promoting summer and cooperative employment experiences in civil engineering.

First year engineering students are introduced to engineering design in GE 101, Introduction to Engineering, where they learn about the creative process through exposure to "real world" examples illustrating each step of the design process. Through the sophomore and junior courses, exposure to design experiences is gradually increased to demonstrate how knowledge gained in the engineering sciences can be used to solve engineering problems, promote original thought, illustrate the work expected of engineers and stimulate interest and enthusiasm for design. As students enter the senior year, the design experiences in the core courses become more complex and open-ended. Design experience culminates in CEE 464-465, Senior Design Project I and II, where design teams work on comprehensive, open-ended projects involving scope and definition, evaluation of alternatives on the basis of economics, safety, ethical implications, and other factors, concluding with the preparation of a functional design, plans, specifications and final cost estimates.

Certain electives are provided to broaden knowledge in the social-humanistic area and to provide some technical specialization. A minimum of 16 credits of Humanities/Arts and Social Sciences are required and must be selected to satisfy the System General Education Core and the SDSU Institutional Graduation Requirements under the Graduation Requirements in this catalog. Students should consult with their academic adviser or the department head for guidance on humanities and arts and social science electives. Technical specialization is obtained through selection of technical electives within Civil Engineering and related disciplines. Twelve credits are required and must be obtained from at least three different sub-disciplines to provide breadth in the student's technical education. The technical electives must be approved by the adviser or department head.

A student interested in Civil Engineering initially enrolls as a pre-engineering major in the College of Engineering. A student's acceptance into Civil Engineering is based on prerequisite preparation, the cumulative grade point average (CGPA) and class standing after completion of the one-year pre-engineering program in the College of Engineering. The number of students accepted into Civil Engineering will also depend on regional and national needs and the resources of the College of Engineering. You should contact the department for the application details. 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 Civil Engineering: a combined average of "C" or better in the Civil Engineering courses and a minimum grade of "C" in all Engineering Mechanics (EM) designated courses. Students will not be permitted to enroll in subsequent Civil Engineering courses for which any of the EM courses are prerequisites until the minimum "C" grade requirement has been met. Students must follow course prerequisite requirements.

The department will assist those interested to arrange cooperative work-study programs with consulting and testing firms, governmental agencies and industry. Credit may be obtained for the work experiences by registering for CEE 494 Internship, CEE 496 Field Experience, or CEE 497 Cooperative Education. These credits, upon approval of the department, may fulfill part of the technical-elective requirements.

The Civil Engineering program at South Dakota State University is accredited by the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology (EAC/ABET).

To make the transition easier for high school students interested in a career in Civil Engineering, the following guidelines are suggested: study as much mathematics as available, including trigonometry and calculus (if possible), one year of physics, one year of chemistry, and four years of English.

Clinical Laboratory Technology

(See Chemistry)

Clinical Pharmacy

Brian Kaatz

Department of Clinical Pharmacy

Pharmacy 125

605-688-6197

e-mail: college-pharmacy@sdstate.edu

Faculty

Professor Kaatz, Head; Professors Farver, Fiechtner, Fischer, Mort; Associate Professors Clem, Hedge, Heins, Jensen Bender, Messerschmidt; Assistant Professors Brand, Dvorak, Johnson, Lee, Lemon; 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)

Laurie Haleta

Department of Communication Studies and Theatre

Pugsley Center 115

605-688-6131

e-mail: laurie_haleta@sdstate.edu

Faculty

Professor Haleta, Head; Distinguished Professor J. Johnson; Professors Ferguson, Jorgensen; Professors Emeriti Denton, Hoogestraat, Meyer, Stine, Widvey; Associate Professors Ackman, Tallmon; Assistant Professors Hefling, Lampson, Peterson, Shelsta, Wheeler.

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 specializations; 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

There are 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

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

Speech-Language Clinic

Professor Lampson, Supervisor

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

Computer Science (CSc)

Ali Salehnia, Acting

Department of Computer Science

Administration Building 133B

605-688-5719

e-mail: ali_salehnia@sdstate.edu

Faculty

Professor Salehnia, Acting Head; Professor Shin; Professor Emeritus Bergum; Associate Professor Emeritus Lundberg; Assistant Professors Hamer, Shim, Svec; Instructor Gamradt; Lecturers Gibbons, Prohaska, Taecker.

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.

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.

Students interested in the Certificate Program in Microcomputer Applications should visit with the Dean of General Studies and Outreach Programs 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 two semesters before graduation. Failure to meet the deadline may disqualify you from getting a minor.

Construction Management (CM)

(See Engineering Technology & Management)

Counseling and Human Resource Development (CHRD)

Ruth Harper, Acting
Department of Counseling and Human Resource Development
Wenona Hall 312
605-688-4190
e-mail: ruth_harper@sdstate.edu

Faculty

Associate Professor Harper, Acting Head; Professors Martin, Acting Dean, Muxen; Associate Professors Britzman, Wilson; Assistant Professor Trenhaile; WRGC Assistant Professor Knox.

Programs

The department offers an M.S. in Counseling and Human Resource Development. Four programs are available to earn the M.S. degree in CHRD. Three of these require a minimum of 48 credit hours and one requires 36 credit hours. All require both written and oral comprehensive examinations. See the Graduate Bulletin for descriptions of available options.

Emphasis

Three programs in CHRD are clinical, each with a different emphasis, including School Counseling, Community Counseling, and Counseling in a Student Affairs setting. These programs share a core set of courses. The fourth program is the Student Personnel Track. It prepares students to administer college student personnel programs.

Criminal Justice (CJus)

Donna Hess
Department of Rural Sociology
Scobey Hall 224
605-688-4132
e-mail: donna_hess@sdstate.edu

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 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 Criminal Justice a student must have a cumulative GPA of at least 2.2 and take a total of 18 credit hours from courses offered in Criminal Justice and selected courses available in

Sociology and Political Science. Six of these 18 hours consist of two required courses (CJus 201 and Soc 351). The remaining 12 hours may be selected from the list of CJus electives. An internship (Soc 494) 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)

David Schingoethe
Department of Dairy Science
Dairy-Microbiology 109A
605-688-4116
fax: 605-688-6276
e-mail: dairy_science@abs.sdstate.edu

Faculty

Professor Schingoethe, Head; Professors Baer, Mistry; Professor Emerita Parsons; Associate Professor Henning, Assistant Professors Dave, Garcia, Hippen, Kalscheur; Instructors Bonnemann, Rennich.

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 Agricultural Education is available with either of the majors. Dairy Science programs are designed to prepare students for careers related to dairy manufacturing and production as well as the allied industries. 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 students 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 300 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. Students are encouraged to supplement their class instruction with internships and extracurricular activities. Leadership opportunities are available through participation in the Dairy Science Club, Dairy Cattle Judging, and Dairy Products Evaluation Teams.

(Pre-) Dental

Scott Pedersen

Department of Biology and Microbiology

Agricultural Hall 335

605-688-5529

e-mail: scott_pedersen@sdstate.edu

Area of Study

Dental schools are looking for bright, articulate students who have a well rounded education and are able to relate to a range of personalities. Most dental schools require at least three years of college, but 90% of applicants have received their baccalaureate degree before they enter dental school. As such, SDSU encourages all pre-dental students to achieve their BS/BA prior to enrollment in a dental school.

Because the requirements of each dental school vary considerably, it is difficult to provide a complete listing of the necessary coursework that would satisfy every institution. Instead, the SDSU pre-dental program challenges the pre-dental student with a heavy emphasis on science courses (two years of chemistry, one year of physics, and at least one year of biology) in order to prepare the student for the Dental Admission Test (DAT). These courses service a wide variety of pharmaceutical sciences and psychology and provide excellent career alternatives for those pre-dentistry students who are not immediately accepted into a dental school.

Admission to dental schools is extremely selective, and students who are serious about being accepted into a dental school should strive to substantially exceed the minimum requirements. Acceptance into dental school is based primarily on four criteria: 1) absolute minimum of a 3.2 GPA on the 4.0 scale, 2) Dental Admission Test (DAT) scores, 3) recommendation from faculty and employers, and 4) a personal statement included in the application packet.

The Career and Academic Planning Center (CAP Center) is an excellent place to begin the process of investigating Dentistry as a career and to begin the process of focusing the student on their pre-dental curriculum. The CAP Center is also an excellent location to look through the course catalogues of a variety of dental programs in order to secure additional information and admission requirements to a school of their choice. A pre-dentistry adviser is also available to help guide the pre-dental student through these processes. Financial aid is available through a wide variety of scholarship programs.

Dietetics

(See Nutrition, Food Science and Hospitality)

Economics (Econ) and Business

Richard Shane

Department of Economics

Scobey Hall 136

605-688-4141

e-mail: janet_wilson@sdstate.edu

<http://econnet.sdstate.edu/dept/index.asp>

Faculty

Professor Shane, Head; Professors Beutler, Dobbs, Fausti, Janssen, Kim, Lamberton, Lyons, O'Brien, Peterson, Pflueger, Sondey, Trierweiler, Professors Emeriti Allen, Anderson, Gilbert, Greenbaum, Hsia, Kamps, Lundeen, Murra, Taylor, Thompson; Associate Professors Adamson, Cumber, Franklin, Klein, Qasmi, Santos, VanderSluis; Associate Professors Emeriti Kelsey, Sogn; Assistant Professors Diersen, Taylor,

Zimmerman; Instructors Ellingson, Gustafson, Rasmussen; Marketing Specialist May; Management Specialists Davis, Oedekoven.

Programs

The Economics Department teaching objectives 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 and resource economics, economics, and business; and,
3. provide a foundation for graduate work in economics, agricultural and resource 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 Agricultural Business or Agricultural and Resource Economics from the College of Agriculture and Biological Sciences. The Department also offers a major in Economics leading to a Bachelor of Science or Bachelor of Arts Degree from the College of Arts and Science. Within the Economics Major, a student can choose the Business Specialization.

These 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, public service, research, and related fields.

Accelerated Master's Program

An accelerated program is offered that allows exceptional students to start Master's degree studies while completing their undergraduate degree. The combined degree program can be completed in five years.

Minors

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

Entry Requirement

Formal application is required for admission into one of the departmental majors. To be admitted, the student must have completed at least 64 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 121 (or Math 123).

Students interested in the accelerated program should contact the Economics Department graduate coordinator to obtain application requirements.

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

Educational Leadership

R.L. Erion, Acting

Department of Educational Leadership

Wenona Hall 112

605-688-6365

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<http://learn.sdstate.edu/edgrad/>

Faculty

Professor Erion, Acting Head; Professor Romerein-Holmes; Assistant Professors Garnos, Peterson, Rasmussen.

Programs

The department provides a Master's of Education (M.Ed.) in Curriculum and Instruction and in Educational Administration. Requirements for Masters' programs can be completed at either the campus in Brookings or at the West River Graduate Center in Rapid City. 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/community college instructors.

Within the major, the following emphases are available: Career and 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. Much of the Career and Technical Education emphasis is available through distance education.

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, Career and Technical Education, and Adult and Higher Education.

Electrical Engineering (EE)

Dennis Helder, Acting

Department of Electrical Engineering

Harding Hall 201

605-688-4526

<http://www3.sdstate.edu/Academics/CollegeOfEngineering/>

[ElectricalEngineering/](http://www3.sdstate.edu/Academics/CollegeOfEngineering/ElectricalEngineering/)

Faculty

Professor Helder, Acting Head; Professors A. Andrawis, M. Andrawis, Galipeau; Professors Emeriti Dracy, Ellerbruch, Knabach, Sander, Storry; Associate Professor Hietpas; Associate Professor Emeritus Moore; Assistant Professor Ropp.

Programs

Electrical engineers play key roles in solving technical problems in many areas including biomedical engineering, communications, computers and digital hardware, electronic materials and sensor devices, image processing, and power and control systems.

The mission of the Department of Electrical Engineering is to provide a rigorous, practical education for our students oriented toward problem solving; to conduct world-class research with a regional emphasis; and to provide technical assistance to existing and emerging businesses, industry, and government.

The Electrical Engineering Department program educational objectives are to equip individuals who, after graduation and initial work experience,

1. Are able to use mathematics, science and engineering knowledge, along with appropriate engineering tools, to solve problems.
2. Actively contribute to multi-disciplinary teams, communicate effectively, and are able to solve, as engineering problems, contemporary issues arising from society.
3. Utilize approaches and solutions to engineering problems that are always framed in a morally and ethically responsible manner, and whose approaches and solutions indicate an awareness of the impact of their work on society at local to global scales, and who continue to learn in order to best solve such problems.

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

Academic and Graduation Requirements

Realizing that each student is an individual, the degree program is arranged to include 31 credits of elective coursework. This elective flexibility allows a student to pick a technical and non-technical course program that best suits his/her needs and interests.

A student's acceptance into the Electrical Engineering program is based on prerequisite preparation, the cumulative grade point average (CGPA) and class standing after completion of the one-year pre-engineering major in the College of Engineering program. The number of students accepted in this major depends on regional and national needs and the resources of the College of Engineering. The department head should be contacted for application details.

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. In addition to the graduation requirements and academic performance specified in this catalog, to earn the Bachelor of Science degree in Electrical Engineering a student must earn a CGPA of 2.0 or higher for all his/her Electrical Engineering courses combined. All graduating seniors are also strongly encouraged to take the Fundamentals of Engineering examination which leads to professional registration.

The non-technical (18), technical (13), and required (105) credits comprise the 136 credit degree.

Graduation requires a minimum of eight approved credits in the Humanities/Arts and a minimum of eight approved credits in the Social Sciences, plus two approved general credits, for a total of 18 credits. The Humanities/Arts and Social Science non-technical elective courses must be chosen to satisfy the institution's General Education Core requirements and must include in-depth coursework to meet the rigorous EAC/ABET requirements. The Department of Electrical Engineering can provide the student with a list of approved courses showing how the depth requirement can be met.

The 13 required technical electives must satisfy the following requirements:

1. At least 10 credits must be from Electrical Engineering courses, including at least 6 credits from the 400 level.
2. Three credits may 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.

Many students benefit from the department's Cooperative Education program which allows students to receive limited technical elective credit for working in industry while they complete their degree in Electrical Engineering. Many such students gain valuable work experience in industry during the summer months without extending the time required to complete the BS degree. The Department of Electrical Engineering provides assistance to these students desiring this practical experience. The department also provides assistance in resume preparation and job placement.

Electronics Engineering Technology (EET)

(See Engineering Technology and Management)

Engineering Mechanics (EM)

(See Mechanical Engineering and Civil & Environmental Engineering)

Don Froehlich
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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 Physics

(See Physics)

Engineering Technology and Management (ETM)

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Faculty

Professor Maleki, Head; Professors Emeriti Heusinkveld, Skubic, Sorensen; Associate Professors Lu, Ostfeld, Reposa; Assistant Professors J. Froehlich, Garry, Haug, Kreyger M. Tolle; Instructors Nusz-Chandler, Steinlicht, Sternhagen, H. Svec, R. Svec, Visser.

Programs

The Department of Engineering Technology and Management offers three Bachelor of Science programs which include Construction Management (CM), Electronics Engineering Technology (EET), and Manufacturing Engineering Technology (MnET). Each program provides practical, hands-on experiences many employers look for when hiring new graduates of such programs. These programs are developed and continuously updated to enhance the employability of the students enrolled in these programs. The Department also offers and coordinates a Master's program in Industrial Management (MSIM). For more information about MSIM, please see the Graduate Bulletin.

Construction Management (CM)

Program Coordinator:
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Construction, the largest industry in the United States, plays a significant role in the nation's economic life, and continues to grow in size and scope. Employment opportunities are excellent in this highly competitive, exciting and diversified business. Properly educated people can expect exceptional job opportunities.

The Construction Management program prepares graduates for employment in the construction industry to effectively manage various construction projects. The program integrates courses and topics from business management, construction engineering, and construction management. This unique combination of various disciplines provides the graduates of this program to perform effectively as construction managers in the construction industry. Graduates from this program find jobs in many construction management related areas including, but not limited to, cost estimators, project managers, and project superintendents. The CM curriculum has been developed using the guidelines provided by the Associated Schools of Construction (ASC) and the Associated General Contractors (AGC). The CM curriculum meets the requirements of the American Council for Construction Education (ACCE) which is the accreditation agency for construction management programs. *Updated program information is available from the Department.*

Electronics Engineering Technology (EET)

Program Coordinator:
Byron Garry, 605-688-6229
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In today's complex world, electronics and computers permeate every facet of our lives, and will do so more in the future. This growth can provide exciting, challenging, and rewarding career opportunities for forward-looking students in Electronics Engineering Technology.

Engineering technology is that part of the technological field that requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities. The engineering technologist is often a member of an engineering team, consisting of an engineer, engineering technologist, and engineering technician.

Graduates use their technical and practical proficiency to implement and extend current technology, and may develop prototype products, optimize designs, manage system operations, or provide technical customer support. These electronics professionals take a hands-on approach to applying engineering methods and principles. Their broad range of knowledge prepares them to engage in lifelong learning as new technologies emerge and to progress in their professional responsibilities.

To meet industry's need for this type of worker, the EET program blends theoretical concepts with practical lab work, resulting in graduates who are well-grounded in current technology and in electronics principles and applications. Coursework integrates interpersonal and communication skills and relates electronics theory and applications to the real world. In addition, the student will gain a background in production management skills. After learning electronics basics in the lower-level coursework, in the last two years the student chooses an emphasis and takes specific coursework in one of three areas: business, computer networking, or industrial electronics. Updated program information sheet is available from the Department.

Program Mission Statement

The mission of the EET program at SDSU is to provide the student a solid foundation in electronics, the flexibility to engage in technical support, design and development, production or technical management; to provide technical assistance to existing and emerging businesses, industry, and government; and to prepare for lifelong learning.

Student Educational Outcomes:

1. **Curriculum** – Provide students with a broad-based, practical background in electronics theory and practice.
2. **Skills** – Supply graduates that will be able to practically apply technologies and utilize resources and equipment related to electronics and possess an understanding of emerging technologies.
3. **Problem Solving** – Supply graduates that can gather and critically evaluate data and other information for problem solving, make informed decisions, and implement them.
4. **Information Technology** – Supply graduates who can understand how information is defined and distributed, locate information from a variety of sources, develop skills in using information technologies, critically analyze and evaluate information, and understand ethical, legal and sociopolitical aspects of information and its technologies.
5. **Management and Productivity Improvements** – Develop an understanding of the importance of quality, perform measurement of quality, and apply quality improvement tools and techniques.
6. **Teamwork and Leadership** – Develop and enhance the students' ability to work together in and understand the value of collaborative teams and develop and enhance leadership skills in students so that they may become community and industry leaders.
7. **Communications** – Develop and enhance students' verbal and written communication skills to enhance their effectiveness in industry and society.
8. **Diversity** – Provide students with the opportunity to interact with people from a variety of backgrounds, cultures, and disciplines so that they may have a better understanding of the diverse nature of the global marketplace and society.
9. **Lifelong Learning** – Provide students with the skills necessary for, and an awareness of, the importance of lifelong learning.

General Engineering (GE)

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

General Engineering (GE) Service Courses

The Department offers a number of General Engineering (GE) courses in support of many programs offered through the College of Engineering. These include a number of courses in the areas of engineering graphics, computer aided drafting, computer aided design, and manufacturing processes.

Manufacturing Engineering Technology (MnET)

Program Coordinator:

Carrie Steinlicht, 605-688-6583

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Manufacturing plays an essential role affecting the way we live and use various products, and will do so more in the future. This growth can provide exciting, challenging, and rewarding career opportunities for forward-looking students in Manufacturing Engineering Technology. Engineering technology is that part of the technological field that requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities.

This program provides the students with the opportunity to learn about the basic and advanced manufacturing technologies, industrial automation, and management techniques for improving the way manufacturing companies operate. Integral to this program are courses and concepts in math, science, communications, social studies, and teamwork, enhancing the employability of the graduates of this program. The graduates of this program are prepared to perform effectively at the entry level as manufacturing engineers in many related areas such as quality, supervision, production planning, product and process design, work design, plant layout, and plant management. The Manufacturing Engineering Technology curriculum at South Dakota State University has been developed using many guidelines provided by the National Center of Excellence for Advanced Manufacturing Education, the Society for Manufacturing Engineers, and input from many of the regional manufacturing businesses. Updated program information sheet is available from the Department.

Program Mission

The MnET program will provide an excellent nationally recognized engineering technology education that will produce graduates who possess the technical, academic, leadership, management and social skills required to facilitate the economic viability and vitality of South Dakota and its industries.

Program Objectives

1. (**curriculum**) Provide students with a broad-based practical background in manufacturing processes, design technologies, and systems and components for automation, management and productivity improvement techniques, and applied sciences.
2. (**skills**) Supply graduates that will be able to practically apply technologies and utilize resources and equipment related to manufacturing in the manufacturing environment and possess an understanding of emerging technologies.

3. **(problem solving and information technology)** Supply graduates that can gather and critically evaluate data and other information for problem solving, make informed decisions, and implement them.
4. **(leadership)** Develop and enhance leadership skills in students so that they may become community and industry leaders.
5. **(teamwork)** Develop and enhance the students' ability to work together in and understand the value of collaborative teams.
6. **(communications)** Develop and enhance students' verbal and written communication skills to enhance their effectiveness in industry and society.
7. **(diversity)** Provide students with the opportunity to interact with people from a variety of backgrounds, cultures, and disciplines so that they may have a better understanding of the diverse nature of the global marketplace and society.
8. **(societal awareness)** Demonstrate the relationship between, application of, and impact of curriculum topics on the local, regional, national, and global society as it relates to ethics, society, economy interests, health and safety, the law and the environment.
9. **(lifelong learning)** Provide students with the skills necessary for and an awareness of the importance of lifelong learning.

English (Engl)

Kathleen Donovan

Department of English

Scobey Hall 014

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Faculty

Associate Professor Donovan, Head; Distinguished Professor Woodard; Professors Brandt, Danker, Evans, Flynn, Ryder, Taylor, Williams; Professors Emeriti Alexander, Brown, Duggan, Foreman, Kildahl, Marken, Witherington, Yarbrough; Associate Professors Keller, O'Connor; Assistant Professors Haug, Nagy; 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. The 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, 201, and non "Honors" 210); **Option B: English Education major, 36 credits in courses prefixed Engl and Ling** (not counting Engl 101, 201, 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, and Engl 200, as well as modern 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. Advisers 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 201), 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.

A minimum grade of "C" must be earned in all English and Linguistics courses to count for the English major or minor.

Entomology (Ent)

(See Plant Science)

Environmental Management (EnvM)

Tom Cheesbrough

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605-688-6141

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<http://www.abs.sdsdstate.edu/bio>

Faculty

Professor Cheesbrough, Head; Professors Gibbons, Granholm, Hildreth, Hutcheson, Kayongo-Male, Larson, McMullen, Peterson, Reese, Ruffolo, Sutton, Westby, Whalen; Professors Emeriti Baker, Chen, Hartel, Huggins, Morgan, Myers, Pengra, Taylor; Associate Professors Bleakley, Erickson, Gibson, Troelstrup; Associate Professor Emeritus Morrill; Assistant Professors Gilmanov, Pedersen, Wake, Young; Instructors McCutcheon, Willgoth; Adjunct/Joint faculty E. Butler (Igne), J. Butler (USFS), Chase (Vet.Sci.), Diggins (Augustana), Evenson (Chem.), Fennell (HFLP), Francis (Vet.Sci.), German (WRI), Henning (DS), Johnson (PS), Majerle (Chem.), McFarland (ARS), Nelson (Vet.Sci.), Reidel (NGIRL-USDA), Rietz (Brookings Medical Clinic), Specker (FFS), West (Chem.).

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 adviser 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 relationships 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
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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*: 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 Education (FCSE)

(See Human Development, Consumer and Family Sciences)

Food and Biological Materials Engineering (FBME)

Van Kelley
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Agricultural Engineering 107
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<http://abe.sdstate.edu/>

Faculty

Associate Professor Kelley, Head; Professors Anderson, Hellickson, Ullery, Werner; Professors Emeriti Chu, DeBoer, Durland, Wiersma; Associate Professors Adelaine, Campbell, Humburg, Julson, Muthukumarappan, Pohl, Trooien; Assistant Professors Schipull, Stange; Assistant Professor Emeriti Bender, Pahl.

Programs

Food and Biological Materials Engineering is a unique educational specialization in Agricultural and Biosystems 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 new technologies that are used in the food and fiber industry.

Students are given foundation courses in mathematics, physics, chemistry and microbiology. Additional coursework stresses communication skills, engineering mechanics, food science, food safety, and engineering design. This program of study will prepare you for entry-level positions with corn, soybean, and wheat 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.

The Program Educational Objectives of the Food and Biological Materials Engineering specialization are:

1. To produce engineers that become competent in methods of analysis involving use of mathematics, fundamental physical and biological sciences, engineering sciences, and in the computation skills needed for the practice of agricultural and biosystems engineering.
2. To produce engineers that develop design skills, including abilities necessary to think creatively, to formulate problem statements, to communicate effectively, to synthesize information, and to evaluate and implement problem solutions.
3. To produce engineers that become capable of addressing issues of ethics, safety, professionalism, cultural diversity, globalization, environmental impact, and social and economic impact in engineering practice.
4. To produce engineers that will contribute to agricultural profitability through the development, adoption and proper use of improved and safer engineering technologies, production systems and management practices.

Engineering design is taught throughout the academic program beginning with the freshman ABE 122 course and culminating in a two semester, senior capstone design experience via the ABE 411 and ABE 422 courses. Senior students are members of design teams which design, build, test and demonstrate engineered products. Design projects solicited from industry provide students with relevant “real world” design experience.

See Agricultural and Biosystems Engineering for courses and curriculum.

French Studies (Fren)

(See Modern Languages)

General Agriculture

Charles McMullen

College of Agriculture and Biological Sciences

Agricultural Hall 156

605-688-5133

e-mail: academic.programs@abs.sdstate.edu

Programs

The General Agriculture curriculum is designed for the student undecided as to a major field of study within the area of agriculture, or for the individual who may want to combine multiple fields of study within agriculture, or 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 for a diversified career or to manage a production unit. Two options are included in this curriculum: a two-year Associate of Science 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)

(See Engineering Technology and Management)

General Studies (Associate of Arts)

Gail Dobbs Tidemann

College of General Studies and Outreach Programs

Medary Commons 121

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Programs

The Associate of Arts degree in General Studies provides a foundational general education at the university level supporting bachelor's degree programs, lifelong learning, leadership, service, and careers requiring general education coursework.

Students completing this Associate of Arts degree will have fulfilled the Board of Regents general education core requirements for a bachelor's degree at any of the Regental universities in South Dakota.

Genetics

Charles McMullen

College of Agriculture and Biological Sciences

Agricultural Hall 156

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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 201, Genetics and Organismal Biology	3
Bio 202, Genetics and Organismal Biology Laboratory	1
Bio 203, Genetics and Cellular Biology	3
Bio 204, Genetics and Cellular Biology Laboratory	1
Bio 371, Genetics	3
Bio 453-553, Advanced Genetics	3
Bio 462-562, Molecular Biology I	2
Bio 464-564, Molecular Biology II	2
Bio 465-565, Molecular Biology II Lab	2
Micr 436, Molecular and Microbial Genetics	4
Micr 438, Molecular Microbial Genetics Lab	2
PS 383, Principles of Crop Improvement	3

Geographic Information Sciences

(See also Geography)

Roger Sandness

Department of Geography

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Faculty

Professor Sandness, Head; Distinguished Professor C. Gritzner; Professors J. Gritzner, Hogan, Napton; Associate Professor Berg; Assistant Professors Samuelson, Watrel; Adjunct Faculty Bliss, Loveland, Reed, Yang.

Program

Geographic Information Sciences (GISc) is the science of geographic and spatial analysis. It is concerned with the basic elements of spatial information including data gathering, description, manipulation, analysis, modeling, interpretation, and presentation. The knowledge

gained from GISc is used to help make decisions about spatial phenomena that are distributed on the earth's surface. This major includes the necessary courses to prepare the graduate to use the tools of GISc in business or governmental agencies.

The GISc graduate will be able to apply the tools of GISc to analyze spatial data in the natural and social sciences. This program gives students an opportunity to become professionals in a career area that has been growing and will continue to grow in numbers. GISc is a highly technical field. Graduates will find themselves on the cutting edge of an important area and will be able to find highly rewarding and remunerative jobs.

The Department of Geography provides coursework leading to the Bachelor of Science degrees in Geographic Information Sciences and Geography. The Bachelor of Science in Geographic Information Sciences major requires 41 credit hours and includes Geog 131, 132, 200, 210, 382, 383, 484, 487, 488, and 489. Math 120 and Stat 281 are also required and included in the 41 credit hours.

Geography (Geog)

Roger Sandness
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Faculty

Professor Sandness, Head; Distinguished Professor C. Gritzner; Professors, J. Gritzner, Hogan, Napton; Associate Professor Berg; Assistant Professors Watrel, Samuelson; Adjunct Faculty Bliss, Loveland, Reed, Yang.

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 in Geography and also in Geographic Information Sciences. The Geography major requires 35 credit hours which includes Geog 131, 132, 200, 210, 382, and 487 with 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 emphasis stresses research techniques and is oriented toward future employment in governmental, industrial, military, or planning positions. The Environmental Planning and Management emphasis is designed to prepare students for careers in governmental, industrial, managerial, recreational areas, and commercial corporations. Minors in Geography and Geographic Information Sciences are also offered by the Department.

German (Germ)

(See Modern Languages)

Gerontology (Gero)

Renee Oscarson
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Interdisciplinary 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)

Patty Hacker
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Faculty

Professor Oien, Head; Professors Booher, Hacker; Professors Emeriti Forsyth, Huether, Williamson; Assistant Professors Janot, Place, Vukovich; Instructors Ballard, Bouman, Danger, Dwyer-Shick, Ekland, Erickson, Etter, Hauschild-Mork, Kirby, Larson, Liles, Melum, Olson, Roethig, Roiger, Russow, Scheid, Steinback, Stiegelmeier; Lecturers Eidsness; Adjunct Professors Ramsay, Reynen, Warren.

Programs

Professional Preparation in Health, Physical Education and Recreation

Four undergraduate majors are offered within the department. These include Athletic Training, Health Promotion, HPER, and Public Recreation. Three undergraduate minors are offered including Health Education, Physical Education, and Public Recreation. Additional programs include Physical Education Teacher Education, Pre-Physical Therapy and Pre-Occupational Therapy.

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

This two credit course is designed to introduce students to the various dimensions of wellness as well as provide the necessary knowledge to make informed decisions which will lead to the development of a healthy lifestyle. The course also includes self assessment activities for students to evaluate their current health status. Wel 100 satisfies Goal #1 of the Institutional Graduation Requirements (SDSU Core).

PE 100 – Activity Courses

Two credits of activity courses may be taken as electives. The courses are designed to be extensions of the Wel 100 course and will promote the development of lifelong wellness through physical activity. Through participation in these activities students may work on further developing their skills in social responsibility, as well as enhancing their ability to embrace change in positive ways.

Course Cross Referencing

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

Health Promotion

Jeffrey Janot
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PEC 119
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Faculty

Assistant Professor Janot, Head; Assistant Professor Vukovich; Instructor Kirby.

Program

Students interested in exercise science, adult fitness, cardiac rehabilitation, and wellness programming are candidates for this major. Individuals will graduate with a Bachelor of Science degree in Health Promotion. This degree prepares the student to enhance awareness, modify behavior, and create environments that promote positive health practices/behaviors. Admission requirements include: sophomore standing with a 2.5 GPA or higher, completion of HPER 180 and Wel 100, and a "C" or better in all courses taken within the major requirements. Students are required to choose classes from a career orientation emphasis area to complete coursework for the major.

Allied Health Specialization

This is designed for individuals interested in matriculating into the baccalaureate degree and receiving transfer credit for their technical training. This degree will prepare graduates for a broad range of opportunities in Health Promotion while continuing their commitment to an allied health profession.

Health Science (HSc)

College of Nursing, Undergraduate Nursing Department
NFA 327
605-688-5178 or 1-888-216-9806 ext. 2
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A Health Science minor is an interdisciplinary concentration offered to any undergraduate student at South Dakota State University by completing a minimum of 24 semester hours across disciplines with a **required core** of course offerings across several disciplines. The purpose of the Health Science minor is to provide an opportunity for students to learn more about health and health care while pursuing other majors in the University, and to provide a Health Science minor for those individuals who wish to obtain competence in health knowledge, public health and healthful environments. The outcomes for graduates of the Health Science minor are:

1. Apply public health principles, including administration and organizations, to selected disciplines.
2. Implement public health methods and strategies in working with individuals and groups, incorporating principles from the fields of sociology, psychology, and human growth and development.
3. Apply basic human health concepts gained from selected disciplines, biology, physiology, and behavioral, mental health.
4. Advocate for needs of people served by public health systems that demonstrate an understanding of how environment and ecology affect aggregates and communities.

The required core courses are:

- a. Biological Science courses (6 credits). These courses do not need to be sequence courses but must include science courses with the following prefixes: Bio, Micr, Zool.
- b. Required Health Science Core courses (12 credits).
- c. Electives from set of selected courses (6 credits).

See Major and Minor Requirements section.

90 Department and Program Descriptions

History (Hist)

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Faculty

Professor Sweeney, Head; Professors Crain, Funchion, Miller; Professor Emeriti Bell, Volstorff; Associate Professors Berg, Brooks.

Program

Majors may choose either the Bachelor of Arts or the Bachelor of Science degree. The requirements in either program are 36 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.

Mission Statement

1. Foster habits of inquiry that lead students to think critically and conceptually.
2. Enable students to appreciate the diversity of peoples and cultures, as well as the shared humanity that unites us.
3. Enhance reading, writing, and communication skills through conventional and computer assisted modes.
4. Acknowledge the complexity of historical processes and historical change that have produced the contemporary world.
5. Assist students in learning to demonstrate historical knowledge.

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

Core Curriculum

In addition to departmental requirements, a student must complete the University and College of Arts and Science core curriculum appropriate to his/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 education program; for details, contact the College of Education and Counseling.

Honors College (HON)

Robert Burns
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Committee

Distinguished Professor Burns, Director; Assistant Director Swedlund; Members: Chase, Dwivedi, Garnos, Kemp, Lyons, Smyer, Utecht.

Program

Graduation with "Honors College Distinction" is earned by completing the requirements listed in the curriculum plan given below. The Honors College is dedicated to supporting the highest quality academic and enrichment opportunities for motivated and academically

suiting students who seek a high level of rigor, challenge and personalized focus in a program featuring a carefully designed, yet flexible, curriculum and attention to growth experiences outside the classroom. Qualified students are encouraged to enroll in Honors designated sections of general education courses whether or not full completion of the program is an objective.

Enrollment Requirements for Honors Courses

Qualified students may enroll in sections designated as Honors (Departmental Honors Courses or Honors Colloquia) without making formal application to the Honors College Committee. To qualify for enrollment in an Honors section, 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 of 27 or higher on the composite ACT or combined SAT at the 90th percentile.

Honors College Continuing Enrollment

Students who wish to progress toward graduation with Honors College Distinction must apply for continued enrollment, generally at the end of the freshman or beginning of the sophomore year. An application form is available from the Honors College Director. Students who are accepted continue to enroll regularly in Honors College sections of lower division courses. They can apply for Honors contract credit for regularly offered courses in which they complete additional assignments to gain Honors credit. These students will enroll in an Honors Colloquium, preferably during the junior year, and will submit and gain approval from the University Honors Committee for a directed study during the senior year.

Graduation with Honors College Distinction

To graduate with Honors College Distinction, a student must have a cumulative GPA of 3.4 or higher as of the beginning of the semester of graduation. A minimum of 27 Honors credit hours is required including 15 credit hours of Honors general education courses, 3-6 hours of Honors Colloquium, 3-6 credit hours of Honors Directed Studies, and 3-6 hours of Honors upper division contract courses. Credit hours earned in Honors Colloquium and Honors Directed Studies beyond the minimum of 3 credit hours can be applied toward Honors College requirements in lieu of Honors upper division contract course credits.

Honors Courses

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. Most 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 College students are encouraged to take more than the one required colloquium.
3. **Honors Directed Study.** In the junior year, Honors College students should propose their directed study projects. The Honors College administrator will supply a set of instructions. The proposed study must be approved by the University Honors College committee. The proposal includes an education plan, career plan, objectives, theory base, methodology, bibliography, time schedule, list of planned outcomes (products), and a plan for reporting the results to an appropriate audience.

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

Peter Schaefer

**Department of Horticulture, Forestry, Landscape and Parks
Northern Plains Biostress Laboratory 201A**

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Faculty

Professor Schaefer, Head; Professors Ball, Graper, Johnson, Stubbles; Professors Emeriti Collins, Peterson, Prashar; Associate Professors Fennell, Maca, Schleicher; Associate Professors Emeriti Johnson, Martin; Assistant Professor Burrows, Nassar; Instructor Evers.

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, turf, 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 Specialization curriculum. Students interested in pursuing careers in managing nurseries, landscape maintenance, garden center, or greenhouse businesses should follow the Business Specialization curriculum. Students interested in graduate study should follow the Science Specialization 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 and Foodservice Management (HFM)

(See Nutrition, Food Science and Hospitality)

Human Development and Family Studies (HDFS)

(See Human Development, Consumer and Family Sciences)

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

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Faculty

Professor Helling, Head; Professors Aamot, Enevoldsen, Gilkerson, Nichols, Tidemann; Professor Emeriti Kranzler, Richardson; Associate Professors Gardner, Oscarson; Assistant Professors Bell, Cegliean, Cutler, DeBates, White; Instructors Howlett, Venhuizen.

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, Dakota State University, Northern State University, or University of South Dakota. Minimum college and university requirements are given in the appropriate sections of this bulletin and are incorporated into curriculum plans for each major. Advisers 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 an internship 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 child care, preschool, public schools (K-Grade 2), 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 coursework at BHSU, DSU, NSU, or USD.

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. Coursework, 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 coursework 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)

Richard Lee
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Faculty

Professor Lee, Head; Professor Olson; Professor Emeritus Markland; Associate Professors Getz, Giago, Lucchesi, Perpich; Associate Professors Emeriti Cline, Laird; Assistant Professors Hinde, 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 specializations 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.

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 108 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 Specialization. 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 specialization.

Broadcast Journalism Specialization. Students who want to work in news in radio and television take this specialization.

Advertising Specialization. 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 specialization.

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 news writing 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 department moved into expanded and renovated facilities that cost \$2.4 million in 2000. There are four computer laboratories – for news writing; for news editing and typography; for broadcasting and advertising; and for photojournalism. All have state-of-the-art equipment (MacIntosh G4's). Broadcast and advertising courses are in the Joe L. Floyd New Media Laboratory. It is equipped with high-end Macintosh computers and connected to digital video and audio production suites. There are two conference rooms, a reading room, a student lounge, and individual offices for the department's nine faculty members. The journalism building has been renamed Yeager Hall in recognition of the contributions of Anson and Ada May Yeager. Mr. Yeager was the long-time editor of the *Argus Leader* in Sioux Falls.

Lakota (Lak)

(See Modern Languages)

Landscape Design (La)

(See Horticulture, Forestry, Landscape and Parks)

Latin American Area Studies Program (LAAS)

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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, Family and Consumer Sciences, Nursing, Foreign Service, Peace Corps, international business and numerous positions with government, the United Nations and private corporations involved with or in Latin America. The program should also facilitate improved communication and understanding between the peoples of these countries and the United States. Courses should be integrated with the student's vocational major. The student should see a faculty adviser and the coordinator of LAAS.

(Pre-) Law

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Area of Study

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. However, you will be required to declare an academic major during your freshman or sophomore year. 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 in June between the junior and senior year or 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.

Liberal Studies

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Programs

The Liberal Studies major is designed for students who have a personal and/or professional goal that cannot be met by an established major on campus. In addition to completing the core requirements of the University, 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 prepared upon entering the program identifying the personal and/or professional goals, the courses to be taken, and an explanation of how the courses contribute to the goals. This form must be approved by the student's adviser and the Dean of the College of General Studies and Outreach Programs. The Liberal Studies major can be obtained with a Bachelor of Science degree.

Manufacturing Engineering Technology (MnET)

(See Engineering Technology & Management)

Mathematics and Statistics (Math, Stat)

Kenneth Yocom
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MathematicsandStatistics/](http://www3.sdstate.edu/Academics/CollegeOfEngineering/MathematicsandStatistics/)

Faculty

Mathematics: Professor Yocom, Head; Professors Ayers, Kemp, Kindermann, Lacher, Nielsen, Schmidt, Vandever; Professors Emeriti Kranzler, Monahan; Associate Professors Abraham, Clever, Cogswell, C. Larson, Schaal; Associate Professors Emeriti Broschat, Nelson; Assistant Professors Flint, Kosek, Roe, Struck; Assistant Professor Emeritus Trapp; Instructors Ahrendsen, Bahr, Brost, B. Larson, Leiferman, Malo, Murugesan, Olson, Werner.

Statistics: Professors Kim, Kindermann, Lacher, Nielsen, Vandever, Wicks; Associate Professors Roe, Struck; Instructors Bahr, Brost, Ellingson, Olson.

Mission

The mission of the Department of Mathematics and Statistics, in support of the College of Engineering and SDSU, is to provide excellent mathematical and statistical instruction, to support scholarly activity, and to make available a wide range of services to our local, regional, and global communities.

Programs

Mathematics Major (B.S.)

The department offers the Bachelor of Science in Mathematics through the College of Arts and Science. This program provides a rigorous preparation for the technically oriented student, the prospective mathematics teacher at the high school or middle school level, or the student preparing for graduate or professional programs. Graduates of the program find employment in business, industry, government, and education.

Beginning with Math 123 Calculus I, 39 mathematics credits are required out of the 128 total credits required for graduation. 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. These requirements are incorporated into the curriculum plans found in the section on Major and Minor Requirements, but students should also read the Arts and Science requirements for the B.S. degree and consult with their adviser who will assist in planning a curriculum and help ensure that all graduation requirements are met.

Teacher Education in Mathematics Specialization

Students interested in teaching mathematics at the high school or 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.

Mechanical Engineering (ME)

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MechanicalEngineering](http://www3.sdstate.edu/Academics/CollegeOfEngineering/MechanicalEngineering/)

Faculty

Professor Froehlich, Head; Professors Delfanian, Ghazi, Hamidzadeh, Moutsoglou, Remund; Associate Professor Bassett; Instructors Hengeveld, Peters, Twedt.

Programs

Mechanical Engineering is a profession in which knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind.

The mission of the Department of Mechanical Engineering, in support of the mission of the College of Engineering, is to provide a highly respected, rigorous, and practical professional education for Mechanical Engineering students oriented toward applied problem solving; to conduct meaningful research which broadens the base of engineering and scientific knowledge with a regional emphasis, and to

provide technology based and related managerial assistance to existing and emerging businesses, industry and government.

The Mechanical Engineering program provides a learning environment that allows graduates to achieve our educational program objectives of having individuals become:

- A. Engineers who have the knowledge and skills of mathematics, science and engineering and are capable of analyzing and solving problems including design and team-based engineering.
- B. Engineers who are technically educated and have an awareness of global and contemporary engineering issues and practices.
- C. Engineers who have a desire for lifelong learning and who are ethical, effective, professional contributors of society.

The Mechanical Engineering program at SDSU is accredited by the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology (EAC/ABET).

Mechanical Engineers have a remarkable range of career directions from which to choose. Work is in research, development, design, testing, manufacturing, operations and maintenance, marketing and sales, or in management and administration. ME's 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.

The curriculum is made up of courses in: Basic Sciences, Engineering Sciences, Design, Communications, Humanities and Social Sciences. 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. In the Design category, which is integrated throughout the curriculum, the student deals with 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, speech, 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.

Mechanical Engineering students are not allowed to randomly select humanities/arts and social science elective courses. The Mechanical Engineering Department recognizes the importance of the general education component of undergraduate education, and the need for this component to complement the technical content of an education in engineering, mathematics, science and technology. This connection is important for producing well-rounded graduates who will continue to meet the present and future needs of society. SDSU's General Education Core proficiencies, outlined in the General Education Course section of this catalog, are of great professional importance to all graduates. By choosing electives to meet the requirements of the goals of the System General Education Core (Gen Ed), and the goals of the Institutional Graduation Requirements (SDSU Core), students connect their general education component to their technical curriculum and thus strengthen their professional competence.

A two-semester sequence taken in the senior year, Senior Design I-II places every student on a design team that designs, builds, tests, and demonstrates a significant design project. The design projects are often solicited from industry and provide students with valuable real world team design experience. Also, opportunity is given to take technical

electives including courses in thermal engineering, machine design, aerospace engineering, industrial engineering and environmental engineering.

Outcomes of the program are that ME graduates have:

- an ability to apply knowledge of mathematics, science, and engineering
- an ability to design and conduct experiments, as well as to analyze and interpret data
- an ability to design a system, component, or process to meet desired needs
- an ability to function on multi-disciplinary teams
- an ability to identify, formulate, and solve engineering problems
- an understanding of professional and ethical responsibility
- an ability to communicate effectively
- the broad education necessary to understand the impact of engineering solutions in a global and social context
- a recognition of the need for, and an ability to engage in lifelong learning
- a knowledge of contemporary issues
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The department helps students arrange cooperative or work-study programs with industry. Credits may be obtained for these work experiences, by prior arrangement with the appropriate faculty member and department head, and by registering for ME 494, 496, or 497. These credits, upon approval, will fulfill part of the technical-elective requirements.

A student interested in Mechanical Engineering initially enrolls as a pre-engineering major in the College of Engineering. A student's acceptance into ME is based on prerequisite preparation, the cumulative grade point average (CGPA) and class standing after completion of the one-year program. The number of students accepted into ME depends on regional and national needs and the resources of the College of Engineering. You should contact the department for the application details. 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 125, 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.

Each Mechanical Engineering student is assigned an academic adviser who provides valuable assistance with professional career advice, course planning and class scheduling. Students should meet with their adviser at least twice per semester for assistance with their progress and course planning. Students of the Mechanical Engineering program should read and follow the additional University and College of Engineering policies, procedures and requirements along with objectives and expectations as listed in the front sections of the bulletin.

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 (MedT)

(See Chemistry)

(Pre-) Medicine

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Advisors

Dr. Michael Hildreth, Dr. Scott Pedersen, Dr. Carol Wake, Ms. JoAnn Willgohs.

Area of Study

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 pre-medicine program is coordinated by the College of General Studies and Outreach Programs. The curriculum is designed to be compatible with many different majors at South Dakota State University. It includes the following typical medical school minimum 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.

The student's 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).

Refer to the Association of American Medical School website at aamc.org for more specific information on the application process as well as information on specific medical schools.

Microbiology (Mier)

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Faculty

Professor Cheesbrough, Head; Professors Gibbons, Granholm, Hildreth, Hutcheson, Kayongo-Male, Larson, McMullen, Peterson, Reese, Ruffolo, Sutton, Westby, Whalen; Professors Emeriti Baker, Chen, Hartel, Huggins, Morgan, Myers, Pengra, Taylor; Associate Professors Bleakley, Erickson, Gibson, Troelstrup; Associate Professor Emeritus Morrill; Assistant Professors Gilmanov, Pedersen, Wake, Young;

Instructors McCutcheon, Willgohs; Adjunct/Joint faculty E. Butler (Igne), J. Butler (USFS), Chase (Vet.Sci.), Diggins (Augustana), Evenson (Chem.), Fennell (HFLP), Francis (Vet.Sci.), German (WRI), Henning (DS), Johnson (PS), Majerle (Chem.), McFarland (ARS), Nelson (Vet.Sci.), Reidel (NGIRL-USDA), Rietz (Brookings Medical Clinic), Specker (FFS), West (Chem.).

Program

The Biology and Microbiology Department offers curricula leading to the Bachelor's degree with a major in Microbiology. 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. Students majoring in Microbiology will select among four areas of specialization depending upon their particular interest and needs: (1) Microbiology, (2) Molecular Biology, (3) Infectious Disease, and (4) Environmental and Applied Microbiology.

The **Microbiology specialization** provides the student with a broad background in all facets of microbiology, thereby preparing students to pursue careers in the breadth of areas related to microbiology.

The **Molecular Biology specialization** enables students to specialize in an area that has become one of the principal tools for the modern biologist plus an expanding career area in its own right.

The **Infectious Disease specialization** focuses on the basic science of animal, human and plant diseases caused by microorganisms. Students will be prepared for careers in communicable disease control, developing antimicrobial agents, and health care professions.

The **Applied and Environmental Microbiology specialization** concentrates on the more applied aspects of microbiology, ranging from the role of microorganisms in the environment to utilization of microbes in agriculture, food science, and industry. Students will find a broad range of career opportunities available.

A Microbiology major is often taken along with the preprofessional programs of Medicine, Dentistry and Veterinary Science. Graduates in Microbiology are equipped for a variety of jobs such as in diagnostic and research laboratories, public health, agriculture, food industry, pharmaceutical companies, academia, governmental agencies, and the private sector. With the recommended electives the graduate is prepared to enter graduate school to pursue a Master's or Doctor's degree. 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)

Lieutenant Colonel (P) Keith Corbett, Ed. D.
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Faculty

Lieutenant Colonel Corbett, Professor of Military Science, Head; Professor Emeritus Adams; Assistant Professor of Military Science Major Fleckenstein, Major Blasdel; Master Sergeant Carpenter; Sergeant First Class Chavez.

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 and master's degree to serve as commissioned officers in the active Army, the Army National Guard or the Army Reserve.

The department has three on-campus 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 National Leader's Course 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: Computer Literacy, Written and Oral Communications and a Military History class. 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 with 54 credits completed.
7. Sign a written agreement.

Army ROTC Scholarships

Qualified students can compete for 4-year, 3-year, and 2-year scholarships which cover full tuition, laboratory and instructional fees, university student fees, transcript, cap and gown, diploma, and selected graduation fees. A flat book rate and supplies payment and \$250, \$300, \$350, and \$400 a month subsistence allowances are provided each semester. Scholarship competition (4-year scholarship) is conducted by the Department of the Army in the fall semester for University bound high school students.

Applications are available from high school guidance counselors or directly from SDSU Army ROTC by contacting the Department of Military Science, Box 2236, University Station, Brookings, SD 57007-1597 or call 605-688-6151, or e-mail garnet_wosje@sdstate.edu.

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 Summer Training Program at selected Army hospitals
6. British Exchange Program

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 ROTC Advanced Camp. This minor is compatible to fields of major studies.

(Pre-) Ministerial

Dennis Bielfeldt

Philosophy and Religion

Scobey Hall

605-688-4934

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Area of Study

Almost all theological seminaries require some undergraduate education. Most require a college degree. A broad general education is desirable. A satisfactory pre-ministerial program could be: a Liberal Studies degree or selection of a major in any humanities or social science area, focusing electives around a core of religion and philosophy courses as selected from the more than 30 hours available in these areas.

Modern Language

Business-Economics Specialization

Philip Baker

Department of Modern Languages

NFA 121

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This specialization is designed for language majors or minors 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. See page 186 for details.

Modern Languages (ML)

Philip Baker

Department of Modern Languages

NFA 121

605-688-5101

e-mail: philip_baker@sdstate.edu

Faculty

Professor Baker, Head; Professors Beattie, Cardenas, Richter, Sunde; Professor Emeriti Bates, Iden, Redhead; Assistant Professors Baggett, Ramos; Instructors Dykstra, Garst-Santos, Tooke; Adjunct Instructor Green.

Programs

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

Students entering the University with a background in modern 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 310 or 311) may apply to receive credit for all previous courses. Even if the student's career goals do not center on a modern language, a strong background in a language may make a second major or a minor feasible.

The faculty of the Department of Modern 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 Modern 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 traveling 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 Modern Languages.

(Pre-) Mortuary

Mark Binkley

College of General Studies and Outreach Programs

Medary Commons 124

605-688-4153

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Area of Study

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 from one to four years of study with students earning a diploma, Associate of Applied Science (AAS) or Bachelors of Science (BS) degree at one of 50 accredited schools which offer programs in mortuary science. One or possibly two years of study may be taken at SDSU. Certification includes passing required board exams and an apprenticeship in an approved funeral home. Leaders of the funeral service field are rapidly recognizing the need for education of the total person. Because the funeral director's work is diverse, he/she must

draw upon knowledge of the social and economic fields as well as the scientific and artistic areas which the technical needs of the profession require.

The curriculum listed below is a GUIDE ONLY and may be altered to meet the licensing requirements of the mortuary science school the student plans to attend. Students interested in completing a bachelor's degree should work closely with the pre-mortuary adviser and will need additional courses to meet system and university core requirements.

Freshman Year

Acct 210, Principles of Accounting I.....	3
Bio 101, Biology Survey I or	
Bio 105, Human Biology	3
Chem 106, Survey of Chemistry	3
Engl 101, Composition I	3
Math 102, College Algebra or	
Math 104, Finite Mathematics	3
Psyc 101, General Psychology	3
Soc 100, Introduction to Sociology	3
SpCm 101-101A, Fundamentals of Speech and Lab	3
Zool 221, Anatomy	3
Social Science Elective	3

Sophomore Year

BAdm 334, Small Business Management	3
BAdm 350, Legal Environment of Business and Contracts	3
Hlth 212, Contemporary Health Problems	2
Micr 231, General Microbiology	4
Nurs 201, Medical Terminology	1
Rel 360, Death and Dying	3
SpCm 201, Interpersonal Communication	3
Social Science Elective.....	3
Electives*	9

* to meet mortuary school or state requirements, suggest Rel 213, Intro to Religion; Engl 201, Composition II

Music Education

(See Music)

Music Merchandising

(See Music)

Music (Mus)

Corliss Johnson

Department of Music

Lincoln Music Hall 204

605-688-5188

e-mail: corliss_johnson@sdstate.edu

Faculty

Professor Johnson, Head; Professors Canaan, Colson, Lis, McKinney; Professors Emeriti Hatfield, Piersel, Royer, Walker; Associate Professors Crowe, Spencer, Vensand; Assistant Professors Brawand, Crawley, Peterson, Walker; Instructors Coull, Quam.

Programs

The Music Department offers three degree options: Bachelor of Arts, Music Major; Bachelor of Science in Music (Merchandising); and Bachelor of Music Education.

Bachelor of Arts – Music Major (B.A.)

This program is recommended for those whose intellectual temperament is suited to the study of music within a liberal arts framework, irrespective of specific career aspirations.

Bachelor of Science in 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. in Music Merchandising degree enables students to continue developing their musical skills along with in-depth study in Economics, Communications, Advertising, and Computer Science. The coursework 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 coursework 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. Several approaches to meeting the requirements are available. 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, and while the required pedagogies develop proficiencies within the areas of specialization for B.M.E. students, a functional knowledge of instrumental or vocal techniques outside the specialty is also essential.
For instrumental B.M.E. majors, this must include one semester each of string, woodwind, brass, and percussion pedagogies. Six semesters will assure the broadest preparation through multiple levels of woodwind and brass pedagogy. In addition, instrumental B.M.E. majors must take one semester of applied voice lessons to ensure functional knowledge of vocal techniques.
For vocal B.M.E. majors, the four required semesters of vocal pedagogy are augmented by Mus 293 String, Wind and Percussion Techniques for Vocalists. An additional instrumental pedagogy will assure the broadest preparation. 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/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

Charles McMullen

College of Agriculture and Biological Sciences

Agricultural Hall 156

605-688-5133

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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 nine 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 and Biosystems Engineering, Agricultural Systems Technology, Agronomy, Biology, 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, Dean

College of Nursing

NFA 255

605-688-5178 or 1-888-216-9806, ext. 2

e-mail: roberta_olson@sdsu.edu

Faculty

Professor Olson, Dean; Distinguished Professor Hegge; Professors Peterson, Sorenson; Professors Emeriti Blazey, Hofland, Johnson, Peterson; Associate Professors Carson, Foland, Hendrickx, Lammers, Mylant, Powers, Smyer, Stenvig, Wey; Associate Professor Emerita B. Hanson; Assistant Professors Craig, Dieter, Iken, Joffer, Talley, Tschetter; Instructors Andersen, Bassett, Becker, Birch, Bouffard, Boysen, Burggraff, Calhoon, Elverson, Fahrenwald, Fischer, Fjelland, Gibbons, Goddard, Hesson, Hobbs, Klawiter, Kirby, Laird, Maurer, Niemeyer, Pickard, Randall, Shaver, Symes, Voss, White, Williams, Winterboer; Instructor Emerita Nelson.

Pre-Nursing and Nursing Major

Any student eligible for regular admission to SDSU who plans to enroll in the College of Nursing and Department of Undergraduate Nursing is accepted into pre-nursing and has an adviser 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 three undergraduate program options for students to complete a nursing major.

The **Standard Option** is designed to meet the educational needs of persons who are not registered nurses.

The **RN Upward Mobility Program Option** is designed as a degree completion for registered nurses who have completed academic diploma or associate degree nursing programs.

The newest option, the **Accelerated Option**, is for students who have completed a bachelor of science or a master of science degree in any field and wish to obtain a Bachelor of Science degree in Nursing. The Standard Option is a five-semester program that can be completed in two years. The Accelerated Option is an intensive course of study that is delivered in a compressed format over 12 months.

Admission to the Nursing Major

Students in the Standard Option are admitted to the nursing major for both the Fall and Spring semesters on the Brookings campus and for the Spring Semester only on the Rapid City campus. Students in the Accelerated Option are admitted once a year at the beginning of the 12-month cycle at the Sioux Falls campus. Clinical and theory classes are taught in Sioux Falls; on-campus labs are taught in Brookings. Students who want to enter the nursing major are required to submit an application for admission to the major. Prior to applying to the nursing major, however, a student must apply and be accepted for admission to SDSU.

Students may apply to only one program site (campus) at a time. The number of students accepted to enroll in the major may vary depending upon available clinical facilities, qualified faculty and funds. Selection is made from among the 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. To enter for the Spring Semester, the deadline to apply for admission to the Standard Option is the third Friday of October. To enter Fall Semester, the deadline is the third Friday of February. Deadlines for application to the Accelerated Option and the RN Upward Mobility Option is March 1. Students interested in the RN Upward Mobility Option should contact the RN Upward Mobility office on the Brookings campus for individual

advising. RN Upward Mobility students must complete all support courses, except for 7 credits, prior to admission to the nursing courses. Speaking with an adviser is extremely important to be able to progress through the program on a timely basis. Failure to submit a completed application by the deadline may automatically disqualify the applicant from being considered for enrollment in nursing major courses for the coming semester.

To be considered for admission, students must have a 2.5 GPA or higher and a grade of "C" or higher 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 Department of Nursing Student Services at the Brookings campus or the Nursing Student Services Coordinator at the Rapid City campus.

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* are outlined in the *Pre-Nursing Student Handbook*, which is available through the Department of Nursing Student Services at the Brookings campus and through the Nursing Student Services Coordinator at the Rapid City campus. The *Pre-Nursing Student Handbook* may also be accessed from the College of Nursing's web page: www3.sdsu.edu/Academics/CollegeofNursing.

Transfer students who have begun but not completed a nursing program at another college or university must submit a letter to the College of Nursing indicating their reason for transfer. They must also apply for admission to SDSU, as well as to the College of Nursing. Three letters of recommendation must also be submitted to the College of Nursing: one from the dean/director of their former program and two from faculty members.

Since the nurse is a professional who deals with human lives, it is mandatory that a higher level of English fluency be met in order to ensure the safety of clients and students. The *English as a Second Language* requirement for the College of Nursing is higher than it is for other colleges in the University. The College of Nursing requires all students who meet the definition of students with English as a Second Language to attain a score of 560 on the *Test of English as a Second Language (TOEFL)*, with no section score below a score of 56. They must also attain a score of 3.25 on the *English Language Teaching Association (ELTA) Oral Interview Exam*, with no section score below a 3. These scores are required before the student will be accepted into the major. The student is responsible for all testing fees. Contact Student Affairs, SDSU, Administration Building 312, Box 2201, Brookings, SD 57007. Phone 605-688-4122; e-mail: sdsu_intlstud@sdsu.edu or Fax (605) 688-5951.

Requirements for Continuation in the Nursing Major

Satisfactory completion of all nursing major courses and required support courses must be accomplished for entrance into the second and subsequent semesters of the major courses. If, for any reason, a student drops out of a course or fails to progress in the major as planned, he/she is not guaranteed a place in another semester due to the necessity of limiting the size of clinical classes. Students who fail to obtain a grade of "C" or above in any course meeting graduation requirements must repeat that course or a similar course. To raise an unsatisfactory grade, required nursing support courses and nursing major courses may be repeated only once. Therefore, all 128 credits toward the College of Nursing program must be a "C" or better. This applies to both students in the Standard Option program and the RN Upward Mobility Program Option. If a student does not satisfactorily complete the course the

second time, he/she will not be allowed to continue in the College of Nursing.

All undergraduate and graduate nursing students are expected to adhere to the principles of the *Code of Ethics for Nurses* (American Nurses Association, 1985). The *Code of Ethics 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 Graduate Nursing 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 of Ethics for Nurses*.

Nutrition, Food Science and Hospitality (NFSH)

Chunyang (C. Y.) Wang, Acting
Department of Nutrition, Food Science and Hospitality
NFA 425
605-688-5161
e-mail: cy_wang@sdstate.edu

Faculty

Associate Professor Wang, Acting Head; Professors M. Crews, Krishnan, Specker; Professors Emeriti Colburn, Deethardt, Wills; Associate Professor Chipman, Kattelmann; Associate Professors Emeriti Guild, M. Rose, R. Rose, Shank; Assistant Professor G. Crews; Instructors Davies, DeSmet, Osowski, Pitts.

Programs

The Department offers the Bachelor of Science degree with majors in Hotel and Foodservice Management (Foodservice Management specialization and Hotel and Hospitality Management specialization) and Nutrition and Food Science (Dietetics specialization, Food Science specialization, and Nutritional Sciences specialization), and a minor in Nutrition.

Hotel and Foodservice Management

The Hotel and Foodservice Management program provides a firm foundation in both lodging and foodservice operational management supported by a strong background in business and economics. On-the-job work experience for credit strengthens the academic program. Students with up to two years general education credits will usually find that most of their credits will transfer into this program.

Hotel and Foodservice Management – Foodservice Management Specialization

Foodservice management provides students with a focused experience in food preparation and service, with emphases on leadership and management. Practical hands on experiences, both in the classroom and in the field, broaden students' knowledge and increase their employability. Students obtain sanitation certification as part of the Foodservice Management specialization. Career opportunities range from quick service and fine dining to purchasing, food brokering, sales and catering. Students are well prepared for leadership and management opportunities in the rapidly expanding food-related hospitality industry.

Hotel and Foodservice Management – Hotel and Hospitality Specialization

Hotel and hospitality management emphasizes the rapidly expanding hospitality industry ranging from convention sales to conference coordinator, from travel and tourism director to hotel general manager.

Students receive a firm foundation in business, economics and accounting in order to be competitive in the highly challenging and rapidly changing corporate world of the hospitality industry. From entrepreneurs who want to own and operate their own business to international opportunities in the expanding hospitality industry, students can pursue a variety of different career options.

Nutrition and Food Science – Dietetics Specialization

Dietetics offers a wide variety of jobs in hospitals, health promotion programs, 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 for the promotion of health and the prevention of disease.

A dietitian is essential to the total care of a patient in a healthcare facility, giving nutritional guidance and instruction. Dietitians also work in clinical research units. The role of a dietitian is changing with changes in health care and has become more involved in preventive health care and in community nutrition programs.

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 United States or other ADA approved experience qualifies the student to take the registration exam. The program has also been granted approval status by the Commission on Accreditation/Approval for Dietetics Education of The American Dietetics Association, 216 W. Jackson Blvd., Chicago, IL 60606-6995, 312-899-4876.

Students interested in earning a degree in the Nutrition and Food Science major (Dietetics Specialization) will be accepted into the Nutrition, Food Science, and Hospitality Department as pre-majors and assigned a departmental adviser. Formal application is required for admission into the dietetic program. Application forms are available from the Nutrition, Food Science, and Hospitality 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 Specialization

Food Science prepares students for professional positions in the food manufacturing industry or for graduate study in Food Science.

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 food deterioration, and principles of food preservation. Creative approaches are employed to develop new food products for the rapidly changing consumer who desires good taste and good nutrition at a good price. Food scientists apply science to the selection, preservation, processing, packaging, and distribution of food. Students with a background in the many science areas during the first two years in college may transfer into the program with minimal credit loss.

Numerous high-paying employment opportunities exist for food science graduates who are searching for fulfilling careers in the national and international food industry. The food industry is searching for individuals interested in product development, technical sales, quality control and research. Additional career experiences exist in both government and regulatory agencies.

Nutrition and Food Science – Nutritional Sciences Specialization

This specialization has a similar curriculum with the dietetics. If you are interested in nutrition and do not plan to become a dietician, this is the specialization for you. This specialization will prepare you well for pursuing further interests in human nutrition in graduate school, medical school, and other professional schools. Many job opportunities also exist for nutritionists with a B.S. degree. They can be employed by the food industry, government agencies, and research institutions.

(Pre-) Occupational Therapy

Jim Booher

Department of Health, Physical Education and Recreation

Physical Education Center 265

605-688-5824

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Area of Study

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 advising 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.

(Pre-) Optometry

Nels H. Granholm

Department of Biology and Microbiology

Northern Plains Biostress Laboratory, 251B

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Area of Study

There are 12 American colleges of optometry accredited by the Council of Optometric Education of the American Optometric Association. Students graduating from SDSU with above average grades and competitive optometry test scores have been successful in the admissions process. Students usually have completed three years of college work. About 60 percent of all students entering professional schools of optometry have completed their work for the bachelor's degree. Students are encouraged to complete a bachelor's degree.

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. 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, anatomy, chemistry and psychology. The program outlined below will meet 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.

It is strongly recommended that pre-optometry students contact the pre-optometry adviser as soon as possible after declaring an interest in optometry.

Most of the accredited colleges of optometry now require an Optometry College Admission Test, prepared by the Psychological Corporation, and given at least three times each year.

Park Management

(See Horticulture, Forestry, Landscape and Parks)

Pest Management

(See Plant Science)

Pharmacy (Pha)

(See College of Pharmacy)

Pharmaceutical Sciences

Department of Pharmaceutical Sciences

Shepard Hall 309

605-688-6198

e-mail: barbara_orton@sdstate.edu

Faculty

Professors Billow, Dwivedi, Houglum, Lattin, Singh; Associate Professors Aparasu, Guan, Helgeland; Assistant Professors Mukherjee, Sonee, 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

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Faculty

Distinguished Professor Burns, Head; Professor Emeritus Nelson; Professor Bahr; Associate 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 coursework 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 15 credit hours of philosophy, including Phil 100. Of these 15 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 265

605-688-5824

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Area of Study

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 advising to assist each student in developing a plan best suited to his/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. Students must have a basic science background and complete a certain number of required courses before applying to a professional physical therapy program.

(Pre-) Physician Assistant

JoAnn Willgohs

Department of Biology and Microbiology

Dairy-Microbiology 209A

605-688-5496

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Area of Study

SDSU offers pre-requisite courses to students interested in gaining admission to one of the more than 120 accredited physician assistant (PA) programs in the United States. Accredited PA programs have their own distinctive features, prerequisites, and missions designed to prepare students to become effective members of a health care delivery team. Currently, PA program options include certificate of completion, associate, baccalaureate, and master's degree.

All PA programs are expected to become master's degree programs, thus earning a baccalaureate degree while completing prerequisites for the PA school(s) of your choice is strongly recommended.

Generally speaking, all PA programs require one year each of general biology and general chemistry, one course each in human or animal anatomy and physiology, microbiology, biochemistry, and general psychology. All science courses need to have an accompanying laboratory. In addition, highly recommended courses include developmental and abnormal psychology, organic chemistry, genetics, immunology, and one year of math (including statistics).

A broad, general education including courses in communication, humanities, and social science is strongly recommended. Many PA schools also require a minimum of three months health care experience. An excellent source of information about accredited PA schools is the *Physician Assistant Programs Directory*.

Pre-requisites for most Accredited PA Programs:

Biology 151-154	8 credits
Chemistry 112-114L	8 credits
Anatomy (Zool 221-222)	3 credits
Physiology (Zool 325-325A)	4 credits
Microbiology (Micr 231-232)	4 credits
Biochemistry (Chem 361-361L)	4 credits
General Psychology	3 credits

Highly recommended courses include Lifespan Development (HDFS 210), Abnormal Psychology (Psyc 451), Organic Chemistry (Chem 120-120L or 326-329), Genetics (Bio 371), Immunology (Micr 422), Calculus (Math 121-121A) and Statistics (Stat 281).

General Psychology, Organic Chemistry, and Biochemistry are additional courses students are encouraged to complete.

Physics (Phys)

Oren Quist

Department of Physics

Crothers Engineering Hall 314

605-688-5428

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www.engineering.sdstate.edu/~physics/physics.htm

Faculty

Professor Quist, Head; Professors Browning, Leisure, Rauber; Professors Emeriti Duffey, Graetzer, Miller; Associate Professor Kitterman; Assistant Professor Aaron; Instructor Vondruska.

Mission

The mission of the SDSU Physics Department is to provide high quality physics instruction, to seek new knowledge, and to apply that knowledge for the improvement of the lives of people in South Dakota, the United States, and the World.

Educational Objectives

Graduates of one of the physics programs at SDSU will compare favorably in their theoretical and technical knowledge with students completing a similar program nationally, they will be able to demonstrate proficiency in understanding and applying physics principles, and they will be productively employed in the state, region, or nation.

Educational Outcomes

Graduates will be able to apply technical knowledge, be able to design an experiment and analyze and interpret the data, be able to communicate effectively and work as a team, and be able to use modern tools to solve engineering problems. They will have learned contemporary issues and understand their professional and ethical responsibilities in social, local and global contexts. They will have learned how to learn and have prepared themselves to be lifelong learners.

Programs

The Physics Department has three main objectives in its program offerings: (1) to serve students interested in engineering as a profession; (2) to serve students from various colleges within the University who need a basic understanding of physics; and (3) to serve students with an interest in a professional future in physics. The department is set up and supported with professional staff, facilities and equipment to support these objectives.

The curriculum in Engineering Physics is built around a strong core of physics courses complemented by courses from engineering departments. Students can earn an Engineering Physics degree with an emphasis in either mechanical or electrical engineering by appropriately choosing courses from one of these two areas. This major is designed to give students the ability to apply new research developments to pressing problems of society and is most attractive for those students interested in industrial employment. Graduates with an Engineering Physics degree typically enter employment as an engineer or continue graduate work in a field such as nuclear engineering, electrical engineering, mechanical engineering or aerospace engineering.

The curriculum in Physics is a major similar to the Engineering Physics curriculum that is not necessarily directed toward engineering. Not requiring the depth of engineering courses allows the Physics curriculum more flexibility to accommodate a wide range of student interests. Students interested in a professional physics career, graduate school, medical school, secondary physics education, meteorology, or a multitude of related areas can choose this option. This flexibility is achieved by building a curriculum around a core of 28 required semester credits in physics. Listings of elective courses for various technical careers are available in the Physics Department office.

A student must have a Cumulative Grade Point Average (CGPA) of 2.0 or above for all physics courses to be eligible for graduation with a major in physics. A GPA 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
e-mail: roger_sandness@sdstate.edu

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
605-688-5123
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Faculty

Professor Gallenberg, Head; Distinguished Professors Malo, Wrage; Professors Beck, Boe, Carlson, Cholick, D. Clay, S. Clay, Doolittle, Fuller, Gelderman, Hall, Kephart, Kohl, Langham, Rickerl, Schumacher, Scott, Smolik, Sutton, Wicks, Woodard; Professors Emeriti Brage, Buchenau, Carson, Derscheid, Dybing, Evenson, Fine, Gardner, Horton, Kantack, Kenefick, Kinch, Mankin, McDaniel, Moore, Reeves, Shank,

Shubeck, Walstrom, Wells, Westin, White; Associate Professors Bleakley, Carter, Chase, Draper, Gerwing, Jin, Johnson, Owens, Pollmann, Stymiest, Turnipseed; Associate Professors Emeriti Colburn, Williamson; Assistant Professors Berg, Catangui, Grady, Ibrahim, Ren; Assistant Professor Emeritus Bonnemann.

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, Yen; (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) Anderson, Chandler, Ellsbury, French, Hammack, Hesler, Jackson, Kieckhefer, Osborne, Pikul, Riedell, Woodson; (P.P.I.) Fixen; (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. Four areas of specialization are offered in the major: 1) Business, 2) Pest Management, 3) Production, and 4) Science.

The choice of an area of specialization 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
e-mail: robert_burns@sdstate.edu

Faculty

Distinguished Professor Burns, Head; Professors Lonoswski, Tolle; Professor Emeritus Cheever; Assistant Professor Aguiar.

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. Majors may not apply Political Science credits toward general education requirements. Students who complete Math 123 or Math 121 may apply a total of 6 credits from CSc 312, Stat 281, 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, International Relations, and Political Philosophy. Students must meet the University and College of Arts and Science requirements. Finite Math (Math 104) may be used to satisfy B.A. and B.S. requirements in Political Science.

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.

Psychology (Psyc)

Virginia Norris
Department of Psychology
Scobey Hall 336
605-688-4322
e-mail: virginia_norris@sdstate.edu

Faculty

Professor Norris, Head; Professors Emeriti Branum, Hillner; Associate Professors Phelps, Spear, Woldt; Assistant Professors King, Shaffer.

Programs

The Department offers a Bachelor of Science degree with a major in Psychology. Within the Psychology major, students may pursue a preprofessional specialization, an applied specialization, a teaching specialization (preparation for secondary school teaching), or a psychological services specialization.

The minimum departmental requirement for a psychology degree (applied curriculum) is 30 credits prefixed Psyc which include 101 or 102, 302 or 315, and 390 and Stat 281. Minimum college and university requirements are given in the appropriate sections of this bulletin and are incorporated in the curriculum plans listed later. Advisers assist students to personalize curriculum plans.

Psychology Major, Preprofessional Specialization

The preprofessional specialization 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 Specialization

The applied specialization 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 Specialization

The teaching specialization 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. See Teacher Education.

Psychology Major, Psychological Services Specialization

The Psychological Services specialization is designed for those persons interested in working as diagnostic and therapeutic aides in

human services 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, and 11 or 12 additional credits of 300-400 level courses for a total of 18 credits.

Public Recreation

Greg Place

Department of Health, Physical Education and Recreation

Physical Education Center 267

605-688-6163

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Programs

The HPER Department offers a Bachelor of Science degree with a major in Public Recreation. The Public Recreation major is excellent for those seeking to work in agencies such as YMCA/YWCAs, municipal recreation, business, and therapeutic recreation in clinical as well as community settings. A minor in Public Recreation is also offered.

Public Recreation Major

The requirements for the major include courses in the freshman and sophomore years which help students learn introductory information in a broad spectrum of courses and to gain a background in several areas of recreation such as dance, recreation leadership, sport programming, and camping. During the junior and senior years the focus changes to administration and management courses.

Minor

Students earning a minor in Public Recreation take six required courses and an additional five to six credits from a selected list of courses.

Range Science (Rang)

(See Animal and Range Sciences)

Religion (Rel)

(See Philosophy and Religion)

Reserve Officer Training Corps Program (ROTC)

(See Aerospace Studies, Military Science)

Restaurant and Institution Management (HFM, NFSH)

(See Nutrition, Food Science and Hospitality)

Rural Sociology (Soc, Anth)

Donna Hess

Department of Rural Sociology

Scobey Hall 224

605-688-4132

e-mail: donna_hess@sdstate.edu

Faculty

Distinguished Professor Hess, Head; Distinguished Regental Professor Emeritus R. Wagner; Professors Arwood, Faltemier, Kayongo-Male, Mendelsohn, Stover; Professor Emeriti Satterlee, Sauer; Associate Professor Grant; Assistant Professor Redlin; Assistant Professor Emerita M. Wagner.

Programs

The courses offered by the department have been organized with three objectives in mind: (1) a sequence for those who may wish to earn an undergraduate major or minor in sociology; (2) basic service courses that will be of interest and practical help to students in any college; and (3) 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 B.A. and B.S. degrees in Arts and Science with a major in Sociology. An undergraduate may select from any of the following specializations in the Arts and Science curriculum. Each student is assigned to an adviser based on choice of specialization.

General Sociology. 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 Advisers, students may select any of the following specializations. Those desiring to gain a broad orientation to all areas of Sociology with anticipation of other career interests or graduate school may remain in general sociology.

Teaching Specialization. Prepares for entrance into junior or senior high level teaching. These students in consultation with departmental Teaching 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)

Social Work Specialization. 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 specialization 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 specialization. (Minimum GPA of 2.2)

Human Services Specialization. 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 Specialization in that students are working toward a B.A. or B.S. degree in Sociology; whereas those in the Social Work Specialization are seeking a B.A. or B.S. in Social Work. (Minimum GPA of 2.2)

Criminal Justice Minor. Designed for students seeking careers in probation, parole, court services, pre-law, private security, or general law enforcement. Sociology majors in this minor will usually be working toward a B.A. or B.S. 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)

Human Resources Specialization. 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 the internship placement in a social service agency. This specialization differs from the Social Work Specialization in that students are working toward a B.A. or B.S. degree in Sociology; whereas those in the Social Work Specialization are seeking a B.A. or B.S. in Social Work. (Minimum GPA of 2.2)

Minor

Includes Soc 100, and 15 additional (Soc or Anth) credits. Six credits must be numbered 300 or above.

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 281 Introduction to Statistics as a part of their general electives.

Sociology (Soc)

(See Rural Sociology)

Soils

(See Plant Science)

Spanish (Span)

(See Modern Languages)

Speech (SpCm)

(See Communication Studies and Theatre)

Statistics (Stat)

(See Mathematics and Statistics)

Teacher Education

R.L. Erion, Acting Head
Department of Teacher Education
Wenona Hall 112
605-688-4376
e-mail: ralph_erion@sdstate.edu
<http://learn.sdstate.edu/teachered/>

Faculty

Professor Erion, Acting Head; Professors Crehan, Hanson, Moeller, Penrod; Associate Professors, Andera, Rogers; Assistant Professor Van Horn; Instructors Rogness, Russow.

Programs

Teacher education at SDSU is a certification program. Students choose a major and seek a B.S. or B.A. degree first in the academic subject or subjects of their choice. Once accepted into the teacher education program, they progress through a sequence of professional courses to acquire knowledge and skills necessary for teaching. Students need to inform their major adviser of their interest in teaching and follow guidelines which are outlined for a teaching emphasis. Advisers in teacher education also work with admitted students.

Many students complete their majors and professional training simultaneously; others earn their degree before beginning the professional sequence. In either case, those who successfully complete all requirements will be qualified to earn a certificate in: secondary teaching in one (or more) of 18 different subject areas or K-12 teaching in art, world languages, music, or physical education (the general elementary education program is a cooperative program with Black Hills State University and/or Dakota State University).

Admission to the teacher education sequence of courses requires an overall GPA of 2.5 and a major GPA of 2.6. Additional prerequisites are required and students seeking admission must demonstrate the personal characteristics desirable for an educator. The professional education/certification program requires professional credits which include student teaching.

The undergraduate teacher education program is NCATE accredited. For more information regarding teacher education please see the section on the College of Education and Counseling in this bulletin.

Career and Technical Education

The Bachelor of Science in Career and Technical Education prepares students to teach in high school, multi district, or post secondary vocational programs. People who have completed a technical specialty at one of the area's technical schools, have occupational experience, or complete a technical specialty at SDSU are eligible for this program. To attain certification, students must meet the certification requirement of the State Department of Education and Cultural Affairs or, in the case of Aviation, must complete FAA requirements.

Many students who enroll 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, telecommunications, the internet, and the Dakota Digital Network (DDN).

Agricultural Education (AgEd)

The Undergraduate Teacher Education Department provides professional education 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. The students' total program is designed so that he/she receives supportive instruction in technical agriculture, basic science, and communication skills.

Students must file an application to be admitted to this program.

Endorsement Programs

Coaching endorsements, as well as endorsements in other areas, can be added to a teacher's certificate. For more information contact the secretary of the Undergraduate Teacher Education Department at 688-4376.

Veterinary Science (Vet)

David Zeman

Department of Veterinary Science

Animal Disease Research 105

605-688-5172

www.vetsci.sdstate.edu

Faculty

Professor Zeman, Head; Professors Benfield, Chase, Francis, Hamilton, Hildreth, Neiger, D. Nelson, Associate Professors Christopher-Hennings, Epperson, Erickson, Holler, Miskimins, E. Nelson; Assistant Professors Lemire, Leslie-Steen, Young.

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 natural 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 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. Many degree options are available to students in the pre-veterinary medicine curriculum, but popular choices include Animal Science, Biology, Microbiology, Dairy Science, or others. Students typically select a B.S. option late in their freshman year or during their sophomore year.

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

Grove Hall 101

605-688-4103

fax: 605-688-6769

e-mail: sdsu_artdept@sdstate.edu

<http://web.sdstate.edu/departments/visualarts/>

Faculty

Professor Gambill, Head; Professors French, Morgan, Spinar, Steele; Professor Emeritus Edie; Associate Professors Kruse, Wallace.

Visual Arts

Programs in Fine Arts, Art Education and Graphic Design

Art Department courses offer art and design studio and lecture experiences to all SDSU students, regardless of their major. Students in the Visual Arts pursue careers as artists, graphic designers, or art educators. Our program aims to give the breadth for careers in reality-based worlds of the visual arts after graduation, or, for further advanced or specialized study of art, education, or design.

Our Visual Arts degree paths include four specializations: **Art Education, Fine Arts-Painting/Printmaking, Fine Arts-Ceramics/Sculpture, and Fine Arts-General Art.** The new degrees in **Graphic Design** complete the department's offerings. To complete a degree, the Major must meet SDSU and College of Arts and Science Core requirements, our own 30-hour department Core, and 18 to 24 or more additional hours in their specialization. To graduate, the Major also presents his/her work to a faculty jury who will assess the development in two reviews: the Progress Review and the Senior Review. The Senior Review involves a public exhibition of the art or design work.

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. The Visual Arts Core also includes art history courses: ArtH 100, 211, 212, plus three hours of art history electives.

Fine Arts and Art Education Degrees (B.A. or B.S.)

1. Art Education Specialization

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 and Counseling's Undergraduate Teacher Education program to provide the degree requirements.

2. Fine Arts – Painting/Printmaking Specialization

Introduces 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.

3. Fine Arts – Ceramics/Sculpture Specialization

Introduces 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.

4. Fine Arts – General Art Specialization

Designed for the student who desires a double major or a major-with-minors in other departments in the University. General Art also accommodates the student who wishes to develop a self-directed program in various specializations in the Department as well as the option of additional elective credits.

Graphic Design Degrees (B.A. or B.S.)

Emphasizes visual communications and 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, logos, computer graphics, publication and web page design, illustration, advertising, posters multi-media, and computer animation.

Requirements for Art Minor: 24 cr

To include 6 credits in art history.

The Ritz in Grove Hall

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

e-mail: charles_scalet@sdstate.edu

<http://wfs.sdstate.edu>

Faculty

Professor Scalet, Head; Distinguished Professor Flake, Professors Berry, Higgins, Hubbard, Jenks, Willis; Professor Emeritus Linder; Associate Professor Brown; Assistant Professor Chipps; Adjunct Associate Professors Euliss, Hamilton, Lindzey, Uresk; Adjunct Assistant Professors Bakker, Blackwell, DePerno, Gigliotti, Holland, Klaver, Naugle, Rumble, Sovada.

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 adviser 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 master's 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)

April Brooks, Program Coordinator

Department of History

Scobey Hall 324

605-688-6042

e-mail: april_brooks@sdstate.edu

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. Eighteen hours with a "C" or better in each course are required for the minor. The Women's Studies Program Coordinator assists students to personalize their curriculum plans.

Zoology (Zool)

Tom Cheesbrough

Department of Biology and Microbiology

Agricultural Hall 304

605-688-6141

e-mail: biomicro@abs.sdstate.edu

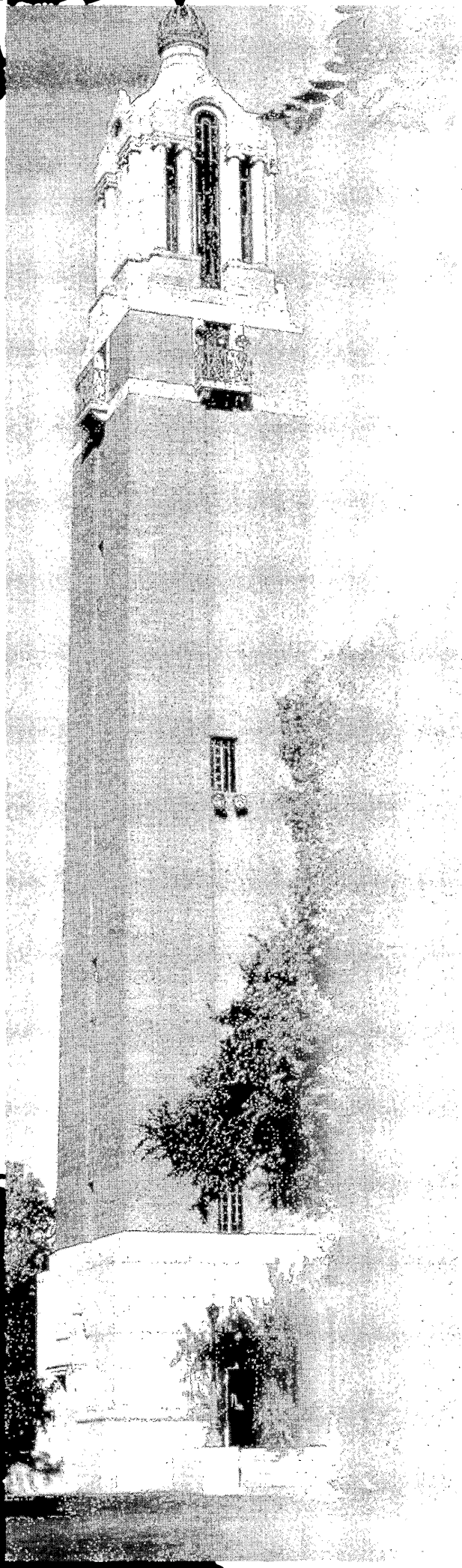
<http://www.abs.sdstate.edu/bio>

Faculty

Professor Cheesbrough, Head; Professors Gibbons, Granholm, Hildreth, Hutcheson, Kayongo-Male, Larson, McMullen, Peterson, Reese, Ruffolo, Sutton, Westby, Whalen; Professors Emeriti Baker, Chen, Hartel, Huggins, Morgan, Myers, Pengra, Taylor; Associate Professors Bleakley, Erickson, Gibson, Troelstrup; Associate Professor Emeritus Morrill; Assistant Professors Gilmanov, Pedersen, Wake, Young; Instructors McCutcheon, Willgohe; Adjunct/Joint faculty E. Butler (Igne), J. Butler (USFS), Chase (Vet.Sci.), Diggins (Augustana), Evenson (Chem.), Fennell (HFLP), Francis (Vet.Sci.), German (WRI), Henning (DS), Johnson (PS), Majerle (Chem.), McFarland (ARS), Nelson (Vet.Sci.), Reidel (NGIRL-USDA), Rietz (Brookings Medical Clinic), Specker (FFS), West (Chem.).

Requirements for Zoology Minor: 18 cr

The department of Biology and Microbiology offers a **Zoology minor** for those wishing to augment their knowledge in the area of animal biology. The minor in Zoology consists of Bio 101 or 151, and additional courses with a Zool prefix for a total of at least 18 credits. Two courses must be at the 300 level or above.



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Summer Term

Edward P. Hogan
Associate Vice President for Academic Affairs and
Chief Information Technology Officer
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SDSU offers a wide range of courses and degree programs during the summer months as well as numerous special workshops, short courses, distance education classes, 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, ADM 230, 605-688-5042.

Evening College

Gail Dobbs Tidemann, Dean
College of General Studies and Outreach Programs
Box 511, Brookings, SD 57007-2098
e-mail: gail_tidemann@sdstate.edu

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 as those taught in the regular day courses with regard to course number and content.

More information on Evening College may be obtained through the College of General Studies and Outreach Programs, South Dakota State University, Box 511, Brookings, SD 57007-2098, 605-688-4153.

USDSU (Sioux Falls Programs)

Sharon Sopko
Coordinator, USDSU (Sioux Falls Programs)
2205 Career Ave.
Sioux Falls, SD 57107
e-mail: sharon_sopko@sdstate.edu

South Dakota State University, through the USDSU in Sioux Falls, provides college coursework and degree programs in Sioux Falls. USDSU is designed to serve the needs of non-traditional students in the Sioux Falls area. Most courses taught through USDSU are taught after 4:00 p.m.. The course content, number and contact hours are the same as the identical course 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. Coursework is offered during the fall, spring, and summer terms.

The majors offered in Sioux Falls include aviation education, engineering, family and consumer sciences, liberal 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: USDSU, 2205 Career Avenue, Sioux Falls, SD 57107, or call 605-367-5640.



Outreach Programs

Gail Dobbs Tidemann, Dean
College of General Studies and Outreach Programs
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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 USDSU in Sioux Falls, the West River Graduate Center in Rapid City, the Capital University Center in Pierre (CUC), Nursing Upward Mobility, and numerous other distance education classes, workshops, and services.

The Outreach Programs Office 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 Programs are 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 technology communicated 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 indicates.

USDSU, see SDSU Sioux Falls Programs on page 112.

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 Associate of Arts degree in General Studies, the Bachelor of Science degree with majors in Liberal Studies, and the Master of Science degrees in Industrial Management.

The **West River Graduate Center** 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 in Rapid City. These programs serve the military personnel, teachers, administrators, and counselors in Western South Dakota.

The **Nursing RN 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 the knowledge and skills necessary for leadership roles in nursing.

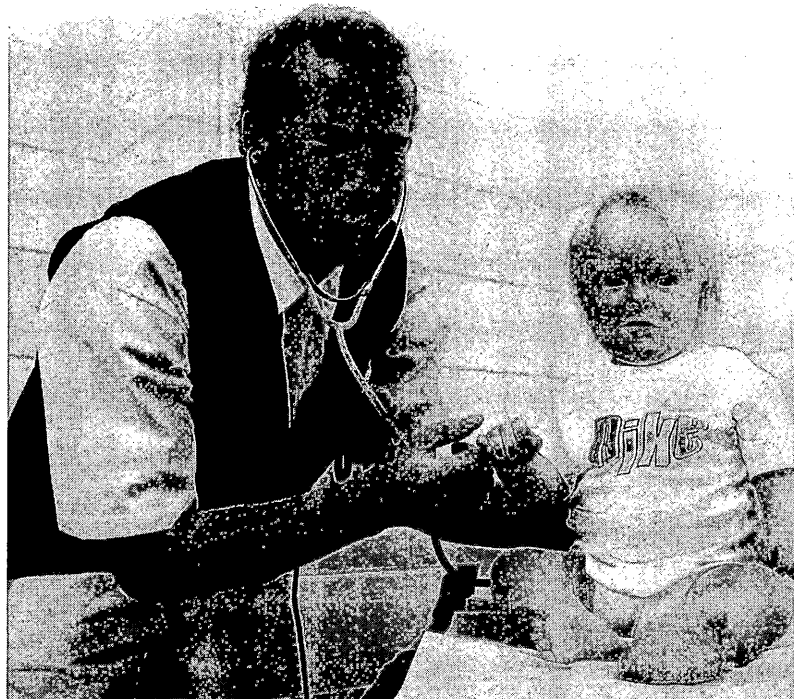
The Nursing Upward Mobility program leading to the Bachelor of Science degree is offered for registered nurses desiring to upgrade their associate degrees or diplomas. The program is offered on line and is available anywhere in the state. Clinical Practicums are performed in the student's community. The Master of Science in Nursing is also offered cyclically to various off-campus sites and on line as programming allows. Please contact the Dean of Nursing at 888-216-9806 for information on nursing programs, or visit our website at www3.sdstate.edu/Academics/CollegeofNursing.

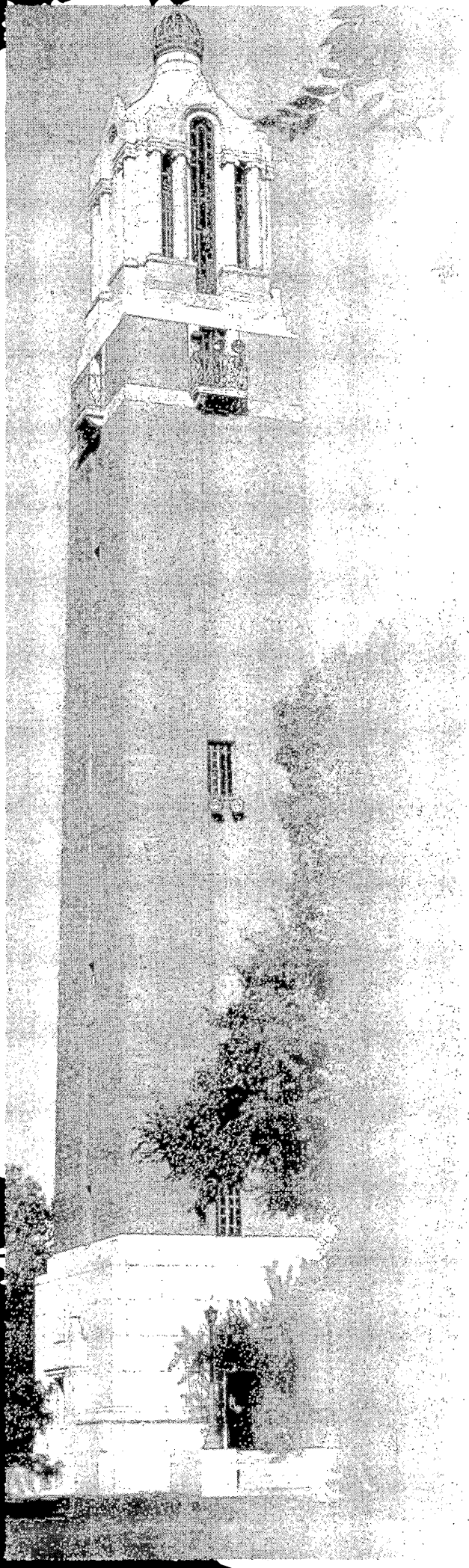
Distance Education offerings include an array of classes and programs directed to specific educational needs of SDSU's off-campus students. These offerings include classes and degree work offered via the Dakota Digital Network, ISDN, Cable TV, dual credit courses to high schools, videotape, Internet, 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 SDSU Cooperative Extension Service has 16 sites throughout the state that offer learning opportunities via V.-Tel technology. Courses for credit as well as non-credit opportunities are offered through this network.

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 Outreach Programs. 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.

Outreach Programs assistance to organizations is another contribution of the University to the social and economic development of the state. The Outreach Programs Office 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 Programs Office, South Dakota State University, Box 511, Brookings, SD 57007-2098, 605-688-4153.





**MAJOR AND
MINOR REQUIREMENTS..... 115**

Major and Minor Requirements

All authorized majors and minors are listed here in alphabetical order. A contact person, his/her campus address, phone number, e-mail address and/or website is included with each major or minor. The curriculum plans shown are examples only. A student should work out a personalized plan with his/her adviser.

Accounting (Acct) Minor

Richard Shane
 Department of Economics
 Scobey Hall 136
 605-688-4141
 e-mail: janet_wilson@sdstate.edu
 website: <http://econnet.sdstate.edu/dept/index.asp>

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, Microeconomics Principles or Econ 202, Macroeconomics Principles.....	3

Aerospace Studies (Air) Minor

(Air Force ROTC)
Lieutenant Colonel Richard C. Runchey
 Department of Aerospace Studies
 DePuy Military Hall 004
 605-688-6106
 e-mail: richard_runchey@sdstate.edu

Requirements for Aerospace Studies Minor: 16 cr

A minor in Aerospace Studies requires 16 semester hours, including all Air Force ROTC courses.

Air 101-101A, Aerospace Studies 100 and Lab.....	1
Air 102-102A, Aerospace Studies 100 and Lab.....	1
Air 201-201A, Aerospace Studies 200 and Lab.....	1
Air 202-202A, Aerospace Studies 200 and Lab.....	1
Air 301-301A, Aerospace Studies 300 and Lab.....	3
Air 302-302A, Aerospace Studies 300 and Lab.....	3
Air 401-401A, Aerospace Studies 400 and Lab.....	3
Air 402-402A, Aerospace Studies 400 and Lab.....	3

Agricultural and Biosystems Engineering (ABE) Major

Van Kelley
 Department of Agricultural and Biosystems Engineering
 Agricultural Engineering 107
 605-688-5141
 e-mail: van_kelley@sdstate.edu
 website: <http://abe.sdstate.edu/index.htm>

Requirements for Agricultural and Biosystems Engineering Major Bachelor of Science in Agricultural and Biosystems Engineering
 (Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology)

Freshman Year	F	S
ABE 122, Introduction to Agricultural and Biological Engineering.....	2	
Chem 112-112L*, General Chemistry I and Lab.....	4	
Chem 114*, General Chemistry II or Chem 120*, Elementary Organic Chemistry.....		3
Engl 101*, Composition I.....		3
GE 101, Introduction to Engineering and Technology.....		1
GE 121, Engineering Design Graphics I.....		1
Math 123*, Calculus I and Math 125, Calculus II.....	4	4
SpCm 101-101A*, Fundamentals of Speech and Lab.....		3
Gen Ed: Humanities and Arts*, pp. 35-37.....		3
Gen Ed: Social Science*, pp. 35-37.....		3

Sophomore Year	F	S
ABE 343-343A, Engineering Properties of Biological Materials and Lab.....	3	
Bio 101-102, Biology Survey I and Lab or Micr 231-232, General Microbiology and Lab or PS 213-213A Soils and Lab.....		3/4
EM 221, Statics.....	3	
EM 222, Dynamics.....		3
GE 122, Engineering Design Graphics II and GE 123, Computer Aided Design and Graphics.....	1	1
Math 225, Calculus III.....	4	
Math 321, Differential Equations.....		3
Phys 211-212**, University Physics I and Lab and Phys 213-214, University Physics II and Lab.....	4	4
Gen Ed: Humanities and Arts*, pp. 35-37.....		3
Gen Ed: Social Science*, pp. 35-37.....		3

Junior Year	F	S
ABE 314-314A†††, Ag Power and Machines and Lab.....	4	
ABE 324-324A†††, Ag Structures and Indoor Environment and Lab.....		4
ABE 372-372A, Microcomputer Applications in Agricultural Engineering and Lab.....		2
ABE 490, Seminar and Inspection Trip.....	1	
CSc 248, Introduction to C/C++/UNIX for Engineers.....	3	
EE 300-301, Basic Electrical Engineering I and Lab.....	3	
EM 321, Mechanics of Materials.....	3	
EM 331, Fluid Mechanics.....		3
Engl 379*, Technical Communications†.....		3
ME 314, Thermodynamics.....	3	
Technical Elective††.....		3

Senior Year	F	S
ABE 411, Design Project III.....	2	
ABE 422, Design Project IV.....		2
ABE 434-434A†††, Natural Resources Engineering and Lab.....	4	
ABE 444-444A†††, Unit Operations of Biological Materials Processing and Lab.....		4
ABE 463-463A, Applied Instrumentation and Lab.....	3	
Math 373, Introduction to Numerical Analysis or		

Math 331, Advanced Engineering Math or Math 381, Mathematical Statistics or Stat 281, Introduction to Statistics	3-4
SDSU Core: Goal 1**, Wellness, p. 39	2
SDSU Core: Goal 2**, Human Community, p. 39	2
SDSU Core: Goal 3**, Human Spirit, p. 40	2
SDSU Core: Goal 5**, Stewardship, p. 41	2
Technical Electives††	4

† You must receive a "C" or better in Engl 379.

†† Technical Electives permit you to concentrate on your applied technical area of interest.

††† You must take at least 4 of these courses, or you may choose to replace one of these 4 Agricultural and Biosystems Engineering courses with 4 technical elective credits (300 or higher in the college of Engineering), in addition to the basic technical elective requirement described below

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or Humanities and Arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Accordingly, the elective program for each student must be approved by your adviser. This will include 7 credit hours of technical electives, of which at least 6 credits are 300 or above level courses in the College of Engineering.

Technical Electives

Electives in all emphases:

ABE 353, Physical Climatology and Meteorology	3
ABE 491, Special Problems in AE	1-3
ABE 492, Special Topics	1-4
ABE 497, 494, 496, Cooperative Education/ Internship/Field Experience	1-6
All 500 level courses listed in Agricultural and Biosystems Engineering	
Bio 103-104, Biology Survey II and Lab or	3
CEE 446, Geotechnical Engineering	4
CSc 314, Assembly Language	3
CSc 316, PL/1 Programming	3
CSc 426, Computer Architecture and Organization	3
CSc 492, Special Topics in Computer Science	1-3
EE 422, Engineering Economy †	2
Geog 488, Geographic Information Systems II	3
Math 331, Advanced Engineering Math	3
Stat 281, Introduction to Statistics or	3
Math 381, Probability and Statistics	3

Structures and Environment Emphasis

CEE 353, Structural Theory	3
CEE 446-446A, Geotechnical Engineering and Lab	4
CEE 455-455A, Steel Design and Lab	3
CEE 456-456A, Concrete Theory and Design and Lab	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 and EE 422.

Power and Machinery Emphasis

ABE 492, Hydraulics	3
ME 321, Fundamentals of Machine Design	3
ME 322, Vibrations	3
ME 341-341A, Metallurgy and Lab	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 428-428A, Machine Design-Case Studies and Lab	3
PS 362-362A, Environmental Soil Management and Lab	3

Water and Natural Resources Engineering Emphasis

AST 463, Agricultural Waste Management	3
CEE 106-106A, Elementary Surveying and Lab	3
CEE 327-327A, Water Supply Engineering and Lab	4
CEE 333-333A, Hydrology and Lab	3
CEE 423, Waste Water Engineering	3
CEE 433, Hydraulic Engineering	3
CEE 446-446A, Geotechnical Engineering and Lab	4
PS 213-213A Soils and Lab	3
PS 362-362A, Environmental Soil Management and Lab	3
PS 483, Irrigation-Crop and Soil Practices	3

Requirements for Agricultural and Biosystems Engineering Major - Food and Biological Materials Engineering Specialization Bachelor of Science in Agricultural and Biosystems Engineering

Freshman Year	F	S
ABE 122, Introduction to Agricultural and Biosystems Engineering		2
Chem 112-112L*, General Chemistry I and Lab and Chem 120*, Elementary Organic Chemistry		3
Engl 101*, Composition I		3
GE 101, Introduction to Engineering and Technology		1
GE 121, Engineering Design Graphics I		1
Math 123*, Calculus I and Math 125, Calculus II		4
Micr 231-232, General Microbiology and Lab		4
SpCm 101-101A*, Fundamentals of Speech and Lab		3
Gen Ed: Social Science*, pp. 35-37		3
Sophomore Year	F	S
ABE 343-343A, Engineering Properties of Biological Materials and Lab		3
EM 221, Statics		3
EM 222, Dynamics		3
GE 122, Engineering Design Graphics II and GE 123, Computer Aided Design and Graphics		1
Math 225, Calculus III		4
Math 321, Differential Equations		3
Phys 211-212**, University Physics I and Lab and Phys 213-214, University Physics II and Lab		4
Gen Ed: Humanities and Arts*, pp. 35-37		3
Gen Ed: Social Science*, pp. 35-37		3
Junior Year	F	S
ABE 372-372A, Microcomputer Applications in Agriculture Engineering and Lab		2
ABE 490, Seminar and Inspection Trip		1
Chem 361-361L, Biochemistry and Lab		4
CSc 218, Introduction to C/C++/UNIX for Engineers		3
EE 300-301, Basic Electrical Engineering I and Lab		3
EM 321, Mechanics of Materials		3
EM 331, Fluid Mechanics		3
Engl 379*, Technical Communications††		3

ME 314, Thermodynamics	3
Micr 311-311A, Food Microbiology and Lab.....	4
NFSH 351-351A, Principles of Food Processing and Lab	3
Technical Electives†	3
Senior Year	
ABE 411, Design Project III	2
ABE 422, Design Project IV	2
ABE 444-444A, Unit Operations of Biological Materials Processing and Lab	4
ABE 463-463A, Applied Instrumentation and Lab	3
Math 331, Advanced Engineering Math or Math 373, Introduction to Numerical Analysis or Math 381, Probability and Statistics or Stat 281, Introduction to Statistics.....	3
NFSH 360-360A, Food Chemistry and Lab	4
SDSU Core: Goal 1**, Wellness, p. 39	2
SDSU Core: Goal 2**, Human Community, p. 39	2
SDSU Core: Goal 3**, Human Spirit, p. 40	2
SDSU Core: Goal 5**, Stewardship, p. 41	2
Technical Electives†	8

† Technical electives permit you to concentrate on your applied technical area of interest.

†† You must receive a "C" or better in Engl 379.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Accordingly, the elective program must be approved by your adviser. This will include 11 credit hours of technical electives of which at least 6 credits are 300 or above level courses in the College of Engineering and 5 additional credits are from the suggested Technical Elective Courses.

Suggested Technical Elective Courses

ABE 314-314A, Ag Power and Machines and Lab	4
ABE 324-324A, Ag Structures and Indoor Environment and Lab	4
ABE 353-353A, Physical Climatology and Meteorology and Lab	3
ABE 434-434A, Soil and Water Engineering and Lab	4
AS 341, Fresh Meat Operations	3
AS 345-345A, Processed Meat Technology and Lab.....	3
AST 443-443A, Food Process and Engineering Fundamentals and Lab.....	3
AST 463, Agricultural Waste Management.....	3
BAdm 360, Organization and Management	3
Bio 101-102, Biology Survey I and Lab	3
Bio 103-104, Biology Survey II and Lab	3
CEE 423-423A, Waste Water Engineering and Lab.....	3
CEE 424, Industrial Waste Treatment	2
Chem 380, Environmental Chemistry	4
DS 313, Technical Control of Dairy Products I	3
DS 321-321A, Dairy Product Processing I and Lab	5
DS 322-322A, Dairy Product Processing II and Lab	5
Math 381, Probability and Statistics	3

ME 421, Design of Machine Elements	3
Micr 310-310A, Environmental Microbiology and Lab	4
NFSH 341-341A, Advanced Food Science and Lab	4
PS 312, Grain and Seed Production and Processing	2
Stat 281, Introduction to Statistics.....	3

Agricultural Business Major and Minor

Richard Shane
Department of Economics
Scobey Hall 136
605-688-4141

e-mail: janet_wilson@sdstate.edu
website: <http://econnet.sdstate.edu/dept/index.asp>

Requirements for Agricultural Business Major Bachelor of Science in Agriculture

Freshman Year		F	S
Chem 106-106L*, Chemistry Survey and Lab			4
Engl 101*, Composition I	3	or	3
Math 102*, College Algebra	3		
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Social Science* (Choose one of the following)			
Soc 100, Introduction to Sociology			
Soc 150, Social Problems, (G)			
Soc 240, Sociology of Rural America, (G)			
Anth 210, Cultural Anthropology, (G).....	3		
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
Biological Science Elective*, pp. 35-37			3
Group I Elective†	2		3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3		3

Sophomore Year		F	S
Acct 210, Principles of Accounting I.....	3		
Acct 211, Principles of Accounting II.....			3
AgEc 271-271A, Farm and Ranch Management and Lab.....	4		
Econ 201**, Microeconomics Principles.....	3	or	3
Econ 202*, Macroeconomics Principles	3	or	3
Engl 201*, Composition II.....	3		
Math 121-121A, Survey of Calculus and Lab or Math 123, Calculus I.....			4-5
General Electives.....	4		4

Junior Year		F	S
AgEc 354, Agricultural Marketing and Prices	3	or	3
AgEc 478-478A, Agricultural Finance and Lab	3		
BAdm 350, Legal Environment of Business and Contracts.....	3	or	3
CSc 312, Advanced Microcomputer Applications	3		
Econ 301, Intermediate Microeconomics.....	3		
Econ 302, Intermediate Macroeconomics			3
Econ 330, Money and Banking	3	or	3
Engl 379, Technical Communications.....			3
Stat 281**, Introduction to Statistics			3
SDSU Core: Goal 3**, Human Spirit, p. 40	2		
One of the following:	3		
SpCm 201, Interpersonal Communication			
SpCm 215, Public Speaking			
SpCm 334, Discussion			

Senior Year		F	S
AgEc 479**, Agricultural Policy	3	or	3
BAdm 324, Operations Research	4		

BAdm 360, Organization and Management.....	3	or	3
Two additional courses prefixed AgEc.....	3		3
Electives prefixed Acct, AgEc, BAdm, or Econ.....	3		3
General Electives.....	6		4

Accelerated Master's Degree

Outstanding students majoring in Agricultural Economics, Agricultural Business or Economics may complete their baccalaureate degree and Master of Science in Economics combined in five years. Students apply for admission to the combined program the fall semester of their junior year. Those admitted as graduate students take 400-500 level courses at the graduate level (500) their fourth (senior) year (see below). See the SDSU Graduate Bulletin or the department graduate coordinator for complete details for the fifth year.

Adjustments to baccalaureate course requirements are as follows:

Fourth Year (Replaces Senior Year Above)	F	S
AgEc 479**, Agricultural Policy	3	or 3
BAdm 324, Operations Research	4	
BAdm 360, Organization and Management.....		3
Econ 423, Statistics II.....	3	
Econ 428, Mathematical Economics	3	

Four of the following:

- AgEc 521, Farming and Food Systems Economics
- AgEc 571, Advanced Farm and Ranch Management
- Econ 504, History of Economic Thought
- Econ 520, Economics of the Public Sector
- Econ 531, Managerial Economics
- Econ 540, Economics of the International Sector
- Econ 550, Industrial Organization
- Econ 560, Economic Development
- Econ 572, Resource and Environmental Economics

General Electives.....	0-3	4-7
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† Group 1 Courses are listed on p. 54.

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** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Agricultural Business Minor: 21-22 cr

Econ 201, Microeconomics Principles	3
Econ 202, Macroeconomics Principles.....	3
Two of the following:	6-7
Acct 210, Principles of Accounting I (3)	
AgEc 271-271A, Farm and Ranch Management and Lab (4)	
AgEc 354, Agricultural Marketing and Prices (3)	
BAdm 310, Business Finance (3)	
BAdm 350, Legal Environment of Business and Contracts (3)	
BAdm 360, Organization and Management (3)	
Econ 370, Marketing (3)	
Nine additional credit hours of courses	9
prefixed AgEc,numbered 300 or above	

Agricultural and Resource Economics (AgEc) Major

Richard Shane

Department of Economics

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website: <http://econnet.sdstate.edu/dept/index.asp>

Requirements for Agricultural and Resource Economics Major Bachelor of Science in Agriculture

Freshman Year	F	S
Chem 106-106L*, Chemistry Survey and Lab		4
Engl 101*, Composition I	3	or 3
Math 102*, College Algebra	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Gen Ed: Social Science* (Choose one of the following).....	3	
Soc 100, Introduction to Sociology		
Soc 150, Social Problems, (G)		
Soc 240, Sociology of Rural America, (G)		
Anth 210, Cultural Anthropology, (G)		
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	2
Biological Science Elective*, pp. 35-37	3	
Group I Elective†		3
General Electives		3

Sophomore Year	F	S
Acct 210, Principles of Accounting I.....	3	
Acct 211, Principles of Accounting II.....		3
AgEc 271-271A, Farm and Ranch Management and Lab....	4	
Econ 201**, Microeconomics Principles.....		3
Econ 202*, Macroeconomics Principles	3	
Engl 201*, Composition II	3	
Math 121-121A, Survey of Calculus and Lab or		
Math 123, Calculus I.....		4-5
Gen Ed: Humanities and Arts*, pp. 35-37	3	
Group I Elective†		2
General Electives.....		3

Junior Year	F	S
AgEc 354, Agricultural Marketing and Prices	3	or 3
AgEc 478-478A, Agricultural Finance and Lab	3	
CSc 312, Advanced Microcomputer Applications	3	
Econ 301, Intermediate Microeconomics.....	3	
Econ 302, Intermediate Macroeconomics		3
Econ 330, Money and Banking.....	3	or 3
Engl 379, Technical Communications.....	3	or 3
Stat 281**, Introduction to Statistics		3
One of the following:	3	
SpCm 201, Interpersonal Communication		
SpCm 215, Public Speaking		
SpCm 334, Discussion		
General Electives.....		5

Senior Year	F	S
AgEc 421**, Farming and Food Systems Economics		3
AgEc 479, Agricultural Policy	3	or 3
One of the following:	3	or 3
Econ 404, History of Economic Thought		
Econ 405, Comparative Economic Systems		
Econ 440, Economics of the International Sector		
Econ 450, Industrial Organization		

Econ 460, Economic Development Hist 377, Economic History of the U.S.	
Econ 423, Statistics II.....	3
Econ 428, Mathematical Economics.....	3
Econ 472, Resource and Environmental Economics	3
General Electives.....	7

Environmental Economics Emphasis

PS 213-213A, Soils and Lab (3)
 WL 110, Environmental Conservation (2)
 (These are Group I Elective Courses)
 One of the following:
 Phil 100, Introduction to Philosophy (4)
 Phil 332/Rel 332, Environmental Ethics (3)
 Phil 383/Bio 383, Bioethics (4)
 Two of the following:
 ABS 475-475A Integrated Natural Resource
 Management and Lab (3)
 PS 362-362A, Environmental Soil Management
 and Lab (3)
 AS 446, Agroecology (3)
 PS 475/Bio 475, Water Quality in Agriculture (3)
 One of these courses may be substituted for Econ 428, Mathematical
 Economics.

Accelerated Master's Degree

Outstanding students majoring in Agricultural Economics, Agricultural
 Business, or Economics may complete their baccalaureate degree and
 Master of Science in Economics combined in five years. Students apply
 for admission to the combined program in the fall semester of their
 junior year. Those admitted as graduate students take 400-500 level
 courses at the graduate level (500) their fourth (senior) year (see below).
 See the SDSU Graduate Bulletin or the department graduate coordinator
 for complete details for the fifth year.

Fourth Year (Replaces Senior Year Above)	F	S
AgEc 479**, Agricultural Policy	3	or 3
AgEc 521, Farming and Food Systems Economics	3	
Econ 423, Statistics II.....	3	
Econ 428, Mathematical Economics.....	3	
Econ 572, Resource and Environmental Economics	3	3
Two of the following:.....	3	3
AgEc 571, Advanced Farm and Ranch Management		
Econ 504, History of Economic Thought		
Econ 520, Economics of the Public Sector		
Econ 531, Managerial Economics		
Econ 540, Economics of the International Sector		
Econ 550, Industrial Organization		
Econ 560, Economic Development		
General Electives.....	4-7	7-10

† Group 1 Courses are listed on p. 54.

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 must be completed as part of a student's first 64 credits. See pages 35-37 for details.
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 Diversity requirement of 6 credits. Courses may count toward both the
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 arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation
 Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These
 requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101,
 and a course in each of the General Education areas of social science, mathematics,
 natural science, and humanities and arts must be taken prior to taking this exam.

Agricultural Education (AgEd) Major

Clark Hanson
Supervisor of Agriculture Education
Department of Undergraduate Teacher Education
Wenona Hall 101
605-688-4379
e-mail: clark_hanson@sdstate.edu

**Requirements for Agricultural Education Major
 Bachelor of Science in Agriculture**

Freshman Year	F	S
AST 202, Construction Techniques and Materials	2	
Bio 101-102*, Biology Survey I and Lab and Bio 103-104, Biology Survey II and Lab and Geog 131-131A*, Physical Geography I and Lab; (10 cr) or Bio-101-102*, Biology Survey I and Lab and Geog 131-131A*, Physical Geography I and Lab and Geog 132-132A, Physical Geography II and Lab (11 cr).....	3-7	3-7
Engl 101*, Composition I	3	
Math 102*, College Algebra	3	
PS 103-103A**, Crop Production and Lab		3
Soc 100*, Introduction to Sociology.....	3	
SpCm 101-101A*, Fundamentals of Speech and Lab.....		3
SDSU Core: Goal 1**, Wellness, p. 39 or GS 143**, Mastering Lifetime Learning Skills.....	2	or 2
Gen Ed: Humanities and Arts*, pp. 35-37		3
Sophomore Year	F	S
AS 101, Introduction to Animal Science	3	
AS 285-285A, Livestock Evaluation and Marketing and Lab.....		4
Chem 106-106L Chemistry Survey and Lab		4
CTE 295, Practicum in Vocational Education (Professional Semester I)	1	
CTE 405, Philosophy of Career and Technical Education (Professional Semester I)	2	
Econ 202*, Macroeconomics Principles or Econ 201, Microeconomics Principles		3
EdFn 375, Human Relations (Professional Semester I).....	3	
Engl 201*, Composition II.....	3	
Ho 111-111A, General Horticulture and Lab		3
MnET 231, Manufacturing Processes	3	
WL 110**, Environmental Conservation or WL 220**, Introduction to Wildlife and Fisheries Management.....	2	
Gen Ed: Humanities and Arts*, pp. 35-37		3
Junior Year	F	S
AgEd 404, Program Planning in AgEd (Professional Semester II)		4
Anth 421**, Indians of North America.....	3	
AS 241, Meat Production to Consumption		3
AST 342-342A, Applied Electricity and Lab.....		3
EdFn 365, Computer-Based Technology and Learning		2
EdFn 427, Middle School Philosophy and Application.....	2	
EPsy 302, Educational and Adolescent Psychology (Professional Semester II).....		3
MnET 132, Welding Technology	3	
Phys 101-102, Survey of Physics and Lab.....	4	
PS 213-213A, Soils and Lab	3	

SeEd 314, Supervised Clinical/Field Experience (Professional Semester II).....	1	
SeEd 420, Teaching Special Needs Students	1	
SeEd 450, Teaching of Reading Across the Content Area (Professional Semester II).....	2	
Agricultural Systems Technology (AST) Elective.....	3	
Senior Year	F	S
AgEc 271-271A, Farm and Ranch Management and Lab.....	4	
AgEd 434, Special Methods in AgEd (Professional Semester III).....	3	
AgEd 454, Teaching Agricultural Systems Technology Labs (Professional Semester III).....	2	
AgEd 475, Supervised Teaching Internship (Professional Semester III).....	8	
AgEd 494-496, Internship/Field Experience.....	2	
Two additional credit hours of courses prefixed Engl, MCom, or SpCm	2	
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	
Approved Agricultural Electives or	5	
Approved Agricultural Electives and	2	
Agricultural Systems Technology (AST) Elective.....	3	

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Agricultural Extension (AgEx)

Ralph Matz
Extension Program Coordinator
Agricultural Hall 130
605-688-5132
e-mail: matz.ralph@ces.sdstate.edu

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
Yeager Hall 209
605-688-4171
e-mail: richard_lee@sdstate.edu

Requirements for Agricultural Journalism Major Bachelor of Science in Agriculture

Freshman Year	F	S
Bio 101-102*, Biology Survey I and Lab and Bio 103-104*, Biology Survey II and Lab	3	3

Chem 106-106L*, Chemistry Survey and Lab	4	
Engl 101*, Composition I	3	or 3
Math 102*, College Algebra	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Soc 100*, Introduction to Sociology or Soc 150*, Social Problems, (G), or Soc 240*, Sociology of Rural America, (G) or Anth 210*, Cultural Anthropology, (G).....	3	
Gen Ed: Humanities and Arts*, (G), pp. 35-37	3	
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Group I Courses (See College of ABS listing, p. 54)	3	3

Sophomore Year

Econ 202*, Macroeconomics Principles	3	
Engl 201*, Composition II.....	3	or 3
MCom 160-160A, Basic Photography and Studio.....	2	or 2
MCom 210-210A, Newswriting and Reporting and Studio	3	or 3
MCom 213-213A, Journalism Typography and Studio	2	or 2
Phys 101-102, Survey of Physics and Lab.....	3	
Second in Sequence of physics, chemistry or bio	3-4	or 3-4
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	
SDSU Core: Goal 2**, Human Community, p. 39.....	2-3	or 2-3
Also meet ABS College Social Science requirement.....	3	or 3
Group I Courses (See College of ABS listing, p. 54)	3	3

Junior Year

MCom 310, Newspaper Editing	2	or 2
MCom 311, Editing Lab (concurrent with 310)	1	or 1
MCom 332-332A, Radio News Reporting and Studio and/or	3	
MCom 315, Magazine Writing and Editing and/or	3	
MCom 410, Advanced Reporting		3
MCom 370, Principles of Advertising.....	3	
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or 3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
Agriculture Electives	3	3
MCom Electives		6

Senior Year

MCom 414, Mass Communication Law	3	or 3
MCom 494, Internship (summer).....	2	or 2
Agriculture Electives	3	6
MCom Electives	3	3
Electives.....	6	8

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(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Agricultural Marketing Minor

Richard Shane
 Department of Economics
 Scobey Hall 136
 605-688-4141
 e-mail: janet_wilson@sdstate.edu
 website: <http://econnet.sdstate.edu/dept/index.asp>

Requirements for Agricultural Marketing Minor: 21-22 cr
 AgEc 354, Agricultural Marketing and Prices.....3
 AgEc 454, Economics of Grain and Livestock Marketing.....3
 Econ 201, Microeconomics Principles3
 Econ 370, Marketing.....3
 Three (3) of the following:9-10
 AgEc 479, Agricultural Policy (3)
 AS 285, Livestock Evaluation and Marketing (4)
 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

Van Kelley
 Department of Agricultural and Biosystems Engineering
 Agricultural Engineering 107
 605-688-5143
 e-mail: van_kelley@sdstate.edu
 website: <http://abe.sdstate.edu/>

Requirements for Agricultural Systems Technology Major Bachelor of Science in Agriculture

Freshman Year	F	S
AST 202-202A, Construction Techniques and Materials and Lab.....	2	
AST 273, Microcomputer Applications in Agriculture or CSc 312, Advanced Microcomputer Applications.....	3	
Chem 106-106L*, Chemistry Survey and Lab or Chem 112-112L*, General Chemistry I and Lab.....	4	
Engl 101*, Composition I.....	3	
Math 120*, Trigonometry†††† or Math 115*, Precalculus.....	3-5	
MnET 231, Manufacturing Processes.....	3	
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	
Gen Ed: Social Sciences*, pp. 35-37.....	3	
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	
SDSU Core: Goal 1**, Wellness, p. 39.....	2	
Group I Elective†††.....	3	
Sophomore Year	F	S
Acct 210, Principles of Accounting I.....	3	
AST 213-213A, Agricultural, Industrial, and Outdoor Power and Lab or AST 313-313A, Farm Machinery Systems Management and Lab.....	3	
Econ 202*, Macroeconomics Principles.....	3	
Engl 201*, Composition II†.....	3	
GE 121, Engineering Design Graphics I and GE 123, Computer Aided Drawing or GE 120, Engineering Drawing/CAD.....	2-3	
Phys 111-112, Introduction to Physics I and Lab.....	4	

Science Elective, selected from Chem, Phys, Bio, Micro, or Bot.....	4	3
PS 213-213A**, Soils and Lab.....		3
Gen. Ed. Core Goal #4.....		3
Junior Year	F	S
AST 333-333A, Soil and Water Mechanics and Lab.....	3	
AST 342-342A, Applied Electricity and Lab.....		3
BAdm 310, Business Finance.....	3	
BAdm 350, Legal Environment of Business and Contracts.....		3
Group I Elective†††.....		3
Specialization Courses.....		6
Biological Science Electives††.....		3
Communication Elective†.....		2
Technical Elective†††.....		3
Senior Year	F	S
ABE 353-353A, Physical Climatology and Meteorology and Lab.....	3	
ABE 490, Seminar and Inspection Trip.....	1	
AST 303, Design Management Experience or AST 494-495-496, Cooperative Education/Internship/Field Experience.....		3
AST 423-423A, Rural Structures and Lab.....	3	
AST 443-443A, Food Process and Engineering Fundamentals and Lab.....	3	
AST 463, Agricultural Waste Management.....		3
SDSU Core: Goal 2**, Human Community, p. 39.....		2
SDSU Core: Goal 3**, Human Spirit, p. 40.....		2
SDSU Core: Goal 5**, Stewardship.....		2
Technical Elective†††.....		6
Specialization Courses.....		3

† "C" grade required in Engl 201.

†† Courses must be selected from the following areas: Botany, Biology, Entomology-Zoology, Microbiology.

††† AST majors are required to take 11 credits of Group 1 classes from page 54. Students may use a maximum of 6 credits of AST classes to satisfy the Group 1 requirement.

†††† Technical electives must be selected from the approved list provided.

††††† Math 115 (5cr) may be taken instead of Math 102 and Math 120

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

The AST major requires a minimum of 14 semester credits from one of the following specializations: Business, Processing, Production, or Environmental Systems. The specialization and technical elective program must be planned with the adviser and approved by the department head.

Business Specialization

AgEc 271-271A, Farm and Ranch Management and Lab.....	4
AgEc 354, Ag Marketing and Prices	3
AgEc 470, Ag Policy.....	3
AgEc 478, Ag Finance	3
AST 303, Design Management Experience.....	3
BAdm 334, Small Business Management	3
BAdm 360, Organization and Management	3
BAdm 474, Principles of Selling	3
BAdm 380, Personal Finance.....	3
Econ 201, Microeconomics Principles	3
Econ 330, Money and Banking.....	3
Stat 281, Introduction to Statistics, or equivalent.....	3
Business Elective.....	3

Processing Specialization

AS 241, Meat: Production to Consumption.....	3
AS 341, Fresh Meat Operations.....	3
DS 321-321A, Dairy Product Processing I and Lab.....	5
DS 421, Dairy Plant Management	3
Micr 231-232, General Microbiology and Lab.....	4
Micr 311-311A, Food Microbiology and Lab	4
NFSH 341-341A, Food Science and Lab	4
PS 312, Grain and Seed Production and Processing	2
Processing Elective	3

Production Specialization

Ag Production Electives.....	3
Animal Science Electives.....	9
Horticulture Electives.....	6
Plant Science Electives	9

Environmental Systems Specialization

Bio 311, Principles of Ecology	3
Chem 380, Environmental Chemistry.....	4
Micr 231, General Microbiology	4
PS 243-244, Geology and Lab	3
PS 475, Water Quality in Agriculture	3
WL 110, Environmental Conservation	2
Environmental Systems Technology Elective.....	3

Technical Electives

ABE 372-372A, Microcomputer Applications in Agricultural Engineering and Lab.....	2
AST 213, Agricultural, Industrial and Outdoor Power.....	3
AST 262, Environmental Safety and Society	2
AST 313, Farm Machinery Systems Management.....	3
AST 492, Special Problems.....	1-3
AST 494 or 495 or 496, Cooperative Education/ Internship/Field Experience.....	1-3
BAdm 380, Personal Finance.....	3
MnET 131, Machining Technology	3
MnET 132, Welding Technology	3
MnET 251, Electricity and Electronics I.....	3
MnET 252, Electricity and Electronics II.....	3
MnET 260/BAdm 260, Production/Operations Management ..	3
MnET 350, Fluid Power Technology.....	3
Any 300 or higher level course in Animal and Range Sciences, Plant Science, Agricultural Business, Agricultural Economics, and Economics	3

Requirements for Agricultural Systems Technology Minor: 18 cr

AST 202-202A, Construction Techniques and Materials and Lab.....	2
AST 213-213A, Agricultural, Industrial and Outdoor Power and Lab	3
AST 333-333A, Soil and Water Mechanics and Lab	3
AST 342, Applied Electricity	3
Plus 7 hours from the following:	
AST 262, Environmental Safety and Society	2
AST 273-273A, Microcomputer Applications in Agriculture and Lab.....	3
AST 313-313A, Farm Machinery Systems Management and Lab	3
AST 423-423A, Rural Structures and Lab	3
AST 443-443A, Food Process and Engineering Fundamentals and Lab.....	3
AST 463, Agricultural Waste Management	3
AST 492, Special Problems.....	1-3
AST 303, Design Management Experience.....	3
AST 494-495 Cooperative Education/Internship/Field Experience.....	1-3

Agronomy Major and Minor

Dale Gallenberg
 Department of Plant Science
 Agricultural Hall 219
 605-688-4450
 e-mail: dale_gallenberg@sdsstate.edu

Requirements for Agronomy Major Bachelor of Science in Agriculture

Freshman Year		F	S
Bio 151-152*, General Biology I and Lab.....	4		
Bio 153-154,* General Biology II and Lab or Bot 201-202*, General Botany and Lab			3-4
Engl 101*, Composition I	3		
Math 102*, College Algebra or Math 115*, Precalculus or Math 120*, Trigonometry	3-5		or 3-5
PS 101, Opportunities in Plant Science	1		
PS 103-103A**, Crop Production and Lab	3		
SpCm 101-101A*, Fundamentals of Speech and Lab or SpCm 215*, Public Speaking or SpCm 222* Argument and Debate			3
Gen Ed: Social Science*, pp. 35-37, (G).....			3
SDSU Core: Goal 1**, Wellness, p. 39	2		or 2
Specialization and Elective Courses†	0-5		0-6

Sophomore Year		F	S
Chem 120-120L, Elementary Organic Chemistry and Lab			4
Econ 201*, Microeconomics Principles or Econ 202*, Macroeconomics Principles.....	3		
Engl 201*, Composition II	3		
PS 213-213A, Soils and Lab			3
PS 223-223A, Principles of Plant Pathology and Lab	3		
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3		3
Specialization and Elective Courses†	4		6

Junior Year		F	S
Bot 327-327A, Plant Physiology and Lab	4		
Micr 231-232, General Microbiology and Lab or PS 421-421A, Soil Microbiology and Lab			3-4
PS 243, Geology.....			3

PS 305-305A, Insect Biology and Lab or PS 307-307A, Insect Pest Management and Lab	3	or	3
PS 323, Soil Fertility and Fertilizers			3
PS 497, Cooperative Education/Internship in Plant Science			1
Soc 100**, Introduction to Sociology or Soc 150**, Social Problems, (G) or Soc 240**, Sociology of Rural America, (G) or Anth 210**, Cultural Anthropology, (G)	3		
SDSU Core: Goal 3**, Human Spirit, p. 40	2	or	2
Specialization and Elective Courses†	0-10		0-6
Senior Year	F		S
Engl 379, Technical Communications	3	or	3
PS 343-343A, Weed Science and Lab	3		
PS 475, Water Quality in Agriculture or PS 446, Agroecology			3
PS 490, Undergraduate Seminar	1	or	1
Stat 281, Introduction to Statistics	3		
SDSU Core: Goal 5**, Stewardship, p. 41	2	or	2
Specialization and Elective Courses†	4-10		7-13

† See selected specialization.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

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Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Agronomy Major Core Curriculum

The following courses (27 credits) are required in all areas of specialization under the agronomy major. A student must have a GPA of 2.5 or higher in the courses used to satisfy the agronomy core curriculum in order to graduate with a major in agronomy.

PS 101, Opportunities in Plant Science	3
PS 103-103A, Crop Production and Lab	3
PS 213-213A, Soils and Lab	3
PS 223-223A, Plant Pathology and Lab	3
PS 243 Geology	3
PS 305-305A, Insect Biology ¹ and Lab or PS 307-307A, Insect and Pest Management	3
PS 322, Soil Fertility and fertilizers	3
PS 343-343A, Weed Science and Lab	3
PS 446, Agroecology ¹ or PS 475, Water Quality in Agriculture	3
PS 490, Seminar	1
PS494, Cooperative Ed./ Internship	1

¹Required for Pest Management Specialization

Business Specialization

ABS 475-475A, Integrated Natural Resource Management and Lab	3
Acct 210, Principles of Accounting I	3
AgEc 354, Agricultural Marketing and Prices or AS 285-285A, Livestock Evaluation and Marketing and Lab	3 or 4

BAdm 360, Organization and Management	3
Chem 106-106L Chemistry Survey and Lab or Chem 112-112L, General Chemistry I and Lab	4
Phys 101-102, Survey of Physics and Lab or Phys 111-112, Introduction to Physics I and Lab	4
PS 383-383A, Principles of Crop Improvement and Lab or Bio 371, Genetics or Bio 210 Genetics and the Organism	3
Business Electives (see list below)	6
Plant Science Electives† (at least one course from each of 3 areas on list on p. 125)	10
Unrestricted Electives	1-5

† See Production Specialization 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 and Ranch Management	4
AgEc 352, Agricultural Law	3
AgEc 354, Agricultural Marketing and Prices†	3
AgEc 373-373A/PS 373-373A, Rural Real Estate Appraisal and Lab†	3
AgEc 421, Production Economics	3
AgEc 454, Economics of Grain and Livestock Marketing	3
AgEc 478-478A, Agricultural Finance and Lab	3
AgEc 479, Agricultural Policy	3
AS 285, Livestock Evaluation and Marketing†	4
BAdm 310, Business Finance	3
BAdm 350, Legal Environment of Business and Contracts	3
BAdm 351, Business Law I	3
BAdm 380, Personal Finance	3
BAdm 474, Principles of Selling	3
Econ 201, Microeconomics Principles†	3
Econ 202, Macroeconomics 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 specialization requirements.

Production Specialization

ABS 475-475A, Integrated Natural Resource Management and Lab	3
AgEc 354, Agricultural Marketing and Prices or AS 285-285A, Livestock Evaluation and Marketing and Lab or BAdm 474, Principles of Selling	3-4
Chem 106-106L, Chemistry Survey and Lab or Chem 112-112L, General Chemistry I and Lab	4
Phys 101-102, Survey of Physics and Lab or Phys 111-112, Introduction to Physics I and Lab	4
PS 383-383A, Principles of Crop Improvement and Lab or Bio 371, Genetics or Bio 210, Genetics and the Organism	3
Plant Science Electives† (at least one course from each of 3 areas listed on p. 125)	13
Unrestricted Electives	10-14

Plant Science Electives †

Crops Courses

PS 303-303A, Seed Technology & Lab
 PS 308-308A, Grain Grading & Lab
 PS 312, Grain & Seed Production & Processing
 PS 313-313A, Forage Crops & Pasture Management & Lab
 PS 383-383A†, Principles of Crop Improvement & Lab
 PS 440-440A, Crop Management with Precision Farming & Lab
 PS 453, Advanced Genetics
 PS 462, Molecular Biology I
 PS 464-465, Molecular Biology II & Lab

Plant Protection Courses

PS 305-305A†, General Entomology & Lab
 PS 307-307A†, Insect Pest Management & Lab
 PS 333-333A, Diseases of Field Crops & Lab
 PS 334-334A Diseases of Horticultural Crops & Lab
 PS 415-415A, Mycology and Lab
 PS 420-420A, Biological Control of Arthropods and Lab
 PS 431-431A, Applied Insect Ecology & Lab
 PS 450-450A Field Studies in Plant Disease Diagnosis & Lab

Soils/Environmental Protection Courses

PS 244, Geology Lab
 PS 310-310A, Soil Geography and Land Use Interpretation and Studio
 PS 362-362A, Environmental Soil Management & Lab
 PS 373-373A, Rural Real Estate Appraisal & Lab
 PS 475†, Water Quality in Agriculture
 PS 412, Environmental Soil Chemistry
 PS 421-421A, Soil Microbiology & Lab
 PS 446†, Agroecology
 PS 483, Irrigation-Crop and Soil Practices

† Courses in Plant Science electives cannot be used to meet other Agronomy major or specialization requirements.

Pest Management Specialization

ABS 203, Global Food Systems or
 AgEc 421, Farming and Food Systems3
 ABS 475-475A, Integrated Natural Resource Management and Lab3
 Bio 371, Genetics or
 Bio 201-202, Genetics and the Organism and Lab3-4
 Bio 467, Environ. Toxicology and Contamination or
 AST 262 Enviro. Safety and Society2
 Bot 301, Plant Systematics or
 Bot 210, Agrostology or
 Range 210, Rangeland Plant ID2
 Bot 311, Principles of Ecology or
 Bot 415 Plant Ecology3
 Chem 106-106L, Chemistry Survey and Lab or
 Chem 112-112L, General Chemistry I and Lab4
 Phys 101-102, Surveys of Physics and Lab or
 Phys 111-112, Introduction to Physics I4
 PS 475, Water Quality in Agriculture or
 PS 440-440A, Crop Management with Precision Farming and Lab3
 Two courses from the following:6
 PS 307-307A, Insect Pest Management and Lab
 PS 431-431A, Applied Insect Ecology and Lab
 PS 420-420A, Biocontrol of Arthropods and Lab
 PS 499, Immature Insects
 Two courses from the following:5
 PS 333-333A, Disease of Field Crops and Lab
 PS 334-334A, Diseases of Horticulture Crops and Lab
 PS 415-415A, Mycology and Lab
 PS 450-450A, Field Studies of Plant Disease Diag. and Lab

Science Specialization

Bio 371, Genetics or
 Bio 201, Genetics and the Organism3
 Chem 112-112L, General Chemistry I and Lab and
 Chem 114-114L, General Chemistry II and Lab8
 Chem 232-233, Analytical Chemistry I and Lab or
 Chem 361-361L, Biochemistry and Lab4
 Math 123, Calculus I or
 Math 121-121A, Survey of Calculus and Lab4-5

Phys 111-112, Introduction to Physics I and Lab and
 Phys 113-114, Introduction to Physics II and Lab8
 Area of Specialization (Crop Science, Entomology, Plant Pathology, Soil Science, or Weed Science)††13
 Unrestricted Electives2-4

†† 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: 18 cr

PS 103-103A, Crop Production and Lab3
 PS 213-213A, Soils and Lab3
 PS 223-223A Principles of Plant Pathology and Lab3
 PS 305-30A, Insect Biology and Lab or
 PS 307-307A, Insect Pest Management3
 PS 323, Soil Fertility and Fertilizers3
 PS 343-343A, Weed Science and Lab3

NOTE: Students must have a GPA of 2.5 or higher in courses used to satisfy the Agronomy Minor.

Soil Science Certification: 21 cr

The following courses are strongly recommended for students seeking certification or licensure as a professional soil scientist:

PS 213-213A, Soils and Lab3
 PS 310-310A, Soil Geography and Land Use Interpretation and Studio3
 PS 323, Soil Fertility and Fertilizers3
 PS 362-362A, Environmental Soil Management and Lab3
 PS 412, Environmental Soil Chemistry3
 PS 421-421A, Soil Microbiology and Lab3
 PS 475, Water Quality in Agriculture3

Pest Management Minor: See p. 193.

American Indian Studies Minor

Lowell Amiotte

American Indian Studies

Pharmacy 127

605-688-6259

e-mail: lowell_amiotte@sdstate.edu

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 Indians3
 Engl 351†, American Indian Literature of the Past3
 Lak 101†, Introductory Lakota I4

10 credits chosen from the following elective courses:

AIS 100, Introduction to American Indian Studies3
 Anth 310, Cultural Anthropology3
 Anth 410†, North American Ethnology3
 Anth 421†, Indians of North America3
 Engl 256, Literature of the American West3
 Engl 352†, American Indian Literature of the Present3
 Geog 219, Geography of South Dakota3
 Geog 467†, Geography of the American Indians3
 Hist 362, History of the American West3
 Hist 368†, History of the American Indians3
 Lak 102†, Introductory Lakota II4
 Lak 201†, Intermediate Lakota I3
 Lak 202†, Intermediate Lakota II3
 Phil 100, Introduction to Philosophy4

PolS 310†, Tribal Government and Politics	3
Rel 238†, Native American Religions	3
Soc 350, Ethnic and Racial Groups	3

† Courses crosslisted as AIS.

Other courses will be added as they are approved by the American Indian Studies Committee.

Animal Science (AS) Major and Minor

Don Boggs
Department of Animal and Range Sciences
Animal Science Complex 103A
605-688-5166
e-mail: donald_boggs@sdstate.edu

Requirements for Animal Science Major Bachelor of Science in Agriculture

Freshman Year	F	S
AS 100, Opportunities in Animal Science	1	
AS 101-101A, Introduction to Animal Science and Lab	3	
Bio 101-102*, Biology Survey I and Lab and Bio 103-104*, Biology Survey II and Lab	3	3
or Bio 151-152*, General Biology I and Lab and Bio 153-154*, General Biology II and Lab	4	4
Engl 101*, Composition I	3	or 3
GS 143 Mastering Lifetime Learning or Wel 100 Skills for Healthy Living	2	or 2
Math 102*, College Algebra or Math 115*, Precalculus	3-5	or 3-5
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Social Science*, (G), p35	3	or 3
Gen Ed: Humanities and Arts*, (G), pp. 35-37	3	or 3
Specialization and elective courses	3-4	3-4
Sophomore Year	F	S
AS 233-233A, Applied Animal Nutrition and Lab	4	or 4
AS 241, Meat: Production to Consumption	3	or 3
Bio 371, Genetics	3	or 3
Chem 120-120L**, Elementary Organic Chemistry and Lab	4	or 4
Econ 202*, Macroeconomics Principles	3	or 3
Engl 201*, Composition II		3
Gen Ed: Humanities and Arts*, (G), pp. 35-37	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39	2	or 2
Specialization and elective courses	0-7	0-7
Junior Year	F	S
AS 323, Advanced Animal Nutrition	3	or 3
AS 332-332A, Principles of Animal Breeding and Lab	4	
AS 390, Animal Science Junior Seminar	1	or 1
SDSU Core: Goal 3**, Human Spirit, p. 40	2	or 2
Communications Elective†	2-3	or 2-3
Specialization and elective courses	3-12	3-12
Senior Year	F	S
AS 433-433A, Livestock Reproduction and Lab	3	
AS 490, Animal Science Senior Seminar Current Issues	1	or 1
AS Production Courses	3-6	or 3-6
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Specialization and elective courses	6-12	6-12

† Choose one from Engl 379, MCom 210, MCom 313, MCom 331, SpCm 201, SpCm 215.

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** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

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Business and Production Specialization

AS 285, Livestock Evaluation and Marketing	4
Chem 106-106L, Chemistry Survey and Lab	4
Phys 101-102, Survey of Physics and Lab or Micro 231-232, General Microbiology and Lab or Chem 361-361L, Biochemistry and Lab	4
Vet 223-223A, Anatomy and Physiology of Livestock and Lab	4
Animal Science Production Courses. Select two from: AS 365, 474, 477, or 478	6
Acct 210, Principles of Accounting I	3
Econ 201, Microeconomics Principles	3
Group I Electives, p. 54	6

Business Electives

Select from the following:	
Acct 211, Principles of Accounting II	3
AgEc 271-271A, Farm and Ranch Management and Lab	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 478-478A, Ag Finance and Lab	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 281, Introduction to Statistics	3
General Electives	7-12

Science Specialization

Chem 112-112L-114-115, General Chemistry I-II and Labs ...	8
Chem 361-361L, Biochemistry and Lab	4
Math 121-121A, Survey of Calculus and Lab	5
Micr 231-232, General Microbiology and Lab	4
Phys 111-112-113-114, Introduction to Physics I-II and Labs or Phys 211-212-213-214, University Physics I-II and Labs	8

Zool 221-222, Anatomy and Lab and Zool 325-325A, Mammalian Physiology and Lab or Vet 223-223A, Anatomy and Physiology of Livestock and Labs	4-7
AS Production Courses. Select two from: AS 365-365A, 474-474A, 477-477A, 478-478A	6
Group I Electives, p. 54	6
General Electives	5-13

Requirements for Animal Science Minor: 19 cr

AS 101-101A, Introduction to Animal Science and Lab	3
AS 233-233A, Applied Animal Nutrition and Lab	4
AS 285-285A, Livestock Evaluation and Marketing and Lab	4
One of the following courses: AS 323, Advanced Animal Nutrition	3
AS 332-332A, Principles of Animal Breeding and Lab	4
AS 433-433A, Livestock Reproduction and Lab	3
Two of the following courses: (one must be 474-474A, 477-477A or 478-478A) AS 241, Meat: Production to Consumption	3
AS 365-365A, Horse Production and Lab	3
AS 474-474A, Beef Cattle Production and Lab	3
AS 477-477A, Sheep and Wool Production	3
AS 478-478A, Swine Production and Lab	3

Apparel Merchandising (AM) Major and Minor

Jane E. Hegland
Department of Apparel Merchandising and Interior Design
NFA 229
605-688-5196
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Requirements for Apparel Merchandising Major Bachelor of Science in Family and Consumer Sciences

Freshman Year	F	S
AM 121, Dress in Popular Culture	3	
AM 172, Introduction to Apparel Merchandising		3
Art 121*, Design I		3
Engl 101*, Composition I	3	or 3
FCS 101, Professional Foundations	1	
Math 102*, College Algebra	3	or 3
Psyc 101*, General Psychology	3	or 3
Soc 100*, Introduction to Sociology	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Natural Science*†, pp. 35-37	4	4
Sophomore Year	F	S
ArtH 100**, Art and Design Appreciation, (G), pp. 39-41	3	or 3
AM 231-231A, Ready-to-Wear Analysis and Lab	3	
AM 242-242A, Textiles I and Lab	3	
AM 274-274A, Fashion Promotion and Visual Merchandising and Lab		3
AM 331-331A, Aesthetics of Dress and Lab		3
CSc 105, Introduction to Computers	3	or 3
Econ 202**, Macroeconomic Principles, pp. 39-41	3	or 3
Engl 201*, Composition II	3	or 3

Hist 121*, History of Western Civilization to 1650 or Hist 122*, History of Western Civilization since 1650, (G)	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
Elective	3	or	3

Summer School

AM 315-315A, Apparel Design and Lab	3
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Junior Year

	F	S
AM 352, History of Dress in Western World		3
AM 372, International Trade in Textiles and Apparel		3
AM 373, Fashion Forecasting	2	
HDFS 241, Family Relations	3	or 3
Studio Art Elective	3	or 3
BAdm Electives	9	or 9
Soc 340**, Urban Sociology††		3
Electives	6	or 6

Senior Year

	F	S
AM 453, Socio-Psychological Aspects of Clothing		3
AM 472, Retailing	3	
AM 473, Merchandising and Buying		3
AM 487, Pre-Practicum	1	
AM 489, Post-Practicum		3
AM 495, Practicum	8	
BAdm/Soc Electives		3
Electives		4

† If a student chooses to take two, 3-credit natural science courses, then he/she will need to take an additional course from the SD Core: Goal 4, p. 41.

†† Soc 340 is recommended to complete SDSU Core Goal 5. However, the student may choose from any course from the SD Core: Goal 5, p. 41.

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Requirements for Apparel Merchandising Minor: 18 cr

AM 231-231A, Ready to Wear Analysis and Lab	3
AM 242-242A, Textiles I and Lab	3
Apparel Merchandising Electives	12
(9 credits must be at the 300 level or above)	

Applied Technical Science, Bachelor of (BATS)

Gail Dobbs Tidemann
College of General Studies and Outreach Programs
Medary Commons 121
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e-mail: gail_tidemann@sdstate.edu

Area of Specialization

Applied Agriculture

	F	S
BATS 100 Transfer Credits.....		0-49
AgEc 354, Agricultural Marketing and Prices.....	3	or 3
AgEc course numbered 300 or above.....	3	or 3
AS 323, Advanced Animal Nutrition or PS 307, Insect Pest Management.....	3	or 3
AS 332, Principles of Animal Breeding or PS 305-305A, Insect Biology and Lab.....	3	or 3
AST 303, Design Management Experience.....	3	or 3
AST course numbered 300 or above.....	3	or 3
Bio 101-102, Biology Survey I.....	3	or 3
Bio 371, Genetics.....	3	or 3
Chem 106-106L*, Chemistry Survey.....	4	or 4
Econ 201*, Microeconomics Principles or Econ 202*, Macroeconomics Principles.....	3	or 3
Engl 101*, Composition I.....	3	or 3
Engl 201*, Composition II.....	3	or 3
Math 102*, College Algebra.....	3	or 3
PS 223-223A, Principles of Plant Pathology and Lab or AS 285, Livestock Evaluation and Marketing.....	3	or 3
PS 323, Soil Fertility and Fertilizers or PS 333, Diseases of Field Crops or AS 474, Beef Cattle Production or AS 478, Swine Production.....	3	or 3
PS, AS, DS, or AE 490, Seminar.....	1	or 1
SpCm 101*, Fundamentals of Speech.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 37-39 (G).....	6	or 6
Gen Ed: Social Sciences*, pp. 37-39 (G).....	3	or 3
Gen Ed: Natural Sciences*, pp. 37-39.....	1	or 1
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41.....	2	or 2
Courses numbered 300 or above with the prefix AgEc, Econ, BAdm, ABS, AS, AST, DS, HO, PS, or Rang.....	9	or 9
Other program supporting courses.....	2	or 2

A total of 30 credits of 300, 400 level coursework is required from the core and track courses.

General Supervision

	F	S
BATS 100 Transfer Credits.....		0-49
BAdm 334, Small Business Management.....	3	or 3
BAdm 360, Organization and Management.....	3	or 3
CSc 312, Advanced Microcomputer Applications.....	3	or 3
Econ 467, Labor, Law and Economics.....	3	or 3
EdFn 375, Human Relations.....	3	or 3
Engl 101*, Composition I.....	3	or 3
Engl 201* Composition II.....	3	or 3
GE 231, Technology and Society.....	3	or 3
Math 115*, Precalculus.....	5	or 5
MnET 231-231A, Manufacturing Processes I and Lab.....	3	or 3
MnET 260, Production/Operations Management.....	3	or 3

MnET 365, Occupational Safety and Health.....	3	or 3
MnET 497, Cooperative Education.....	3	or 3
Soc 353, Sociology of Work.....	3	or 3
Soc 433, Leadership and Group Organization.....	3	or 3
SpCm 101*, Fundamentals of Speech.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 37-39 (G).....	6	or 6
Gen Ed: Social Sciences*, pp. 37-39 (G).....	6	or 6
Gen Ed: Natural Sciences*, pp. 37-39.....	6	or 6
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2
SDSU Core: Goal 4**, Natural Sciences, p. 41.....	2	or 2

A total of 20 credits of 300, 400 level coursework is required from the core and track courses.

General Technology

	F	S
BATS 100 Transfer Credits.....		0-49
AST 342-342A, Applied Electricity and Lab.....	3	or 3
AST 423-423A, Rural Structures and Lab.....	3	or 3
AST 443-443A, Food Process and Engineering Fundamentals and Lab.....	3	or 3
Chem 106-106L*, Chemistry Survey.....	4	or 4
CSc 312, Advanced Microcomputer Applications.....	3	or 3
Engl 101*, Composition I.....	3	or 3
Engl 201*, Composition II.....	3	or 3
GE 120-120A, Engineering Drawing/CAD and Lab.....	3	or 3
GE 231, Technology and Society.....	3	or 3
Math 115*, Precalculus.....	5	or 5
MnET 231-231A, Manufacturing Processes I and Lab.....	3	or 3
MnET 251-251A, Electricity and Electronics I and Lab.....	3	or 3
MnET 252-252A, Electricity and Electronics II and Lab.....	3	or 3
MnET 260, Production/Operations Management.....	3	or 3
MnET 497, Cooperative Education.....	3	or 3
SpCm 101*, Fundamentals of Speech.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 37-39 (G).....	6	or 6
Gen Ed: Social Sciences*, pp. 37-39 (G).....	6	or 6
Gen Ed: Natural Sciences*, pp. 37-39.....	4	or 4
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2

A total of 20 credits of 300, 400 level coursework is required from the core and track courses.

Industrial Sales

	F	S
BATS 100 Transfer Credits.....		0-49
BAdm 474, Principles of Selling.....	3	or 3
CSc 312, Advanced Microcomputer Applications.....	3	or 3
Econ 370, Marketing.....	3	or 3
Engl 101*, Composition I.....	3	or 3
Engl 201* Composition II.....	3	or 3
GE 120-120A, Engineering Drawing/CAD and Lab.....	3	or 3
GE 231, Technology and Society.....	3	or 3
Math 115*, Precalculus.....	5	or 5
MnET 231-231A, Manufacturing Processes I and Lab.....	3	or 3
MnET 251-251A, Electricity and Electronics I and Lab.....	3	or 3
MnET 252-252A, Electricity and Electronics II and Lab.....	3	or 3
MnET 334-334A, CAM/CNC and Lab.....	3	or 3
MnET 451-451A, Industrial Electronics and Control and Lab.....	3	or 3
MnET 260, Productions/Operation Management.....	3	or 3
MnET 497, Cooperative Education.....	3	or 3
Phys 101-102, Survey of Physics and Lab.....	4	or 4

SpCm 101*, Fundamentals of Speech.....	3	or	3
Gen Ed: Humanities and Arts*, pp. 37-39 (G)	6	or	6
Gen Ed: Social Sciences*, pp. 37-39 (G).....	6	or	6
Gen Ed: Natural Sciences*, pp. 37-39	4	or	4
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or	2
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or	2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or	2

A total of 20 credits of 300, 400 level coursework is required from the core and track courses.

Industrial Supervision	F	S
BATS 100 Transfer Credits	0-49	
CSc 312, Advanced Microcomputer Applications	3	or 3
Econ 467, Labor, Law and Economics	3	or 3
Engl 101*, Composition I	3	or 3
Engl 201* Composition II.....	3	or 3
GE 120-120A, Engineering Drawing/CAD and Lab	3	or 3
GE 231, Technology and Society	3	or 3
Math 115*, Precalculus	5	or 5
MnET 231-231A, Manufacturing Processes I and Lab	3	or 3
MnET 260, Production/Operations Management	3	or 3
MnET 365, Occupational Safety and Health	3	
MnET 367, Plant Layout and Material Handling	3	
MnET 462, Quality Management.....	3	
MnET 463, Production and Inventory Management.....	3	
MnET 468, Manufacturing Plant Management.....	3	or 3
MnET 497, Cooperative Education.....	3	or 3
SpCm 101*, Fundamentals of Speech.....	3	or 3
Stat 281, Statistical Methods	3	or 3
Gen Ed: Humanities and Arts*, pp. 37-39 (G)	6	or 6
Gen Ed: Social Sciences*, pp. 37-39 (G).....	6	or 6
Gen Ed: Natural Sciences*, pp. 37-39	6	or 6
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2

A total of 20 credits of 300, 400 level coursework is required from the core and track courses.

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Athletic Training (AT) Major

Jim Booher
Department of Health, Physical Education and Recreation
Physical Education Center 265
605-688-5824
e-mail: james_boohier@sdstate.edu

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 101-102*, Biology Survey I and Lab	3	3
Engl 101*, Composition I	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 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Chemistry.....	4	

Sophomore Year	F	S
Engl 201*, Advanced Composition	3	or 3
HDFS 210, Lifespan Development	3	or 3
Hlth 250, First Aid.....	2	or 2
Nurs 201, Medical Terminology	1	or 1
PE 354 Prevention and Care of Athletic Injuries	2	or 2
Zool 221, Anatomy.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	3
SDSU Core: Goal 2**, Human Community, p. 39.....	3	or 3
SDSU Core: Goal 4**, NFSH 221**, Survey of Nutrition ...	3	or 3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2-3	or 2-3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
Chemistry.....	4	or 4

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 374, Athletic Training Clinical Experience IV.....		2
AT 454, Athletic Injury Assessment, Lower Extremity	3	
AT 464, Therapeutic Modalities in AT.....		2
AT 456, Athletic Injury Assessment-Upper Extremity		3
Nurs 323, Introduction to Pathophysiology		3
PE 353, Biomechanics.....	3	or 3
Psyc 442, Health Psychology (alternative years).....	3	
Zool 325, Mammalian Physiology	4	

Summer School

AT 471, Fall Football Clinical Experience	1	
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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 474, Rehabilitation of Athletic Injuries.....	2	
AT 490, Senior Seminar in Athletic Training.....		2
PE 350, Exercise Physiology.....	3	
PE 400, Exercise Test and Prescription.....		3

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Aviation Education (AVED)

Major and Minor

Jim Crehan

College of Education and Counseling

Wenona Hall 103

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website: <http://learn.sdstate.edu/Aviation>

South Dakota State University offers a Bachelor of Science in Education degree in Career Technical Education with a specialization in Aviation Education. This four-year degree program requires a student to obtain pilot certification from the private pilot through flight instructor certificates. In addition, courses are available to obtain the certified flight instructor instrument, multi-engine, and multi-engine instructor ratings. For students meeting requirements, the Airline Transport Pilot rating is also available.

Students attend classes on campus for general education and flight theory courses, while flying with one of three flight contractors located at Brookings, Sioux Falls, and Rapid City airports to obtain flight certificates and ratings.

Departmental consent is required for registration in flight training courses. Additional costs are associated with flight training to cover costs of aircraft use and individual flight instruction. Students enrolled in this program are eligible for financial aid through the university and other supplemental sources.

This program prepares students for positions as professional flight instructors, as well as providing the capability for graduates to obtain teacher certification in career technical education at the high school and community levels. The flight experience gained in this program also enhances the opportunity for graduates to meet minimum flight experience requirements for consideration for hire by regional airlines, air freight operators, corporate aviation, charter aviation operators, and other aviation industry positions.

The degree includes courses in safety, human factors, teaching methodologies, curriculum development and other courses recognized by our industry advisory council, and potential employers, as courses which prepare the best future employee. Students are expected to complete the flight instructor certificate by the end of the junior year, then have the opportunity to instruct incoming students during their senior year, with the intent of graduating with the highest level of flight instruction experience possible

Requirements for Aviation Education Specialization Bachelor of Science in Career and Technical Education

Freshman Year		F	S
Avia 101, Introduction to General Aviation	1		
Avia 200, Aviation Safety	3		
Avia 201, Aviation Weather			3
Avia 270, Private Pilot Operation	3	or	3
Avia 272, Private Pilot Flight I	2		
Avia 273, Private Pilot Flight II			3
Engl 101*, Composition I	3	or	3
Engl 201*, Composition II	3	or	3
Math 102*, College Algebra	3	or	3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37 and/or	3	or	3
Gen Ed: Cultural Diversity*, pp. 35-37	3	or	3

Sophomore Year		F	S
Acct 210, Principles of Accounting I	3	or	3
Avia 370, Commercial Pilot Theory			3
Avia 371, Instrument Pilot Theory	3		
Avia 372, Instrument Flight	2		
Avia 373, Commercial Flight I			3
EdFn 365, Computer Based Tech and Learning	2	or	2
Phys 101-102*, Survey of Physics I and Lab	4	or	4
Psyc 101, General Psychology or			
Soc 100, Introduction to Sociology	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37 and/or	3	or	3
Gen Ed: Cultural Diversity*, pp. 35-37 and/or	3	or	3
SDSU Core: Goals 1-5, pp. 39-41	2	or	2

Junior Year		F	S
Avia 300, Human Factors in Aviation			3
Avia 305, Intro to Aviation Administration	3		
Avia 374, Commercial Flight II	3		
Avia 470, Professional Flight Instructor			3
CTE 405, Philosophy of Career and Technical Education	2		
CTE 295, Practicum in Career and Technical Education	1		
CTE 419, Methods of Teaching			3
CTE 430, Cooperative Education			3
Engl 379, Technical Communications	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37 and/or	3	or	3
Gen Ed: Cultural Diversity*, pp. 35-37 and/or	3	or	3
SDSU Core: Goals 1-5, pp. 39-41	4	or	4

Senior Year		F	S
Avia 400, Air Transportation System			3
CTE 440, Curriculum	3		
Econ 202*, Macroeconomics Principles	3	or	3
EdFn 475, Human Relations	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37 and/or	3	or	3
Gen Ed: Cultural Diversity*, pp. 35-37 and/or	3	or	3
SDSU Core: Goals 1-5, pp. 39-41	4	or	4

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Requirements for Aviation Minor: 19 cr

AVIA 200, Aviation Safety	3
AVIA 270, Private Pilot Theory	3
AVIA 272, Private Pilot Flight I	2
AVIA 273, Private Pilot Flight II	3
AVIA 300, Human Factors in Aviation	3
AVIA 371, Instrument Pilot Theory	3
AVIA 372, Instrument Flight	2

Biology (Bio) Major and Minor

Tom Cheesbrough
 Department of Biology and Microbiology
 Agricultural Hall 304
 605-688-6141
 e-mail: biomicro@abs.sdstate.edu
 website: www.abs.sdstate.edu/Bio

Requirements for Biology Major Bachelor of Science

Majors must complete the core curriculum and one of the specialization for their B.S.

Core Curriculum:

Freshman Year		F	S
Bio 151-152, General Biology I and Lab	4		
Bio 153-154, General Biology II and Lab	4		
Gen Ed: Natural Science* and SDSU Core Goal 4**			
Chem 112-112L*, General Chemistry I and Lab**	4		
Chem 114-114L*, General Chemistry II and Lab**	4		
Gen Ed: Mathematics*: choose a, b, c, or d ¹	3-5		3-4
a. Math 102, College Algebra and Math 120, Trigonometry			
b. Math 115, Precalculus			
c. Math 121-121A, Survey of Calculus			
d. Math 123, Calculus I and Math 125, Calculus II			
Engl 101*, Composition I	3		
SpCm 101-101A*, Fundamentals of Speech and Lab	3		
Gen Ed: Social Science*, pp. 35-37	3		
Recommended: Anth 210, Soc 150, or Soc 240 (G)			
SDSU Core Goal 1**, Wel 100 or GS 143	2		
Sophomore Year		F	S
Bio 201-202 ² , Genetics and Organismal Biology and Lab....	4		
Bio 203-204 ² , Genetics and Cellular Biology and Lab	4		
Bio 290, Sophomore Seminar	1		
Engl 201*, Composition II	3		
Micr 231-232, General Microbiology and Lab	4		
Organic Chemistry: choose a or b ³	4		
a. Chem 326-327, Org. Chem 1 and Lab and Chem 328-329; Org. Chem II and Lab			
b. Chem 120-120L, Elem. Org. Chem and Lab Chem elective (Chem 361-361L recommended)			
Gen Ed: Humanities and Arts*, pp. 35-37	3		3
Gen Ed: Social Science*, pp. 35-37	3		
Junior Year		F	S
Physics: choose a or b ³	4		4
a. Phys 111-112, Introduction to Physics I and Lab and Phys 113-114, Introduction to Physics II and Lab			
b. Phys 101-102, Survey of Physics and Lab			
Stat 281 ⁵ , Introduction to Statistics or Math 125 ⁵ , Calculus II	3-4		
SDSU Core: Goal 2**, Econ 202, Macroeconomics,	3		
SDSU Core: Goal 5**, choose a or b ⁴	3-4		
a. Bio 311, Ecology			
b. Bio 383, Bioethics			
Specialization courses/electives	8-9		5-10

Senior Year	F	S
Bio 490, Senior Seminar	1	
SDSU Core: Goal 3**, Human Spirit, p. 40		2
Communications Elective ⁶ (recommend Engl 379)	3	
Specialization courses/electives	12	12

- 1 Students in the Preprofessional Specialization, Biology-Ecology Specialization, or planning to attend graduate school should take option c or d.
- 2 Students in the Biology-Ecology Specialization may take Bio 201 or Bio 371 in lieu of the 4 course series.
- 3 Option b of Organic Chemistry and Physics are not sufficient for students planning to enter professional or graduate degree programs.
- 4 Principles of Ecology is required for the Organismal and Ecology Specializations. Bioethics is recommended for the Preprofessional Specialization.
- 5 This course is highly recommended but not required.
- 6 Students in the College of Arts and Sciences should substitute a social science from the listing on pages 56-57.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Preprofessional Specialization

Health Related

Take at least four (4) courses from the following list:

HSc 440, Epidemiology	4
Micr 311-311A, Food Microbiology and Lab	4
Micr 323-323A, Medical Microbiology and Lab	4
Micr 424-424A, Virology and Lab	4
Micr 425, Pathogenesis	3
Micr 491, Microbiology Problems	3-4
Zool 467-367A, General Parasitology and Lab	3

Structure Function Courses

Take at least four (4) courses from the following list:

Micr 422-422A, Immunology and Lab	4
Zool 221-222, Anatomy and Lab	3
Zool 325-325A, Mammalian Physiology and Lab	4
Zool 383-383A, Developmental Biology and Lab	4
Zool 441-441A, Vertebrate Histology and Lab	4

Recommended General Electives

to complete the 218 credits required for graduation:

Chem 361-361L ¹ , Biochemistry and Lab	4
Hlth 364-364A, Emergency Med Tech and Lab	4
HSc 120, Community Health	2
Math 121 ² , Survey of Calculus	5
Stat 341, Introduction to Statistics	3
Psyc 101 ³ , General Psychology	3
SpCm 201, Interpersonal Communication	3

- 1 May be taken in conjunction with core Organic Chemistry option a.
- 2 May be taken in conjunction with core Math option a.
- 3 If not taken for Gen Ed Goal 3, Social Sciences.

Biological Science Electives

Any Bio, Bot, Micro, Zool or prefixed courses (with the exception of seminars)

Molecular/Cellular Specialization

Required Courses

Chem 361-361L ¹ , Biochemistry and Lab	4
Micr 436, Molecular Microbial Genetics (Fall).....	4
Micr 438, Molecular Microbial Genetics Lab	2

Molecular and Cellular Electives

Take at least **four (4)** courses from the following list:

Bio 462, Molecular Biology I	2
Bio 464, Molecular Biology II	2
Bio 465, Molecular Biology II Lab	2
Bio 453, Advanced Genetics.....	3
Micr 422-422A, Immunology and Lab	4
Chem 461, Intermediate Biochemistry	4
Micr 424-424A, Virology and Lab	4
Micr 425, Pathogenesis.....	3

Physiology Electives

Take at least **one (1)** course from the following list:

Bot 327-327A, Plant Physiology and Lab	4
Micr 332-333, Microbial Physiology and Lab	4
Zool 325-325A, Mammalian Physiology and Lab	4

Organismal Electives

Take at least **two (2)** courses from the following list:

Bio 445-445A, Histological Techniques and Lab	4
Bot 201-202, General Botany and Lab	3
Bot 301-301A, Plant Systematics and Lab	4
Bot 305-305A, Agrostology and Lab	3
Bot 421-421 A, Plant Anatomy and Lab	3
Bio 200-200A, Biological Diversity and Lab	3
Micr 414-414A, Anaerobic Microbiology and Lab	3
Micr 323-324, Medical Microbiology and Lab	4
Zool 221-222, Anatomy and Lab	3
Zool 301, Animal Behavior	3
Zool 355-355A, Mammalogy and Lab	4
Zool 365-365A, Vertebrate Zoology and Lab	4
Zool 383-383A, Developmental Biology and Lab	4
Zool 441-441A, Vertebrate Histology and Lab	4
Zool 467-467A, General Parasitology and Lab	3

Population and Ecology Electives

Take at least **one (1)** course from the following list:

Bio 383 ² , Bioethics or Bio 311 ² , Ecology	3
Bio 373, Evolution	3
Bot 415-415A, Plant Ecology and Lab	4
Bio 440-440A, Restoration Ecology and Lab	4
Bio 467, Environment Toxicology and Contaminants	3
EnvM 425-425A, Disturbance Ecology and Lab	4
Micr 310-310A, Environmental Microbiology and Lab	4
Micr 421-421A, Soil Microbiology and Lab	3

1 This can be taken as part of the Chem 120-120L, 361-361L, option in the departmental core. However, the recommended Chemistry series is Chemistry 326-327, 328-329 and 361-361L.

2 You may use either Bio 311 or Bio 383 for this requirement if you have not already used this course to fulfill Goal #5 of the core.

Organismal Specialization †

Core Courses

Take at least **six (6)** courses from the following list:

Bio 200-200A, Biological Diversity and Lab	4
Bio 445-445A, Histological Techniques and Lab	4
Bot 201-202, General Botany and Lab	3
Bot 301-301A, Plant Systematics and Lab	4
Bot 305-305A, Agrostology and Lab	3
Bot 327-327A, Plant Physiology and Lab	4
Bot 421-421A, Plant Anatomy and Lab	3
WL 363-363A, Ornithology and Lab	4
WL 367-367A, Ichthyology and Lab	3
Zool 221-222, Anatomy and Lab	3
Zool 301, Animal Behavior	3
Zool 325-325A, Mammalian Physiology and Lab	4
Zool 355-355A, Mammalogy and Lab	4
Zool 365-365A, Vertebrate Zoology and Lab	4
Zool 383-383A, Developmental Biology and Lab	4
Zool 441-441A, Vertebrate Histology and Lab	4
Zool 467-467A, General Parasitology and Lab	3
Zool 305-305A, Insect Biology and Lab	4

Biology Electives

Take at least **two (2)** courses from the following list:

Bio 373, Evolution	3
Bio 383, Bioethics	4
Bio 440-440A, Restoration Ecology and Lab	4
Bio 467, Environmental Toxicology and Contaminants	3
Bot 145-415A, Plant Ecology and Lab	4
EnvM 275, Intro to Environmental Science	3
EnvM 425-425A, Disturbance Ecology and Lab	4
Micr 310-310A, Environmental Microbiology and Lab	4
Micr 422-422A, Immunology	4
Micr 436, Molecular and Microbial Genetics	4

† Students selecting the Organismal Biology Specialization are required to take at least 2 courses from the Organismal Biology core list having a Bio prefix, 2 courses having a Bot prefix, and 2 courses having a Zool prefix.

Students selecting the Botany emphasis must take a minimum of 4 courses from the core list having the Bot prefix.

Students selecting the Zoology emphasis must take a minimum of 4 courses from the core list having the Zool, or WL prefixes.

Ecology Specialization

Required Courses

Bot 415, Plant Ecology	4
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Systematics/Survey Electives

(choose 1 Bot and 1 Bio, PS, WL or Zool)

Bio 415-415A, Mycology and Lab	3
Bot 301-301A, Plant Systematics and Lab	4
Bot 305-305A, Agrostology and Lab	3
PS 305-305A, Entomology and Lab	3
PS 492-492A, Immature Insects	3
WL 363-363A, Ornithology and Lab	4
WL 367-367A, Ichthyology and Lab	3
Zool 355-355A, Mammalogy and Lab	3

Organismal Biology Electives

(choose 1)

Bot 327-327A, Plant Physiology and Lab	4
Bot 421-421A, Plant Anatomy and Lab	3
Zool 221-222, Anatomy and Lab	3
Zool 325-325A, Mammalian Physiology and Lab	4
Zool 365-365A, Vertebrate Zoology	4
Zool 467-467A, Parasitology and Lab	3

Suggested Ecology Specialization Electives

Bio 440-440A, Restoration Ecology.....	4
Bio 467, Environmental Toxicology and Contaminants.....	3
EnvM 275, Intro to Environmental Science.....	3
Micr 310-310A, Environmental Microbiology.....	4
PR 303, Forest Ecology and Management.....	3
PS 446, Agroecology.....	3
Rang 321, Wildland Ecosystems.....	3
Rang 325-325A, Measurement Topics: Natural Resources Measurements and Lab.....	3
WL 415-415A, Upland Game Ecology and Management.....	3
WL 417-417A, Large Mammal Ecology and Management.....	3
WL 419-419A, Waterfowl Ecology and Management.....	3
WL 421-421A, Grassland Fire Ecology.....	3
Zool 301, Animal Behavior.....	3

Requirements for Biology Minor: 18 cr

The minor in Biology consists of Bio 101-102 or Bio 151-152, and additional credit hours in Biology and Microbiology Departmental courses for a total of at least 18 credits. Two courses must be at the 300 level. A minimum GPA of 2.0 is required in these courses.

Biostress Center of Excellence

Charles McMullen

Biostress Center of Excellence

Agriculture Hall, 156

605-688-5133

e-mail: academic.programs@abs.sdstate.edu

Admission Requirements

1. Completion of 96 semester credits in an Agriculture or Biological Science major.
2. Completion of university core, college core, and specified core of technical courses for the respective major.
3. GPA of 3.0.
4. Completion of ABS 203, Global Food Systems (3 credits).
5. Completion of an application form and a personal statement of interest.
6. Completion of building courses.

To meet Biostress Center of Excellence requirements, students shall take six courses (with associated lab) with a minimum of one course in each of the four resource areas (Resource Management, etc.) listed below. The remaining two courses may be chosen from any of the four areas listed. Courses may also be used to meet major requirements.

Resource Management

AS 101-101A, Introduction to Animal Science and Lab.....	3
Bot 201-202, General Botany and Lab.....	3
DS 130-130A, Introduction to Dairy Science and Lab.....	3
Ho 111-111A, General Horticulture and Lab.....	3
PS 103-103A, Crop Production and Lab.....	3
PS 213-213A, Soils and Lab.....	3
PS 243-244, Geology and Lab.....	3
Rang 205-205A, Introduction to Range Management and Lab.....	3
WL 220, Introduction to Wildlife and Fisheries Management.....	3

Agricultural Systems Analysis

AgEc 271-271A, Farm and Ranch Management and Lab.....	4
AgEc 354, Agricultural Marketing and Prices.....	3
AgEc 421-521, Farming and Food System Economics.....	3

AS 474-474A, Beef Cattle Production and Lab.....	3
AS 477-477A, Sheep and Wool Production and Lab.....	3
AS 478-478A, Swine Production and Lab.....	3
PS 440-440A, Crop Management with Precision Farming and Lab.....	3
Rang 485-485A, Advanced Integrated Ranch Management and Lab.....	3

Social Awareness

CA 381, Social Skills in the Business Environment.....	2
PolS 210, State and Local Government.....	3
Soc 233, Introduction to Leadership.....	1
Soc 240, Sociology of Rural America.....	3

Communications Skills

Engl 379, Technical Communications.....	3
MCom 313, Publicity Methods.....	2
SpCm 201, Interpersonal Communication.....	3
SpCm 215, Public Speaking.....	3
SpCm 322, Argumentation and Debate.....	3
SpCm 334, Discussion.....	3

Graduation Requirements:

1. Multicultural/Global travel experience (2 credit minimum):
ABS 381, Multicultural Agricultural/Biological
Science Experience **or**
ABS 381, Multicultural Agricultural/Biological
Science Experience, **or**
ABS 382, International Multicultural Agricultural/Biological
Science Experience, **or**
ML 195, Living and Study Abroad, **or**
EurS 301, Topics in European Society, **or**
LAAS 301, Latin American Cultures, **or**
LAAS 302, Latin American Societies
2. GPA of 3.0 overall and in courses required for the Biostress Center of Excellence.
3. ABS 476, Integrated Management of Agricultural Resources, (6 credits).

Botany (Bot) Minor

Tom Cheesbrough

Department of Biology and Microbiology

Agricultural Hall 304

605-688-6141

e-mail: biomicro@abs.sdstate.edu

website: www.abs.sdstate.edu/Bio

Requirements for Botany Minor: 18 cr

The minor in Botany consists of Bio 101 and Lab or 151 and Lab, Bot 201 and Lab, and additional courses with a Bot prefix for a total of at least 18 credits. Two courses must be at the 300 level or above. A minimum GPA of 2.0 is required in these courses.

Business Area Studies

Richard Shane

Department of Economics

Scobey Hall 136

605-688-4141

e-mail: janet_wilson@sdstate.edu

website: <http://econnet.sdstate.edu/dept/index.asp>

Business Economics Specialization – See Economics Major

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	F	S	
Acct 210, Principles of Accounting I.....	3	or	3
Acct 211, Principles of Accounting II.....	3	or	3
Acct 310, Intermediate Accounting I.....	3		
Acct 311, Intermediate Accounting II.....			3
Acct 320, Cost Accounting.....	3		
Acct 430, Income Tax Accounting.....	3		

Agricultural Economics	F	S	
AgEc 271-271A, Farm and Ranch Management and Lab	4	or	4
AgEc 352, Agricultural Law	3		
AgEc 354, Agricultural Marketing and Prices	3	or	3
AgEc 373/PS 373, Rural Real Estate Appraisal	3		
AgEc 454, Economics of Grain and Livestock Marketing ...	3	or	3
AgEc 478-478A, Agricultural Finance and Lab	3		

Apparel Merchandising and Interior Design	F	S	
AM 372 International Trade in Textiles and Apparel	3		
AM 472/ID 472, Retailing	3		
AM 473 Merchandise Planning and Control	3		

Business Administration	F	S	
BAdm 310, Business Finance	3	or	3
BAdm 324, Operations Research	4		4
BAdm 334, Small Business Management	3	or	3
BAdm 350, Legal Environment of Business and Contracts	3	or	3
BAdm 351, Business Law I	3	or	3
BAdm 360, Organization and Management	3	or	3
BAdm 380, Personal Finance	3		
BAdm 416, Commercial Bank Management	3		
BAdm 474, Principles of Selling	3	or	3
BAdm 482, Business Policy and Strategy	3	or	3
BAdm 483 Seminar in Business Consulting	3	or	3

Computer Science	F	S	
CSc 330, COBOL Programming	3	3	3

Economics	F	S	
Econ 330, Money and Banking	3	or	3
Econ 370, Marketing	3	or	3
Econ 467, Labor, Law and Economics	3		
Econ 476, Marketing Research	3	or	3

Engineering Technology and Management	F	S	
CM 443, Construction Planning and Scheduling	3	or	3
MnET 260/BAdm 260, Production and Operations Management	3	or	3

Geography	F	S	
Geog 454, Site Selection and Development.....	3	or	3

Mathematics	F	S	
Math 242, Mathematics of Finance			3

Mass Communications	F	S	
MCom 313, Publicity Methods	2	2	2
MCom 370, Principles of Advertising.....	3		

Political Science	F	S	
PolS 428, Personnel and Budgetary Administration.....			3

Psychology	F	S	
Psyc 331, Business and Industrial Psychology	3		

Speech	F	S	
SpCm 201, Interpersonal Communication			3
SpCm 215, Public Speaking.....	3	or	3

Business Minor[†]

Richard Shane

Department of Economics

Scobey Hall 136

605-688-4141

e-mail: economics@abs.sdstate.edu

website: <http://econnet.sdstate.edu/dept/index.asp>

Requirements for Business Minor: 21 cr

Acct 210, Principles of Accounting I.....	3
Econ 201, Microeconomics Principles	3
Econ 202, Macroeconomics Principles.....	3
Two (2) of the following:	6
BAdm 310, Business Finance (3)	
BAdm 334, Small Business Management (3)	
BAdm 350, Legal Environment of Business and Contracts (3)	
BAdm 360, Organization and Management (3)	
Econ 370, Marketing (3)	
Two courses from Business Area Studies ^{††} , p. 134.....	6

[†] This minor provides the prerequisites for the Master of Science in Industrial Management (MSIM) offered by the Department of Engineering Technology and Management at South Dakota State University (605-688-4161). Preparation for a Master's in Business Administration (MBA) offered by the Business School at the University of South Dakota (605-677-5235), and other business schools includes the three required courses listed above and Marketing, Business Finance, Business Management, Accounting II, Calculus, Statistics, Production and Operations Management and Management Information Systems. These courses (except Calculus) can be used to fulfill the select two of the following and Business Area Studies requirements listed above.

^{††} The elective program desired should be planned with the student's academic adviser and submitted to the Economics Department Head for approval. Minor program forms can be obtained from the Economics Department.

Career and Technical Education (CTE) Major

Tim Andera
Coordinator of CTE
Department of Teacher Education
Wenona Hall 104
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website: <http://learn.sdstate.edu/cte/index.html>

Requirements for Career and Technical Education Major Bachelor of Science in Education

The Career and Technical Education (CTE) Bachelor degree is multifaceted in that it can be used as a degree leading to a teaching profession or industry interests. The major is comprised of traditional and non-traditional students. The traditional student enters after graduating from high school seeking either teaching or industry interests. The non-traditional makes up a large number of students enrolled in CTE are individuals currently teaching in a technical field and are pursuing a bachelor degree concurrently.

Individuals currently teaching and enrolled in the CTE major are often under a demanding schedule. Typically participants are scattered across the state and find it challenging to take a significant amount of coursework in a particular semester. Traditionally freshman/sophomore/junior and senior years at college are a remote possibility due to full-time employment, scheduling, and locations. Individuals are encouraged to contact a person in the CTE program at SDSU to begin drafting a schedule and timeline needed to complete an undergraduate program. There is a five-year rotation schedule of the required courses in CTE and individuals are asked to visit the CTE homepage for the latest information on the course rotations. There are certain CTE courses offered through distance learning activities to accommodate students across the state. Courses within the System General Education Core may be taken at other regental institutions offering coursework in an undergraduate program. It is strongly recommended to obtain approval before enrolling in another course at another institution.

The following courses are part of the Career and Technical Education teacher preparation program at SDSU and represent a small number of courses offered:

- CTE 405, Philosophy of Career and Technical Education
- CTE 419, Methods of Teaching†
- CTE 420, Entrepreneurship in Career and Technical Education
- CTE 425, Development of Career and Technical Education Thought and Practice†
- CTE 430, Cooperative Education in Career and Technical Education†
- CTE 440, Career and Technical Education Curriculum†

† represents a required course for CTE

There are numerous courses offered in Career and Technical Education that will allow the student flexibility in developing a program to meet the demands of the ever-changing career field. The following is a sample of courses offered to meet individual student needs:

- CTE 208, Occupational Internship I
- CTE 308, Occupational Internship II
- CTE 380, Technical and Industrial Training
- CTE 408, Occupational Internship III
- CTE 491, Special Problems
- CTE 492, Special Topics

CTE 189 Technical Specialty course permits Career and Technical Education students to receive college credit for technical training or industry experience by meeting specific requirements. A complete description of CTE 189 and the requirements to receive credit can be found in the Course Description area of this bulletin.

The undergraduate curriculum in CTE along with additional education information, can be found at the CTE homepage at the address listed above.

AVIATION EDUCATION

Please see Aviation Education section

Chemistry (Chem) Major and Minor

James A. Rice
Department of Chemistry and Biochemistry
Shepard Hall 121
605-688-5151

e-mail: james_rice@sdstate.edu
website: <http://www3.sdstate.edu/Academics/ArtsandScience/ChemistryandBiochemistry>

Requirements for Chemistry Major Bachelor of Science in Arts and Science

Freshman Year	F	S
Chem 112-112L, General Chemistry I and Lab.....	4	
Chem 114-114L, General Chemistry II and Lab		4
Engl 101*, Composition I	3	or 3
Math 123*, Calculus I or		
Math 121-121A, Survey of Calculus and Lab.....	4-5	or 4-5
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Humanities and Arts*, (G), pp. 35-37	3	or 3
Gen Ed: Social Science*, (G), pp. 35-37.....	0-6	0-6
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2
Sophomore Year	F	S
Chem 326-327, Organic Chemistry I and Lab.....	4	
Chem 328-329, Organic Chemistry II and Lab.....		4
Engl 201*, Composition II.....	3	or 3
Phys 111-112, Introduction to Physics I and Lab.....	4	
Phys 113-114, Introduction to Physics II and Lab.....		4
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Biological Science Elective††.....	3	or 3
Electives†	0-3	or 0-3
Junior Year	F	S
Chem 232-233, Analytical Chemistry I and Lab.....	4	
Chem 342-342L, Physical Chemistry and Lab	5	
SDSU Core: Goal 2**, Human Community, p. 39.....	3	or 3
Biological Science Elective††.....	3	or 3
Electives†	0-7	or 0-13
Senior Year	F	S
Social Science Elective††.....	3	or 3
Electives†	0-16	0-16

† Electives must include at least 8 credits of Chemistry selected from Chem 344-344L, 352-352L, 361-361L, 380, 416, 434-434L, 461, 493. Math 125 is recommended as an elective.

†† Required by the College of Arts and Science Core. See College of Arts and Science requirements, pp. 56-57.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Suggested courses for those interested in associated careers in:

Allied Health

Bio 151-152; Zool 221-222, 325-325A, 467-467A; Micr 231-232, 422-422A; Chem 361-361L, 382, 383, 434-434L, Stat 281

Biological Sciences

Chem 361-361L, 461; Biological Science upper division, 9 credits; Bio 151-152

Education

Chem 352-352L, 361-361L, 380; Education Requirements

Environmental

Chem 361-361L, 380, 434-434L; Micr 310; Bot 415; Bio 311; Geog 337

Quality Control

Chem 352-352L, 361-361L, 434-434L; Stat 281

Requirements for Chemistry Major – ACS Certified

Bachelor of Science in Arts and Science

Freshman Year	F	S
Chem 112-112L, General Chemistry I and Lab.....	4	
Chem 114-114L, General Chemistry II and Lab		4
Engl 101*, Composition I	3	
Engl 201*, Composition II.....		3
Math 123*, Calculus I.....	4	
Math 125, Calculus II.....		4
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Social Science*, pp. 35-37, (G).....	0-6	0-6

Sophomore Year

	F	S
Chem 232-233**, Analytical Chemistry I and Lab	4	
Chem 326-327, Organic Chemistry I and Lab.....	4	
Chem 328-329, Organic Chemistry II and Lab.....		4
Phys 211-212, University Physics I and Lab	4	
Phys 213-214, University Physics II and Lab.....		4
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	0-6	or 0-6
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2
Math Elective†.....	3	or 3

Junior Year

	F	S
Chem 342-342L, Physical Chemistry I and Lab.....	5	
Chem 344-344L, Physical Chemistry II and Lab		5
Chem 352-352L, Inorganic Chemistry and Lab	4	
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Biological Science Elective††.....	3	3
Social Science Elective††.....	3	or 3
Electives†	0-8	0-8

Senior Year	F	S
Chem 361-361L, Biochemistry and Lab.....	3	or 3
Chem 434-434L, Instrumental Analysis and Lab		4
Chem 492, Undergraduate Research	3	or 3
Computer Science Course	3	or 3
Advanced Physics Elective.....	3	or 3
Advanced Chemistry Elective	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39.....	3	or 3
Electives†	0-10	0-12

Emphases:

Within the ACS-certified chemistry specialization, courses from the elective credits may be chosen to develop emphases that are recognized by the American Chemistry Society.

Biochemistry Emphasis

The following courses may be taken as electives to develop the biochemistry emphasis: Chem 461; one course (4 semester hours) taken from cell biology (Bio 343-343A), molecular biology (Bio 462 and 464-465), microbiology (Micr 231-232), genetics (Bio 371), molecular and microbial genetics (Micr 436-438), or physiology (Zool 325-325A). An additional 6 semester hours from these courses should replace the computer science and advanced physics elective in the major. Any of these courses at, or above, the 300-level maybe substituted for the remaining advanced chemistry electives. The required undergraduate research experience (Chem 492) must be in biochemistry and for at least 3 credits.

Chemical Physics Emphasis

The following courses may be taken as electives to develop the chemical physics emphasis: three semester hours of advanced physics electives beyond that already required; at least three semester hours of advanced mathematics electives. The required undergraduate research experience (Chem 492) must be in physical chemistry and for at least 3 credits.

Environmental Chemistry Emphasis

The following courses may be taken as electives to develop the environmental chemistry emphasis: Chem 380 and one of the following sequences; PS 213-213A and PS 412, Micr 231-231A and Micr 310-310A or PS 421-421A, CEE 333-333A and Bio 475. The required undergraduate research experience (Chem 492) must be in environmental chemistry and for at least 3 credits. Field work and/or studies of modeling in environmental systems are encouraged as a component of the undergraduate research experience.

† Electives must include at least 4 credits of Chemistry selected from Chem 380, 416, 461, or 492. Math 321 is recommended as an elective.

†† Required by the College of Arts and Science Core. See College of Arts and Science requirements, pp. 56-57.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Chemistry Minor: 20 cr

A minor should include a minimum of 20 semester credit hours (or equivalent). Two or more areas of chemistry should be chosen beyond general chemistry (Chem 112-112L and Chem 114-114L) from the

following: Analytical, Biochemistry, Inorganic, Organic, Physical and Environmental. This should include laboratory experiences in at least two different areas beyond general chemistry. A grade of "C" or better is required for each course proposed for the minor. At least 50% of chemistry courses applied toward a minor must be completed at SDSU.

(Pre-) Chiropractic

Katherine Erdman
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The adviser can provide assistance in selecting a major or electives to meet the requirements for admission to chiropractic college. Requirements for most chiropractic colleges in the United States:

General Biology with labs, 6 semester credits or one academic year

Choose two of the following:

- Bio 151 and 152, General Biology I
- Bio 153 and 154, General Biology II
- Micr 231 and 232, General Microbiology
- Zool 221 and 222, Anatomy (recommended)
- Zool 325 and 325A, Mammalian Physiology (recommended)

General Chemistry with labs, 6 semester credits or one academic year

- Chem 112 and 112L, General Chemistry I (required)
- Chem 114 and 114L, General Chemistry II (required)

Organic Chemistry with labs, 6 semester credits or one academic year

- Chem 326 and 327, Organic Chemistry (required)
- Chem 328 and 329, Organic Chemistry (required)

General Physics with labs, 6 semester credits or one academic year

Choose one sequence:

- Phys 111 and 112, Intro to Physics I, and
- Phys 113 and 114, Intro to Physics II (recommended) or
- Phys 211 and 212, University Physics I, and
- Phys 213 and 214, University Physics II

General Psychology, 3 semester credits

- Psyc 101, General Psychology (recommended), or
- Psyc 102, Introduction to Psychology

Communications, 6 semester credits†

Choose two of the following:

- Engl 101, Composition I
- Engl 201, Composition II
- SpCm 101, Fundamentals of Speech

† Other Engl or SpCm courses may also fulfill this requirement. See the adviser for details.

Social Sciences and Humanities (15 semester hours, minimum)

Any courses in the following departments:

- Anthropology
- Art History
- Education
- English (Literature)
- French
- German
- History
- Music
- Philosophy

- Political Science
- Psychology
- Religion
- Sociology
- Spanish
- Theatre

Chiropractic colleges typically do not accept math, science, business or computer courses as social sciences and humanities credits.

Electives (42 semester hours, minimum)

Electives may include math, science, business, computer and/or courses for a specific major. Check with the adviser or chiropractic colleges if you have questions about specific courses.

Civil Engineering (CEE) Major

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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)

	F	S
Freshman Year		
CEE 106-106A, Elementary Surveying and Lab		3
Chem 112-112L*, General Chemistry I and Lab.....	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*, Composition I	3	
GE 101**, Introduction to Engineering and Technology	1	
Math 123*, Calculus I and		
Math 125, Calculus II	4	4
SpCm 101-101A*, Fundamentals of Speech and Lab		3
Gen Ed: Humanities and Arts*, pp. 35-37	3	
Gen Ed: Social Science*, pp. 35-37		3
Sophomore Year	F	S
CEE 208-208A, Engineering Surveys and Lab.....	3	
CEE 216-216A, Materials and Lab		3
EG 123, Computer Aided Design and Graphics	1	
EM 221, Statics	3	
EM 222, Dynamics.....		3
Math 225, Calculus III	4	
Math 321, Differential Equations.....		3
Phys 211-212**, University Physics I and Lab and		
Phys 213-214**, University Physics II and Lab.....	4	4
Gen Ed: Humanities and Arts*, pp. 35-37	3	
Gen Ed: Social Science*, pp. 35-37		3
SDSU Core: Goal 2**, Human Community, p. 39		2
Junior Year	F	S
CEE 311, Structural Materials Lab	1	
CEE 327-327A**, Water Supply Engineering and Lab.....		3
CEE 336-336A, Engineering Geology and Lab.....	3	
CEE 353, Structural Theory		3
CEE 363-363A, Highway and Traffic Engineering		
and Lab.....		3
CEE 446-446A, Geotechnical Engineering and Lab		4
CEE 490**, Seminar	0	

CSc 150, Computer Science I	3
EM 321, Mechanics of Materials	3
EM 331, Fluid Mechanics	3
Engl 201*, Composition II or	
Engl 379, Technical Communications	3
Math 381, Probability and Statistics	3
SDSU Core: Goal 1**, Wellness, p. 39	2

Senior Year	F	S
CEE 331, Fluid Mechanics Lab	1	
CEE 423-423A**, Wastewater Engineering and Lab	3	
CEE 433, Hydraulic Engineering	3	
CEE 455-455A, Steel Design and Lab	3	
CEE 456-456A, Concrete Theory and Design and Lab	3	
CEE 464**, Senior Design Project I	1	
CEE 465**, Senior Design Project II	2	
CEE 475, Engineering Administration	3	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	
CEE Technical Electives	6	
Total hours required for graduation	136	

Technical Electives Credits
(12 credits required, must be in 3 different areas)

CEE 304, Land Surveying	3
CEE 306-306A, Photo Interpretation and Photogrammetry and Lab	3
CEE 333-333A, Hydrology and Lab	3
CEE 411-411A, Bituminous Materials and Lab	3
CEE 424**, Industrial Waste	2
CEE 427-427A**, Environmental Engineering Instrumentation and Lab	3
CEE 428-428A**, Solid Waste Engineering and Management and Lab	3
CEE 435**, Water Resources Engineering	3
CEE 436-436A, Foundation Engineering and Lab	3
CEE 443, Matrix Analysis of Structures	3
CEE 444, Precast Concrete Structures	3
CEE 447, Advanced Geotechnical Engineering	3
CEE 452, Prestressed Concrete	3
CEE 457-457A, Indeterminate Structural Analysis and Lab	3
CEE 458, Design of Timber Structures	3
CEE 459, Advanced Structural Mechanics	3
CEE 467, Transportation Engineering	3
CEE 472, Geosynthetics	3
CEE 483-483A**, Municipal Engineering and Lab	3
CEE 491, Special Problems	1-3
CEE 492, Special Topics	1-3
EE 300-301, Basic Electrical Engineering I and Lab	3
ME 314, Thermodynamics	3

CEE students receive educational experiences for understanding the relationship between the environment and society and stewardship. The principles of wise use of the environment; impact analyses of communities, organizations and society on environments, and the knowledge and care of the environment are part of CEE courses, experiments, course projects along with internships, cooperative education experiences, engineering technical tours, activities of professional engineering organizations and curriculum assignments. The primary courses that cover these elements are GE 101, CEE 327, 333, 423, 427, 428, 435, 464, 465, 483, and 490. For Civil and Environmental Engineering students, these educational experiences fulfill the SDSU IGR, Stewardship (SDSU Core: Goal 5).

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the

International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Clinical Laboratory Technology (MedT) Major

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Requirements for Clinical Laboratory Technology Major Bachelor of Science in Arts and Science

Freshman Year	F	S
Bio 151-152, General Biology I and Lab	4	
Chem 112-112L, General Chemistry I and Lab	4	
Chem 114-114L, General Chemistry II and Lab	4	
Engl 101*, Composition I	3	or 3
Math 102*, College Algebra or		
Math 115, Precalculus	3-5	or 3-5
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Zool 221-222, Anatomy and Lab	3	
Gen Ed: Social Science*, pp. 35-37, (G)	0-6	0-6
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year	F	S
Chem 120-120L, Elementary Organic Chemistry and Lab ...	4	
Chem 361-361L, Biochemistry and Lab	4	
Engl 201*, Composition II	3	or 3
Micr 231-232, General Microbiology and Lab	4	
Stat 281, Introduction to Statistics	3	or 3
Zool 325-325A, Mammalian Physiology and Lab	4	
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	6	or 6
SDSU Core: Goal 2**, Human Community, p. 39	3	or 3
Social Science Elective††	3	or 3

Junior Year	F	S
Chem 232-233, Analytical Chemistry I and Lab	4	
Chem 382, Techniques in Clinical Laboratory Technology I	2	
Chem 383, Techniques in Clinical Laboratory Technology II	2	
MedT 487, Internship Orientation	1	
Micr 323-324, Medical Microbiology and Lab	4	
Micr 422-422A, Immunology and Lab	4	
Zool 467-467A, General Parasitology and Lab	3	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Elective†	3	or 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. Interns register for MedT 494 during summer, fall and spring semesters of the internship year.

† Students are encouraged to select one course from the following: Phys 101, Survey of Physics; Bio 371, Genetics; Acct 210, Principles of Accounting I; SpCm 201, Interpersonal Communications.

†† Required by the College of Arts and Science Core. See College of Arts and Science requirements, pp. 56-57.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

SpCm 334, Discussion	3	or	3
SDSU Core: Goal 2**, Human Community, p. 39.....	6	or	6
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2-3	or	2-3
SDSU Core: Goal 4**, Science and Sci Method, p. 41.....	8	or	8
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
CST Electives	2		

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

† RTVF students who do not take RTVF 160 must take an additional three (3) credits from the approved list of Humanities and Arts.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Communication Studies and Theatre (CST) Major and Minor

Laurie L. Haleta
 Department of Communication Studies and Theatre
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Requirements for Communication Studies and Theatre Major – RTVF Specialization (Radio, Television, and Film) Bachelor of Science in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
RTVF 130, Introduction to Radio and TV	3	or 3
RTVF 144, Radio, Television and Film Activities	1	or 1
RTVF 160*, Introduction to Film (or RTVF 360)†	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	3	3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year	F	S
Engl 201*, Composition II.....	3	or 3
RTVF 330-330A, Writing for Radio and TV and Lab.....		3
RTVF 331-331A, Television Production and Lab	3	or 3
RTVF 344, Radio, Television and Film Activities	1	or 1
Gen Ed: Humanities and Arts*, pp. 35-37 (Not in CST).....	3	or 3
CST Electives	3	3
General Electives	3	3

Junior and Senior Year	F	S
GCOM 345, Organizational Communication		3
RTVF 332-332A, Radio News Reporting and Lab or RTVF 333-333A, TV News Reporting and Lab.....	3	or 3
RTVF 360, Film Narrative (or RTVF 160)		3
RTVF 441-441A, Advanced Television Production and Lab.....		3

Requirements for Communication Studies and Theatre Major – RTVF Specialization (Radio, Television, and Film) Bachelor of Arts in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Modern Language*, 101 and 102.....	4	4
RTVF 130, Introduction to Radio and Television.....	3	
RTVF 144, Radio, Television, and Film Activities	1	or 1
RTVF 160*, Introduction to Film (or RTVF 360)†	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year	F	S
Engl 201*, Composition II	3	or 3
Modern Language, 201 and 202.....	3	3
RTVF 330-330A, Writing for Radio and Television and Lab.....		3
RTVF 331-331A, Television Production and Lab	3	or 3
RTVF 344, Radio, Television, and Film Activities	1	or 1
Gen Ed: Social Science*, pp. 35-37	3-4	or 3-4
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	2	or 2
CST Electives	3	3
General Electives	3	3

Junior and Senior Year	F	S
GCOM 345, Organizational Communication		3
RTVF 360, Film Narrative		3
RTVF 332-332A, Radio News Reporting and Lab or RTVF 333-333A, TV News Reporting and Lab.....	3	or 3
RTVF 441-441A, Advanced Television Production and Lab.....		3
SpCm 334, Discussion	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2-3	or 2-3
CST Electives	2	

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

† RTVF students who do not take RTVF 160 must take an additional three (3) credits from the approved list of Humanities and Arts.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Communication Studies and Theatre Major – SpCm Specialization (Speech Communication) Bachelor of Science in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
RTVF 130, Introduction to Radio and Television	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
SpCm 281, Forensic Activities	1	or 1
Thea 100*, Introduction to Theatre.....	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	3	3
Gen Ed: Social Science*, pp. 35-37.....	3	3

Sophomore Year	F	S
Engl 201*, Composition II.....	3	or 3
GCom 211, Phonetics.....		3
SpCm 201, Interpersonal Communication		3
SpCm 215, Public Speaking.....	3	or 3
SpCm 340, Oral Interpretation	3	or 3
Gen Ed: Humanities*, pp. 35-37 (Not in CST)	3	
CST Electives	3	3
General Electives	3	3

Junior and Senior Year	F	S
GCom 345, Organizational Communication.....		3
SpCm 222, Argumentation and Debate.....	3	
SpCm 334, Discussion	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39	6	or 6
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2-3	or 2-3
SDSU Core: Goal 4**, Science and Sci Method, p. 41.....	8	or 8
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
CST Electives	8	or 8

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Requirements for Communication Studies and Theatre Major – SpCm Specialization (Speech Communication) Bachelor of Arts in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Modern Language*, 101 and 102.....	4	4
RTVF 130, Introduction to Radio and Television	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
SpCm 281, Forensic Activities	1	or 1
Thea 100*, Introduction to Theatre.....	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3

Sophomore Year	F	S
Engl 201*, Composition II.....	3	or 3
Modern Language, 201 and 202.....	3	3
GCom 211, Phonetics.....		3
SpCm 201, Interpersonal Communication		3
SpCm 215, Public Speaking.....	3	or 3
SpCm 340, Oral Interpretation	3	or 3
Gen Ed: Social Science*, pp. 35-37	3-4	3-4
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	2	or 2
CST Electives	3	3
General Electives	3	3

Junior and Senior Year	F	S
GCom 345, Organizational Communication.....		3
SpCm 222, Argumentation and Debate.....	3	or 3
SpCm 334, Discussion	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39	6	or 6
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
CST Electives	8	or 8

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Communication Studies and Theatre Major – SpEd Specialization (Speech Education) Bachelor of Science in Arts and Science

Freshman Year	F	S
DCom 131, Introduction to Communication Disorders.....	3	or 3
Engl 101*, Composition I	3	or 3
RTVF 130, Introduction to Radio and TV	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Thea 131*, Acting	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3

Gen Ed: Natural Science*, pp. 35-37.....	3	3
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year

Engl 201*, Composition II.....	3	or 3
SpCm 201, Interpersonal Communication	3	
Thea 241-241A, Stagecraft and Lab	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37 (Not in CST).....	3	
CST Electives	3	3
General Electives	3	3

Junior and Senior Year

SpCm 222, Argumentation and Debate.....	3	
SpCm 340, Oral Interpretation.....	3	or 3
SpCm 375, Teaching of Speech	3	
SDSU Core: Goal 2**, Human Community, p. 39	6	or 6
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2-3	or 2-3
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	8	or 8
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
CST Electives	8	or 8

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

Prospective classroom teachers must also complete courses required of all secondary school teachers. Students who plan to teach in secondary schools should consult with the College of Education and Counseling before their sophomore year.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Communication Studies and Theatre Major – SpEd Specialization (Speech Education)

Bachelor of Arts in Arts and Science

Freshman Year

DCom 131, Introduction to Communication Disorders.....	3	or 3
Engl 101*, Composition I	3	or 3
Modern Language*, 101 and 102.....	4	4
RTVF 130, Introduction to Radio and TV	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Thea 131*, Acting	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year

Engl 201*, Composition II.....	3	or 3
Modern Language, 201 and 202.....	3	3
SpCm 201, Interpersonal Communication	3	
Thea 241-241A, Stagecraft and Lab	3	or 3
Gen Ed: Social Science*, pp. 35-37	3-4	or 3-4
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	2	or 2
CST Electives	3	3
General Electives	3	3

Junior and Senior Year

SpCm 222, Argumentation and Debate.....	3	
SpCm 340, Oral Interpretation	3	or 3
SpCm 375, Teaching of Speech	3	
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
CST Electives	8	or 8

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

Prospective classroom teachers must also complete courses required of all secondary school teachers. Students who plan to teach in secondary schools should consult with the College of Education and Counseling before their sophomore year.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Communication Studies and Theatre Major – Thea Specialization (Theatre)

Bachelor of Science in Arts and Science

Freshman Year

Engl 101*, Composition I.....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Thea 100*, Introduction to Theatre.....	3	or 3
Thea 131, Acting or Thea 241-241A, Stagecraft and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	3	3
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year

Engl 201*, Composition II.....	3	or 3
Thea 240, Stage Costuming	3	
Thea 243, Makeup for the Stage	3	
Gen Ed: Humanities and Arts*, pp. 35-37 (Not in CST).....	3	3
SDSU Core: Goal 2**, Human Community, p. 39.....	6	or 6
SDSU Core: Goal 4**, Natural Sciences, p. 41.....	4	or 4

Junior and Senior Year

Thea 351, Directing or Thea 445, Lighting.....	3	or 3
Thea 397, Theatre Arts Management or Thea 445, Advanced Acting	3	or 3
Thea 441, Scene Design	3	or 3
Thea 485, Summer Theatre (Su ONLY)	5	5
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
CST Electives	8	or 8

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Communication Studies and Theatre Major – Thea Specialization (Theatre)

Bachelor of Arts in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I.....	3	or 3
Modern Language*, 101 and 102.....	4	4
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Thea 100*, Introduction to Theatre.....	3	or 3
Thea 131, Acting or		
Thea 241-241A, Stagecraft and Lab.....	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2

Sophomore Year	F	S
Engl 201*, Composition II.....	3	or 3
Modern Language, 201 and 202.....	3	3
Thea 240, Stage Costuming.....	3	
Thea 243, Makeup for the Stage.....	3	
Gen Ed: Science*, pp. 35-37.....	3-4	3-4
SDSU Core: Goal 4**, Science and Sci Methods, p. 41.....	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	3	or 3
General Electives.....	3	3

Junior and Senior Year	F	S
Thea 351, Directing or		
Thea 445 Lighting.....	3	or 3
Thea 397, Theatre Arts Management or		
Thea 445, Advanced Acting.....	3	
Thea 441, Scene Design.....	3	or 3
Thea 485, Summer Theatre (Su ONLY).....	5	
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	
CST Electives.....	8	or 8

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Communication Studies and Theatre Minor: 20 cr (Theatre Specialization, 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

Ali Salehnia, Acting
Department of Computer Science
Administration Building 133B
605-688-5719
e-mail: ali_salehnia@sdstate.edu

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*, Composition I.....	3	or 3
GE 101, Introduction to Engineering and Technology.....		1
Math 123*, Calculus I.....	4	
Math 125, Calculus II.....		4
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 2**, Human Community, p. 39.....		2

Sophomore Year	F	S
CSc 241, Computer Logic.....	3	
CSc 285, Data Structures.....	3	
CSc 290, Programming Languages.....		3
CSc 314, Assembly I.....	3	
Engl 201*, Composition II.....		3
Math 215, Matrix Algebra.....	2	
Math 253, Logic and Set Theory.....	3	
Math 345, Discrete Mathematics.....		3
Gen Ed: Humanities and Arts*, pp. 35-37.....		3
Gen Ed Natural Science* pp 35-37.....	3	3
SDSU Core: Goal 3 **, Human Spirit, p. 40.....		2

Junior Year	F	S
CSc 303, Introduction to Ethical Issues in Computer Science.....		3
CSc 328, Introduction to Automata Theory.....	3	
CSc 354, Introduction to Systems Programming.....	3	
CSc 428, Compiler Construction.....		3
Math 373, Introduction to Numerical Analysis.....		3
Stat 281, Introduction to Statistics†.....	3	
SDSU Core: Goal 4**, Natural Sciences, p. 41.....		2
Applied Electives††.....	3	3
Electives.....	3	2

Senior Year	F	S
CSc 426, Computer Architecture and Organization.....		3
CSc 456, Operating Systems.....	3	
CSc 470, Software Engineering.....		3
CSc 484, Database Management Systems.....		3
SDSU Core: Goal 1**, Wellness, p. 39.....		2
SDSU Core: Goal 5**, Stewardship, p. 41.....	2	
Applied Electives††.....	6	4
Electives.....	5	

† May substitute Math 381 but then must take a Natural Science to meet SDSU Core Goal #4, p. 41.

†† Courses numbered 300 or above, at least half of the credits from CSc courses, the rest may be from a support discipline.

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(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Computer Networking Emphasis

The Computer Science Department offers an emphasis in computer networking. Student interested in Computer Networking Emphasis should take the courses below. This emphasis deals with the hardware and software issues in running a computer system. All EET courses have both lecture and laboratory components, so as the theory is taught, it is immediately reinforced with hands-on lab experience. The student starts with Electricity and Electronics course, which covers topics from basic electronics and microprocessors. This leads to the Computer Systems course, which specifically deals with the electronic hardware side of computers, and also with basic PC set-up software. Finally, there is a 2-semester sequence in the study of personal computer systems, networking, and data communications from a software and management point of view, concentrating on Intel-type personal computers. Current Microsoft and Novell software systems are installed and explored by the students. This course of study is designed to prepare students to work with the installation of new systems, and the maintenance of existing Local-Area-Networks (LANs), looking at both hardware and software issues. An emphasis is placed on the complete system, including management of the system and the people and information involved. Students interested in Network should take the following courses:

CSc 474, Computer Networks	3
EET 251-251 A, Electricity and Electronics I and Lab.....	3
EET 370-370 A, Computer Systems and Lab	4
EET 472-472 A, Networking systems I and Lab	4
EET 474-474 A, Networking Systems II and Lab	4

Information Technology Management Emphasis

Information is one of the most important assets of any organization. The use of the computer and software in the current Information Age requires business to employ individuals savvy in producing, manipulating, and analyzing data. Business leaders understand that management of the organizational information systems must be entrusted to a competent and knowledgeable person. Students interested in Information Technology Management Emphasis should take courses:

CSc 312 Advanced Microcomputer Application	3
CSc 325 Management Information Systems	3
CSc 474 Computer Networks	3
CSc 484 Database Management Systems.....	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*, Composition I	3	or 3
Math 123*, Calculus I.....	4	
Math 125, Calculus II.....		4
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	
Gen Ed: Social Science*, pp. 35-37.....	3	
SDSU Core: Goal 2**, Human Community, p. 39		2
Electives or SDSU Core: Goal 5 **, Stewardship, p. 41		2

Sophomore Year	F	S
CSc 241, Computer Logic	3	
CSc 285, Data Structures	3	
CSc 290, Programming Languages.....		3
CSc 314, Assembly I	3	
Engl 201*, Advanced Composition II.....		3
Math 215, Matrix Algebra.....	2	
Math 253, Logic and Set Theory.....	3	
Math 345, Discrete Mathematics		3
Gen Ed: Humanities and Arts* pp 35-37		3
Gen Ed: Natural Science*, pp. 35-37.....		3
SDSU Core: Goal 3**, Human Spirit, p.40		2

Junior Year	F	S
CSc 328, Introduction to Automata Theory	3	
CSc 354, Introduction to Systems Programming.....	3	
CSc 426, Computer Arch		3
CSc 428, Compiler		3
CSc 456, Operating Systems	3	
CSc 470, Software Engineering		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 287, Practicum and Professional Lab	2	
SDSU Core: Goal 1**, Wellness, p. 39		2

Senior Year	F	S
CSc 480, Methods for Teaching Computer Science	3	
EdFn 365, Computer Base Technology and Learning	2	
EdFn 475, Human Relations	3	
SeEd 314, Supervised Clinical/Field Experience.....	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 450, Teaching of Reading	3	
SeEd 488, Supervised Teaching Internship.....		8
SDSU Core: Goal 4**, Stat 281†, Introduction to Statistics ...	3	
Electives.....		2

† May substitute Math 381 but then must take a Natural Science to meet SDSU Core Goal #4, p. 41.

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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 adviser and department head.

Construction Management (CM)

Major

Reza Maleki, Head
 Ivan Ostfeld, Program Coordinator
 Department of Engineering Technology and Management
 Wenona Hall 301
 605-688-4160
 e-mail: ivan_ostfeld@sdstate.edu

Requirements for Construction Management Major Bachelor of Science in Construction Management

Freshman Year	F	S
Acct 210, Principles of Accounting I.....	3	
Acct 211, Principles of Accounting II.....		3
CM 101, Introduction to Construction.....	1	
Chem 106-106L*, Chemistry Survey and Lab	4	
CSc 312, Advanced Microcomputer Applications		3
Engl 101*, Composition I	3	
GE 101, Introduction to Engineering and Technology		1
GE 121, Engineering Design Graphics I.....	1	
Math 115*, Precalculus	5	
Math 121-121A**, Survey of Calculus and Lab		5
SpCm 101-101A*, Fundamentals of Speech and Lab.....		3
SDSU Core: Goal 1**, Wellness, p. 39		2

Sophomore Year	F	S
CM 216-216A, Construction Materials and Lab		3
CM 232, Plans, Specifications and Blueprint Reading.....		3
Econ 201* Microeconomics Principles or Econ 202*, Macroeconomics Principles.....		3
Engl 379*, Technical Communications.....	3	
GE 122, Engineering Design Graphics II	1	
GE 123, Computer Aided Drawing		1
GE 241, Applied Mechanics and Lab		3
Phil 220*, Introduction to Ethics, (G).....	3	
Phys 111-112*, Introduction to Physics I and Lab.....	4	
Gen Ed: Social Science*, pp. 35-37, (G).....	3	
Gen Ed: Humanities and Arts*, pp. 35-37	3	
SDSU Core: Goal 5**, Stewardship, p. 41		2

Junior Year	F	S
BAdm 350 Legal Envir. of Business and Contracts.....		3
CM 210-210A, Construction Surveying and Lab	4	
CM 320-320A, Construction Soil Materials and Hydrology and Lab.....		3
CM 321-321A, Strength of Materials and Lab	3	
CM 332-332A, Building Systems in Construction and Lab....		3
CM 333, Practical Hydrology and Hydraulics.....	3	
CM 352, Cost Estimating I.....	3	
CM 353, Structural Theory for Technologists.....		3
CM 374, Construction Method and Equipment.....	3	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	
Technical Elective (from approved CM program list)		3

Senior Year	F	S
BAdm 334, Small Business Management.....	3	
CM 400, Risk Management and Construction Safety	3	
CM 410, Construction Supervision.....	3	
CM 443, Construction Planning and Scheduling.....		3
CM 452, Cost Estimating II	2	
CM 473, Construction Management	3	
CM 475, Engineering Administration	3	
SDSU Core: Goal 2**, Human Community, p. 39.....	3	
Technical Electives (from approved CM program list).....		3

NOTE: Students are required to have a minimum grade of "C" in all of the courses that are designated as prerequisites for the required courses.

Business Minor

Students enrolled in the Construction Management program have the option to obtain the Business minor offered through the Economics Department, pp. 152-154. With proper planning, the students can fulfill the Business minor requirements and without exceeding the 128 credits required for Construction Management majors.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

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Consumer Affairs (CA) Major and Minor

Mary Kay Helling
 Department of Human Development, Consumer and Family Sciences
 NFA 369
 605-688-6418
 e-mail: mary_helling@sdstate.edu

Requirements for Consumer Affairs Major Bachelor of Science in Family and Consumer Sciences

Freshman Year	F	S
CA 130 Coping Skills for Consumers.....	2	
CA 150, Early Experience in Consumer Affairs		1
Engl 101*, Composition I	3	or 3
FCS 101, Family and Consumer Sciences: Professional Foundations	1	or 1
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	3	3
Gen Ed: Social Science*, pp. 35-37, (G).....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39	2	or 2
Electives.....	2	or 2

Sophomore Year	F	S
CA 289, Consumers and the Market.....	3	or 3
Econ 202*, Macroeconomics Principles or Econ 201, Microeconomics Principles	3	or 3
Engl 201*, Composition II	3	or 3
HDFS 241, Family Relations	3	or 3
College of Family and Consumer Sciences Electives.....	3	3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
SDSU Core: Goal 3**, Human Spirit, p. 40	2	or 2
SDSU Core: Goal 4**, Science and Science Methods, p. 41	2	or 2
Business Electives	3	or 3
Electives.....	2	2

Junior Year	F	S
BAdm 350, Legal Environment of Business and Contracts...	3	or 3
BAdm 360, Organization and Management.....	3	or 3
CA 340, Work, Time, and Energy Decisions	3	3
CA 341, Management Personal/Family Living.....	3	or 3
CA 381, Social Skills in the Business Environment.....	2	or 2
FCSE 421, Adult Education	3	3
College of Family and Consumer Sciences Electives.....	3	3
Business Electives	3	3
Electives.....	3	3

Senior Year	F	S
CA 371, Issues in Consumer Affairs.....	2	
CA 412, Strategies for Consumer Affairs Professionals.....		3
CA 421 Diversity in the Workplace	3	
CA 442, Family Resource Management Lab.....	3	
CA 487, Transition to the Professional World	1	
CA 494, Internship		10
College of Family and Consumer Sciences Electives.....	3	
Business Electives	3	
SDSU Core: Goal 5**, Stewardship, p. 41	2	

NOTE: A grade of "C" or better is required in all courses with a CA prefix.

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** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

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Requirements for Consumer Affairs Minor: 18 cr

CA 341, Management Personal/Family Living†	3
CA 371, Issues in Consumer Affairs†	2
CA 289, Consumers and the Market.....	3
FCSE 421, Adult Education.....	3

In addition, at least 7 credits must be taken from the following:

CA 130, Coping Skills for Consumers†	2
CA 340, Work, Time and Energy Decisions†	3
CA 421, Diversity in the Workplace.....	3
CA 442, Family Resource Management Lab	3
CA 492, 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)

Ruth Harper, Acting

Department of Counseling and Human Resource Development

Wenona Hall 319

605-688-4190

e-mail: ruth_harper@sdstate.edu

See Graduate Bulletin for requirements.

Criminal Justice (CJus) Minor

Donna Hess

Department of Sociology

Scobey Hall 224

605-688-4132

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Requirements for Criminal Justice Minor: 18 cr†

CJus 201, Introduction to Criminal Justice.....	3
Soc 351, Criminology††	3

12 hours from:

CJus 203, Police and Community Relations	3
CJus 331, Civil Rights and Liberties	3
CJus 333, Fundamentals of Criminal Procedure	3
CJus 334, Criminal Law	3
CJus 335, Criminal Prosecution and Defense	3
CJus 336, Juvenile Justice	3
CJus 491, Problems in Criminal Justice	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††	3
Soc 480, Sociology of Law††	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, Acting

Department of Educational Leadership

Wenona Hall 219

605-688-4369

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website: <http://learn.sdstate.edu/edgrad/>

See Graduate Bulletin for requirements.

Dairy Manufacturing (DS)

Major

David J. Schingoethe, Acting
 Dairy Science Department
 Dairy-Microbiology 109A
 605-688-4116
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Requirements for Dairy Manufacturing Major Bachelor of Science in Agriculture

Freshman Year		F	S
Chem 106-106L Chemistry Survey and Lab or Chem 112-112L, General Chemistry I and Lab	4		
DS 130-130A, Introduction to Dairy Science and Lab.....	3	or	3
Engl 101*, Composition I	3	or	3
Math 102*, College Algebra or Math 115*, Precalculus	3-5	or	3-5
Social Science.....	3		
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3		3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
Group I Electives, p. 54.....	3		1
Electives.....	2	or	2
Sophomore Year		F	S
Bio 101-102*, Biology Survey I and Lab and Bio 103-104*, Biology Survey II and Lab	3		3
Chem 120-120L, Elementary Organic Chemistry and Lab ...	4		
DS 202, Dairy Products Judging.....	1		
Econ 202*, Macroeconomics Principles	3		
Engl 201*, Composition II.....	3		
Micr 231-232**, General Microbiology and Lab.....	4		
Electives.....	6		5
Junior and Senior Years		F	S
Acct 210, Principles of Accounting I.....	3		
AST 443, Food Process and Engineering Fundamentals.....	3		
CSc 105, Introduction to Computers or CSc 150, Computer Science I.....	3		
DS 313-313A, Technical Control of Dairy Products I and Lab and DS 422-422A, Technical Control of Dairy Products II and Lab	3		4
DS 301-301A, Dairy Microbiology and Lab	3		
DS 321-321A, Dairy Product Processing I and Lab and DS 322-322A Dairy Product Processing II and Lab	5		5
DS 421, Dairy Plant Management	3		
DS 490, Dairy Seminar	1		
DS 496, Field Experience.....	3		
Micr 311-311A, Food Microbiology and Lab.....	4		
Phys 101-102, Survey of Physics and Lab or Phys 111-112, Introduction to Physics I and Lab or Phys 211-212, University Physics I and Lab.....	4		4
Communications Elective††.....	2		
Economics, Business Administration, or Statistics Electives†	3		3
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or	2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or	2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or	2
Electives.....	5	or	5

† Economics, Business Administration, or Statistics electives to be selected from: BAdm 310, 351, 360, 380; Econ 330, 370, 433, 467; Stat 281.

†† Communication elective to be selected from: Engl 379; MCom 210, 313, 315, 331; SpCm 315, 334.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Dairy Production (DS) Major

David J. Schingoethe, Acting
 Dairy Science Department
 Dairy-Microbiology 109A
 605-688-4116
 e-mail: dairy_science@abs.sdstate.edu

Requirements for Dairy Production Major Bachelor of Science in Agriculture

Freshman Year		F	S
Chem 106-106L, Chemistry Survey and Lab or Chem 112-112L, General Chemistry I and Lab	4		
DS 130-130A, Introduction to Dairy Science and Lab.....	3	or	3
DS 212, Dairy Cattle Evaluation.....	2		
Engl 101*, Composition I	3	or	3
Math 102*, College Algebra or Math 115*, Precalculus	3-5		
PS 103-103A, Crop Production and Lab	3		
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3		3
SDSU Core: Goal 1**, Wellness, p. 39	2		
Social Science Elective.....	3		
Sophomore Year		F	S
AS 233-233A, Applied Animal Nutrition and Lab	4		
Bio 101-102*, Biology Survey I and Lab and Bio 103-104*, Biology Survey II and Lab	3		3
Chem 120-120L, Elementary Organic Chemistry and Lab ...	4		
DS 202, Dairy Products Judging.....	1		
Econ 202*, Macroeconomics Principles	3		
Engl 201*, Composition II.....	3		
Micr 231-232**, General Microbiology and Lab.....	4		
Phys 101-102, Survey of Physics and Lab or Phys 111-112, Introduction to Physics I and Lab or Phys 211-212, University Physics I and Lab.....	4		4
PS 213-213A Soils and Lab	3		
Junior and Senior Years		F	S
AgEc 271-271A, Farm and Ranch Management and Lab.....	4		
AS 323, Advanced Animal Nutrition	3		
AS 433-433A, Livestock Reproduction and Lab.....	3		
Bio 371, Genetics	3		
DS 301-301A, Dairy Microbiology and Lab	3		
DS 411, Dairy Breeds and 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	
Vet 223-223A, Anatomy and Physiology of Livestock and Lab.....	4	
Communications Elective†.....	2	
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, pp. 40.....	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41.....	2	or 2
Electives.....	5	5

The following specializations have been approved for the curricula in Agriculture. Students may use elective credits in the major to fulfill requirements for the specialization.

Business Specialization

Acct 210, Principles of Accounting I.....	3
BAdm 360, Organization and Management	3
Econ 201, Microeconomics Principles	3

Plus 12 hours to be chosen from:

Acct 211, Principles of Accounting II.....	3
AgEc 354, Agricultural Marketing and Prices	3
BAdm 310, Business Finance.....	3
BAdm 380, Personal Finance	3
Econ 330, Money and Banking	3
Econ 370, Marketing	3
Econ 476, Marketing Research.....	3
Stat 281, Introduction to Statistics, or equivalent.....	3

Science Specialization

Chemistry, Mathematics and/or Physics.....	11
Biological Science to be selected from the following areas: Botany, Entomology-Zoology or Plant Pathology	2

† Communication elective to be selected from: Engl 379; MCom 210, 313, 315, 331; SpCm 315, 334.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

(Pre-) Dental

Scott Pedersen
Department of Biology and Microbiology
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605-688-5529
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Suggested Pre-Dental Plan of Study

Freshman Year	F	S
Bio 151-152*, General Biology I and Lab and Bio 153-154*, General Biology II and Lab.....	4	4
Chem 112-112L*, General Chemistry I and Lab and Chem 114-114L*, General Chemistry II and Lab.....	4	4

Engl 101*, Composition I and SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	3
Math 102*, College Algebra, or Math 115*, Precalculus, or Placement in Calculus.....	3-5	
Math 121-121A, Survey of Calculus and Lab or Math 123*, Calculus I.....	4-5	
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
Requirements for Major or Electives.....	0-2	0-2

Sophomore Year

Engl 201*, Composition II.....	3	or 3
Phys 111-112*, Introduction to Physics I and Lab and Phys 113-114*, Introduction to Physics II and Lab	4	4
Chem 326-327, Organic Chemistry I and Lab and Chem 328-329, Organic Chemistry II and Lab	4	4
Gen Ed: Humanities and Arts*, pp. 35-37	3	3
Gen Ed: Social Science*, pp. 35-37.....	3	3
Requirements for Major or Electives	3	or 3

Junior Year

Chem 361-361L, Biochemistry and Lab.....	4	
Stat 281, Introduction to Statistics	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Electives and Major Requirements.....	5	9

Senior Year

Complete Major Requirements

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

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** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Early Childhood Education Major

Mary Kay Helling
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605-688-6418
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Requirements for Early Childhood Education Major Birth to 5 Specialization

Bachelor of Science in Family and Consumer Sciences

Freshman Year	F	S
CSc 105, Introduction to Computers.....	3	or 3
ECE 150-150A, Early Experience and Lab	2	or 2
ECE 227, Human Development and Personality I: Childhood		3
Engl 101*, Composition I	3	or 3

FCS 101, Family and Consumer Sciences: Professional Foundations.....1		
HDFS 210*, Lifespan Development	.....3	
Psyc 101*, General Psychology	.....3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	.....3	or 3
Wel 100**, Skills for Healthy Living	.....2	or 2
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	.....3	or 3
Gen Ed: Mathematics*, pp. 35-37	.....3	or 3
Gen Ed: Natural Science*, pp. 35-37	.....3	or 3

Sophomore Year F S		
DCom 212, Language Development	.....3	
ECE 220, Health, Safety, and Nutrition	.....3	or 3
ECE 228-228A, Experiences with Young Children and Lab	.....3	or 3
EdFn 338, Foundations of American Education	.....2	or 2
EdFn 475, Human Relations	.....3	or 3
Engl 201*, Composition II	.....3	or 3
HDFS 241, Family Relations	.....3	or 3
Gen Ed: Natural Science*, pp. 35-37	.....3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	.....3	or 3
SDSU Core: Goal 2**, Human Community, p. 39	.....3	or 3
SDSU Core: Goal 3**, Human Spirit, p. 40	.....3	or 3

Junior Year F S		
Anth 421**, Indians of North America	.....3	
ECE 361, Methods/Materials Early Childhood Education†	.....5	or 5
ECE 362, Early Childhood Education Curriculum†	.....5	or 5
ECE 364, Parent/Child Relationships in a Professional Context	.....3	or 3
ECE 468, Early Intervention Family Centered Practices	.....3	
ECE 487, Orientation to Child and Family Services Practicum	.....1	
ECE 371, Infants and Toddlers: Developmentally Appropriate Practices	.....3	or 3
ECE 470, Early Childhood Inclusion Strategies	.....3	
ECE 492, Current Topics: Kindergarten Education	.....3	
EdFn 365, Computer Based Technology and Learning	.....2	or 2
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	.....3	or 3

Senior Year F S		
ECE 441, Professional Issues Child and Family Study	.....3	or 3
ECE 455, Administration and Supervision in Early Childhood Settings	.....3	or 3
ECE 465†, Introduction to Developmental Assessment of Young Children	.....3	or 3
ECE 472†, Student Teaching in Early Childhood Education	.....6	or 6
ECE 495, Practicum	.....8	or 8
Electives	.....8	or 8

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, Engl 101, SpCm 101.

† Taken concurrently.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the

International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Early Childhood Education Major Birth to 8 Specialization

Bachelor of Science in Family and Consumer Sciences

Freshman Year F S		
Bio 101-102*, Biology and Lab	.....3	or 3
ECE 150-150A, Early Experience and Lab	.....2	or 2
ECE 227, Human Development and Personality I: Childhood.....3		
Engl 101*, Composition I	.....3	or 3
FCS 101, Family and Consumer Sciences: Professional Foundations.....1		
HDFS 210**, Lifespan Development	.....3	
Psyc 101*, General Psychology	.....3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	.....3	or 3
Wel 100**, Skills for Healthy Living	.....2	or 2
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	.....3	or 3
Gen Ed: Mathematics*, pp. 35-37	.....3	or 3
Electives	.....3	or 3

Sophomore Year F S		
ECE 220, Health, Safety, and Nutrition	.....3	or 3
ECE 228-228A, Experiences with Young Children and Lab	.....3	or 3
EdFn 338†, Foundation of American Education	.....2	or 2
EdFn 475†, Human Relations	.....3	or 3
Engl 201*, Composition II	.....3	or 3
Geog 131-131A, Physical Geography and Lab	.....4	or 4
HDFS 241, Family Relations	.....3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	.....3	or 3
SDSU Core: Goal 2**, Human Community, p. 39	.....3	or 3
SDSU Core: Goal 3**, Human Spirit, p. 40	.....3	or 3
Math Elective	.....3	or 3

Junior Year F S		
Anth 421**, Indians of North America	.....3	
ECE 361†, Methods/Materials Early Childhood Education	.....5	or 5
ECE 362†, Early Childhood Education Curriculum	.....5	or 5
ECE 364, Parent/Child Relationships in a Professional Context	.....3	or 3
ECE 371, Infants and Toddlers: Developmentally Appropriate Practices	.....3	or 3
ECE 492, K-8 Reading Methods	.....3	
EdFn 365, Computer Based Technology and Learning	.....2	or 2
Engl 240, Juvenile Literature	.....3	
Phys 101-102, Survey of Physics and Lab or	.....4	or 4
Phys 185, Intro to Astronomy or	.....3	or 3
Chem 106-106L, Survey of Chemistry and Lab	.....4	or 4

Senior Year F S		
ECE 441, Professional Issues Child and Family Study	.....3	or 3
ECE 465†, Introduction to Developmental Assessment of Young Children	.....3	or 3
ECE 468, Early Intervention Family Centers Practice	.....3	or 3
ECE 472†, Student Teaching in Early Childhood Education	.....6	and 6
ECE 492, Kindergarten Education	.....3	

Mus 351, Music Education I: Elementary Music Concepts ..2	or	2
PE 360, K-8 Physical Education Methods	2	or 2
Math Elective.....	3	or 3
Electives.....	1	or 1

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, Engl 101, SpCm 101.

† Taken concurrently.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Early Childhood Education Major
Cooperative Agreement with Black Hills State University
Bachelor of Science in Family and Consumer Sciences**

Freshman Year		F	S
Art 121*, Design I.....	3	or	3
Bio 101-102*, Biology Survey I and Lab	3	or	3
ECE 150-150A, Early Experience and Lab	2	or	2
Engl 101*, Composition I	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	1		
HDFS 210**, Lifespan Development	3	or	3
Hist 151, U.S. History to 1877 or			
Hist 152, U.S. History since 1877	3	or	3
Psyc 101*, General Psychology	3	or	3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Wel 100**, Skills for Healthy Living	2	or	2
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37, (G) (must meet cultural diversity requirements)	3	or	3

Sophomore Year		F	S
ECE 220, Health, Safety, and Nutrition	3	or	3
ECE 227, Human Development and Personality I: Childhood.....	3		
ECE 228-228A, Experiences with Young Children and Lab ...			3
Engl 201*, Composition II.....	3	or	3
EPsy 302, Educational Psychology.....	3	or	3
Geog 131-131A*, Physical Geography I and Lab	4	or	4
HDFS 241, Family Relations	3	or	3
Math 140, Survey of Mathematics			3
Phys 101-102**, Survey of Physics and Lab or			
Chem 106-106L Survey of Chemistry/Lab.....	4	or	4
PolS 100, American Government.....	3	or	3

Junior Year		F	S
ECE 361†, Methods/Materials Early Childhood Education.....	5	or	5
ECE 362†, Early Childhood Education Curriculum.....	5	or	5

ECE 364, Parent/Child Relationships in a Professional Context	3	or	3
ECE 371, Infants and Toddlers: Developmentally Appropriate Practices	3		
EdFn 338†, Foundations of American Education	2	or	2
EdFn 475†, Human Relations	3	or	3
Engl 240, Juvenile Literature	3		
Geog 200*, Introduction to Human Geography, (G) or			
Geog 210*, World Regional Geography, (G)	3	or	3
Mus 351, Music Education I: Elementary Music	2		
PE 360, K-8 Physical Education Methods			2
Math Elective.....	3	or	3

Senior Year		F	S
Anth 421**, Indians of North America.....	3	or	3
ECE 400, Orientation to Cooperative Elementary Education.....			0
ECE 441, Professional Issues in Child Family Study.....	3	or	3
ECE 465†, Introduction to Developmental Assessment of Young Children	3	or	3
ECE 472†, Student Teaching in Early Childhood Ed.	6	or	6
EdFn 365, Computer-Based Technology and Learning	3	or	3
EPsy 303, Exceptional Child.....	3	or	3
Electives.....	3	or	3

Courses taken at BHSU to meet state elementary education certification will require at least 2 additional semesters. Enroll in ECE 400 (0 cr) while at BHSU.

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 Engl 101, SpCm 101, EPsy 302, EdFn 338.

Students must meet all requirements for admission to Teacher Education Program at BHSU and SDSU. Students must successfully complete the PPST Exam or CAAP.

† Taken concurrently.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Early Childhood Education Major
Cooperative Agreement with Dakota State University
Bachelor of Science in Family and Consumer Sciences**

Freshman Year		F	S
Bio 101-102*, Biology Survey I and Lab	3		
CSc 105, Introduction to Computers.....	3	or	3
ECE 150-150A, Early Experience and Lab	2	or	2
Engl 101*, Composition I	3	or	3
FCS 101, Family and Consumer Sciences: Professional Foundations	1		

Hist 151, U.S. History to 1877 or		
Hist 152, U.S. History since 1877	3	or 3
PolS 100, American Government	3	or 3
Psyc 101*, General Psychology	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Wel 100**, Skills for Healthy Living	2	or 2
Gen Ed: Mathematics*, pp. 35-37	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3

Sophomore Year	F	S
Art 121*, Design I	3	or 3
ECE 227, Human Development and Personality I: Childhood	3	
ECE 228-228A, Experience with Young Children and Lab	3	
EdFn 338, Foundations of American Education	2	
EdFn 475, Human Relations	3	or 3
Engl 201*, Composition II	3	or 3
Geog 131-131A*, Physical Geography I and Lab	4	or 4
HDFS 210**, Lifespan Development	3	or 3
HDFS 241, Family Relations	3	or 3
Hlth 250-250A, First Aid and Lab or	2	or 2
ECE 220, Health, Safety, and Nutrition	3	or 3
Gen Ed: Social Science or Humanities and Arts*, pp. 35-37, (G)	3	or 3

Junior Year	F	S
Bio 103-104**, Biology Survey II and Lab or		
Bot 201-202**, General Botany and Lab or	3	or 3
Phys 101-102, Survey of Physics and Lab or	4	or 4
Chem 106-106L, Survey of Chemistry and Lab	4	or 4
ECE 361†, Methods/Materials in Early Childhood Education	5	or 5
ECE 362†, Early Childhood Education Curriculum	5	or 5
ECE 364, Parent/Child Relationship in a Professional Context	3	or 3
ECE 371, Infants and Toddlers: DAP	3	or 3
Engl 240, Juvenile Literature	3	
EPsy 303, The Exceptional Child	3	or 3
Mus 351, Music Education I: Elementary Music	2	
PE 360, K-8 Physical Education Methods	2	or 2
Electives	3	or 3

Senior Year	F	S
Anth 421**, Indians of North America	3	or 3
ECE 400, Orientation to Cooperative Elementary Education Program	0	
ECE 441, Professional Issues in Child/Family Studies	3	
ECE 465†, Introduction to Developmental Assessment of Young Children	3	
ECE 472†, Student Teaching in ECE	6	
ECE 492, Current Topics: K-8 Reading Methods (via DDN) .	3	
EdFn 365, Computer-Based Technology and Learning	3	or 3
EPsy 302, Educational and Adolescent Psychology	3	
Elective	3	or 3

Courses taken at DSU to meet state elementary education certification will require at least 3 additional semesters. Enroll in ECE 400 (0 cr) while at DSU.

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 completion of EdFn 338, Engl 101, EPsy 302, Math 102, SpCm 101-102 with no grade less than "C".

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.

† Taken concurrently.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Early Childhood Education Major
Cooperative Program with Northern State University
Bachelor of Science in Family and Consumer Sciences**

Freshman Year	F	S
Art 121*, Design I	3	or 3
Bio 101-102*, Biology Survey I and Lab	3	or 3
ECE 150-150A, Early Experience and Lab	2	or 2
Engl 101*, Composition I	3	or 3
FCS 101, Professional Foundations	1	
HDFS 210**, Lifespan Development	3	or 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
Psyc 101*, General Psychology	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Wel 100**, Skills for Healthy Living	2	or 2
Gen Ed: Humanities and Fine Arts (G)	3	or 3

Sophomore Year	F	S
ECE 227, Human Development and Personality I: Childhood	3	
ECE 228-228A, Exp. with Young Children and Lab	3	
EPsy 302, Educational Psychology	3	or 3
ECE 220, Health, Safety and Nutrition	3	or 3
Engl 201*, Composition II	3	or 3
Geog 131-131A, Physical Geography and Lab	4	or 4
Geog 200,* Intro Human Geography or		
Geog 210*, World Regional Geography	3	or 3
HDFS 241, Family Relations	3	or 3
Math 140, Survey of Math	3	
Phys 101-102** Survey of Physics and Lab or		
Chem 106-106L, Chemistry Survey and Lab	4	or 4

Junior Year	F	S
ECE 361†, Methods and Materials in Early Childhood Education	5	or 5
ECE 362†, Early Childhood Education Curriculum	5	or 5
ECE 364, Parent/Child Relationships	3	or 3
ECE 371, Infants and Toddlers: Developmentally Appropriate Practices	3	
Engl 240, Juvenile Literature	3	
EdFn 338†, Foundations of American Education	2	or 2
EdFn 475†, Human Relations	3	or 3
Mus 351, Music Ed I: Elementary Music	2	
PE 360, K-8 PE Methods	2	
PolS 100, American Government	3	or 3

Senior Year	F	S
Anth 421, Indians of North America	3	or 3
ECE 400, Orientation to Cooperative Elementary Education Prog.		0
ECE 441, Professional Issues in CFS	3	
ECE 465†, Intro Development Assessment of Young Children	3	
ECE 472†, Student Teaching in ECE.....	6	
ECE 492, Current Topics: K-8 Reading Methods (via DDN) .		3
EdFn 365, Computer-Based Technology and Learning	2	or 2
EPsy 303, Exceptional Child.....	3	or 3

Courses taken at NSU to meet state elementary education certification will require at least 3 additional semesters. Enroll in ECE 400 (0 cr) while at NSU.

A pre-graduate check is required 1 semester before going to NSU.

At beginning of graduation semester, a graduation application from SDSU must be completed.

NSU requires at least a grade of "C" in Engl 01, SpCm 101-102, EPsy 302.

An overall cumulative GPA of 2.6 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 NSU and SDSU and successfully complete the PPST.

† Taken concurrently.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Early Childhood Education Major Cooperative Program with University of South Dakota Bachelor of Science in Family and Consumer Sciences

Freshman Year	F	S
Art 121*, Design I.....	3	or 3
Bio 101-102*, Biology Survey I and Lab	3	or 3
ECE 150-150A, Early Experience and Lab	2	or 2
Engl 101*, Composition I	3	or 3
FCS 101, Professional Foundations	1	
HDFS 210**, Lifespan Development	3	or 3
Math 102*, College Algebra	3	or 3
Psyc 101*, General Psychology	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Wel 100**, Skills for Healthy Living	2	or 2
Gen Ed: Humanities and Fine Arts*, pp. 35-37, (G)	3	or 3

Sophomore Year	F	S
ECE 220, Health, Safety and Nutrition.....	3	or 3
ECE 227, Human Development and Personality I: Childhood.....	3	
ECE 228-228A, Experience with Young Children and Lab....		3
Engl 201, Composition II.....	3	or 3
Geog 131-131A*, Physical Geography and Lab.....	4	or 4
HDFS 241, Family Relations	3	or 3
Hist 151, U.S. History to 1877 or		
Hist 152, U.S. History since 1877	3	or 3

Math 140, Survey of Math		3
Mus 351, Music Ed I: Elementary Music	2	
Phys 101-102** Survey of Physics and Lab or		
Chem 106-106L, Chemistry Survey and Lab	4	or 4
PolS 100, American Government.....	3	or 3

Junior Year	F	S
ECE 361†, Methods and Materials in ECE.....	5	or 5
ECE 362†, Early Childhood Education Curriculum.....	5	or 5
ECE 364, Parent/Child Relationships	3	or 3
ECE 371, Infants and Toddlers: Developmentally Appropriate Practices	3	
EdFn 338†, Foundations of American Education	2	
EdFn 475†, Human Relations	3	or 3
Engl 240, Juvenile Literature	3	
EPsy 302, Educational Psychology		2
Geog 210, World Regional Geography	3	or 3
PE 360, K-8 PE Methods		2
Math Elective (check with adviser).....	3	or 3

Senior Year	F	S
Anth 421, Indians of North America.....	3	or 3
ECE 400, Orientation to Cooperative Elementary Education Program.....		0
ECE 441, Professional Issues in CFS	3	
ECE 465†, Intro Development Assessment of Young Children	3	
ECE 472†, Student Teaching in ECE.....	6	
EdFn 365, Computer-Based Technology and Learning	2	or 2
EPsy 303, Exceptional Child.....	3	or 3

Courses taken at USD to meet state elementary education certification will require at least 2-3 additional semesters. Enroll in ECE 400 (0 cr) while at USD.

A pre-graduate check is required 1 semester before going to USD.

At beginning of graduation semester, a graduation application from SDSU must be completed.

USD requires at least a grade of "C" in SpCm 101-101A, EdFn 338.

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 USD and SDSU.

† Taken concurrently.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Economics (Econ) Major and Minor and Business Specialization

Richard Shane
 Department of Economics
 Scobey Hall 136
 605-688-4141
 e-mail: janet_wilson@sdstate.edu
 website: <http://econnet.sdstate.edu/dept/index.asp>

Requirements for Economics Major Bachelor of Science in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Math 102*, College Algebra	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Gen Ed: Social Science*, pp. 35-37, (G)	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-57, (G)	3	3
Biological Science Electives*, pp. 35-37	3	3
General Electives	2	4

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*, Microeconomics Principles	3	or 3
Econ 202**, Macroeconomics Principles	3	or 3
Engl 201*, Composition II	3	
Math 121-121A, Survey of Calculus and Lab or Math 123, Calculus I	4-5	
Gen Ed: Humanities and Arts*, pp. 35-37	2	
Physical Science Elective**, pp. 39-41		3-4
General Electives	1-3	3-4

Junior Year	F	S
Econ 301, Intermediate Microeconomics	3	
Econ 302, Intermediate Macroeconomics		3
Econ 330, Money and Banking	3	or 3
Engl 379, Technical Communications	3	
Stat 281**, Introduction to Statistics	3	
One of the following:	3	or 3
SpCm 201, Interpersonal Communication		
SpCm 215, Public Speaking		
SpCm 334, Discussion		
Business Economics Specialization Courses† or General Electives	7	7

Senior Year	F	S
One of the following:	3	or 3
Econ 404, History of Economic Thought		
Econ 405, Comparative Economic Systems		
Econ 440, Economics of the International Sector		
Econ 450, Industrial Organization		
Econ 460 Economic Development		
Hist 377, Economic History of the U.S		
Econ 423, Statistics II	3	
Econ 428, Mathematical Economics	3	
Econ 433, Public Finance	3	or 3
SDSU Core: Goal 5**, Stewardship, p. 41		2-3
Electives in Acct, AgEc, BAdm, or Econ	3	6

Business Economics Specialization Courses† or General Electives	3	5-6
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Business Economics Specialization Courses:†

Junior Year	
BAdm 310, Business Finance	3
BAdm 350, Legal Environment of Business and 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 specialization courses can be substituted for:
 Econ 423, Statistics II

Accelerated Master's Degree
 Outstanding students majoring in Agricultural Economics, Agricultural Business or Economics may complete their baccalaureate degree and Master of Science in Economics combined in five years. Students apply for admission to the combined program the Fall Semester of their junior year. Those admitted as graduate students take 400-500 level courses at the graduate level (500) their fourth (senior) year (see below). See the SDSU Graduate Bulletin or the department graduate coordinator for complete details for the fifth year.

Adjustments to baccalaureate course requirements are as follows:		
Fourth Year (Replaces Senior Year Above)	F	S
Econ 423, Statistics II	3	
Econ 428, Mathematical Economics	3	
Econ 433, Public Finance	3	or 3
Four of the following:	6	6
AgEc 521, Farming and Food Systems Economics		
AgEc 571, Advanced Farm and Ranch Management		
Econ 504, History of Economic Thought		
Econ 520, Economics of the Public Sector		
Econ 531, Managerial Economics		
Econ 540, Economics of the International Sector		
Econ 550, Industrial Organization		
Econ 560, Economic Development		
Econ 572, Resource and Environmental Economics		
SDSU Core: Goal 5**, Stewardship, p. 41		2-3
Business Economics Specialization Courses† or General Electives	1-4	4-8

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Economics Major
Bachelor of Arts in Arts and Science**

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Math 102*, College Algebra	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Gen Ed: Natural Science*, pp. 35-37.....	3	3
Gen Ed: Social Science*, pp. 35-37, (G).....	3	3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	3
General Electives and Arts and Science requirements, pp. 56-57	5	4

Sophomore Year	F	S
Acct 210, Principles of Accounting I.....	3	
Acct 211, Principles of Accounting II.....		3
Econ 201*, Microeconomics Principles	3	or 3
Econ 202**, Macroeconomics Principles	3	or 3
Engl 201*, Composition II.....	3	
Modern Language††.....	4	4
Math 121-121A, Survey of Calculus and Lab or Math 123, Calculus I	4-5	
Gen Ed: Humanities and Arts*, pp. 35-37 and Arts and Science requirements, pp. 56-57		3

Junior Year	F	S
CSc 312, Advanced Microcomputer Applications		3
Econ 301, Intermediate Microeconomics.....	3	
Econ 302, Intermediate Macroeconomics		3
Econ 330, Money and Banking	3	
Stat 281**, Introduction to Statistics	3	
Modern Language††.....	3	3
One of the following:	3	
SpCm 201, Interpersonal Communication		
SpCm 215, Public Speaking		
SpCm 334, Discussion		
Elective in Acct, BAdm, Ag Econ, Econ.....		3
Business Economics Specialization Courses † or General Electives.....		3

Senior Year	F	S
Econ 423, Statistics II.....	3	
Econ 428, Mathematical Economics.....	3	
Econ 433, Public Finance.....	3	or 3
One of the following:	3	or 3
Econ 404, History of Economic Thought		
Econ 405, Comparative Economic Systems		
Econ 440, Economics of the International Sector		
Econ 450, Industrial Organization		
Econ 460, Economic Development		
Hist 377, Economic History of the US		
Engl 379, Technical Communications.....		3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	
Electives in Acct, BAdm, AgEcon, Econ	3	3
Business Economics Specialization Courses† or General Electives	4-5	4

Business Economics Specialization Courses:†

Junior Year	
BAdm 310, Business Finance	3
BAdm 350, Legal Environment of Business and 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 specialization 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

Accelerated Master's Degree

Outstanding students majoring in Agricultural Economics, Agricultural Business or Economics may complete their baccalaureate degree and Master of Science in Economics combined in five years. Students apply for admission to the combined program the fall semester of their junior year. Those admitted as graduate students take 400-500 level courses at the graduate level (500) their fourth (senior) year (see below). See the SDSU Graduate Bulletin or the department graduate coordinator for complete details for the fifth year.

Adjustments to baccalaureate course requirements are as follows:

Fourth Year (Replaces Senior Year Above)	F	S
Econ 423, Statistics II.....	3	
Econ 428, Mathematical Economics.....	3	
Econ 433, Public Finance.....	3	or 3
Engl 379, Technical Communications.....		3
Four of the following:.....	6	6
AgEc 521, Farming and Food Systems Economics		
AgEc 571, Advanced Farm and Ranch Management		
Econ 504, History of Economic Thought		
Econ 520, Economics of the Public Sector		
Econ 531, Managerial Economics		
Econ 540, Economics of the International Sector		
Econ 550, Industrial Organization		
Econ 560, Economic Development		
Econ 572, Resource and Environmental Economics		
SDSU Core: Goal 5**, Stewardship, p. 41		2-3
Business Economics Specialization Courses† and General Electives	2-3	3

†† Modern Language: 6-14 credits with completion of 201-202.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Economics Minor: 21-24 cr

Econ 201, Microeconomics Principles	3
Econ 202, Macroeconomics 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, Probability and Statistics (3)	
Stat 281, Introduction to Statistics (3)	
Courses prefixed Acct, AgEc, BAdm, or Econ (3-4)	

International Studies. For the international specialization in agriculture, refer to page 175.

A Modern Language/Business-Economics Specialization is available for all students majoring or minoring in Agricultural Business, Agricultural and Resource Economics, Business or Economics. The specialization requires the following courses in addition to specified courses in the major or minor.

Core Courses:

- Take B.A. Language requirement.....14
- Take Business French, German or Spanish.....3
- Minors take six additional hours approved6
by the Economics Department Head

Business Area Studies. Students preparing for various positions in management and business should consult the list of courses under Business Area Studies. Some of the courses listed there are offered by departments other than the Department of Economics and may be of specific interest to students in majors outside this department.

Educational Administration (EdAd)

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See Graduate Bulletin for requirements.

Electrical Engineering (EE) Major

Dennis Helder, Acting
Department of Electrical Engineering
Harding Hall 201
605-688-4526
website: http://www3.sdstate.edu/Academics/CollegeOf
Engineering/ElectricalEngineering/

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 112-112L*, General Chemistry I and Lab 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*, Composition I and		
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	3
GE 101**, Introduction to Engineering and Technology	1	
Math 123*, Calculus I and		
Math 125, Calculus II	4	4
Phys 211-212*, University Physics I and Lab		4
Gen Ed: Social Science*, pp. 35-37.....	3	
Gen Ed: Humanities and Arts*, pp. 35-37		3
Sophomore Year	F	S
CSc 150, Computer Science I.....		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 260**, Materials Science for EE's.....		2
Engl 379*, Technical Communications.....	3	
Math 225, Calculus III	4	
Math 321, Differential Equations.....		3
Phys 213-214**, University Physics II and Lab.....	4	
Gen Ed: Social Science*, pp. 35-37.....	3	
Gen Ed: Humanities and Arts*, pp. 35-37		3
SDSU Core: Goal 1**, Wellness, p. 39		2

Junior Year	F	S
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 347 Microcontroller Systems Design.....		3
EE 348 Microcontroller Systems Design Laboratory		1
EE 360**, Electronic Devices.....	3	
EE 385, Electromagnetics		4
Approved Math/Basic Science Elective		
(See EE Department List).....	3	
SDSU Core: Goal 2**, Human Community, p. 39.....		2

Senior Year	F	S
Math 381 Probability and Statistics		3
EE 422, Engineering Economy	2	
EE 430**, Energy Conversion	3	
EE 431**, Energy Laboratory.....	1	
EE 464**, Senior Design I and		
EE 465**, Senior Design II	2	2
EM 223, Engineering Mechanics	3	or 3
ME 314, Thermodynamics	3	or 3
SDSU Core: Goal 3**, Human Spirit, p. 40.....		2
Approved EE Technical Electives	5	5
Electives.....	1	1

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

EE students receive educational experiences for understanding the relationship between the environment and society and stewardship. The principles of wise use of the environment; impact analyses of communities, organizations and society on environments; and the knowledge of the care for the environment are part of EE design courses, experiments, course projects and internships, cooperative education experiences, engineering technical tours and inspections, activities of professional engineering organizations and curriculum assignments. The primary courses that cover these activities are: GE 101, EE 260, EE 360,

EE 430-431, EE 464-465, and EE 497. For Electrical Engineering students, these educational experiences fulfill the SDSU Stewardship requirement (SDSU Core: Goal 5, p. 41).

You should select EE technical electives to complement employment goals. At least ten credits of 400-level or higher EE electives are required for the Bachelor of Science degree. Following are some suggested areas and supporting courses.

Biomedical Engineering Emphasis

EE 420, Electronics III.....	3
EE 421, Electronics Laboratory III.....	1
EE 450, Biomedical Signal Processing.....	3
EE 454, Biomedical Instrumentation and Electrical Safety	3
Zool 221-222, Anatomy and Lab.....	3
Zool 325-325A, Mammalian Physiology and Lab	4

Communications and Advanced Electronics Emphasis

CSc 474, Computer Networks	3
EE 416, Passive and Active Filters	3
EE 420, Electronics III.....	3
EE 421, Electronics Laboratory III.....	1
EE 470, Communications Engineering.....	3
EE 471, Fiber Optic Communications.....	3
EE 472, Fiber Optic Communications Lab.....	1
Phys 361, Optics	3

Computers-Digital Hardware Emphasis

CSc 474, Computer Networks	3
EE 420, Electronics III.....	3
EE 421, Electronics Laboratory III.....	1
EE 440-440A, VLSI Circuit Design and Studio.....	3
Math 373, Introduction to Numerical Analysis	3

Electronic Devices and Materials Emphasis

Chem 342-342L, 344A-344L, Physical Chemistry and Lab	3, 5
EE 440-440A, VLSI Circuit Design and Studio.....	3
EE 460-460A, Sensor Theory and Design and Lab.....	3
EE 491, Microelectronic Device Fabrication Lab	1
EE 492, Surface Acoustic Wave Device Design.....	3
EE 492, Dielectric and Piezoelectric/Ferroelectric Materials.....	3
EE 492, Microelectronic Packaging.....	3
Phys 331, Introduction to Modern Physics.....	3
Phys 361, Optics	3
Phys 439, Physics of the Solid State.....	3
Phys 441, Science of Solids.....	3
Phys 471, Quantum Mechanics.....	3

Image Processing Emphasis

EE 415, Linear Control Systems.....	3
EE 470, Communications Engineering.....	3
EE 475, Digital Image Processing	3
Math 373, Introduction to Numerical Analysis	3
Phys 361, Optics	3

Power Systems Emphasis

EE 415, Linear Control Systems.....	3
EE 432, Power Systems	3
EE 435, Seminar in Power Systems.....	1
EE 470, Communications Engineering.....	3
EE 492, Power Electronics.....	3
EE 492, Power Technology Tour	1
Math 315, Linear Algebra.....	3
Math 373, Introduction to Numerical Analysis	3
ME 362, Industrial Engineering.....	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 of Electrical Engineering prior to the work experience. Further information can be found in the Department's Cooperative Education policy.

Electronics Engineering Technology (EET) Major

Reza Maleki, Head

Byron Garry, Program Coordinator

Department of Engineering Technology and Management
Wenona Hall 304

605-688-6229

e-mail: byron_garry@sdstate.edu

Requirements for Electronics Engineering Technology Major Bachelor of Science in Electronics Engineering Technology

Freshman Year	F	S
EET 114-114A, DC Concepts and Lab.....	4	
EET 116-116A, AC Concepts and Lab		4
EET 122-122A, Introductory Circuits and Lab.....		4
Engl 101*, Composition I	3	or 3
GE 101, Introduction to Engineering and Technology	1	
Math 115*, Precalculus	5	
Math 121-121A, Survey of Calculus and Lab		5
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	
Sophomore Year	F	S
Econ 202*, Macroeconomics Principles		3
EET 220-220A, Advanced Circuits and Lab.....	4	
EET 230-230A, Introductory Digital and Lab	4	
EET 232-232A, Advanced Digital and Lab		4
Engl 201*, Composition II or		
Engl 379, Technical Communications		3
GE 120-120A, Engineering Drawing and CAD or.....	3	
GE 121, Engineering Design Graphics I and		
GE 123, Computer Aided Drawing.....	1	1
Phys 111-112*, Introduction to Physics I and Lab.....	4	
Phys 113-114*, Introduction to Physics II and Lab.....		4
Gen Ed: Social Science*, pp. 35-37, (G)	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
Junior Year	F	S
CSc 150, Computer Science I		3
CSc 312, Advanced Microcomputer Applications	3	
EET 320-320A, Analog Devices and Lab.....	4	
EET 330-330A, Microprocessors and Lab.....	4	
EET 370-370A, Computer Systems and Lab.....		4
MnET 260, Production/Operations Management	3	
Stat 281**, Introduction to Statistics		3
SDSU Core: Goal 2**, Human Community, p. 39		2
Technical Emphasis Elective.....	3	and 3

Senior Year	F	S
EET 472-472A, Networking Systems I and Lab and.....4		
EET 474-474A, Networking Systems II and Lab	4	
or		
EET 451-451A, Industrial Electronics and Control and ..3		
EET 453-453A, Manufacturing Automation	3	
or		
BAdm 360, Organization and Management and	3	
BAdm 334, Small Business Management	3	
MnET 462, Quality Management.....	3	
EET 440-440A, Prototyping Techniques and Lab	4	
EET 426-426A, Communication Systems and Lab	4	
EET 469-469A, Project Management and Lab	3	
Technical Emphasis Elective	3	
SDSU Core: Goal 1**, Wellness, p. 39	2	
SDSU Core: Goal 2**, Human Spirit, p. 40	2	
SDSU Core: Goal 5**, Stewardship, p. 41	2	
Non-technical Elective		Balance of the credits

You should select Technical Emphasis Elective courses in the Junior and Senior years to complement your chosen major emphasis. Following are some suggested courses.

Computer Networking Emphasis

- CSc 250, Computer Science II
- CSc 285, Data Structures
- CSc 325, Information Systems
- CSc 492-592, Windows Programming

Manufacturing and Industrial Automation Emphasis

- MnET 231-231A, Manufacturing Process I and Lab
- MnET 334-334A, CAM/CNC and Lab
- MnET 350-350A, Fluid Power and Lab

Business Minor

Choose additional courses needed to fulfill the requirements for the Business Minor offered through the Economics Department, p. 134.

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(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Engineering Physics Major

Oren Quist

Department of Physics

Crothers Engineering Hall 314

605-688-5428

website: www.engineering.sdstate.edu/~physics/physics.htm

Requirements for Engineering Physics Major

Bachelor of Science in Engineering Physics

Electrical Engineering Emphasis

Freshman Year

Chem 112-112L*, General Chemistry I and Lab	F	S
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Chem 114*, General Chemistry II		3
EG 123, Computer Aided Drawing		1
Engl 101*, Composition I	3	
GE 101, Introduction to Engineering and Technology		1
GE 121, Engineering Design Graphics I.....	1	
Math 123*, Calculus I.....	4	
Math 125, Calculus II.....	4	
Phys 211-212**, University Physics I and Lab	4	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	
Gen Ed: Social Science*, pp. 35-37, (G).....	3	

Sophomore Year

CSc 150, CSc 213, or CSc 218 (a programming language)	F	S
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	4	
Math 321, Differential Equations	3	
Phys 213-214, University Physics II and Lab	4	
Phys 331, Introduction to Modern Physics	3	
Gen Ed: Humanities and Arts*, pp. 35-37	3	
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	
Gen Ed: Social Science*, pp. 35-37.....	3	

Junior Year

EE 320, Electronics I.....	F	S
EE 321, Electronics II	3	
EE 322, Electronics Laboratory I.....	1	
EE 323, Electronics Laboratory II	1	
Engl 201*, Composition II or		
Engl 379, Technical Communications	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, Elementary Thermodynamics	2	
Phys 343, Intro to Statistical Physics	2	
Phys 351, Classical Mechanics	4	
Phys 361, Optics.....	3	
SDSU Core: Goal 1**, Wellness, p. 39	2	
Technical Electives†	2	2

Senior Year

Phys 412, Advanced Lab II	F	S
Phys 421, Electromagnetism	4	
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	4	
Phys 490, Physics Colloquium.....	1	
SDSU Core: Goal 2**, Human Community, p. 39	2	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	
SDSU Core: Goal 5**, Stewardship, p. 41	2	
Technical Electives†	5	2

† Technical electives will be selected with the assistance of the student's adviser from courses offered by the Electrical Engineering, Physics, Computer Science, Chemistry, Biology, and Mathematics Departments. Technical electives must be carefully chosen so as to meet the minimum EAC/ABET "Engineering Topics" component. 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.

* The 30 credit Board of Regents **System General Education** requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details.

Courses that are part of these credits are indicated by an asterisk (*). However, the *Engineering Physics-Mechanical Engineering Emphasis* major has received an exemption from this requirement in that the second English course may be delayed until the junior year. It is recommended that Econ 202, Macroeconomics (3 cr.) be one of the elective Social Science courses.

(G) The BOR System General Education requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Engineering Physics Major
Bachelor of Science in Engineering Physics
Mechanical Engineering Emphasis**

Freshman Year		F	S
Chem 112-112L*, General Chemistry I and Lab.....	4		
Chem 114*, General Chemistry II			3
Engl 101*, Composition I	3		
GE 101, Introduction to Engineering and Technology			1
GE 121, Engineering Design Graphics I.....	1		
GE 122, Engineering Design Graphics II			1
Math 123*, Calculus I.....	4		
Math 125, Calculus II.....			4
Phys 211-212**, University Physics I and Lab	4		
SpCm 101-101A*, Fundamentals of Speech and Lab			3
Gen Ed: Social Science*, pp. 35-37, (G).....	3		

Sophomore Year		F	S
CSc 150, CSc 213, or CSc 218 (a programming language)			3
EE 220, Circuits I.....	3		
EE 222, Circuits I Laboratory	1		
EM 221, Statics			3
GE 225, Survey of Machine Tool Applications			1
Math 225, Calculus III	4		
Math 321, Differential Equations.....			3
ME 240, Fundamentals of Mechanical Design.....			3
Phys 213-214, University Physics II and Lab.....	4		
Gen Ed: Social Science*, pp. 35-37.....	3		
Gen Ed: Humanities and Arts*, pp. 35-37, (G)			3
Gen Ed: Humanities and Arts*, pp. 35-37			3

Junior Year		F	S
EE 221, Circuits II	3		
EE 223, Circuits II Laboratory.....	1		
EM 331, Fluid Mechanics			3
Engl 201*, Composition II or Engl 379, Technical Communications			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 331, Introduction to Modern Physics	3		
Phys 341, Elementary Thermodynamics	2		
Phys 343, Intro to Statistical Physics	2		
Phys 351, Classical Mechanics			4
Phys 361, Optics.....	3		
SDSU Core: Goal 2**, Human Community, p. 39.....	2		
SDSU Core: Goal 3**, Human Spirit, p. 40.....			2

Senior Year		F	S
Phys 412, Advanced Lab II			1
Phys 421, Electromagnetism	4		
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			4
Phys 490, Physics Colloquium.....			1
SDSU Core: Goal 1**, Wellness, p. 39	2		
SDSU Core: Goal 5**, Stewardship, p. 41	2		
Technical Electives†	6		3

† Technical electives will be selected with the assistance of the student's adviser from courses offered by the Electrical Engineering, Physics, Computer Science, Chemistry, Biology, and Mathematics Departments. Technical electives must be carefully chosen so as to meet the minimum EAC/ABET "Engineering Topics" component. 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.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*). However, the *Engineering Physics-Mechanical Engineering Emphasis* major has received an exemption from this requirement in that the second English course may be delayed until the junior year. It is recommended that Econ 202, Macroeconomics (3 cr.) be one of the elective Social Science courses.

(G) The BOR System General Education requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

English (Engl) Major and Minor

Kathleen Donovan
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**Requirements for English Major
Bachelor of Arts in Arts and Science**

Freshman Year		F	S
Engl 101*, Composition I	3	or	3
Engl 200, Intro to English Studies	2		
Hist 121*, History of Western Civilization to 1650, (G) and Hist 122*, History of Western Civilization since 1650, (G).....	3		3
Gen Ed: Humanities and Arts*† (G), pp. 35-37	4		4
Gen Ed: Natural Science*, pp. 35-37 and SDSU Core: Goal 4**, Natural Sciences, p. 41	4		4
Gen Ed: Social Science*, pp. 35-37.....	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2

Sophomore Year		F	S
Engl 201*, Composition II.....	3	or	3
Engl 221*, British Literature I and Engl 222*, British Literature II.....	3		3
English or American Literature Courses	3		3
Gen Ed: Humanities and Arts*†, pp. 35-37	4		4
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3

Gen Ed: Social Science*, pp. 35-37.....	3	or	3
Electives.....	4	or	4
Junior Year			
Engl 241, American Literature I and Engl 242, American Literature II.....	3		3
Engl 379, Technical Communications or Engl 383, Creative Writing	3	or	3
English or American Literature Courses	6		6
SDSU Core: Goal 2**, Human Community, p. 39.....	2-3	or	2-3
SDSU Core: Goal 5**, Stewardship, p. 41	2-3	or	2-3
Electives.....	3	or	3
Senior Year			
English or American Literature Courses	6		3
Linguistics Course (203, 425, 420, 443, 452).....	3	or	3
Electives	6-12		6-12

NOTE: A minimum grade of "C" is required in all English and Linguistics courses for them to count toward the English major and minor.

† Students need to take a Modern Language course with prefix of Fren, Germ, Lak, Span, or other languages upon consent.

†† Courses need to fulfill Gen Ed: Natural Sciences as well as SDSU Core: Goal 4, Natural Sciences, p. 41.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for English Major – Education Specialization

Bachelor of Arts in Arts and Science			
Freshman Year			
Engl 101*, Composition I	3	or	3
Hist 121*, History of Western Civilization to 1650, (G) and Hist 122*, History of Western Civilization since 1650, (G).....	3		3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or	3
Gen Ed: Humanities and Arts*† (G), pp. 35-37	4		4
Gen Ed: Natural Science*, pp. 35-37 and SDSU Goal 4**, Natural Sciences, p. 41	4		4
Gen Ed: Social Science*, pp. 35-37.....	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
Sophomore Year			
Engl 201*, Composition II.....	3	or	3
Engl 221*, British Literature I and Engl 222*, British 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
Gen Ed: Humanities and Arts*†, pp. 35-37	4		4

Professional Semester I			
(SeEd 287, Practicum and Professional Lab and EdFn 375, Human Relations).....	5	or	5
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3
Junior Year			
F S			
Anth 421, Indians of North America or Hist 368, History of American Indians	3	or	3
EdFn 365, Integrating Computers into the Curriculum	2	or	2
Engl 241, American Literature I and Engl 242, American Literature II.....	3		3
Engl 308, The Teaching of English.....	3		
Engl 240, 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 402, Educational and Adolescent Psychology and SeEd 314, Supervised Clinical/Field Experience and SeEd 450, Teaching of Reading)	6	or	6
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
Senior Year			
F S			
Professional Semester III			
(SeEd 400, Curriculum and Instruction in Secondary School and SeEd 410, Social Foundations, Management and Law and SeEd 420, Teaching Special Needs Students and SeEd 488, Supervised Teaching Internship)	15	or	15
English Electives	9	or	9
Electives.....	6	or	6

NOTE: A minimum grade of "C" is required in all English and Linguistics courses for them to count toward the English major and minor.

† Students need to take a Modern Language course with prefix of Fren, Germ, Lak, Span, or other languages upon consent.

†† Courses need to fulfill Gen Ed: Natural Sciences as well as SDSU Core: Goal 4, Natural Sciences, p. 41.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for English Minor: 20 cr

(Engl 101 and 201 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

NOTE: A minimum grade of "C" is required in all English and Linguistics courses for them to count toward the English major and minor.

Environmental Management (EnvM) Major

Tom Cheesbrough
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Agricultural Hall 304
605-688-6141
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Requirements for Environmental Management Major Bachelor of Science in Biological Science

Freshman Year		F	S
Engl 101*, Composition I	3		
Bio 151-152, General Biology I and Lab.....	4		
Bio 153-154, General Biology II and Lab	4		
Bio 290, Undergraduate Seminar (EnvM section)	1		
SpCm 101-101A*, Fundamentals of Speech and Lab	3		
Gen Ed: Natural Science* and SDSU Core Goal 4**			
Chem 112-112L, General Chemistry I and Lab	4		
Chem 114-114L, General Chemistry II and Lab	4		
Gen Ed: Mathematics*: Choose a, b, or c.....	5-6		
a. Math 102, Coll. Algebra and			
Math 120, Trigonometry			
b. Math 115, Precalculus			
c. Math 121-121A, Survey of Calculus			
Gen Ed: Social Science*, pp. 35-37.....	3		
Recommended: Anth 210, Soc 150, or Soc 240			
SDSU Core: Goal 1**, Wellness, p. 39	2		
SDSU Core Goal 3**, Human Spirit, p. 40	2		
Sophomore Year		F	S
Engl 201*, Composition II.....	3		
Micr 231-232, General Microbiology and Lab	4		
PS 213/213A, Soils and Lab	3		
PS 243, Geology and Lab.....	3		
Gen Ed: Social Science, pp. 35-37.....	3		
Recommended: Anth 210, Soc 150, Soc 240			
Gen Ed: Humanities and Arts*, pp. 35-37	3		
Select 2 of the following:			
ArtH 100, Engl 250, Hist 121, Hist 122,			
Phil 215, Phil 220, Rel 213, Modern Language			
SDSU Core Goal 5**, EnvM 275, Intro Envir. Sci	3		
SDSU Core Goal 2**, Econ 202, Macroeconomics	3		
Emphasis and Elective course (see list)	3		
Junior Year		F	S
Bio 311**, Principles of Ecology	3		
Engl 379, Technical Communications.....	3		
Phys 111-112, Introduction to Physics I and Lab	4		
Phys 113-114, Introduction to Physics II and Lab.....	4		
Organic Chemistry: choose a or b.....	4		
a. Chem 326-327, Organic Chemistry I and Lab and			
Chem 328-329, Organic Chemistry II and Lab			
b. Chem 120-120L, Elementary Organic Chemistry and Lab			
and Chemistry Elective			
SDSU Core Goal 4**, Stat 281, Introduction to Statistics	3		
Emphasis and Elective Courses (see list).....	2		
Senior Year		F	S
ABS 475-475A, Integrated Natural Resource			
Management and Lab.....	3		
Bio 371, Genetics	3		
Bio 490, Senior Seminar†	1		

EnvM 425-425A, Disturbance Ecology and Lab	4
Emphasis and Elective Courses (see list).....	8

† Senior Seminar may be elected in Animal Science and Range Science, Biology and Microbiology, Plant Science or any other second major department.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Environmental Management Majors are required to take 15 hours from the following list of approved electives:

ABE 353-353A, Physical Climatology and	
Meteorology and Lab.....	3
ABE 434-434A, Soil and Water Engineering and Lab	4
AST 463, Agricultural Waste Management	3
Bio 200-200A, Biological Diversity and Lab	4
Bio 373, Evolution	3
Bio 383, Bioethics	4
Bio 415-415A, Mycology and Lab	3
Bio 440-440A, Restoration Ecology and Lab	3
Bio 467, Environmental Toxicology and Contaminants	3
Bot 201-202, General Botany and Lab	3
Bot 301-301A, Plant Systematics and Lab	4
Bot 305-305A, Agrostology and Lab	3
Bot 327-327A, Plant Physiology and Lab	4
Bot 415-415A, Plant Ecology and Lab	4
CEE 333-333A, Hydrology and Lab.....	3
Chem 232-233, Analytical Chemistry I and Lab	4
Chem 342-342L, Elementary Physical Chemistry and Lab.....	5
Chem 361-361L, Biochemistry and Lab.....	4
Chem 380, Environmental Chemistry	4
CSc 285, Data Structures	3
CSc 484, Database Management Systems	3
Econ 423, Statistics II.....	3
GE 525, Risk/Loss Control Management	2
Geog 365, Land Use Planning	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
HSc 440, Epidemiology	3
HSc 443, Public Health Science.....	3
La 231, Introduction to LandCADD	3
La 322, Site Planning	3
La 324-324A, Planning Public Grounds and Lab.....	3
La 364, Planting Design and Specification	4
La 424-424A, Recreational Facilities Design and Lab	3
Math 121-121A, Survey of Calculus and Lab	5
Math 123, Calculus I.....	4
Math 125, Calculus II.....	4
Math 225, Calculus III	4
ME 411, Environmental Engineering.....	3
Micr 310-310A, Environmental Microbiology and Lab	4
Micr 421-421A, Soil Microbiology and Lab	3
Micr 422-422A, Immunology and Lab	4
PolS 320, Public Administration	3
PR 303, Forest Ecology and Management.....	3
PS 305-305A, Insect Biology and Lab.....	3

PS 362-362A, Environmental Soil Management and Lab.....	3
PS 412, Environmental Soil Chemistry.....	3
PS 475, Water Quality in Agriculture.....	3
Soc 362, Population Problems	3
Stat 441, Statistical Methods II	3
Stat 445, Nonparametric Statistics	3
WL 363-363A, Ornithology and Lab.....	4
WL 367-367A, Ichthyology and Lab.....	3
WL 370-370A, Limnology and Lab.....	3
WL 411-411A, Principles of Wildlife Management and Lab	4
WL 417-417A, Large Game Ecology and Management and Lab	3
WL 419-419A, Waterfowl Ecology and Management and Lab	3
WL 430-430A, Human Dimensions in Wildlife and Fisheries and Lab	3
Zool 325-325A, Mammalian Physiology and Lab.....	4
Zool 355-355A, Mammalogy and Lab.....	3
Zool 467-467A, General Parasitology and Lab	3

Total Required Electives (from list above)15
Optional Elective Credits
(select from any university course offerings)14

European Studies Program (EurS)

Gordon Tolle
Department of Political Science
Scobey Hall 304
605-688-4912
e-mail: gordon_tolle@sdstate.edu

Curriculum in European Studies Program Requirements	Credits
Language: 8 credits of a European language*, (G) or an appropriate European language substitution.....	8
History: Hist 122*, History of Western Civilization since 1650, (G) or Hist 328 or 329	3
Political Science: PoIS 341**, European Democratic Governments (SDSU Core Goal 2, p. 39), or PoIS 165*, Political Ideologies, (G), or PoIS 462**, Modern Political Philosophy (SDSU Core Goal 3, p. 40), or.....	3
EurS 300**, Topics in European Culture (SDSU Core Goal 3, p. 40) and/or EurS 301**, Topics in European Society (SDSU Core Goal 2, p. 39).....	6
Total	20

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Family and Consumer Sciences Education (FCSE) Major

Mary Kay Helling
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Sciences
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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*, Composition I	3	or 3
FCS 101, Family and Consumer Sciences: Professional Foundations	1	
HDFS 227, Human Development and Personality I: Childhood.....	3	or 3
Psyc 101*, General Psychology	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
Gen Ed: Natural Science*, pp. 35-37	3-4	3-4
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Electives	1-3	or 1-3

Sophomore Year	F	S
CA 289, Consumers and the Market.....	3	or 3
CTE 287, Practicum in Career and Technical Education.....	1	
CTE 405, Philosophy of Career and Technical Education.....	2	
ECE 228, Experience with Young Children.....	3	or 3
EdFn 475, Human Relations	3	
Engl 201*, Composition II.....	3	or 3
NFSH 111**, Food and People.....	3	or 3
NFSH 141-141A, Food Principles and Lab	4	or 4
NFSH 221**, Survey of Nutrition	3	or 3
Gen Ed: Social Science*, pp. 35-37, (G).....	2	or 2
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3
HDFS/ECE Elective	2	or 2

Junior Year	F	S
AM 121, Apparel in Popular Culture or AM 453, Socio-Psy Aspects of Clothing or AM 231, Ready to Wear Analysis.....	3	or 3
EdFn 365, Computer-Based Technology and Learning	2	or 2
EPsy 302, Educational Psychology	3	or 3
FCSE 331, Workforce Preparation	2	
HDFS 241, Family Relations	3	or 3
ID 150, Introduction to Interior Design	3	or 3
SeEd 314, Supervised Clinical/Field Experience.....	1	
SeEd 420 Teaching Special Needs Students or SeEd 450, 7-12 Teaching Reading in Content Area	3	or 3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2-3	or 2-3
HDFS/ECE Elective	3	or 3
Electives.....	1	or 4-5

Senior Year	F	S
Anth 421**, Indians of North America.....	3	
CA 341, Management Personal and Family Living.....	3	
CA 442, Family Resource Management Lab.....	3	
EdFn 427, Middle School: Philosophy and Application.....	2	
FCSE 411, Philosophy and Methods	4	
FCSE 412, Preparation for Student Teaching		5

FCSE 473, Supervised Student Teaching in FCSE.....	10
Elective	2

NOTE: Students must receive a grade of "C" or better in English 101 and Math 102 and have a cumulative GPA of 2.5 or above in order to be admitted to the College of Education for teacher certification.

A grade of "D" on courses in the major cannot be counted and course must be repeated.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Food and Biological Materials Engineering (FBME) Major

Van Kelley
 Department of Agricultural and Biosystems Engineering
 Agricultural Engineering 107
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 e-mail: Van_Kelley@sdstate.edu
 website: <http://abe.sdstate.edu/index.htm>

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 became a specialization as described under the Agricultural and Biosystems Engineering Major.

Food Science Specialization

C.Y. Wang, Acting
 Department of Nutrition, Food Science and Hospitality
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Requirements for Food Science Specialization Nutrition and Food Science Major
 See the requirements under Nutrition and Food Science Major.

French (Fren) Major and Minor

Philip Baker
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The major in French Studies requires a minimum of 37 credit hours in French.¹ All French Majors will take the following courses:

Fren 101-102, Introductory French I-II.....	8
Fren 201-202, Intermediate French I-II.....	8
Fren 310, French Language Skills.....	3
Fren 333, Topics in Francophone Culture	3

¹ French 101 does not count towards the major or minor.

In addition, French Majors taking the Business Specialization are required to take:

Fren 350, Business Communications in French.....	3
Fren 450, Business French II.....	3

Regardless of the Specialization chosen, French Majors will take at least nine hours of electives from the following:

Fren 395, Travel Study Abroad Francophone	1-6
Fren 415, French Language Skills Workshop	1-6
Fren 480, Senior Capstone Experience	3
Fren 491, Directed Readings/Independent Study.....	1-3
(may be repeated)	
Fren 492, Special Topics	3-9
(may be repeated)	

Requirements for French Major Bachelor of Arts in Arts and Science

Freshman Year	
Engl 101*, Composition I	3
Fren 101-102†, Introductory French I-II	8
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3
Gen Ed: Mathematics*, pp. 35-37	3
Gen Ed: Social Science*, pp. 35-37	3
SDSU Core: Goal 1**, Wellness, p. 39	2
SDSU Core: Goal 3**, Human Spirit, p. 40 (not in Modern Languages Department).....	3
Electives	

Sophomore Year

Engl 201*, Composition II.....	3
Fren 201-202, Intermediate French I-II	8
Electives in French.....	8
Gen Ed: Social Science*, pp. 35-37	3
Gen Ed: Natural Science*, pp. 35-37	6
SDSU Core: Goal 3**, Human Spirit, p. 40 (not in Modern Languages Department).....	3
Electives	

Junior Year††

French coursework (300-400 level).....	6-12
SDSU Core: Goal 2**, Human Community, p. 39.....	2
SDSU Core: Goal 4**, Science and Science Methods, p. 41	2
SDSU Core: Goal 5**, Stewardship, p. 41.....	2
Electives	

Senior Year

French coursework (300-400 level).....	6-12
Electives	

Requirements for the French Minor: 22 cr

Fren 101-102, Introductory French I-II	8
Fren 201-202, Intermediate French I-II	6
French electives, 300 and above	6

NOTE: A minimum grade of "C" is required of all French classes for them to count for the French major or minor.

† Students who have a background in modern 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, with a grade of "C" or better, and the payment of the established fee to the Academic Evaluation and Assessment Office.

†† Junior year course selections, which fulfill the Institutional (SDSU Core) requirements, must be different from those taken to fulfill the General Education requirements.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

General Agriculture Major

Charles McMullen

College of Agriculture and Biological Sciences

Agricultural Hall 156

605-688-5133

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Requirements for Associate of Science 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 entering the work force or returning to the farm or ranch. The core requirement is as follows:

Course	Credits
Mathematics ¹	3
Wel 101 or GS 143	2
English 101 ¹	3
Speech 101	3
Humanities and Arts ¹	3
Natural Science ¹	3
Social Science ¹	3
Major field of concentration	16
General electives	28
Total	64
GPA 2.0	

¹ Students must take the proficiency examination after completing 32 credits. Engl 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for General Agriculture Major Bachelor of Science in Agriculture

Freshman Year		F	S
AS 101, Introduction to Animal Science			3
Bio 101-102*, Biology Survey I and Lab	3		
Bio 103-104*, Biology Survey II and Lab			3
Chem 106-106L*, Chemistry Survey and Lab			4
Engl 101*, Composition I	3		
Math 102*, College Algebra	3		
PS 103-103A, Crop Production and Lab	3		
Soc 100*, Introduction to Sociology or Soc 150*, Social Problems, (G) or Soc 240*, Sociology of Rural America, (G) or Anth 210*, Cultural Anthropology, (G)	3		
SpCm 101-101A*, Fundamentals of Speech and Lab			3
Gen Ed: Humanities and Arts*, pp. 35-37			3
SDSU Core: Goal 1**, Wellness, p. 39	2		

Sophomore Year		F	S
AgEc 271-271A, Farm and Ranch Management and Lab			4
Chem 120-120L, Elementary Organic Chemistry and Lab ...4			
Econ 202*, Macroeconomics Principles or Econ 201, Microeconomics Principles	3		
Engl 201*, Composition II			3
Micr 231-232, General Microbiology and Lab	4		
Phys 101-102, Survey of Physics I and Lab			4
PS 213-213A, Soils and Lab			3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3		
SDSU Core: Goal 2**, Human Community, p. 39	2		
Also meet ABS College Social Science requirement			3

Junior Year		F	S
AS 233-233A, Applied Animal Nutrition and Lab	3		
Bio 371, Genetics			3
PS 223-223A, Principles of Plant Pathology and Lab	3		
PS 307-307A, Insect Pest Management and Lab			3
SDSU Core: Goal 3**, Human Spirit, p. 40	2-3		
SDSU Core: Goal 5**, Stewardship, p. 41			2-3
Program Concentration Electives	4-5		4-5
Restricted Elective (from, Math, Stat, CSc, Acct, BAdm)			3
Communications Elective†	3		

Senior Year		F	S
Program concentration electives	16		16
(remaining hours must total 128; at least 25 credits must be 300 level or above courses excluding Internships, Cooperative Education, or Field Experience courses)			

† Communications Elective to be selected from the following: Engl 379; MCom 210, 313, 315, 331; SpCm 201, 315, 334.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

General Studies (Associate of Arts)

Gail Dobbs Tidemann
College of General Studies and Outreach Programs
Medary Commons 121
605-688-4153
e-mail: gail_tidemann@sdstate.edu

Requirements for Associate of Arts in General Studies

Course	Credits
Engl 101, Composition I.....	3
Engl 201, Composition II.....	3
SpCm 101-101A, Fundamentals of Speech and Lab.....	3
Mathematics (minimum level: Math 102 or 104).....	3
Gen Ed: Natural Science*, pp. 35-37	6
Gen Ed: Humanities*, pp. 35-37	6
Gen Ed: Social Science*, pp. 35-37	6
International/Global Diversity Requirements	6
Selected Electives.....	34
Total	64

Geographic Information Sciences (GIS) Major and Minor

Roger Sandness
Department of Geography
Scobey Hall 232
605-688-4511
e-mail: roger_sandness@sdstate.edu

Bachelor of Science in Geographic Information Sciences Curriculum for Undergraduate

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*(G), Human Geography	3	or 3
SpCm 101*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	3
Geography Electives.....	3	3
Sophomore Year		
Engl 201*, Advanced Composition.....		3
Geog 210** (G), Regional Geography		3
Geog 382, Research Methods.....		3
Geog 383, Cartography		3
Geog 487, Geographic Information Systems I.....		3
Humanities and Arts, Arts and Science Requirement		3
Gen Ed: Social Science *, pp. 35-37 (Not Geog)	3	
SDSU Core: Goal 1** Wellness, p. 39	2	or 2
Biological Science Electives (Arts and Science Core, pp. 56-57)		3
Geography Electives (upper division).....		3
Junior Year		
Geog 488, Geographic Information Systems II	3	S
Geog 489, Geographic Information Systems III.....		3
Math 120, Trigonometry.....		3
Stat 281, Introduction to Statistics		3
SDSU Core: Goal 2**, Human Community, p. 39, (Not Geog)		3

SDSU Core: Goal 3**, Human Spirit, p. 40.....	2-3
SDSU Core: Goal 5**, Stewardship, p. 41	2-3
Free Electives	4-5 7-8

Senior Year	F	S
Geography/Other Electives.....	16	16

Total 128 credits, 35 credits in Geography, minimum 18 upper division credits. Geog 382 and 487 will prepare the geography student to meet the Institutional Technology Literacy requirements.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Geographic Information Sciences Major: 41 cr

Geog 131-131A, Physical Geography I and Lab.....	4
Geog 132-132A, Physical Geography II and Lab.....	4
Geog 200, Intro to Human Geography	3
Geog 210, World Regional Geography	3
Geog 382, Geographic Research Methods	3
Geog 383, Cartography	3
Geog 484, Remote Sensing.....	3
Geog 487, Geographic Information Systems I	3
Geog 488, Geographic Information Systems II.....	3
Geog 489, Geographic Information Systems III.....	3
Math 120, Trigonometry	3
Stat 281, Introduction to Statistics.....	3

Requirements for Geographic Information Sciences Minor: 18 cr

(Three out of the four)

Geog 487, Geographic Information Systems I	3
Geog 488, Geographic Information Systems II.....	3
Geog 489, Geographic Information Systems III.....	3
CEE 304, Land Surveying	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
e-mail: roger_sandness@sdstate.edu

Requirements for Geography Major Bachelor of Science in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Geog 131-131A*, Physical Geography I and Lab	4	
Geog 132-132A*, **Physical Geography II and Lab.....		4
Geog 200*, Introduction to Human Geography, (G)	3	or 3

SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37	3		3
Geography Electives.....	3		3

Sophomore Year

Engl 201*, Composition II		F	S
Geog 210**, World Regional Geography, (G).....	3		3
Geog 382, Geographic Research Methods.....	3		3
Biological Science (Arts and Science Core, pp. 56-57).....	3		3
Humanities and Arts (Arts and Science Core, pp. 56-57).....	3		3
Gen Ed: Social Science*, pp. 35-37 (Not Geog)	3		3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
Geography Electives (upper division)	3		3

Junior Year

Geog 487 Geographic Information Systems I.....		F	S
SDSU Core: Goal 2**, Human Community, p. 39 (Not Geog).....	3		3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2-3		2-3
SDSU Core: Goal 5**, Stewardship, p. 41	2-3		2-3
Geography Electives (upper division)	3		3
Free Electives	6-7		9-10

Senior Year

Geography/Other Electives.....	16	F	S
			15

Total of 128 credits, 35 credits in Geography, minimum 18 upper division credits. Geog 382 and 487 will prepare the geography student to meet the Institutional Technology Literacy requirements.

* The 30 credit Board of Regents **System General Education** requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Technical Geography – Science Emphasis

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 488, Geographic Information Systems II.....	3
Geog 489, Geographic Information Systems III	3
Total	21

Environmental Planning and Management Emphasis

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 310-310A, Soil Geography and Land Use Interpretation and Studio	3
Geog 337, Atmospheric Sciences	3

Geog 339, The Earth's Landforms.....	2
Geog 343, Natural Disasters and 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 488, Geographic Information Systems II.....	3
Geog 489, Geographic Information Systems III.....	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 488, Geographic Information Systems II.....	3
Geog 489, Geographic Information Systems III.....	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: 35 cr

Geog 131-131A, Physical Geography I and Lab.....	4
Geog 132-132A, Physical Geography II and Lab	4
Geog 200, Intro to Human Geography	3
Geog 210, World Regional Geography.....	3
Geog 382, Geographic Research Methods	3
Geog 487, Geographic Information Systems I.....	3
Upper division courses.....	18

Requirements for Geography Minor: 20 cr

Geog 131-131A, Physical Geography I and Lab.....	4
Geog 132-132A, Physical Geography II and Lab	4
Geog 200, Introduction to Human Geography	3
Geog 210, World Regional Methods.....	3
Upper-division courses or substitutions approved by the Department.....	6

German (Germ) Major and Minor

Philip Baker
Department of Modern Languages
NFA 121
605-688-5101
e-mail: philip_baker@sdstate.edu

The major in German requires a minimum of 36 credit hours in German. The coursework should include 101, 102, 201, 202, 311, 312, and 18 credit hours of upper-division (300-400) classes. It is recommended that upper-division coursework include a minimum of 4 credit hours in literature, 3 credit hours in civilization and culture, and 2 credit hours in advanced language study.

The following schedules 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*, Composition I	3	or 3
Germ 101-102†, Introductory German I-II	4	and 4
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37	3	or 3
Gen Ed: Social Science*, pp. 35-37	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40 (not in Modern Languages Department)	3	or 3
Electives		

Sophomore Year	F	S
Engl 201*, Composition II	3	or 3
Germ 201-202, Intermediate German I-II	3	& 3
Electives in German	4	4
Gen Ed: Social Science*, pp. 35-37	3	or 3
Gen Ed: Natural Science*, pp. 35-37	3	3
SDSU Core: Goal 3**, Human Spirit, p. 40 (not in Modern Languages Department)	3	or 3
Electives		

Junior Year††	F	S
German coursework (300-400 level)	3-6	& 3-6
SDSU Core: Goal 2**, Human Community, p. 39	2	or 2
SDSU Core: Goal 4**, Science and Science Methods, p. 41	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Electives		

Senior Year	F	S
German coursework (300-400 level)	3-6	& 3-6
Electives		

NOTE: A minimum grade of "C" is required in all German classes for them to count towards the major or minor.

† Students who have a background in modern 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, with a grade of "C" or better, and the payment of the established fee to the Academic Evaluation and Assessment Office.

†† Junior year course selections, which fulfill the Institutional (SDSU) requirements, must be different from those taken to fulfill the General Education requirements.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for German Minor: 20 cr

Germ 101-102, Introductory German I-II	8
Germ 201-202, Intermediate German I-II	6
Germ 300-400 level Electives	6

Gerontology (Gero) Minor

Renee Oscarson
Department of Human Development, Consumer and Family
Sciences
NFA 369
605-688-6418
e-mail: renee_oscarson@sdstate.edu

Requirements for Gerontology Minor: 18 cr

Choose 11 credits from the following Level One (Aging) courses:

Bio 425, Biology of Aging	3
CA 442, Family Resource Management Lab	3
Gero 201, Introduction to Gerontology (required for minor)	3
GERO 491, Independent Study in Gerontology (by permission)	1-4
GERO 492, Current Topics in Gerontology	1-3
HDFS 337, Human Development and Personality III: Adulthood	3
Nurs 201, Medical Terminology	1
Psyc 324, Psychology of Aging	3
Soc 490, Seminar: Sociology of Aging	3
Seminar, Current Topics, or Special Problems approved by the Gerontology Coordinator. The topic and credits vary by semester.	

Choose 7 credits from list of Levels Two and Three courses:

A portion of Level Two courses is aging-related.
Level Three courses are those which cover the study of biological, psychological, or social aspects of humans.

Students who plan to complete a gerontology minor need to contact the Gerontology Coordinator, Renee Oscarson (Renee_Oscarson@sdstate.edu) for a list of courses which meet Level Two and Three requirements.

NOTE: A grade of "C" or better is required in all courses in the minor.

Graphic Design (ArtD) Major

Norman Gambill
Department of Visual Arts
Grove Hall 101
605-688-4103
fax: 605-688-6769
e-mail: sdsu_artdept@sdstate.edu
website: <http://web.sdstate.edu/departments/visualarts/>

**Requirements for Graphic Design Major
Bachelor of Science in Arts and Science**

Freshman Year	F	S
ArtH 100*, Art and Design Appreciation, (G)		3
Engl 101*, Composition I	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37	3	or 3
Gen Ed: Natural Science, pp. 35-37, Biological	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Visual Arts Studio Core, p. 108	6	3

Sophomore Year	F	S
ArtD 251, Graphic Design I	3	or 3
ArtD 255, Computer Graphics I	3	or 3
ArtH 211*, World Art, (G)	3	
ArtH 212*, Western Traditions, (G)		3
Engl 201*, Composition II	3	or 3
MCom 160-160A, Basic Photography and Studio	2	or 2

Gen Ed: Social Science*, pp. 35-37.....	3		3
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	or	3
Visual Arts Studio Core, p. 108.....	3	or	3
Electives.....	2	or	2
Junior Year	F		S
ArtD 350, Graphic Design II.....	3		
ArtD 351, Visual Communications I: Advanced Graphic Design.....	3		
ArtD 352, Design Media I.....	3		
ArtD 355, Computer Graphics II.....	3		
SDSU Core: Goal 2**, Human Community, p. 39.....	3		
SDSU Core: Goal 4**, Physical Science, p. 41.....	4		4
Art History Elective.....	3		
Visual Arts Studio Core (finish it).....	3	or	
Electives (complete 300-400 level rule, can be Art/ArtD/ArtH courses)			

Senior Year	F		S
ArtD 450, Visual Communications II: Senior Portfolio.....	3		
ArtD 452, Design Media II.....	3		
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
Art Electives.....	3		4
Electives (complete 300-400 level rule, can be Art/ArtD/ArtH courses)			

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Graphic Design Major Bachelor of Arts in Arts and Science

Freshman Year	F		S
ArtH 100*, Art and Design Appreciation, (G).....	3		3
Engl 101*, Composition I.....	3	or	3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or	3
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3
Gen Ed: Natural Science, pp. 35-37, Biological.....	4		4
Visual Arts Studio Core, p. 108.....	6		6

Sophomore Year	F		S
ArtD 251, Graphic Design I.....	3	or	3
ArtD 255, Computer Graphics I.....	3	or	3
ArtH 211*, World Art, (G).....	3		
ArtH 212*, Western Traditions, (G).....	3		
Engl 201*, Composition II.....	3	or	3
MCom 160-160A, Basic Photography and Studio.....	2	or	2
Modern Language.....	4		4
Gen Ed: Social Science*, pp. 35-37.....	3		3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or	2

Junior Year	F		S
ArtD 350, Graphic Design II.....	3		
ArtD 351, Visual Communications I: Advanced Graphic Design.....	3		
ArtD 352, Design Media I.....	3		

ArtD 355, Computer Graphics II.....	3		
Modern Language.....	3		3
SDSU Core: Goal 2**, Human Community, p. 39.....	3		3
Art History Elective.....	3		
Visual Arts Studio Core (finish it).....	6	or	6
Electives (complete 300-400 level rule, can be Art/ArtD/ArtH courses)			
Senior Year	F		S
ArtD 450, Visual Communications II: Senior Portfolio.....	3		
ArtD 452, Design Media II.....	3		
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
Art Electives.....	3		4
Electives (complete 300-400 level rule, can be Art/ArtD/ArtH courses)			

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Health Education (Hlth) Minor

Patty Hacker

Department of Health, Physical Education and Recreation
Physical Education Center 269

605-688-5218

e-mail: patricia_hacker@sdstate.edu

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 taken in the minor.

Requirements for Health Education Minor: 21 cr (minimum)

Required courses are:

HDFS 250, The Development of Human Sexuality.....	3
Hlth 212, Contemporary Health Problems.....	2
Hlth 120, Community Health.....	2
Hlth 420, Methods of Health Instruction.....	2
HSc 302, Wellness and the Family.....	2
NFSH 221, Survey of Nutrition.....	3

Three courses must be completed from among the following (7-9 cr):

CA 289, Consumers and the Market.....	3
HDFS 141, Individual and the Family.....	2
HDFS 341, Family Theories.....	3
Hlth 250-250A, First Aid and Lab.....	2
Hlth 440, Epidemiology.....	3
Pha 201, Medication and the Consumer.....	2
Psyc 442, Health Psychology.....	3
Soc 250, Marriage.....	2

Health, Physical Education and Recreation (HPER) Major

Patty Hacker

Department of Health, Physical Education and Recreation

Physical Education Center 269

605-688-5218

e-mail: patricia_hacker@sdstate.edu

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 a Specialization but may pursue an emphasis in teaching physical education. Students choosing this emphasis must contact the faculty coordinator for the 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 each course in the major.

Required courses for the HPER Major

Bachelor of Science in Arts and Science

Freshman Year	F	S
Danc 130*, Dance Fundamentals.....	1	or 1
Engl 101*, Composition I.....	3	or 3
Hlth 212, Contemporary Health Problems.....	2	
HPER 180, Introduction to HPER.....	1	or 1
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	3	3
Gen Ed: Social Science*, pp. 35-37.....	3	3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	3	3
Gen Ed: Global Diversity* (met through Social Science and Humanities)		

Sophomore Year	F	S
Engl 201*, Composition II.....	3	or 3
Hlth 250-250A, First Aid.....	2	or 2
HPER 252-252A, Motor Learning and Performance.....	2	
Recr 260, Recreation Leadership.....	3	3
Zool 221-222, Anatomy and Lab.....	3	or 3
Hlth course to meet requirements of major.....	2	or 2
HPER/PE course to meet requirements of major.....	3	or 3
Recr course to meet requirements of major.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	
SDSU Core: Goal 4**, Science and Sci Methods, p. 41.....	4	
Gen Ed: Social Science*, pp. 35-37.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	or 3
Gen Ed: Global Diversity*, (met through Social Science and Humanities)		

Junior Year	F	S
PE 353, Biomechanics.....	3	or 3
PE 354-354A, Prevention and Care of Athletic Injuries.....	2	or 2
Hlth/HSc course to meet requirements of major.....	2	2
HPER/PE course to meet requirements of major.....	3	3
SDSU Core: Goal 5**, Stewardship, p. 41.....	3	or 3
Electives (Dept. courses or SDSU Core courses).....	6	8

Senior Year	F	S
HPER 490, Senior Seminar.....	2	or 2
Hlth/HSc course to meet requirements of major.....	2	2
HPER/PE course to meet requirements of major.....	3	3
Electives or SDSU Core courses.....	12	9

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for HPER Major – Teaching Specialization Bachelor of Science in Arts and Science

Application for admission into the Physical Education teaching specialization is required and can begin during the Spring Semester of the freshman year, providing HPER 180, Engl 101 and SpCm 101 have been completed (with a minimum grade of "C") or are in progress during the time of application. Additional admission requirements are available from the Physical Education Teacher Education (PETE) Coordinator. All HPER teaching majors are strongly encouraged to obtain a health education minor (21-23 hours) or a school health teaching endorsement (18 hours). Information on courses which fulfill the health education minor is in this catalog. Information on courses that fulfill the health endorsement (or other teaching area endorsements) can be obtained from the PETE Coordinator. A minimum final grade of "C" is required in each course in the major/ specialization area.

Freshman Year	F	S
Bio 101-102*, Biology Survey I and Lab.....	3	
Bio 103-104*, Biology Survey II and Lab.....		3
Danc 130**, Dance Fundamentals.....		1
Engl 101*, Composition I.....	3	or 3
Hlth 120 Community Health or Hlth 212, Contemporary Health Problems.....	2	or 2
HPER 180, Introduction to HPER.....	1	or 1
Math 102*, College Algebra.....	3	
PE 170 Fundamental Movement.....	1	
Psyc 101*, Introduction to Psychology.....	3	or 3
Soc 100*, Introduction to Sociology.....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Wel 100** Wellness.....		2
Gen Ed: Global Diversity* (met through Social Science and Humanities)		

Sophomore Year	F	S
Danc 240** Multicultural Dance.....		1
EdFn 338 Introduction to American Education.....	3	
EdFn 475 Human Relationships.....	3	
Engl 201*, Composition II.....	3	
HPER 252-252A, Motor Learning and Development and Lab.....		2
PE 241, Curriculum in PE.....	2	
PE 320-320A Lifeguard Training and Lab or PE 321-321A Water Safety Instructor and Lab.....	2	or 2
PE 352, Adapted Physical Education.....	2	
PE 360-360A, K-8 Physical Education Methods and Lab.....	2	
Recr 260 Recreational Leadership.....		3
Zool 221-222 Anatomy and Lab.....	3	

Junior Year	F	S
Chem 100*, World of Chemistry or Chem 106-107* Chemistry and Lab.....		4
Danc 241, Creative Movement for Kids.....		2

EdFn 427 Middle School Philosophy and Applications	2
EdFn 365 Computer Based Technology and Learning	2
Hist 368** History of American Indians	3
Hlth 420, Methods of Teaching Health	2
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 Activity.....	1
PE 204, Skill Concept: Rhythms and Dance	1
PE 334, Assisting Teaching I.....	1
PE 353, Biomechanics.....	3
PE 354-354A, Prevention and Care of Athletic Injuries and Lab.....	2
Recr 342 Recreational Sports Programming and Administration	2
SeEd 420 Teaching Special Needs Students	1
Gen Ed: Social Science*, pp. 35-37.....	3

Senior Year	F	S
EPsy 302, Educational Psychology.....	3	
HPER 440, Organization and Administration of HPER	2	
HPER 451 Tests and Measurement.....	2	
HPER 490, Senior Seminar.....	2	
PE 350-350A, Exercise Physiology and Lab	3	or 3
PE 461-461A, Methods of Teaching Physical Education and Lab.....	3	
SeEd 314, Supervised Field Experience	1	
SeEd 400, Curriculum and Instruction in Middle and Secondary Schools	4	
SeEd 410, Social Foundation, Management and Law	2	
SeEd 420, Teaching Special Needs Students	1	
SeEd 450, Teaching Reading in the Content Area.....	2	
SeEd 488, 7-12 Student Teaching	4	
Gen Ed: Social Science*, pp. 35-37.....	3	

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Health Promotion Major

Jeffrey Janot
Department of Health, Physical Education and Recreation
Physical Education Center 119
605-688-4034
e-mail: jeffrey_janot@sdstate.edu

Individuals graduating with a Health Promotion degree will be prepared to enhance awareness, modify behavior and create environments that promote positive health practices/behaviors for the individuals that they work with. This program is designed to prepare students for employment in wellness centers, rehabilitation centers, hospitals, and managed care groups. In addition it prepares students for graduate work in cardiac rehabilitation, physical therapy and exercise

physiology. A minimum final grade of "C" is required in each course in the major.

Requirements for Health Promotion Major Bachelor of Science in Arts and Science

Freshman Year	F	S
Bio 101-102*, Biology Survey I and Lab	3	or 3
Chem 106-106L*, Chemistry Survey and Lab	4	or 4
Engl 101*, Composition I	3	or 3
Hlth 120, Community Health or Hlth 212, Contemporary Health Problems	2	or 2
HPER 180, Introduction to HPER	1	or 1
Math 102*, College Algebra	3	or 3
Psyc 101*, General Psychology	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year	F	S
Chem 108-108L**, Organic and Biochemistry and Lab	4	or 4
Engl 201*, Composition II.....	3	or 3
HDFS 241, Family Relations	3	or 3
Hlth 364, Emergency Medical Technician or Hlth 250-250A, First Aid and Lab.....	2	or 2
Soc 100, Introduction to Sociology or.....	3	or 3
Soc 150*, Social Problems, (G).....	3	or 3
Zool 221-222, Anatomy and Lab	3	or 3
Zool 325-325A, Mammalian Physiology and Lab.....		4
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
Gen Ed: Social Science*, pp. 35-37, (G).....	3	3

Junior Year	F	S
Hlth 480-480A, Wellness Programming and Lab	2	
HPER 468, Internship.....		2
Hsc 302, Wellness and the Family or HSc 300, Complementary and Alternative Health Care		2
NFSH 321, Human Nutrition	3	or 3
Nurs 323, Pathophysiology		3
PE 350, Exercise Physiology.....	3	
PE 354-354A, Prevention/Care of Athl Inj and Lab	2	or 2
PE 400-400A, Exercise Testing and Prescription and Lab		3
Psyc 358, Behavior Modification.....		3
Career Orientation Electives.....	3	or 3

Senior Year	F	S
Hlth 440, Epidemiology	3	or 3
HPER 490, Senior Seminar.....	2	or 2
HPER 496, Field Experience		1-6
MCom 313, Publicity Methods	2	or 2
PE 367, Fitness Practicum.....	2	
PE 450, Clinical Exercise Physiology.....		3
Psyc 442, Health Psychology	3	
Career Orientation Electives.....	9	or 9

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Allied Health Specialization

Required Courses for Allied Health†:

HDFS 241, Family Relations	3	or	3
Hlth 120, Community Health or HSC 212, Contemporary Health Problems	2	or	2
Hlth 250, First Aid or Hlth 364, Emergency Medical Technician	2	or	2
Hlth 442, Epidemiology	3	or	3
HPER 180, Introduction to HPER	1	or	1
HPER 490, Senior Seminar	2	or	2
HSc 300, Complementary and Alternative Health Care or HSc 302, Wellness and the Family	2	or	2
NFS 321, Human Nutrition	3	or	3
PE 350, Exercise Physiology	3	or	3
Psyc 442, Health Psychology	3		
Zool 221, Anatomy	3	or	3
Zool 325, Mammalian Physiology	4	or	4
Hlth 295†, Allied Health Technical Training	24-48		
Gen Ed Core Requirements	40		
Electives	9-33		

Health Science (HSc) Minor

Roberta K. Olson

College of Nursing, Undergraduate Nursing Department
NFA 327

605-688-6153 or 1-888-216-9806 ext. 2

e-mail: roberta_olson@sdstate.edu

Requirements for Health Science Minor: 24 cr

Biological Science courses (6 credits):

These courses do not need to be sequence courses, but must include science courses with the following prefixes: Bio, Micr, Zool.

All of the following courses (12 credits):

HDFS 210, Lifespan Development	3
HSc 212, Contemporary Health	2
HSc 440, Epidemiology	3
HSc 443, Public Health Science	3
Nurs 201, Medical Terminology	1

Elective credits from the following courses (6 credits):†

HDFS 241, Family Relations	3
HDFS 250, Development of Human Sexuality	3
HDFS 312, Human Development and Personality II: Adolescence	3
HDFS 313, Human Development and Personality III: Adulthood	3
HDFS 327, Human Development and Personality I: Childhood	3
HDFS 350, Helping Relationships	3
Hlth 250, First Aid or	2
Hlth 364, Emergency Medical Technician	4
HSc 120, Community Health	2
HSc 200, Complementary and Alternative Health Care	3
HSc 302, Wellness and the Family	2
HSc 420, Methods of Health Instruction	2
HSc 433-533, Industrial Hygiene	3
Nurs 635, Dying, Death, and Bereavement	3
Psyc 414, Drugs and Behavior	3
Soc 250, Marriage	3
Stat 281, Introduction to Statistics	3

† Any changes/additions to elective credits must receive prior approval from the Department Head of Undergraduate Nursing.

History (Hist) Major and Minor

Jerry Sweeney

Department of History

Scobey Hall 322

605-688-4311

e-mail: jerry_sweeney@sdstate.edu

Requirements for History Major: 36 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, and at least 6 in non-U.S. courses	24

Requirements for History Major

Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year

Engl 101*, Composition I	3	or	3	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		
SpCm 101-101A*, Fundamentals of Speech and Lab or approved Gen Ed alternative	3	or	3		
Modern Language*, 101 and 102 (B.A. only)	4		4		
Gen Ed: Mathematics*, pp. 35-37	3	or	3		
Gen Ed: Social Science*, pp. 35-37 (not History)	3	or	3		
Gen Ed: Natural Science*, pp. 35-37 (Physical Science: Chem, Geog, Phys, or PS) (B.S. only)	4		4		
Gen Ed: Natural Science*, pp. 35-37 (B.A. only)	3		3		
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2		

Sophomore Year

Engl 201*, Composition II	3	or	3	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		
Modern Language, 201 and 202 (B.A. only)	3		3		
Gen Ed: Humanities and Arts*, pp. 35-37 (B.S. only) (not History)	3	or	3		
SDSU Core: Goal 2**, Human Community, p. 39 (B.S. only) (not History)	3	or	3		
SDSU Core: Goal 4**, Science and Sci Methods, p. 41 (Biological Science: Bio, Bot, Micro, NFSH, WL) (B.S. only)	3		3		
SDSU Core: Goal 4**, Science and Sci Methods, p. 41 (B.A. only)	2	or	2		
Electives (consider education specialization, second major or minor)	3		3		

Junior Year

Hist 300-400 level (to include Hist 380)	6-12		6-9	F	S
Electives (consider education specialization, second major or minor)	3-9		3-9		

Senior Year

Hist 300-400 level	6-12		6-9	F	S
SDSU Core: Goal 5**, Stewardship, p. 41	2-3	or	2-3		
Electives, 100-400 level (consider education specialization, second major or minor)	0-9		6-16		

PLEASE NOTE: No more than 6 credits in Special Problems (Hist 491) and Internship (Hist 494) 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.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

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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 18773
- Hist 152, U.S. History since 18773

Additional credits (6 must be upper level).....9

Honors College (Hon)

Robert Burns
Director of Honors College
Administration 315
605-688-4860
e-mail: robert_burns@sdstate.edu

Sample Curriculum†

Freshman Year	F	S
Engl 101, Composition I (Honors).....	3	or 3
SpCm 101-101A, Fundamentals of Speech and Lab (Honors)		
or SpCm 222, Argumentative Debate (Honors)	3	or 3
Gen Ed: Social Science, pp. 35-37, (Honors) or	3	or 3
Gen Ed: Mathematics, pp. 35-37, (Honors) Math 123	4	or 4
Major and Other Requirements.....	10-12	10-12

Sophomore Year	F	S
Gen Ed: Humanities and Arts, pp. 35-37, (Honors).....	3	or 3
Gen Ed: Social Science, pp. 35-37, (Honors)	3	or 3
Gen Ed: Natural Science, pp. 35-37, (Honors).....	3-4	or 3-4
Major and Other Requirements.....	10-12	10-12

Junior Year	F	S
Honors Contract Courses (6 credits allowable).....	3	&/or 3
Honors Colloquium (minimum 3 credits required).....	3	&/or 3
Major and Other Requirements.....	10-12	10-12

Senior Year	F	S
Honors Directed Study (minimum of 3 credits)	3	&/or 3
Major and Other Requirements	10-12	10-12

† Requirements for graduation with Honors College Distinction include 15 credit hours of System General Education Honors, 3 credit hours of Honors Colloquium, 3 credit hours of Honors Directed Study and 6 credit hours of Honors contract courses or, in lieu of contract credits, students can choose to complete 3 additional credit hours of Honors Colloquium and 3 additional credits of Honors Directed Studies.

Horticulture (Ho) Major

Peter Schaefer
Department of Horticulture, Forestry, Landscape and Parks
Northern Plains Biostress Laboratory 201A
605-688-5136
e-mail: sdsu_hflp@sdstate.edu

Requirements for Horticulture Major – Production Specialization Bachelor of Science in Agriculture

Freshman Year	F	S
Bio 101-102*, Biology Survey I and Lab	3	or 3
Chem 106-106L*, Chemistry Survey and Lab		4
Engl 101*, Composition I	3	or 3
Ho 111-111A, Introduction to Horticulture and Lab	3	or 3
Math 102*, College Algebra	3	
Soc 100*, Introduction to Sociology or		
Soc 150*, Social Problems, (G) or		
Soc 240*, Sociology of Rural America, (G) or		
Anth 210*, Cultural Anthropology, (G).....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Elective	3	or 3

Sophomore Year	F	S
Bot 201-202, General Botany and Lab	3	
Econ 202**, Macroeconomics Principles	3	or 3
Engl 201*, Composition II.....	3	or 3
Ho 220-220A, Landscape Maintenance and Lab.....		3
Ho 230-230A, Greenhouse and Nursery Crops and Lab		3
Ho 240-240A, Fruit and Vegetable Crops and Lab.....		3
Ho 250-250A, Woody Plants: Trees and Lab.....		3
Ho 260, Woody Plants: Shrubs and Vines.....		2
PS 213-213A**, Soils and Lab	3	or 3
PS 223-223A, Principles of Plant Pathology and Lab	3	
Gen Ed: Social Science*, pp. 35-37, (G)	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 371-372, Genetics and Lab or		
Ho 383-383A, Principles of Crop Improvement		
and Lab	3-4	or 3-4
Bot 327-327A, Plant Physiology and Lab	4	
Engl 379, Technical Communications.....	3	or 3
Ho 311-311A, Herbaceous Plants and Lab.....	3	
Ho 312-312A, Plant Propagation and Lab		3
Ho 490, Seminar.....		1
Phys 101-102, Survey of Physics and Lab.....	4	or 4
PS 305-305A, Insect Biology and Lab.....	3	
PS 334-334A, Diseases of Horticultural Crops and Lab	3	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Electives.....	2	3
Technical Electives†	3	5

Choose 15 credits from the following:

- Ho 314-314A, Turf Management and Lab
- Ho 411-411A, Fruit Production and Lab
- Ho 412-412A, Greenhouse Management and Lab
- Ho 413-413A, Arboriculture and Lab.....
- Ho 415, Nursery Management.....
- Ho 416, Advanced Turfgrass Science
- La 201, Introduction to Landscape Design

† 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.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Horticulture Major – Business Specialization Bachelor of Science in Agriculture

Freshman Year	F	S
Bio 101-102*, Biology Survey I and Lab	3	or 3
Chem 106-106L*, Chemistry Survey and Lab		4
Engl 101*, Composition I	3	or 3
Ho 111-111A, Introduction to Horticulture and Lab	3	or 3
Math 102*, College Algebra	3	or 3
Soc 100*, Introduction to Sociology or Soc 150*, Social Problems, (G) or Soc 240*, Sociology of Rural America, (G) or Anth 210*, Cultural Anthropology, (G).....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	3
Gen Ed: Social Science*, pp. 35-37, (G).....	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year	F	S
Acct 210, Principles of Accounting	3	or 3
Bot 201-202, General Botany and Lab	3	
Econ 202**, Macroeconomics Principles	3	or 3
Engl 201*, Composition II	3	or 3
Ho 220-220A, Landscape Maintenance and Lab		3
Ho 230-230A, Greenhouse and Nursery Crops and Lab		3
Ho 240-240A, Fruit and Vegetable Crops and Lab		3
Ho 250-250A, Woody Plants: Trees and Lab		3
Ho 260, Woody Plants: Shrubs and Vines		2
PS 213-213A**, Soils and Lab	3	or 3
PS 223-223A, Principles of Plant Pathology and Lab	3	

Summer Term		
Ho 494, Cooperative Education	1	

Junior and Senior Years	F	S
BAdm 360, Organization and Management	3	or 3
Bio 371-372, Genetics and Lab or Ho 383-383A, Principles of Crop Improvement and Lab	3-4	or 3-4
Bot 327-327A, Plant Physiology and Lab	4	
Econ 201, Microeconomics Principles	3	or 3
Engl 379, Technical Communications	3	or 3
Ho 312-312A, Plant Propagation and Lab		3
Ho 490, Seminar	1	
Phys 101-102, Survey of Physics and Lab	4	or 4
PS 305-305A, Insect Biology and Lab	3	
PS 334-334A, Diseases of Horticultural Crops and Lab	3	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Electives	4	or 4

Choose 15 credits from the following:

Ho 311-311A, Herbaceous Plants and Lab	3	
Ho 314-314A, Turf Management and Lab	3	
Ho 411-411A, Fruit Production and Lab		3
Ho 412-412A, Greenhouse Management and Lab		3
Ho 413-413A, Arboriculture and Lab		3
Ho 415, Nursery Management	3	
Ho 416, Advanced Turfgrass Science	3	
La 201, Introduction to Landscape Design	3	or 3

Choose 9 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 334, Small Business Management	3	
BAdm 350, Legal Environment of Business and 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 281, Introduction to Statistics	3	or 3

† Students seeking a Business Minor must take either Econ 370, BAdm 310, BAdm 334, or BAdm 350. Stat 281 does not meet the Business Minor requirement.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Horticulture Major – Science Specialization Bachelor of Science in Agriculture

Freshman Year	F	S
Bio 151-152*, General Biology I and Lab	4	
Chem 106-106L*, Chemistry Survey and Lab		4
Engl 101*, Composition I	3	or 3
Ho 111-111A, Introduction Horticulture and Lab	3	or 3
Math 102*, College Algebra	3	or 3
Soc 100*, Introduction to Sociology or Soc 150*, Social Problems, (G) or Soc 240*, Sociology of Rural America, (G) or Anth 210*, Cultural Anthropology, (G).....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	3
Gen Ed: Social Science*, pp. 35-37, (G).....	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year	F	S
Bot 201-202, General Botany and Lab	3	
Econ 202**, Macroeconomics Principles	3	or 3
Engl 201*, Composition II	3	or 3
Ho 220-220A, Landscape Maintenance and Lab		3
Ho 230-230A, Greenhouse and Nursery Crops and Lab		3
Ho 240-240A, Fruit and Vegetable Crops and Lab		3
Ho 250-250A, Woody Plants: Trees and Lab		3
Ho 260, Woody Plants: Shrubs and Vines		2

Math 120, Trigonometry.....	3	or	3
PS 213-213A**, Soils and Lab	3	or	3
PS 223-223A, Principles of Plant Pathology and Lab	3		

Summer Term

Ho 494, Cooperative Education	1		
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Junior and Senior Years

Bio 371-372, Genetics and Lab.....	4	or	4
Bot 327-327A, Plant Physiology and Lab	4		
Chem 120-120L, Elementary Organic Chemistry and Lab ...	4	or	4
Chem 361-361L, Biochemistry and Lab.....	4	or	4
Engl 379, Technical Communications.....	3	or	3
Ho 311-311A, Herbaceous Plants and Lab.....	3		
Ho 312-312A, Plant Propagation and Lab.....	3		
Ho 490, Seminar.....	1		
Phys 101-102, Survey of Physics and Lab	4	or	4
PS 305-305A, Insect Biology and Lab.....	3		
PS 334-334A, Diseases of Horticultural Crops and Lab	3		
Stat 281, Introduction to Statistics	3	or	3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or	2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or	2

Choose 15 credits from the following:

Ho 314-314A, Turf Management and Lab	3		
Ho 411-411A, Fruit Production and Lab.....	3		
Ho 412-412A, Greenhouse Management and Lab	3		
Ho 413-413A, Arboriculture and Lab.....	3		
Ho 415, Nursery Management.....	3		
Ho 416, Advanced Turfgrass Science	3		
La 201, Introduction to Landscape Design	3	or	3

Choose one course from the following:

Bot 301-301A, Plant Systematics and Lab	4		
Bot 415-415A, Plant Ecology and Lab.....	4		
Bot 421-421A, Plant Anatomy and Lab	3		
Ho 480, Environmental Stress Physiology	3		
Ho 492, Problems	1-2		
Ho 493, Special Topics	1-4		
Ho 590, Special Topics in Horticulture	1-3		

If necessary, choose elective credits to bring total to 128 required for graduation.

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Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Hotel and Foodservice Management (HFM) Major

C.Y. Wang, Acting

Department of Nutrition, Food Science and Hospitality
NFA 425

605-688-5161

e-mail: cy_wang@sdstate.edu

Requirements for Hotel and Foodservice Management Major Foodservice Management Specialization

Bachelor of Science in Family and Consumer Sciences

Freshman Year

CSc 105, Introduction to Computers.....	3	F	S
Engl 101*, Composition I	3		
FCS 101, Family and Consumer Sciences: Professional Foundations	1		
Math 102*, College Algebra	3		
NFSH 141-141A, Food Principles and Lab	4		
NFSH 151, Food Technology	2		
NFSH 171, Introduction to the Hospitality and Tourism.....	3		
Psyc 101**, General Psychology	3		
SpCm 101-101A*, Fundamentals of Speech and Lab	3		
SDSU Core: Goal 1**, Wellness, p. 39	2		
Gen Ed: Natural Sciences*, pp. 35-37**	4		

Sophomore Year

Acct 210, Principles of Accounting I.....	3	F	S
Acct 211, Principles of Accounting II.....	3		
Econ 202*, Macroeconomics Principles	3		
Engl 201*, Composition II.....	3		
NFSH 110, Perspectives in Nutrition.....	3		
NFSH 251-251A, Meal Service Management and Lab	3		
Gen Ed: Mathematics*, pp. 35-37, (G).....	3		
Gen Ed: Natural Sciences*, pp. 35-37**	4		
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3		
Gen Ed: Humanities and Arts*, pp. 35-37	3		

Summer

NFSH 295, Professional Practicum (summer only).....	2		
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Junior Year

BAdm 310, Business Finance	3	F	S
BAdm 350, Legal Environment of Business and Contracts...3			
Econ 201, Microeconomics Principles.....	3		
Econ 370, Marketing	3		
HDFS 241, Family Relations	3		
NFSH 261, Food Service Operations.....	3		
NFSH 271-271A, Lodging and Casino Management and Lab	3		
NFSH 361, Hospitality Industry Law	2		
NFSH 371, Food Service Purchasing.....	3		
NFSH 381-381A, Quantity Food Production and Service and Lab.....	3		
NFSH 482, Hospitality Marketing or			
NFSH 372, Property Maintenance and Housekeeping	3		
Elective	3		

Summer

NFSH 495, Professional Practicum (summer only).....	2		
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Senior Year

AS 241, Meat: Production to Consumption.....	3	F	S
BAdm 360, Organization and Management.....	3		
CSc 312, Advanced Microcomputer Applications	3		

NFSH 465, Cost Controls in Hospitality Industry	3
or NFSH 421, Diversity in the Workplace	3
NFSH 372, Property Maintenance and Housekeeping or	
NFSH 482, Hospitality Marketing	3
NFSH 481 Professional Issues (Capstone)	3
SDSU Core: Goal 3**, Human Spirit, p. 40	2
SDSU Core: Goal 5**, Stewardship, p. 41	2
Electives	2

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Hotel and Foodservice Management Major
Hotel and Hospitality Management Specialization
Bachelor of Science in Family and Consumer Sciences**

Freshman Year	F	S
CSc 105, Introduction to Computers	3	
Engl 101*, Composition I	3	
FCS 101, Family and Consumer Sciences: Professional Foundations	1	
Math 102*, College Algebra	3	
NFSH 141-141A, Food Principles and Lab	4	
NFSH 171, Introduction to the Hospitality and Tourism	3	
Psyc 101**, General Psychology	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	
SDSU Core: Goal 1**, Wellness, p. 39	2	
Gen Ed: Natural Science*, pp. 35-37**	4	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	

Sophomore Year	F	S
Acct 210, Principles of Accounting I	3	
Acct 211, Principles of Accounting II	3	
Econ 202*, Macroeconomics Principles	3	
Engl 201*, Composition II	3	
NFSH 110, Perspectives in Nutrition	3	
NFSH 251-251A, Meal Service Management and Lab	3	
Gen Ed: Social Sciences*, (pp. 35-37), (G)	3	
Gen Ed: Natural Sciences*, pp. 35-37**	4	
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	
Gen Ed: Humanities and Arts*, pp. 35-37	3	

Summer		
NFSH 295, Professional Practicum (summer only)	2	

Junior Year	F	S
BAdm 310, Business Finance	3	
BAdm 350, Legal Environment of Business and Contracts	3	
Econ 201, Microeconomics Principles	3	
Econ 370, Marketing	3	
HDFS 241, Family Relations or		
NFSH 455, Meeting and Convention Management	3	
NFSH 261, Food Service Operations	3	
NFSH 271, Lodging and Casino Management	3	
NFSH 361, Hospitality Industry Law or		
NFSH 465, Cost Controls in Hospitality Industry	2 or 3	

NFSH 371, Food Service Purchasing	3
NFSH 482, Hospitality Marketing or	
NFSH 372, Property Maintenance and Housekeeping	3
Elective	3

Summer	
NFSH 495, Professional Practicum (summer only)	2

Senior Year	F	S
BAdm 334, Small Business Management	3	
CSc 312, Advanced Microcomputer Applications	3	
NFSH 421, Diversity in the Workplace	3	
NFSH 455, Meeting and Convention Management or		
HDFS 241, Family Relations	3	
NFSH 465, Cost Controls in Hospitality Industry or	3	
NFSH 361, Hospitality Industry Law	2	
NFSH 372, Property Maintenance and Housekeeping or		
NFSH 482, Hospitality Marketing	3	
NFSH 487, Transition to the Professional World	1	
NFSH 481, Professional Issues (Capstone)	3	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	
SDSU Core: Goal 5**, Stewardship, p. 41	2	

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** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Human Development and Family Studies (HDFS) Major

Mary Kay Helling
Department of Human Development, Consumer and Family Sciences
NFA 369
605-688-6418
e-mail: mary_helling@sdstate.edu

**Requirements for Human Development and Family Studies Major
Bachelor of Science in Family and Consumer Sciences**

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
FCS 101, Family and Consumer Sciences: Professional Foundations	1	
HDFS 141**, Individual and the Family	2	or 2
HDFS 150-150A, Early Experience and Lab	2	or 2
HDFS 227, Human Development and Personality I:		
Childhood	3	or 3
Psyc 101**, General Psychology	3	or 3
Soc 100, Introduction to Sociology	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3
Gen Ed: Natural Science*, pp. 35-37	3-4	3-4
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year		F	S
CSc 105, Introduction to Computers.....	3	or	3
Engl 201*, Composition II.....	3	or	3
HDFS 241, Family Relations.....	3	or	3
HDFS 250, The Development of Human Sexuality.....	3	or	3
HDFS 337, Human Development and Personality II: Adolescence.....	3		
HDFS 347, Human Development and Personality III: Adulthood.....			3
PolS 100, American Government or Econ 201, Microeconomics or Econ 202, Macroeconomics.....	3	or	3
Gen Ed: Social Science* (G).....	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	or	3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2-3	or	2-3

Junior Year		F	S
FCSE 421, Experience in Adult Education.....	3	or	3
HDFS 341, Family Theories.....	3	or	3
HDFS 350, The Helping Relationship.....	3	or	3
HDFS 355, Prevention Programs in Human Development and Family.....	3	or	3
HDFS 364, Parent-Child Relations in a Professional Context.....	3	or	3
Soc 370, Social Policy.....	3		
SDSU Core: Goal 4**, Science and Science Methods, p. 41.....	2-3	or	2-3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2	or	2
Electives/Emphasis Area.....	3		4

Senior Year		F	S
CA 442, Family Resource Management.....	3	or	3
HDFS 441, Professional Issues in Child and Family Studies.....	3	or	3
HDFS 457, Family Assessment.....	3	or	3
HDFS 487, Orientation to Child and Family Services Practicum.....	1		
HDFS 494, Practicum in Child and Family Services (or Summer Session).....	8-12	or	8-12
Stat 281, Introduction to Statistics or Soc 307, Research Methods I or Soc 308, Research Methods II or Psyc 315, Research Methods in Psychology.....	3	or	3
Electives/Emphasis Area.....	6	or	6

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.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Human Development, Child and Family Studies (HDFS) Minor

Mary Kay Helling
Department of Human Development, Consumer and Family Sciences
NFA 369
605-688-6418
e-mail: mary_helling@sdstate.edu

Requirements for Human Development, Consumer 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):

HDFS 141, Individual and the Family.....	2
HDFS 210, Lifespan Development.....	3
HDFS 241, Family Relations.....	3
HDFS 250, The Development of Human Sexuality.....	3
HDFS 227, Human Development and Personality I: Childhood.....	3
HDFS 337, Human Development and Personality II: Adolescence.....	3
HDFS 347, Human Development and Personality III: Adulthood.....	3

Interior Design (ID) Major and Minor

Jane E. Hegland
Department of Apparel Merchandising and Interior Design
NFA 229
605-688-5196
e-mail: jane_hegland@sdstate.edu

Requirements for Interior Design Major Bachelor of Science in Family and Consumer Sciences

Freshman Year		F	S
Art 111**, Drawing I.....			3
Art 121*, Design I.....	3	or	3
Engl 101*, Composition I.....	3	or	3
FCS 101, Professional Foundations.....	1		
Geog 131-131A*, Physical Geography I and Lab.....	4		
Geog 132-132A*, Physical Geography II and Lab.....			4
ID 122, Design Graphics.....	3		
ID 150-150A, Introduction to Interior Design I and Studio.....	3		
ID 151-151A, Introduction to Interior Design II and Studio.....			3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or	2

Sophomore Year		F	S
AM 242-242A, Textiles I and Lab.....	3		
Engl 201*, Composition II.....			3
Hist 122*, History of Western Civilization since 1650, (G).....			3
ID 215-215A, Materials and Studio.....			3
ID 230, Presentation Techniques.....	2		
ID 231, Computer Aided Design.....			2
ID 250-250A, The Design Process and Studio.....	3		
ID 260, Product Design.....			3

ID 317, Interior Design Practices or ID 319-319A, Building Systems and Studio	2
Math 102*, College Algebra	3
Psyc 101*, General Psychology	3
Soc 100*, Introduction to Sociology.....	3
Junior Year F	S
ArtH 100*, Art and Design Appreciation, (G) or ArtH 211*, Survey of World Art and Architecture, (G) or ArtH 212*, Western Traditions in Art and Architecture, (G)	3
Econ 201**, Microeconomics Principles or Econ 202**, Macroeconomics Principles.....	3
HDFS 241, Family Relations	3
ID 316, Codes and Specifications	2
ID 317 Interior Design Practices or ID 319-319A, Building Systems and Studio	2
ID 320-320A, Color and Lighting Design and Studio.....	3
ID 322, Intermediate Interior Design I Studio.....	4
ID 323, Intermediate Interior Design II Studio.....	4
ID 424, History of Interiors I	3
ID 487, PrePracticum (Jr. or Sr. year) or Elective.....	1

Summer School either Junior or Senior Year	
ID 495, Professional Practicum.....	7

Senior Year F	S
BAdm 350, Legal Environment of Business and Contracts or BAdm 360, Organization and Management or BAdm 474, Principles of Selling or ID 472, Retailing or Acct 210, Principles of Accounting I.....	3
ID 422, Advanced Interior Design I.....	4
ID 423, Advanced Interior Design II.....	4
ID 425, History of Interiors II	3
ID 477-477A, Portfolio and Senior Exhibit and Studio.....	3
ID 487, Pre-Practicum (Jr. or Sr. Year) or Elective.....	1
Soc 340**, Urban Sociology.....	3
Electives.....	4

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** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Interior Design Minor: 18 cr	
ID 150-150A, Introduction to Interior Design I and Studio.....	3
ID 151-151A, Introduction to Interior Design II and Studio.....	3
Interior Design Electives.....	12

International Agriculture Specialization

Charles McMullen
College of Agriculture and Biological Sciences
Agricultural Hall 156
605-688-5133
e-mail: academic.programs@abs.sdstate.edu

Leading to the B.S. in Agriculture or Biological Science	
Two Years of same Modern Language.....	14
Required Electives†	12
Group I Electives††	11
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 210, Cultural Anthropology, (3)
- Anth 220, Physical Anthropology, (3)
- Econ 201, Microeconomics Principles, (3)
- Econ 370, Marketing, (3)
- Econ 405, Comparative Economic Systems, (3)
- Econ 440, Economics of the International Sector, (3)
- EurS 300, Topics in European Culture, (3)
- EurS 301, Topics in European Society, (3)
- Geog 200, Introduction to Human Geography, (3)
- Geog 313, Geography of Latin America, (3)
- Geog 314, Geography of the Former USSR, (3)
- Geog 315, Geography of Europe, (3)
- Geog 316, Geography of Asia, (3)
- Geog 317, Geography of Africa, (3)
- Geog 433, World Crop and Soil Resources, (3)
- HDFS 141, Individual and the Family, (2)
- Hist 345, History of Russia, (3)
- Hist 418, History of Latin America, (3)
- Hist 467, American Foreign Relations (20th Century), (3)
- NFSH 111, Food and People, (3)
- NFSH 321, Human Nutrition, (3)
- PolS 253, Current World Problems, (3)
- PolS 350, International Relations, (3)
- PolS 446, China and Asian Politics, (3)
- PolS 461, Early Political Philosophy, (3)
- PolS 462, Modern Political Philosophy, (3)
- Psyc 101, General Psychology, (3)
- Psyc 441, Social Psychology, (3)
- Soc 362, Population Problems, (3)

†† The Group I Electives (ag) are presently included in all curricula leading to the B.S. degree in agriculture but under this specialization they would also be required for a degree leading to a B.S. in Biological Science. See page 54.

††† 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 (MCom)

Major and Minor

Richard Lee

Department of Journalism and Mass Communication

Yeager Hall 209

605-688-4171

e-mail: richard_lee@sdsstate.edu

Requirements for Journalism Major – Advertising

Bachelor of Arts in Arts and Science

Freshman Year

	F	S
Engl 101*, Composition I	3	or 3
MCom 151, Introduction to Mass Communication (recommended).....	2	or 2
Modern Language*, 101 and 102, (G).....	4	4
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37	3-4	3-4
Gen Ed: Social Science*, pp. 35-37.....	3	3

Sophomore Year

	F	S
Econ 202*, Macroeconomics Principles	3	or 3
Engl 201*, Composition II.....	3	or 3
MCom 160-160A, Basic Photography and Studio.....	2	or 2
MCom 210-210A, Newswriting and Reporting and Studio ..	3	or 3
MCom 213-213A, Journalism Typography and Studio	2	or 2
Modern Language, 201 and 202.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	2-3	or 2-3
SDSU Core: Goal 4**, Natural Sciences, p. 41	2-3	or 2-3
Electives.....	3	3

Junior Year

	F	S
Econ 370, Marketing	3	or 3
MCom 370, Principles of Advertising.....	3	
MCom 371-371A, Advertising Copy and Layout and Studio	3	or 3
MCom 372, Media and Markets		3
MCom Elective.....	3	or 3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or 3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
Social Science Electives	4	6
MCom 494, Internship (also offered Summer).....	2	2 2

Senior Year

	F	S
MCom 414, Mass Communication Law	3	or 3
MCom 417, History of Journalism or MCom 416, Mass Media in Society	3	or 3
MCom 473, Advertising Campaigns	3	or 3
MCom Electives	3	3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or 3
Electives.....	6	10

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** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Journalism Major – Advertising Bachelor of Science in Arts and Science

Freshman Year

	F	S
Engl 101*, Composition I	3	or 3
MCom 151, Introduction to Mass Communication (recommended).....	2	or 2
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science (Physical)*, pp. 35-37	4	4
Gen Ed: Social Science*, pp. 35-37.....	3	3
Gen Ed: Humanities and Arts*, pp. 35-37 (G)	3	3

Sophomore Year

	F	S
Econ 202*, Macroeconomics Principles	3	or 3
Engl 201*, Composition II.....	3	or 3
MCom 160-160A, Basic Photography and Studio.....	2	or 2
MCom 210-210A, Newswriting and Reporting and Studio ..	3	or 3
MCom 213-213A, Journalism Typography and Studio	2	or 2
SDSU Core: Goal 4**, Natural Sciences (Biological), pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	2-3	or 2-3
Electives.....	3	3

Junior Year

	F	S
Econ 370, Marketing	3	or 3
MCom 370, Principles of Advertising.....	3	or 3
MCom 371-371A, Advertising Copy and Layout and Studio	3	or 3
MCom 372, Media and Markets		3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or 3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
MCom Elective.....	3	or 3
Social Science Electives	3	6
MCom 494, Internship (also offered Summer)	2	2 2

Senior Year

	F	S
MCom 414, Mass Communication Law	3	or 3
MCom 417, History of Journalism or MCom 416, Mass Media in Society	3	or 3
MCom 473, Advertising Campaigns	3	or 3
MCom Electives	3	3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	3
Electives.....	4	7

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Journalism Major – Broadcast Journalism
Bachelor of Arts in Arts and Science**

Freshman Year		F	S
Engl 101*, Composition I	3	or	3
MCom 151, Introduction to Mass Communication (recommended).....	2	or	2
Modern Language*, 101 and 102, (G).....	4		4
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or	3
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3
Gen Ed: Social Science*, pp. 35-37.....	3		3
Gen Ed: Natural Science*, pp. 35-37	3-4		3-4

Sophomore Year		F	S
Engl 201*, Composition II.....	3	or	3
MCom 160-160A, Basic Photography and Studio.....	2	or	2
MCom 210-210A, Newswriting and Reporting and Studio	3	or	3
Modern Language, 201 and 202.....	3		3
PolS 210*, State and Local Government	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
SDSU Core: Goal 2**, Human Community, p. 39.....	2-3	or	2-3
SDSU Core: Goal 4**, Natural Sciences, p. 41	2-3	or	2-3
Electives.....	6		2

Junior Year		F	S
MCom 316-316A, Public Affairs Reporting and Studio (recommended).....	3	or	3
MCom 331-331A, Television Production and Lab	3	or	3
MCom 332-332A, Radio News Reporting and Studio	3		3
MCom 333-333A, Television News Reporting and Studio	3		3
SDSU Core: Goal 3**, Human Spirit, p. 40	3	or	3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
MCom Elective.....	3	or	3
Social Science Electives	4		6
MCom 494, Internship (also offered Summer).....	2		2

Senior Year		F	S
MCom 414, Mass Communication Law	3	or	3
MCom 417, History of Journalism or MCom 416, Mass Media in Society	3	or	3
MCom 433-433A, Advanced Television News Reporting and Studio.....	3		3
MCom Electives	3		3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or	3
Electives.....	6		10

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Journalism Major – Broadcast Journalism
Bachelor of Science in Arts and Science**

Freshman Year		F	S
Engl 101*, Composition I	3	or	3
MCom 151, Introduction to Mass Communication (recommended).....	2	or	2

SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3
Gen Ed: Social Science*, pp. 35-37.....	3		3
Gen Ed: Natural Science (Physical)*, pp. 35-37	4		4
Gen Ed: Humanities and Fine Arts*, pp. 35-37 (G)	3		3

Sophomore Year		F	S
Engl 201*, Composition II.....	3	or	3
MCom 160-160A, Basic Photography and Studio.....	2	or	2
MCom 210-210A, Newswriting and Reporting and Studio	3	or	3
PolS 210*, State and Local Government, pp. 35-37	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
SDSU Core: Goal 2**, Human Community, p. 39.....	2-3	or	2-3
SDSU Core Goal 4**: Natural Sciences (Biological), pp. 35-37	3		3
Electives.....	6		2

Junior Year		F	S
MCom 316-316A, Public Affairs Reporting and Studio (recommended).....	3	or	3
MCom 331-331A, Television Production and Lab	3	or	3
MCom 332-332A, Radio News Reporting and Studio	3		3
MCom 333-333A, Television News Reporting and Studio	3		3
MCom Elective.....	3	or	3
SDSU Core: Goal 3**, Human Spirit, p. 40	3	or	3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
Social Science Electives	4		6
MCom 494, Internship (also offered Summer).....	2		2

Senior Year		F	S
MCom 414, Mass Communication Law	3	or	3
MCom 417, History of Journalism or MCom 416, Mass Media in Society	3	or	3
MCom 433-433A, Advanced Television News Reporting and Studio.....	3		3
MCom Electives	3		3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or	3
Electives.....	6		10

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Journalism Major – News-Editorial
Bachelor of Arts in Arts and Science**

Freshman Year		F	S
Engl 101*, Composition I	3	or	3
MCom 151, Introduction to Mass Communication (recommended).....	2	or	2
Modern Language*, 101 and 102, (G).....	4		4
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3
Gen Ed: Social Science*, pp. 35-37.....	3		3
Gen Ed: Natural Science*, pp. 35-37	3-4		3-4

Sophomore Year		F	S
Engl 201*, Composition II.....	3	or	3
MCom 160-160A, Basic Photography and Studio.....	2	or	2
MCom 210-210A, Newswriting and Reporting and Studio	3	or	3
MCom 213-213A, Journalism Typography and Studio	2	or	2
Modern Language, 201 and 202.....	3		3
PolS 210*, State and Local Government, pp. 35-37.....	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
SDSU Core: Goal 2**, Human Community, p. 39.....	2-3	or	2-3
SDSU Core: Goal 4**, Natural Sciences, p. 41	2-3	or	2-3
Electives.....	3		3

Junior Year		F	S
MCom 310, Newspaper Editing.....	2	or	2
MCom 311, Editing Lab (concurrent with 310)	1	or	1
MCom 316-316A, Public Affairs Reporting and Studio.....	3	or	3
MCom Elective.....	3		3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or	3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
Social Science Electives	4		6
MCom 494, Internship (also offered Summer).....	2	2	2

Senior Year		F	S
MCom 412, Advanced Editing Lab.....	1	or	1
MCom 414, Mass Communication Law	3	or	3
MCom 417, History of Journalism or MCom 416, Mass Media in Society	3	or	3
MCom Electives	3		3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or	3
Electives.....	6		10

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Journalism Major – News-Editorial Bachelor of Science in Arts and Science

Freshman Year		F	S
Engl 101*, Composition I	3	or	3
MCom 151, Introduction to Mass Communication (recommended).....	2	or	2
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Mathematics*, pp. 35-37.....	3	or	3
Gen Ed: Social Science*, pp. 35-37.....	3		3
Gen Ed: Natural Science (Physical)*, pp. 35-37	4		4
Gen Ed: Humanities and Arts*, (G).....	3		3

Sophomore Year		F	S
Engl 201*, Composition II.....	3	or	3
MCom 160-160A, Basic Photography and Studio.....	2	or	2
MCom 210-210A, Newswriting and Reporting and Studio	3	or	3
MCom 213-213A, Journalism Typography and Studio	2	or	2
PolS 210*, State and Local Government	3	or	3
SDSU Core Goal 4**: Natural Sciences (Biological)*, pp. 35-37	3		3

SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
SDSU Core: Goal 2**, Human Community, p. 39.....	2-3	or	2-3
Electives.....	3		3

Junior Year		F	S
MCom 310, Newspaper Editing.....	2	or	2
MCom 311, Editing Lab (concurrent with 310)	1	or	1
MCom 316-316A, Public Affairs Reporting and Studio.....	3	or	3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or	3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
MCom Elective.....	3		3
Social Science Electives	4		6
MCom 494, Internship (also offered Summer).....	2	2	2

Senior Year		F	S
MCom 412, Advanced Editing Lab.....	1	or	1
MCom 414, Mass Communication Law	3	or	3
MCom 417, History of Journalism or MCom 416, Mass Media in Society	3	or	3
MCom Electives	3		3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	3	or	3
Electives.....	6		10

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Journalism Minor: 16 cr

To include:

MCom 210-210A, Newswriting and Reporting and Studio (3)

Landscape Design (La) Major

Peter Schaefer

Department of Horticulture, Forestry, Landscape and Parks

Northern Plains Biostress Laboratory 201A

605-688-5136

e-mail: sdsu_hflp@sdstate.edu

Requirements for Landscape Design Major Bachelor of Science in Agriculture

Freshman Year		F	S
Bio-101-102*, Biology Survey I and Lab or Bio 151-152, General Biology I and Lab.....	3-4	or	3-4
Bio 103-104, Biology Survey II and Lab or Bot 201-202, General Botany and Lab or Bio 153-154, General Biology II and Lab.....	3-4	or	3-4
Chem 106-106L*, Chemistry Survey and Lab or Chem 112-112L, General Chemistry I and Lab	4	or	4
Engl 101*, Composition I	3	or	3
Ho 111-111A, Introduction to Horticulture and Lab	3	or	3
ID 122, Design Graphics.....	3	or	3
Math 115*, Precalculus, or Math 102, College Algebra and Math 120, Trigonometry	5-6	or	5-6

SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2

Sophomore Year **F** **S**

CM 210, Construction Surveying or CEE 106, Elementary Surveying and CEE 108, Engineering Surveys	4-6	or	4-6
EG 123, Computer Aided Design and Graphics	1	or	1
Engl 201*, Composition II	3	or	3
Ho 250-250A, Woody Plants: Trees and Lab	3		
Ho 260, Woody Plants: Shrubs and Vines	2		
La 201, Introduction to Landscape Design	3	or	3
La 284, Graphics and Theory of Design	4		
PS 213-213A**, Soils and Lab	3		
Soc 100*, Introduction to Sociology or Soc 150*, Social Problems, (G) or Soc 240*, Sociology of Rural America, (G) or Anth 210*, Cultural Anthropology, (G)	3	or	3
Gen Ed: Social Science*, pp. 35-37, (G)	3	or	3

Junior Year **F** **S**

Art 111**, Drawing I (FA) or Art 121**, Design I (FA) or Art 123**, Three Dimensional Design (FA)	3	or	3
Ho 220-220A†, Landscape Maintenance and Lab or Technical Elective	3		
Ho 311-311A, Herbaceous Plants and Lab	3		
La 231, Introduction to LandCADD	3		
La 241, History of Landscape Architecture	3		
La 314, Landscape Design Studio	4		
La 322, Site Planning	3		
La 324-324A, Planning Public Grounds and Lab	3		
La 364, Planting Design and Specification	4		
Phys 101-102, Survey of Physics and Lab or Phys 111-112, Introduction to Physics and Lab	4	or	4

Senior Year **F** **S**

Econ 202**, Macroeconomics Principles	3	or	3
La 323, Landscape Construction	3		
La 421-421A, City Planning and Lab	3		
La 424-424A, Recreational Facilities Design and Lab	3		
La 464, Landscape Professional Practice Studio	4		
WL 110**, Environmental Conservation or Rang 205-205A**, Introduction to Range Management and Lab	2-3	or	2-3
Technical Electives†	5-7		6
Communications Elective	2	or	2

NOTE: No grade below a "C" in an La prefixed course will be accepted toward a major in Landscape Design.

† 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.

(FA) The fine arts course selected can not have also been used for the BOR Gen Ed core.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Latin American Area Studies Program (LAAS)

Deanna Dykstra, Coordinator
College of Arts and Science
NFA 117
605-688-4273
e-mail: deanna_dykstra@sdstate.edu

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 355, Spanish American Literature	3
Span 435, Spanish American Culture and Civilization	1-3
Span 484, 20th Century Spanish American Literature	3
Span 491, Special Problems	1-3
(oriented toward Latin America)	

Courses in English:

Geog 313, Geography of Latin America	3
Hist 418, History of Latin America	3
Hist 492, Topics in History	1-5
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
GlSt 201, Introduction to Global Studies	3
Hist 467, U.S. Foreign Relations (20th Century)	3
ML 395, Summer Study Abroad (when travel is to Latin America)	2-6
NFSH 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

Liberal Studies Major

Gail Dobbs Tidemann
 College of General Studies and Outreach Programs
 Medary Commons 121
 605-688-4153
 e-mail: gail_tidemann@sdstate.edu

Requirements for Liberal Studies Major Bachelor of Science in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37	3	or 3
Gen Ed: Natural Science*, pp. 35-37	3	3
Gen Ed: Social Science*, pp. 35-37	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year	F	S
Engl 201*, Composition II	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
General Electives	3	3

Program of Study Courses

Junior and Senior Years	F	S
SDSU Core: Goal 2**, Human Community, p. 39	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40	2	or 2
SDSU Core: Goal 4**, Natural Sciences, p. 41	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Complete 40 credits Program of Study and Electives	20	and 20

All students must demonstrate advanced Information Technology Literacy (ITL). Numerous courses fulfill this requirement.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Manufacturing Engineering Technology (MnET) Major

Reza Maleki, Head
 Carrie Steinlicht, Program Coordinator
 Department of Engineering Technology and Management
 Wenona Hall 302
 605-688-6583
 e-mail: carrie_steinlicht@sdstate.edu

Requirements for Manufacturing Engineering Technology Major Bachelor of Science in Manufacturing Engineering Technology

Freshman Year	F	S
Chem 106-106L*, Chemistry Survey and Lab	4	
Econ 202*, Macroeconomics Principles		3
Engl 101*, Composition I	3	
GE 101, Introduction to Engineering and Technology	1	

GE 120-120A, Engineering Drawing/CAD and Lab	3	
or		
GE 121, Engineering Design Graphics I and		
GE 123, Computer Aided Drawing	1	1
Math 115*, Pre-Calculus	5	
Math 121, Survey of Calculus		5
MnET 231-231A, Manufacturing Processes I and Lab		3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	
Gen Ed: Social Science*, pp. 35-37 † (G)		3
SDSU Core: Goal 1**, Wellness, p. 39	2	

Sophomore Year	F	S
Engl 379*, Technical Communications		3
GE 231**, Technology and Society	3	
MnET 243-243A, Introduction to Materials Science and Lab		3
MnET 251-251A, Electricity and Electronics I and Lab	3	
MnET 252-252A, Electricity and Electronics II and Lab		3
MnET 260, Production/Operations Management	3	
Phys 111-112*, Introduction to Physics I and Lab	4	
Stat 281**, Introduction to Statistics		3
Gen Ed: Humanities and Arts*, pp. 35-37 † (G)	3	3

Junior Year	F	S
CSc 312, Advanced Microcomputer Applications	3	
MnET 241, Applied Mechanics	3	
MnET 320-320A, Computer Aided Design/Drawing and Lab		3
MnET 334-334A, CAM/CNC and Lab		3
MnET 350-350A, Fluid Power Technology and Lab		3
MnET 361-361A, Metrology and Process Control and Lab		3
MnET 367, Plant Layout and Material Handling		3
Phys 113-114, Introduction to Physics II and Lab	4	
SDSU Core: Goal 2**, Human Community, p. 39		2
SDSU Core: Goal 3**, Human Spirit, p. 40		2
Departmentally approved computer programming course		3

Senior Year	F	S
MnET 365, Industrial Safety and Accident Prevention	3	
MnET 436-436A, Tool and Die Fundamentals and Lab	3	
MnET 451-451A, Industrial Electronics and Control and Lab		3
MnET 453-453A, Manufacturing Automation and Lab		3
MnET 460, Manufacturing Cost Analysis		3
MnET 462, Quality Management	3	
MnET 463, Production and Inventory Management	3	
MnET 469-469A, Project Management and Lab	3	
MnET 494, Internship		3
Technical Electives		4

† System General Education Core requires a total of 6 credits to meet Goal #7, International/Global Diversity. One of these 3 classes does not have to meet Goal #7 criteria, but must meet the guidelines for Goal #3, Social Sciences or Goal #4, Humanities and Arts.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Mathematics (Math) Major and Minor

Kenneth Yocom

Department of Mathematics and Statistics

Harding Hall 101

605-688-6196

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website: <http://www3.sdstate.edu/Academics/CollegeOfEngineering/MathematicsandStatistics>

Requirements for Mathematics Major Bachelor of Science in Arts and Science

Freshman Year	F	S
Chem 106-106L* Chemistry Survey and Lab or Chem 112-112L*, General Chemistry I and Lab	4	
CSc 150, Computer Science I		3
Engl 101*, Composition I	3	or 3
Math 123*, Calculus I	5	
Math 224, Calculus II		4
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Natural Science*, Biology Elective, pp. 35-37	3	
Gen Ed: Humanities and Arts*, pp. 35-37		3
SDSU Core: Goal 1**, Wellness, p. 39	2	
SDSU Core: Goal 4**, Biology Elective, p. 41		3

Sophomore Year	F	S
Econ 202*, Macroeconomics Principles	3	
Engl 201*, Composition II		3
Math 225, Calculus III	3	
Math 253, Elementary Logic and Set Theory		3
Math 271, Mathematical Applications with Computers	3	
Phys 211-212**, University Physics I and Lab	4	
Phys 213-214, University Physics II and Lab		4
Gen Ed: Humanities and Arts*, pp. 35-37	3	
Gen Ed: Social Science*, pp. 35-37, (G)		3
Elective	2	

Junior Year	F	S
Math 215, Matrix Algebra	2	
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
SDSU Core: Goal 2**, Human Community, p. 39	3	
SDSU Core: Goal 3**, Human Spirit, p. 40		2
Electives	5	8

Senior Year	F	S
Math 401, Senior Seminar	1	
Math Electives (300 level or above)	6	3
SDSU Core: Goal 2**, Human Community, p. 39	3	
SDSU Core: Goal 5**, Stewardship, p. 41	2	
Electives	4	13

NOTE: A grade of "C" or above is required in all Math courses.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the

International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Teacher Education in Mathematics Specialization

Freshman Year	F	S
Chem 106-106L, Chemistry Survey and Lab or Chem 112-112A, General Chemistry I and Lab	4	
CSc 150, Computer Science I		3
Engl 101, Freshman Composition	3	or 3
Math 123, Calculus I	4	
Math 125, Calculus II		4
Soc 100, Introduction to Sociology or Psyc 101, General Psychology	3	
SpCm 101, Fundamental of Speech	3	or 3
Wel 100, Skills for Healthy Living or GS 143, Master Lifetime Learning Skills	2	
Gen Ed: Humanities and Arts**, pp. 35-37 (Goals 4 and 7)		3
SDSU Core: Goal 3**, Human Spirit, p. 40		2

Sophomore Year	F	S
Engl 201, Advanced Composition	3	
EdFn 365, Computer Based Technology and Learning		2
Math 225, Calculus III	4	
Math 215, Matrix Algebra		2
Math 271, Math Applications with Computers	3	
Math 253, Elem. Logic and Sets		3
Phys 211, General Physics I	4	
Phys 213, General Physics II		4
PS I†, Professional Semester I		5
Gen Ed: Humanities and Arts**, pp. 35-37 (Goals 4 and 7)	3	

Junior Year	F	S
Econ 202, Macroeconomics	3	
EdFn 427/527, Middle School: Philosophy and Application	2	
Engl 379, Technical Communication	3	
Hist 368, History of the American Indians or Anth 421, Indians of North America	3	3
Math 261, Geometry for Teachers	3	
Math 315, Linear Algebra	3	
Math 316, Discrete Math	3	
Math 381, Introduction to Problems and Statistics	3	
Math 413, Abstract Algebra	3	
Biology (Arts and Science Requirement, pp. 56-57)	3	3
SDSU Core: Goal 5**, Stewardship, p. 41	2	

Senior Year	F	S
Math Elective (300 and above)	3	
Math 361, Modern Geometry or Math 450, History of Mathematics Math 355-355A, Methods of Teaching Mathematics and Lab	3	
Math 401, Senior Seminar	1	
SeEd 420, Teaching Special Needs Students	1	
PS II††, Professional Semester II	6	
SDSU Core: Goal 2**, Human Community, p. 39	2	
PS III†††, Professional Semester III		15

PS I†	
EdFn 338, Foundations of American Education.....	2
EdFn 475, Human Relations.....	3
PS II††	
EPsy 302, Educational Psychology.....	3
SeEd 450, Teaching Reading in Content Area.....	2
SeEd 314, Clinical.....	1
PS III†††	
SeEd 400, Curriculum and Instruction.....	4
SeEd 410, Social Foundations, Management and Law.....	2
EdFn 499, Professional Issues in Education.....	1
SeEd 488, Student Teaching.....	8

**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.....	4
Math 224, Calculus II.....	4
Math 253, Elementary Logic and Set Theory.....	3
Mathematics courses at the 200 level or above.....	12

Required of minors in the Teacher Education Program:

Math 123, Calculus I.....	4
Math 125, Calculus II.....	4
Math 253, Elementary Logic and Set Theory.....	3
Math 261, Geometry for Teachers.....	3
Math 355, Methods of Teaching Mathematics.....	3
Two of the following:	
Math 313, Modern Algebra.....	3
Math 315, Linear Algebra.....	3
Math 345, Discrete Mathematics.....	3
Math 381, Probability and Statistics.....	3

NOTE: 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
e-mail: don_froehlich@sdstate.edu
website: <http://www3.sdstate.edu/Academics/CollegeOfEngineering/MechanicalEngineering>

**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 112-112L*, General Chemistry I and Lab.....	4		
Engl 101*, Composition I.....	3		
EM 221, Statics.....		3	
GE 101**, Introduction to Engineering and Technology.....	1		
GE 121, Engineering Design Graphics I and GE 122, Engineering Design Graphics II.....	1		1

Math 123*, Calculus I and Math 125, Calculus II.....	4	4
Phys 211-212*, University Physics I and Lab.....	4	4
SpCm 101-101A, Fundamentals of Speech and Lab.....	3	3
Gen Ed: Social Science*, pp. 35-37.....	3	
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	3

Sophomore Year		F	S
CSc 150 or Technical Electives.....	3		
Econ 202*, Macroeconomics Principles.....	3		3
EM 222, Dynamics.....	3		
EM 321, Mechanics of Materials.....		3	
GE 123, Computer Aided Design and Graphics.....	1		
GE 225, Industrial Machine Tool Applications.....	1		
Math 225, Calculus III.....	4		
Math 321, Differential Equations.....		3	
ME 240**, Introduction to Mechanical Design.....		3	
ME 241**, Engineering Materials.....	3		
ME 311, Thermodynamics I.....		3	
Phys 213-214**, University Physics II and Lab.....	4		
Gen Ed: Humanities and Arts*, pp. 35-37.....	3		

Junior Year		F	S
EE 300-301, Basic Electrical Engineering I and Lab and EE 302-303, Basic Electrical Engineering II and Lab.....	3		3
Engl 379*, Technical Communications.....	3		
EM 331, Fluid Mechanics.....	3		
Math 331, Advanced Engineering Math or Math 471, Numerical Analysis.....	3		
Math 381, Probability and Statistics.....		3	
ME 312, Thermodynamics II.....	3		
ME 321, Fundamentals of Machine Design.....	3		
ME 376-376A, Measurements and Instrumentation and Lab.....		2	
ME 415**, Heat Transfer.....		3	
SDSU Core: Goal 1**, Wellness, p. 39.....		2	
SDSU Core: Goal 2**, Human Community, p. 39.....		2	

Senior Year		F	S
ME 322, Vibrations.....	3		
ME 419-419A, Heating and Air Conditioning Design and Lab 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		
SDSU Core: Goal 3**, Human Spirit, p. 40.....		2	
Technical Electives.....	5-6		8-9

Technical Electives
 The 11-14 credits of technical electives may be chosen from the following list. At least one course must be in design. **Design courses are identified by a (D).**

ME 313, Analytical Thermodynamics.....	3
ME 341, Metallurgy.....	3
ME 362**, Industrial Engineering.....	3
ME 381, Mechanical Equipment for Buildings.....	3
ME 411**, Environmental Engineering.....	3
ME 412, Internal Combustion Engines (D).....	3
ME 413, Turbomachinery (D).....	3

ME 414**, Air Pollution Control (D).....	3
ME 416-416A, Computer Aided Engineering and Lab (D).....	3
ME 418, Design of Thermal Systems (D)	3
ME 419-419A, Heating and Air Conditioning Design and Lab (D).....	3
ME 427, Gas Dynamics I.....	3
ME 428-428A, Machine Design- Case Studies and Lab (D).....	3
ME 431, Aerodynamics (D).....	3
ME 440, Computer Aided Design (D).....	3
ME 461, Analysis and Design of Industrial Systems (D).....	3
ME 491, Special Problems (D).....	1-5
ME 492, Special Topics (D)	1-5
ME 494**-497**, Cooperative Education/ Internship (D)	1-3
Courses from other departments or disciplines accepted on approval.	

ME students receive educational experiences for understanding the relationship between the environment and society and stewardship. The principles of wise use of the environment, impact analyses of communities, organizations and society on environments, and the knowledge and care of the environment are part of ME design courses, experiments, course projects along with internships, cooperative education experiences, engineering technical tours and inspections, activities of professional engineering organizations and curriculum assignments. The primary courses that cover these elements are GE 101, ME 240, 241, 362, 411, 414, 415, 477, 480, 494, and 495. For Mechanical Engineering students, these educational experiences fulfill the SDSU IGR, Stewardship (SDSU Core: Goal 5).

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

(Pre-) Medicine

Carol Wake
Department of Biology and Microbiology
Ag Hall
605-688-5756
e-mail: carol_wake@sdstate.edu

Suggested Pre-Medicine Plan of Study

Freshman Year	F	S
Bio 151-152*, General Biology I and Lab and		
Bio 153-154*, General Biology II and Lab.....	4	4
Chem 112-112L*, General Chemistry I and Lab and		
Chem 114-114L*, General Chemistry II and Lab.....	4	4
Engl 101*, Composition I and		
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	3
Math 102*, College Algebra, or		
Math 115*, Precalculus or		
Placement in Calculus.....	3-5	
Math 221-221A, Survey of Calculus and Lab or		
Math 123*, Calculus I.....		5
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
Requirements for Major or Electives.....	0-2	0-2

Sophomore Year	F	S
Chem 326-327, Organic Chemistry I and Lab and		
Chem 328-329, Organic Chemistry II and Lab	4	4
Engl 201*, Composition II.....	3	or 3
Phys 111-112*, Introduction to Physics I and Lab and		
Phys 113-114*, Introduction to Physics II and Lab	4	4
Gen Ed: Humanities and Arts*, pp. 35-37	3	3
Gen Ed: Social Science*, pp. 35-37.....	3	3
Requirements for Major or Electives	3	or 3

Junior Year	F	S
Chem 361-361L, Biochemistry and Lab.....	4	
Stat 281, Introduction to Statistics	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Electives and Major Requirements.....	5	9

Senior Year Complete Major Requirements

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** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Microbiology (Mic) Major and Minor

Tom Cheesbrough
Department of Biology and Microbiology
Agricultural Hall 304
605-688-6141
e-mail: biomicro@abs.sdstate.edu
website: www.abs.sdstate.edu/bio

Requirements for Microbiology Major Bachelor of Science

Majors must complete the core curriculum and one of the specializations for their B.S.

Core Curriculum:	F	S
Freshman Year		
Engl 101*, Composition I	3	
SpCm 101-101A*, Fundamentals of Speech		3
Bio 151-152, General Biology I and Lab.....	4	
Bio 153-154, General Biology II and Lab		4
Gen Ed: Natural Science* and SDSU Core Goal 4 **		
Chem 112-112L, General Chemistry I and Lab and.....	4	
Chem 114-114L, General Chemistry II and Lab.....		4
Gen Ed: Mathematics*: choose a, b, c, or d ¹	3-5	3-4
a. Math 102, College Algebra and		
Math 120, Trigonometry		
b. Math 115, Precalculus		
c. Math 121-121A, Survey of Calculus and Lab		
d. Math 123, Calculus I and		
Math 125, Calculus II		

Gen Ed: Social Science*, pp. 35-37.....	3
Recommended: Anth 210, Soc 150, or Soc 240 (G)	
SDSU Core: Goal 1**, p. 39, Wel 100 or GS 143	2

Sophomore Year	F	S
Bio 201-202, Genetics and Organismal Biology and Lab	4	
Bio 203-204, Genetics and Cellular Biology and Lab	4	
Engl 201*, Composition II	3	
Micr 231-232, General Microbiology and Lab	4	
Micr 390, Sophomore Seminar	1	
Organic Chemistry: choose a or b ²	4	4
a. Chem 326-327, Organic Chemistry I and Lab and Chem 328-329, Organic Chemistry II and Lab		
b. Chem 120-120L, Elementary Organic Chemistry and Lab and Chem 361-361L, Biochemistry and Lab		
Gen Ed: Social Science*, pp. 35-37	3	
Gen Ed: Humanities and Arts*, pp. 35-37	3	

Junior Year	F	S
Physics: choose a or b ²	4	4
a. Phys 111-112, Intro Physics I and Lab and Phys 113-114, Intro Physics II and Lab		
b. Phys 101-102, Survey of Physics and Lab		
Stat 281, Intro to Statistics, or Math 125, Calculus II ⁴	3-4	
SDSU Core: Goal 2**, Econ 202, Macroeconomics	3	
SDSU Core: Goal 5**, choose a or b ³	3-4	
a. Bio 311, Ecology		
b. Bio 383, Bioethics		
Specialization courses/electives	8-9	5-10

Senior Year	F	S
Bio 490, Senior Seminar	1	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	
Communication Elective (Engl 379 recommended) ⁵	3	
Specialization course/electives	12	12

- 1 Students in the Pre-professional track or planning to attend graduate school should take option c or d.
- 2 Option b of Organic Chemistry and Physics are not sufficient for students planning to enter professional or graduate degree programs.
- 3 Bioethics is recommended for Preprofessional students. Principles of Ecology is recommended for all other microbiology students.
- 4 This course is highly recommended but not required.
- 5 Students in the College of Arts and Sciences should substitute a social science from the college listing on pages 56-57.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The **BOR System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Specializations:

Students must complete one of the following specializations for their Bachelor of Science degree.

Molecular Biology Specialization

<i>Required Courses</i>	F	S
Chem 361-361L, Biochemistry and Lab	4	
Micr 332, Microbial Physiology Lecture		2
Micr 333, Microbial Physiology Lab		2
Micr 422-422A, Immunology Lecture and Lab	4	
Micr 436, Molecular Microbial Genetics	4	
Micr 438, Molecular Microbial Genetics Lab	2	

Supporting Courses

(choose a minimum of 12 credits)

Bio 462, Molecular Biology I	2	
Bio 464, Molecular Biology II		2
Bio 465, Molecular Biology II Lab		2
Bot 327-327A, Plant Physiology and Lab		4
Chem 461, Intermediate Biochemistry		3
Micr 424-424A, Virology and Lab		4
Micr 425, Pathogenesis		3
Micr 491, Microbiology Problem	1-2	
Zool 325-325A, Mammalian Physiology and Lab	4	

Microbiology Electives

(choose a minimum of 1 course)

Micr 310-310A, Environmental Microbiology and Lab	4
Micr 311-311A, Food Microbiology	4
Micr 414-414A, Anaerobic Microbiology and Lab	3
Micr 421-421A, Soil Microbiology and Lab	4

Suggested General Electives

(choose courses from this list, as well as above lists to complete 128 credits)

Bio 445-445A, Histological Techniques and Lab	4
Chem 232-233, Analytical Chemistry and Lab†	4
Chem 342-342L, Physical Chemistry and Lab	4
Chem 344-344L, Physical Chemistry and Lab	4
DS 301-301A, Dairy Microbiology and Lab	3
Micr 491, Microbiology Problem	1-3
Micr 494-497, Internship/Coop. Ed.	1-3

† Recommended as a General Elective

Microbiology Specialization

Required Courses

Chem 361-361L, Biochemistry and Lab	4
Micr 332, Microbial Physiology Lecture	2
Micr 333, Microbial Physiology Lab	2
Micr 422-422A, Immunology Lecture and Lab	4
Micr 436, Molecular Microbial Genetics	4

Areas of Study

(choose at least one course from each section

for a minimum of 14 credit hours)

Section 1 Applied and Environmental

Micr 310-310A, Environmental Microbiology and Lab ..	4
Micr 414-414A, Anaerobic Microbiology and Lab	3
Micr 421-421A, Soil Microbiology and Lab	3

Section 2 Infectious Disease

Micr 323, Medical Microbiology Lecture	3
Micr 324, Medical Microbiology Lab	1
Micr 424-424A, Virology and Lab	4
Micr 425, Pathogenesis	3
Zool 467-467A, Parasitology and Lab	3

Section 3 Molecular Biology

Bio 462, Molecular Biology I.....	2
Bio 464, Molecular Biology II	2
Bio 465, Molecular Biology II Lab	2
Micr 438, Molecular Microbial Genetics Lab	2

Suggested General Electives

(choose courses from this list, as well as above lists, to complete 128 credits)

Bio 445-445A, Histological Techniques and Lab.....	4
Chem 232-233, Analytical Chemistry and Lab†	1-3
DS 301-301A, Dairy Microbiology and Lab.....	3
Micr 311, Food Microbiology and Lab.....	3
Micr 491, Microbiology Problems	1-3
Micr 494-497, Internship/Coop. Ed.....	1-3

† Recommended as a General Elective

Applied and Environmental Specialization

Required Courses

Chem 361-361L, Biochemistry and Lab.....	4
Micr 310-310A, Environmental Microbiology and Lab	4
Micr 332, Microbial Physiology Lecture	2
Micr 333, Microbial Physiology Lab	2
Micr 422-422A, Immunology Lecture and Lab	4
Micr 436, Molecular Microbial Genetics.....	4
Micr 438, Molecular Microbial Genetics Lab	2

Supporting Courses

(choose a minimum of 8 credits)

Chem 461, Intermediate Biochemistry	3
DS 301-301A, Dairy Microbiology and Lab.....	3
Micr 311-311A, Food Microbiology	4
Micr 414-414A, Anaerobic Microbiology and Lab	3
Micr 421-421A, Soil Microbiology and Lab	3
Micr 491, Microbiology Problem.....	1-2

Biology-Microbiology Electives

(choose a minimum of 1 course)

Micr 323, Medical Microbiology Lecture	3
Micr 324, Medical Microbiology Lab	1
Micr 424-424A, Virology and Lab.....	4
Micr 425, Pathogenesis	3
Micr 491, Microbiology Problem.....	1-2
Zool 467-467A Parasitology Lecture and Lab	3

Suggested General Electives

(choose courses from this list as well as above lists, to complete 128 credits)

Bio 311, Principles of Ecology	3
Bio 462, Molecular Biology I.....	2
Bio 464, Molecular Biology II.....	2
Bio 465, Molecular Biology II Lab	2
Chem 232-233, Analytical Chemistry and Lab†	4
Chem 380, Environmental Chemistry and Lab.....	4
Chem 434-434L, Instrumental Analysis and Lab	4
DS 301-301A, Dairy Microbiology and Lab	3
EnvM 275, Intro. Environmental Management	3
EnvM 425-425A, Disturbance Ecology and Lab.....	3
Micr 491, Microbiology Problem.....	1-3
Micr 494-497, Internship/Coop. Ed.....	1-3
Phil 332, Environmental Ethics	3

† Recommended as a General Elective

Infectious Disease Specialization

(Plant, Animal, Human)

Required Courses

Chem 361-361L, Biochemistry and Lab.....	4
Micr 332, Microbial Physiology Lecture	2
Micr 333, Microbial Physiology Lab	2
Micr 422-422A, Immunology Lecture and Lab.....	4
Micr 425, Pathogenesis	3
Micr 436, Molecular Microbial Genetics	4
Micr 323, Medical Microbiology Lecture.....	3
Micr 324, Medical Microbiology Lab.....	1

Supporting Courses

(choose a minimum of 7 credits)

Micr 311-311A, Food Microbiology	4
Micr 424-424A, Virology and Lab	4
Micr 438, Molecular Microbial Genetics Lab	2
Micr 491, Microbiology Problem	1-2
Zool 467-467A, Parasitology Lecture and Lab	3

Microbiology Electives

(choose a minimum of 1 course)

Micr 310-310A, Environmental Microbiology and Lab.....	4
Micr 414-414A, Anaerobic Microbiology and Lab	3
Micr 421-421A, Soil Microbiology and Lab.....	3

Suggested General Electives

(choose courses from this list, as well as above lists to complete 128 credits)

Bio 462, Molecular Biology I.....	2
Bio 464, Molecular Biology II.....	2
Bio 465, Molecular Biology II Lab	2
Bot 327-327A, Plant Physiology and Lab	4
Chem 232-233, Analytical Chemistry and Lab†	4
Chem 461, Intermediate Biochemistry	3
DS 301-301A, Dairy Microbiology and Lab	3
Micr 491, Microbiology Problems	1-3
Micr 494-497, Internship/Coop. Ed.....	1-3
PS 232-232A, Principles of Plant Pathology and Lab.....	4
Zool 325-325A, Mammalian Physiology and Lab	4

† Recommended as a General Elective

Requirements for Microbiology Minor: 18 cr

The minor in Microbiology consists of Micr 231-232, General Microbiology and Lab, and additional credit hours with Micr prefix for a total of at least 18 credits. DS 301 may be included in the 18 credits. Two courses must be at the 300 level or above. A minimum GPA of 2.0 is required in these courses.

(Pre-) Ministerial

Dennis Bielfeldt
 Department of Philosophy and Religion
 Scobey Hall
 605-688-4934
 e-mail: Dennis_Bielfeldt@sdstate.edu

Program

Almost all theological seminaries require some undergraduate education. Most require a college degree. A broad general education is desirable. A satisfactory pre-ministerial program could be: a Liberal Studies degree or selection of a major in any humanities or social science area, focusing electives around a core of religion and philosophy courses as selected from the more than 30 hours available in these areas:

Military Science (Mil) Minor

Lieutenant Colonel (P) Keith Corbett
 Department of Military Science
 DePuy Military Hall 200
 605-688-6151
 e-mail: keith_corbett@sdstate.edu

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 ROTC Advanced Camp. This minor is compatible to fields of major studies.

Modern Language (ML)

Business-Economics Specialization

Philip Baker
 Department of Modern Languages
 NFA 121
 605-688-5101
 Fax: 605-688-6699
 e-mail: phil_baker@sdstate.edu

Requirements for Modern Language

Business-Economics Specialization:

17 cr. of one language including Business French,
 German or Spanish17
 Econ 201, Microeconomics Principles3
 Econ 202, Macroeconomics Principles3
 Subtotal.....23

Choose 4 of the following courses:

Acct 210, Principles of Accounting I3
 AgEc 354, Agricultural Marketing and Prices3
 AgEc 454, Economics of Grain and Livestock Marketing3
 AgEc 479, Agricultural Policy.....3
 BAdm 310, Business Finance.....3
 BAdm 350, Legal Environment of Business and Contracts.....3
 BAdm 360, Organization and Management3
 Econ 330, Money and Banking3
 Econ 370, Marketing3
 PolS 350, International Relations3
 Stat 281, Introduction to Statistics.....3
 Subtotal.....12

Choose 1 of the following courses:

Econ 405, Comparative Economic Systems3
 Econ 440, Economics of the International Sector3
 Econ 460, Economic Development3
 Econ 472, Resource and Environmental Economics.....3
 Subtotal.....3
 Total38

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.

Music (Mus) Major and Minor

Corliss Johnson
 Department of Music
 Lincoln Music Center 204
 605-688-5187
 e-mail: corliss_johnson@sdstate.edu

Requirements for Music Major

Bachelor of Arts in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Mus 110-110A, Basic Theory and Musicianship I and Lab and Mus 111-111A, Basic Theory and Musicianship II and Lab.....	4	4
Mus 195, Recital Attendance	0	0
SpCm 101*-101A, Fundamentals of Speech and Lab	3	or 3
Applied Music	1	1
Music Organization	1	1
Gen Ed: Mathematics*, pp. 35-37	3	or 3
Gen Ed: Social Science*, (G), pp. 35-37	3	or 3
Gen Ed: Natural Science*, pp. 35-37	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
SDSU Core: Goal 4**, Science and Sci Method, p. 41	2	or 2

Sophomore Year

F	S
Engl 201*, Composition II	3 or 3
Mus 195, Recital Attendance	0
Mus 210-210A, Intermediate Theory and Musicianship III and Lab and Mus 211-211A, Intermediate Theory and Musicianship IV and Lab.....	4 4
Mus 130, Music Literature and History I (World Music), and Mus 131, Music Literature and History II (Medieval and Renaissance).....	2 2
Mus 260-260A, Conducting Fundamentals and Lab	2
Applied Music	1 1
Music Organization	1 1
Gen Ed: Social Science*, pp. 35-37	3 or 3
Gen Ed: Humanities and Arts*, (G), pp. 35-37 Modern Language* (Fren, Germ, Span, Lak).....	4 4

Junior Year

F	S
Mus 195, Recital Attendance	0
Mus 313, Form and Analysis	3
Mus 230**, Music Literature and History III (Baroque and Classical), and Mus 231**, Music Literature and History IV (Romantic)	2 2
Modern Language	3
Applied Music	2
Music Organization	1

Music Electives	2	2
General Electives	3	6
Senior Year	F	S
Mus 195, Recital Attendance	0	0
Mus 433, Music Literature and History V (20th Century)	2	
Mus 483, Public Recital	0	or 0
Applied Music	2	2
Music Organization	1	1
SDSU Core: Goal 2**, Human Community, p. 39	2	
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Gen Ed: Humanities and Arts, pp. 35-37	3	or 3
General Electives	5	8

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Requirements for Music Minor: 22 cr

Mus 110-110A-111-111A, Basic Theory and Musicianship I-II and Labs	8
Mus 130, Music Literature and History I	2
Mus 260-260A, Conducting Fundamentals and Lab	2
Mus 361-361A, Music Education II (Vocal or Instrumental Conducting) and Lab or Music Electives	2
Applied (at least two hours upper level—300-400)	6
Music Electives	2

NOTE: Mus 195 required for each semester enrolled for applied lessons.

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 Center 204
 605-688-5187
 e-mail: corliss_johnson@sdstate.edu

Requirements for Music Education Major Bachelor of Music Education

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Mus 110-110A, Basic Theory and Musicianship I and Lab and Mus 111-111A, Basic Theory and Musicianship II and Lab	4	4
Mus 195, Recital Attendance	0	0
SpCm 101*-101A, Fundamentals of Speech and Lab	3	or 3
Applied Music	1	1
Music Organization	1	1
Gen Ed: Mathematics*, pp. 35-37	3	or 3

Gen Ed: Social Science*, (G), pp. 35-37, Soc 150, Social Problems	3	or 3
Gen Ed: Natural Science*, pp. 35-37	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	2	2

Sophomore Year	F	S
Engl 201*, Composition II	3	or 3
Mus 130*, Music Literature and History I (World Music) and Mus 131*, Music Literature and History II (Medieval and Renaissance)	2	2
Mus 195, Recital Attendance	0	0
Mus 210-210A, Intermediate Theory and Musicianship III and Lab and Mus 211-211A, Intermediate Theory and Musicianship IV and Lab	4	4
Mus 260-260A, Conducting Fundamentals and Lab	2	
Mus 270-Mus 271, Pedagogy I and II	1	1
Mus 361-361A, Music Education II: Conducting and Lab	2	2
Applied Music	1	1
Music Organization	1	1
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3
Gen Ed: Social Science*, pp. 35-37	3	
SDSU Core: Goal 5**, Stewardship, p. 41	2	2

Junior Year	F	S
EdFn 365, Integrating Computers into the Classroom	2	
EdFn 427, Middle School Philosophy and Applications	2	2
Mus 195, Recital Attendance	0	0
Mus 313, Form and Analysis	3	3
Mus 351-351A, Music Education I: Elementary Music Concepts and Lab	2	
Mus 362-362A, Music Education III: Methods and Materials and Lab	2	2
Mus 365-365A, Music Education IV: Supervision and Administration of School Music and Lab	2	2
Mus 370-371, Pedagogy III and IV	1	1
Applied Music	2	2
Music Organization	1	1
Professional Semester I	5	
SDSU Core: Goal 2**, Human Community, p. 39, Anth 421, Indians of North America	3	3
SDSU Core: Goal 3**, Human Spirit, p. 40, Mus 230, Music Literature and History III (Baroque and Classical) and Mus 231, Music Literature and History IV (Romantic)	2	2

Senior Year	F	S
EdFn 489, Professional Issues in Education	1	1
Mus 195, Recital Attendance	0	
Mus 420, Orchestration and Arranging	3	
Mus 433, Music Literature and History V (20th Century)	2	
Mus 483, Public Recital	0	or 0
SeEd 420, Teaching Special Needs Students	1	
Applied Music	2	
Music Organization	1	
Professional Semester II	6	
Professional Semester III	14	

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 260-260A, Conducting Fundamentals and Lab
- Mus 270-271, Pedagogy I-II
- Mus 370-371, Pedagogy III-IV
- Mus 351-351A, Music Education I: Elementary Music Concepts and Lab
- Mus 361-361A, Music Education II: Conducting and Lab
- Mus 362-362A, Music Education III: Methods and Materials (Vocal) and Lab
- Mus 365-365A, Music Education IV: Supervision and Administration of School Music and Lab

Specific Courses Required for Instrumental Emphasis:

- Mus 260-260A, Conducting Fundamentals and Lab
- Mus 270-271, Pedagogy I-II
- Mus 370-371, Pedagogy III-IV
- Mus 351-351A, Music Education I: Elementary Music Concepts and Lab
- Mus 361-361A, Music Education II: Conducting and Lab
- Mus 362-362A, Music Education III: Methods and Materials (Instrumental) and Lab
- Mus 365-365A, Music Education IV: Supervision and Administration of School Music and Lab

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Music Merchandising Major

Corliss Johnson
 Department of Music
 Lincoln Music Center 204
 605-688-5187
 e-mail: corliss_johnson@sdstate.edu

**Requirements for Music Merchandising Major
 Bachelor of Science in Arts and Science**

Freshman Year	F	S
CSc 105, Introduction to Computers	3	3
Engl 101*, Composition I	3	or 3
Mus 110-110A, Basic Theory and Musicianship I, and Lab and Mus 111-111A, Basic Theory and Musicianship II and Lab	4	4
MuAp 115, Class Instruction in Keyboard and MuAp 116, Class Instruction in Keyboard	1	1
Mus 195, Recital Attendance	0	0
Mus 201*, History of Country Music, (G)	3	3
Mus 202, The Music Industry or Mus 302, Introduction to the Recording Industry	2-3	2-3
SpCm 101*-101A, Fundamentals of Speech and Lab	3	or 3
Applied Music	1	1
Music Organization	1	1
Gen Ed: Mathematics*, pp. 35-37	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	2

Sophomore Year	F	S
Econ 202*, Principles of Macroeconomics	3	3
Engl 201*, Composition II	3	or 3
Mus 195, Recital Attendance	0	0
Mus 210-210A, Intermediate Theory and Musicianship III and Lab and Mus 211-211A, Intermediate Theory and Musicianship IV and Lab	4	4
Applied Music	1	1
Music Organization	1	1
Gen Ed: Natural Science*, pp. 35-37	3	3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	3
Gen Ed: Social Science*, pp. 35-37, (G)	3	3

Junior Year	F	S
Acct 210, Principles of Accounting	3	3
MCom 370, Principles of Advertising	3	3
Mus 195, Recital Attendance	0	0
Mus 202, The Music Industry or Mus 302, Introduction to the Recording Industry	2-3	2-3
Mus 203, Blues, Jazz and Rock	3	3
Applied Music	2	2
Music Organization	1	1
SDSU Core: Goal 2**, Human Community, p. 39	3	3
SDSU Core: Goal 3**, Human Spirit, p. 40, Mus 230, Music Literature and History III (Baroque and Classical) and Mus 231, Music Literature and History IV (Romantic)	2	2
SDSU Core: Goal 4**, Science and Science Methods, p. 41	4	4
SDSU Core: Goal 5**, Stewardship, p. 41	2	2
SDSU Core: Goal 2**, Human Community, p. 39	3	3

Senior Year	F	S
BAdm 310, Business Finance	3	3
Econ 370, Marketing	3	3
MCom 212-212A, Desktop Publishing and Lab	3	3
Mus 195, Recital Attendance	0	0
Mus 433, Music Literature and History V (20th Century)	2	2
Mus 483, Public Recital	0	or 0
Applied Music	2	2
Music Organization	1	or 1
Professional Electives	3-6	3-6

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Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Nursing (Nurs) Major

Roberta Olson, Dean
College of Nursing
NFA 255

605-688-5178 or 1-888-216-9806, ext. 6

e-mail: roberta_olson@sdstate.edu

Requirements for Nursing Major – Standard Option Bachelor of Science in Nursing

Freshman Year	F	S
Chem 106-106L*, Chemistry Survey and Lab†††	4	
Chem 108-108L*, Organic and Biochemistry and Lab**,†††	5	
Engl 101*, Composition I	3	
GS 143, Mastering Lifetime Learning Skills or Wel 100, Skills for Healthy Living	2	
Math 102*, College Algebra*	3	
Psyc 101*, General Psychology†	3	
Soc 100, Introduction to Sociology or Soc 150*, Social Problems†, (G) or Soc 240*, Sociology of Rural America†, (G) or Soc 250, Marriage or Soc 340, Urban Sociology	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	
Zool 221-222, Anatomy and Lab (optional)	4	
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	

Sophomore Year	F	S
Engl 201*, Composition II	3	
HDFS 210*, Lifespan Development**	3	
Micr 231-232*, General Microbiology and Lab††	4	
NFSH 321, Human Nutrition	3	
Nurs 264, Professional Perspectives I	1	
Nurs 265-265A, Health Assessment Intervention and Lab	4	
Nurs 280-280A, Professional Communication and Lab	2	
Nurs 282, Health Promotion	2	
Nurs 323, Introduction to Pathophysiology	3	
Zool 325-325A, Mammalian Physiology and Lab	4	
Gen Ed: Humanities and Arts*, pp. 35-37††	3	

Junior Year	F	S
HSc 443**, Public Health Science	3	
Nurs 304, Professional Perspectives II	1	
Nurs 320-320A, Family as Client: Emerging and Developing and Lab	6	
Nurs 330-330A, Family Health Environment Across the Lifespan and Lab	3	
Nurs 364, Professional Perspectives III	1	
Nurs 370-370A, Acute Health Care I and Lab	5	
Nurs 375-375A, Chronic Health Care I and Lab	5	
Pha 321, Pharmacology	3	
Electives	6	

Senior Year	F	S
Nurs 404, Professional Perspectives IV	1	
Nurs 410-410A, Acute Health Care II and Lab	5	
Nurs 420-420A, Chronic Health Care II and Lab	6	
Nurs 464, Professional Perspectives V	2	
Nurs 475-475A, Community as Client and Lab	3	
Nurs 495-495A, Directed Study in Nursing:Practicum	6	
Stat 281**, Introduction to Statistics or HSc 440, Epidemiology	3	
Gen Ed: Humanities and Arts*, pp. 35-37 or SDSU Core: Goal 3**	3	

A total of 128 credits are required for graduation.

Required pre-nursing major courses: Chem 106-106L, 108-108L; HDFS 210; Micr 231-232; NFSH 321; Psyc 101; (one of the following) Soc 100, 150, 240, 250, or 340; Zool 221-222, 325-325A; MAJOR: Nurs 264, 265, 280, 282, 304, 320, 323, 330, 364, 370, 375, 404, 410, 420, 464, 475, 491.

Other required support courses: Pha 321; HSc 443; Stat 281 or HSc 440.

Eight elective credits or more are required to achieve 128 credits to graduate.

Six credits of Humanities and Arts are required in 2 disciplines or a sequence of modern language courses. At least one must be on the International/Global Diversity requirement list to meet System General Education (Gen Ed) requirements. Two credits to meet the University (SDSU Core) requirements for graduation for a total of 8 credits of Humanities and Arts.

NOTE: West River pre-nursing courses may not be offered in exactly the same semester as they are on the main campus in Brookings. However, this is a recommended sequence for courses.

† Social Sciences requirements 6 credits (in 2 disciplines) and 3 credits to meet SDSU core requirements (9 total credits).

†† Additional liberal studies core: 5 credits to meet SDSU Core requirements includes courses selected from the Humanities, Natural Sciences or Social Science. See pages 39-41 for details.

††† Natural Sciences requirements 6 credits (does not have to be in sequence) and 2 credits to meet SDSU core requirements (8 total credits).

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Nursing Major – RN Upward Mobility Option Bachelor of Science in Nursing

Please contact the Coordinator, RN Upward Mobility, at 605-688-6186, or 1-888-216-9806 ext. 1, for plan.

Requirements for Nursing Major – Accelerated Option Bachelor of Science in Nursing

Requirements are the same as those for the Standard Option. For transcript evaluation, please contact the Department Head, Nursing Student Services, at 605-688-4106, or toll-free at 1-888-216-9806 ext. 4.

Nutrition and Food Science (NFSH) Major and Minor

C. Y. Wang, Acting
Department of Nutrition, Food Science and Hospitality
NFA 425
605-688-5161
e-mail: cy_wang@sdstate.edu

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 112-112L*, General Chemistry I and Lab**	4	
Chem 120-120L*, Elementary Organic Chemistry and Lab**	4	
Engl 101*, Composition I	3	or 3

FCS 101, Family and Consumer Sciences: Professional			
Foundations	1		
Math 102*, College Algebra	3		
NFSH 110, Perspectives in Nutrition	3		
NFSH 141-141A, Food Principles and Lab	4	or	4
Soc 100, Introduction to Sociology or			
Soc 150*, Social Problems, (G)	3	or	3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2

Sophomore Year			
Acct 210, Principles of Accounting I	3		
Chem 361-361L, Biochemistry and Lab	4		
CSc 105, Introduction to Computers	3		
Econ 202*, Macroeconomics Principles	3		
Engl 201*, Composition II	3		
HDFS 241, Family Relations	3		
Micr 231-232, General Microbiology and Lab	4		
NFSH 321, Human Nutrition	3		
PE 350-350A, Exercise Physiology and Lab or	3		
Chem 114-114L General Chemistry and Lab	4		
Psyc 101**, General Psychology	3		
Zool 221-222, Anatomy and Lab	3		

Junior Year			
NFSH 261, Food Service Operations	3		
NFSH 322, Assessment Skills in Nutrition	4		
NFSH 341-341A, Food Science and Lab	4		
NFSH 371, Food Service Purchasing	3		
NFSH 381, Quantity Food Production and Service	3		
NFSH 422, Advanced Human Nutrition	4		
Stat 281, Introduction to Statistics	3		
Zool 325-325A, Mammalian Physiology and Lab	4		

Summer			
NFSH 495, Professional Practicum	2		
(taken summer between Junior and Senior year)			

Senior Year			
FCSE 421, Adult Education	2		
NFSH 423, Clinical Nutrition I	3		
NFSH 424-424A, Community Nutrition and Lab	3		
NFSH 425-425A, Clinical Nutrition II and Lab	3		
NFSH 481, Professional Issues	3		
NFSH 490, Seminar	1		
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3		3
SDSU Core: Goal 3**, Human Spirit, p. 40	2		
SDSU Core: Goal 5**, Stewardship, p. 41	2		
Electives	3		4

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** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

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Requirements for Nutrition and Food Science Major			
Food Science Specialization			
Bachelor of Science in Family and Consumer Sciences			
Freshman Year			
	F		S
Chem 112-112L*, General Chemistry I and Lab**	4		
Chem 114-114L*, General Chemistry II and Lab**			4
Engl 101*, Composition I	3	or	3
FCS 101, Family and Consumer Sciences: Professional			
Foundations	1		
Math 113*, College Algebra and Trigonometry			5
NFSH 151, Food Technology			2
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Goal 3*, pp. 35-37 (G)	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2		
SDSU Core: Goal 2**, Human Community, p. 39	2		
SDSU Core: Goal 3**, Human Spirit, p. 40	2		

Sophomore Year			
	F		S
AS 241, Meat: Production to Consumption			3
Chem 120-120L, Elementary Organic Chemistry and Lab	4		
DS 231, Dairy Foods	3		
Engl 201*, Composition II			3
NFSH 141-141A, Food Principles and Lab			4
NFSH 341-341A, Food Science and Lab	4		
Phys 111-112, Introduction to Physics I and Lab			4
Psyc 101*, General Psychology	3		
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3		3

Junior Year			
	F		S
Bio 101-102, Biology Survey I and Lab	3		
Chem 232-233, Analytical Chemistry I and Lab			4
Chem 361-361L, Biochemistry and Lab			4
DS 313-313A, Technical Control of Dairy Products I and Lab	3		
Math 222, Calculus for Non-Math Majors	5		
Micr 231-232, General Microbiology and Lab			4
NFSH 351-351A, Principles of Food Processing and Lab or NFSH 450-450A, Food Analysis and Lab			3-4
NFSH 360-360A, Food Chemistry and Lab or NFSH 451-451, Advanced Food Processing and Lab			4
Stat 281, Introduction to Statistics	3		

Senior Year			
	F		S
AST 443-443A, Food Processing and Engineering Fundamentals and Lab	3		
DS 422-422A, Technical Control of Dairy Products II and Lab			4
HDFS 241, Family Relations			3
Micr 311-311A, Food Microbiology and Lab	4		
NFSH 321, Human Nutrition			3
NFSH 450-450A, Food Analysis and Lab or NFSH 351-351A, Principles of Food Processing and Lab			3-4
NFSH 451-451A, Advanced Food Processing and Lab or NFSH 360-360A, Food Chemistry and Lab			4
NFSH 481, Professional Issues	3		
NFSH 490, Seminar in Food and Nutrition	1		
SDSU Core: Goal 5**, Stewardship, p. 41			2

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**Requirements for Nutrition and Food Science Major
Nutritional Sciences Specialization
Bachelor of Science in Family and Consumer Sciences**

Freshman Year	F	S
Bio 151-152*, General Biology I and Lab.....	4	
Bio 153-154*, General Biology II and Lab.....	4	
Chem 112-112L*, General Chemistry and Lab.....	4	
Chem 114-114L*, General Chemistry II and Lab.....	4	
Engl 101*, Composition I.....	1	
FSC 101, Professional Foundations.....	1	
Math 121-121A Survey of Calculus and Lab or Math 123-123A Calculus I.....	5	
Math 222, Calculus for Non Math Majors or Math 123* Calculus I.....	5	
NFSH 110, Perspectives in Nutrition.....	3	

Sophomore Year	F	S
Chem 328-329, Organic Chemistry II and Lab.....	4	
Chem 326-327, Organic Chemistry I and Lab.....	4	
Engl 201*, Composition II.....	3	
NFSH 141-141A, Food Principles and Lab.....	4	
NFSH 321, Human Nutrition.....	3	
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	
GenEd* Humanities and Arts, pp. 35-37 (G).....	3	
GenEd* Social Science, pp. 35-37 (G).....	3	

Junior Year	F	S
Chem 361-361L, Biochemistry and Lab.....	4	
HDFS 241, Family Relations.....	3	
NFSH 422, Advanced Human Nutrition.....	4	
NFSH 322-322A, Assessment Skills in Nutrition and Lab...4		
Phys 111-112*, Introduction to Physics I and Lab.....	4	
Phys 113-114*, Introduction to Physics II and Lab.....	4	
Zool 221-222, Anatomy and Lab.....	3	
Zool 325-325A, Mammalian Physiology and Lab.....	4	
SDSU Core: Goal 1**, Wellness, p. 39.....	2	

Senior Year	F	S
FCSE 421, Adult Education.....	2	
NFSH 424-424A, Community Nutrition and Lab.....	3	
NFSH 425-425A, Community Nutrition II and Lab.....	3	
NFSH 341-341A, Food Science and Lab.....	4	
NFSH 423-423A, Clinical Nutrition I and Lab.....	3	
NFSH 481, Professional Issues.....	3	
NFSH 490, Seminar.....	1	
Stat 281, Introduction to Statistics.....	3	
SDSU Core: Goal 2**, Human Community, p. 39.....	2	
SDSU Core: Goal 3**, Human Spirit p. 40.....	2	
SDSU Core: Goal 5**, Stewardship, p. 41.....	2	
Electives.....	2-4	

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Requirements for Nutrition Minor: 18-19 cr
Required courses include:

NFSH 110, Perspectives in Nutrition or NFSH 221, Survey of Nutrition.....	3
NFSH 141-141A, Food Principles and Lab.....	4
NFSH 321, Human Nutrition.....	3
NFSH 422, Advanced Human Nutrition.....	4

Plus one or two of the following:

NFSH 322-322A, Assessment Skills in Nutrition and Lab.....	4
NFSH 423, Clinical Nutrition I.....	3
NFSH 424-424A, Community Nutrition and Lab.....	3
NFSH 425-425A, Clinical Nutrition II and Lab.....	3
NFSH 492-592, Current Topics: Nutrition Seminar.....	1

Any required prerequisites must also be taken. Students planning a minor must receive departmental approval. Higher level mathematics or chemistry course may be accepted with department approval.

(Pre-) Optometry

Nels Granholm
Department of Biology and Microbiology
Northern Plains Biostress Laboratory, 251B
605-688-4554
e-mail: nels_granholm@sdstate.edu

Suggested Pre-Professional Plan of Study

Freshman Year	F	S
Bio 151-152*, General Biology I and Lab and Bio 153-154*, General Biology II and Lab.....	4	4
Chem 112-112L*, General Chemistry I and Lab and Chem 114-114L*, General Chemistry II and Lab.....	4	4
Engl 101*, Composition I and SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	3
Math 102*, College Algebra, or Math 115*, Precalculus, or Placement in Calculus.....	3-5	
Math 121-121A, Survey of Calculus and Lab or Math 123*, Calculus I.....		4-5
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
Requirements for Major or Electives.....	0-2	0-2

Sophomore Year	F	S
Chem 326-327, Organic Chemistry I and Lab and Chem 328-329, Organic Chemistry II and Lab.....	4	4
Engl 201*, Composition II.....	3	or 3
Phys 111-112*, Introduction to Physics I and Lab and Phys 113-114*, Introduction to Physics II and Lab.....	4	4
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	3
Gen Ed: Social Science*, pp. 35-37.....	3	3
Requirements for Major or Electives.....	3	or 3

Junior Year	F	S
Chem 361-361L, Biochemistry and Lab.....	4	
Stat 281, Introduction to Statistics.....	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2

SDSU Core: Goal 5**, Stewardship, p. 41	2	or	2
Electives and Major Requirements.....	5		9

Senior Year

Complete Major Requirements

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Park Management (PR) Major

Peter Schaefer

Department of Horticulture, Forestry, Landscape and Parks

Northern Plains Biostress Laboratory 201A

605-688-5136

e-mail: sdsu_hflp@sdstate.edu

Requirements for Park Management Major

Bachelor of Science in Agriculture

Freshman Year	F	S
Bio-101-102*, Biology Survey I and Lab.....	3	or 3
Chem 106-106L*, Chemistry Survey and Lab	4	or 4
Engl 101*, Composition I	3	or 3
Ho 111-111A, Introduction to Horticulture and Lab	3	or 3
Math 102*, College Algebra	3	or 3
PR 101, Parks and Society	3	or 3
Psyc 101*, General Psychology	3	or 3
Soc 100*, Introduction to Sociology or Soc 150* Social Problems, (G) or Soc 240*, Sociology of Rural America, (G) or Anth 210*, Cultural Anthropology, (G).....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year

	F	S
Bio 200-200A, Biological Diversity and Lab	4	or 4
Econ 202**, Macroeconomics Principles	3	or 3
Engl 201*, Composition II.....	3	or 3
Ho 220-220A, Landscape Maintenance and Lab.....	3	or 3
Phys 101-102, Survey of Physics and Lab	4	or 4
PolS 100**, American Government or PolS 210**, State and Local Government	3	or 3
PR 202-202A, Outdoor Recreation Resource Management and Lab.....	3	or 3
PS 213-213A**, Soils and Lab	3	or 3
WL 110**, Environmental Conservation or Bio 311**, Principles of Ecology.....	2-3	or 2-3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3

Summer

PR 496, Field Experience (summer)	1
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Junior Year	F	S
AST 333-333A, Soil and Water Mechanics and Lab.....	3	or 3
Ho 250-250A, Woody Plants: Trees and Lab.....	3	or 3
Ho 311-311A, Herbaceous Plants and Lab or Ho 413-413A, Arboriculture and Lab.....	3	or 3
PR 301-301A, Park Interpretation and Lab.....	3	or 3
PR 302, Commercial Recreation Areas.....	3	or 3
PR 303, Forest Ecology and Management.....	3	or 3
PS 243-244, Geology and Lab	4	or 4
SpCm 315, Public Speaking.....	3	or 3
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2
Economics/Business Electives	3	or 3
Electives.....	3	or 3

Summer

PR 496, Field Experience (summer)	1
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Senior Year

	F	S
Engl 379, Technical Communication	3	or 3
Ho 314-314A, Turf Management and Lab.....	3	or 3
PolS 320, Public Administration or PolS 428, Personnel and Budgetary Administration.....	3	or 3
PR 300-300A, Park Operations and Facility Management and Lab.....	3	or 3
PR 401-401A, Advanced Park Management and Lab	3	or 3
Recr 440, Administration of Leisure Services	3	or 3
Economics/Business Electives	3	or 3
Land Use Planning Electives.....	3	or 3
Electives.....	3	or 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 201, Microeconomics Principles	3
Econ 370, Marketing	3
Econ 433, Public Finance	3
Stat 281, Introduction to Statistics.....	3

Park Management Land Use Planning Electives

Choose 6 credits from the following:

La 201, Introduction to Landscape Design	3
La 241, History of Landscape Architecture.....	3
La 322, Site Planning.....	3
La 324-324A, Planning Public Grounds and Lab	3
La 421-421A, City Planning and Lab	3
La 424, Recreational Facilities Design.....	3
Plan 471, Principles of State, Regional and Community Planning.....	3
Plan 472, Techniques of State, Regional and Community Planning.....	3
PS 310-310A, Soil Geography and Land Use Interpretation and Studio.....	3

Park Management Suggested Electives

Geog 464, Geographic Aspects of Regional Planning.....	3
Hlth 250-250A, First Aid and Lab.....	2
Ho 260, Woody Plants: Shrubs and Vines	2
PE 321-321A, Water Safety Instructor and Lab	2
Phil 220, Introduction to Ethics	3

Recr 260, Recreation Leadership.....	2
Soc 308, Research Methods II.....	3

Students must obtain 2 to 4 credits of PR 494, 496, 497 Cooperative Education/Internship/Field Experience in Park Management by completing either (a) or (b):

- Field Experience (PR 496). Work two 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.
- Cooperative Education (PR 497), Internship (PR 494), Field Experience (PR 496). Work one summer or equivalent time unit as stated in (a) for 1 credit and participate in Department approved Professional Internship for one 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.

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Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Pest Management Minor

Dale Gallenberg
Department of Plant Science
Agricultural Hall 219
605-688-4450
e-mail: dale_gallenberg@sdstate.edu

Requirements for Pest Management Minor: 18 cr

PS 223-223A, Principles of Plant Pathology and Lab.....	3
PS 305-305A, Insect Biology and Lab.....	3
PS 343-343A, Weed Science and Lab.....	3
PS 490, Undergraduate Seminar.....	1

Plus 8 additional credits from:

PS 307-307A, Insect Pest Management and Lab.....	3
PS 333-333A, Diseases of Field Crops and Lab.....	3
PS 334-334A, Diseases of Horticultural Crops and Lab.....	3
PS 415-415A, Mycology and Lab.....	3
PS 420-420A, Biological Control of Arthropods and Lab..	3
PS 431-431A, Applied Insect Ecology and Lab.....	3
PS 450-450A, Field Studies in Plant Disease Diagnosis....	2
PS 491, Special Problems (in Pest Management Areas)..	1-4
PS 492, Special Topics (in Pest Management Areas).....	3

Student must have a GPA of 2.5 or higher in courses used to satisfy the Pest Management Minor.

Pharmacy (Pha) Major

Danny Lattin
College of Pharmacy
Pharmacy 125
605-688-6197

website: www3.sdstate.edu/Academics/CollegeofPharmacy

Progression Standards for Class Standing

Some pharmacy courses have prerequisites such as 3rd Year Standing, etc. These are defined as follows:

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.

NOTE: “completion” means a passing grade in each pharmacy course and maintaining semester and cumulative Pha GPA requirements

Requirements for Doctor of Pharmacy Degree

Pre-Pharmacy Courses:

First Year	F	S
Bio-101-102**, Biology Survey I and Lab.....	3	or 3
Chem 112-112L*, General Chemistry I and Lab.....	4	
Chem 114-114L*, General Chemistry II and Lab.....		4
Engl 101*, Composition I.....	3	or 3
Math 121-121A*, Survey of Calculus and Lab.....	5	or 5
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37.....	6	or 6
Gen Ed: Social Science*, pp. 35-37.....	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2

Second Year	F	S
Chem 326-327, Organic Chemistry I and Lab.....	4	
Chem 328-329, Organic Chemistry II and Lab.....		4
Econ 202*, Macroeconomics Principles.....	3	or 3
Engl 201*, Composition II.....	3	or 3
Micr 231-232, General Microbiology and Lab.....	4	or 4
Stat 281, Introduction to Statistics.....	3	or 3
Zool 221-222, Anatomy and Lab.....	4	
Zool 325-325A, Mammalian Physiology and Lab.....		4
SDSU Core: Goal 2**, Human Community, p 39.....	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or 2
General Electives†.....	1	or 1

Professional Program Courses:

Third Year	F	S
Pha 310-310A, Introduction to Pharmaceutical Care and Lab.....	3	
Pha 311-311A, Professional Communication Skills and Lab.....		3
Pha 313, Pharmaceutical Calculations.....	1	
Pha 320, Pathophysiology.....	3	
Pha 323, Pharmaceutical Biochemistry.....	4	
Pha 324, Biomedical Science.....		4
Pha 331, Pharmaceutics I.....	3	
Pha 332-332A, Pharmaceutics II and Lab.....		4
Pha 340-340A, Principles of Drug Action I and Lab.....	4	
Pha 341-341A, Principles of Drug Action II and Lab.....		4
SDSU Core: Goal 5**, Stewardship, p. 41.....		2
General Electives†.....		1

Fourth Year¹	F
Pha 415, Biopharmaceutics and Pharmacokinetics.....	5
Pha 430, Pharmaceutical Jurisprudence.....	3
Pha 441, Chemotherapeutic Agents	2
Pha 442-442A, Principles of Drug Action III and Lab.....	5
Pha 443-443A, Principles of Drug Action IV and Lab.....	5
Pha 445-445A, Drug Literature and Research Design and Lab.....	4
Pha 450-450A, Drug Distribution Systems and Lab.....	4
Pha 460, Pharmaceutical Care Experience Lab	1
Pha 465-465A, Professional Resources Management and Lab.....	4
General Electives†.....	2

Fifth Year	F
Pha 719, Physical Assessment Laboratory.....	1
Pha 722, Therapeutics – The Geriatric Patient.....	2
Pha 723, Ethics in Healthcare Practice	2
Pha 727, U.S. Health Care Systems	2
Pha 732, Therapeutics – Renal/Fluids and Electrolytes.....	3
Pha 733, Therapeutics – Gastrointestinal and Nutrition	3
Pha 734, Therapeutics – Endocrine/Reproduction	2
Pha 735, Therapeutics – Infectious Disease.....	3
Pha 736, Therapeutics – Neurology/Psychiatry	3
Pha 737, Therapeutics – Cardiopulmonary	4
Pha 738, Therapeutics – Hematology/Oncology.....	2
Pha 739, Therapeutics – Rheumatology/Skin/Skeletal	2
Pha 743, Pharmacy Care in the Community.....	2
Pha 784, Seminar.....	1
Pharmacy Electives.....	2

Sixth Year – Clerkships²	Su/F/S
Pha 714, Community Pharmacy	6
Pha 716, Institutional Pharmacy	6
Pha 717, Community Pharmacy Care.....	4
Pha 772, Internal Medicine I.....	4
Pha 773, Internal Medicine II or Pha 774, Ambulatory Care/Family Prac.	4
Assigned Clerkships (see below).....	12
Elective Clerkships (see below).....	8

Assigned Clerkships (choose 3):

Pha 700, Directed Studies.....	4
Pha 706, Critical Care.....	4
Pha 707, Infectious Disease.....	4
Pha 770, Pediatrics.....	4
Pha 771, Geriatrics.....	4
Pha 773, Internal Medicine II or Pha 774, Ambulatory Care/Family Prac.	4
Pha 775, Psychiatry	4

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 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

Clerkships not utilized from list of Assigned Clerkships

S	† General Electives: 4 credits required prior to beginning Fifth Year. Credits in excess of System General Education Requirements or IGR Goals may apply toward General Elective requirement.
1	Eligible for Bachelor of Science degree in Pharmaceutical Sciences after completion of Fourth Year.
2	Clerkships completed during Summer Session, Fall and Spring Semesters of Sixth Year. Each credit requires one week of clerkship experience.
*	The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).
(G)	The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

S	** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).
	Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Philosophy (Phil) Minor

Robert Burns
Department of Philosophy and Religion
Scobey Hall 308
605-688-4909
e-mail: robert_burns@sdstate.edu

Requirements for Philosophy Minor: 15 cr	
Phil 100, Introduction to Philosophy	3
Upper division courses.....	6
Additional Phil courses.....	6

Physical Education (PE) Minor

Patty Hacker
Department of Health, Physical Education and Recreation
Physical Education Center 269
605-688-5218
e-mail: patricia_hacker@sdstate.edu

All students interested in obtaining this minor must obtain written approval from the Physical Education Teacher Education (PETE) Coordinator. A minimum final grade of "C" is required in all courses taken in the minor.

Requirements for Physical Education Minor: 24 cr	
Hlth 250-250A, First Aid and Lab.....	2
HPER 252-252A, Motor Learning and Development and Lab	2
PE 352, Adapted Physical Education.....	2
PE 360-360A, Methods of Elementary School Physical Education and Lab	2
PE 461-461A, Methods of Teaching Physical Education and Lab	3

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

Eight hours from the following courses:	
Danc 241-241A, Creative Movement for Children and Lab	2
HPER 180, Introduction to HPER	3
HPER 440, Organization and Administration of HPER	2
HPER 451-451A, Tests and Measurements in HPER and Lab	2
PE 241, Curriculum in Physical Education	2
PE 321-321A, Water Safety Instructor and Lab	2
PE 350, Exercise Physiology	3
PE 353, Biomechanics	3
Recr 342, Recreation Sports Programming/ Administration	2

Physics (Phys) Major and Minor

Oren Quist

Department of Physics

Crothers Engineering Hall 314

605-688-5428

website: www.engineering.sdstate.edu/~physics/physics.htm

Requirements for Physics Major – College of Engineering Bachelor of Science in Physics Professional Physics Emphasis

Freshman Year	F	S
Chem 112-112L*, General Chemistry I and Lab	4	3
Chem 114*, General Chemistry II	1	3
GE 121, Engineering Design Graphics I	1	1
GE 122, Engineering Design Graphics II or GE 123, Computer Aided Drawing	1	1
Engl 101*, Composition I	3	4
Math 123*, Calculus I	4	4
Math 224, Calculus II	4	4
Phys 211-212**, University Physics I and Lab	3	3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	3
Gen Ed: Social Science*, pp. 35-37, (G)	3	3

Sophomore Year	F	S
CSc 150, CSc 213, CSc 218 (a programming language)	3	3
EE 220, Circuits I	3	3
EE 221, Circuits II	1	1
EE 222, Circuits I Laboratory	1	1
EE 223, Circuits II Laboratory	3	3
Engl 201*, Composition II or Engl 379, Technical Communications	4	3
Math 225, Calculus III	3	3
Math 321, Differential Equations	4	4
Phys 213-214, University Physics II and Lab	3	3
Gen Ed: Humanities and Arts*, pp. 35-37	3	3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	3
Gen Ed: Social Science*, pp. 35-37	3	3

Junior Year	F	S
Math 331, Advanced Engineering Mathematics or Math 327, Calculus of Several Variables	3	3
Phys 312, Measurement Theory and Experiment Design	2	2
Phys 314, Advanced Laboratory I	1	1
Phys 331, Introduction to Modern Physics	3	3
Phys 341, Elementary Thermodynamics	2	2
Phys 343, Intro to Statistical Physics	2	2
Phys 351, Classical Mechanics	4	4
Phys 361, Optics	3	3

SDSU Core: Goal 1**, Wellness, p. 39	2	2
SDSU Core: Goal 2**, Human Community, p. 39	2	2
SDSU Core: Goal 3**, Human Spirit, p. 40	2	2
Technical Electives†	3	4
Senior Year	F	S
Phys 412, Advanced Lab II	1	1
Phys 421, Electromagnetism	4	4
Phys 435, Introduction to Nuclear Engineering or Phys 439, Physics of the Solid State	3	3
Phys 471, Quantum Mechanics	4	4
Phys 490, Physics Colloquium	1	1
SDSU Core: Goal 5**, Stewardship, p. 41	2	2
Technical Electives†	12	5

† Technical electives will be selected with the assistance of the student's adviser from courses offered by the Biology, Chemistry, Computer Science, Electrical Engineering, Mathematics, and Physics Departments. A complete list of departmental 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.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Physics Major Bachelor of Science in Physics Flexible Emphasis

The Flexible Emphasis Physics Major is designed to allow students the freedom to achieve significant preparation in an area that will complement physics. The resulting physics major will have an emphasis in an area such as: business, biophysics, geophysics, information systems, mass communications, medical physics, or statistical process control. A student is advised to work closely with an adviser as emphasis courses are chosen.

Freshman Year	F	S
Chem 112-112L*, General Chemistry I and Lab or Chem 106-106L, Chemistry Survey and Lab	4	4
Chem 114*, General Chemistry II or Chem 120, Elementary Organic Chemistry	3	3
Engl 101*, Composition I	3	3
Math 123*, Calculus I	4	4
SpCm 101-101A*, Fundamentals of Speech and Lab	3	3
Gen Ed: Social Science*, pp. 35-37, (G)	3	3
Gen Ed: Humanities and Arts*, pp. 35-37	3	3
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	2
Directed Electives††	3	3

Sophomore Year	F	S
CSc 150, CSc 213, CSc 218, (a programming language)	3	3
Engl 201*, Composition II or Engl 379, Technical Communication	3	3
Math 224, Calculus II	4	4
Math 225, Calculus III	4	4

Phys 211-212**, University Physics I and Lab or Phys 111-112, Introduction to Physics I and Lab	4	
Phys 213-214, University Physics II and lab or Phys 113-114, Introduction to Physics II and Lab	4	
Gen Ed: Social Science*, pp. 35-37.....	3	
Directed Electives††.....	6	2
Junior Year	F	S
Math 321, Differential Equations.....	3	
Phys 312, Measurement Theory and Experiment Design.....	2	
Phys 331, Introduction to Modern Physics	3	
SDSU Core: Goal 2**, Human Community, p. 39.....	2	
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	
Physics Electives	5	
Directed Electives††.....	3	12
Senior Year	F	S
Phys 351, Classical Mechanics or Phys 471, Quantum Mechanics or Phys 421, Electromagnetism.....	4	4
Phys 490, Physics Colloquium.....	1	1
SDSU Core: Goal 5**, Stewardship, p. 41	2	2
Physics Electives	5	5
Technical Electives†	10	10

† Technical electives will be selected with the assistance of the student's adviser from courses offered by the Biology, Chemistry, Computer Science, Electrical Engineering, Mathematics, and Physics Departments. A complete list of departmental 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.

†† The Flexible Emphasis Physics Major is designed to allow the students the freedom to achieve significant preparation in an area that will complement physics. The resulting physics major will have an emphasis in an area such as: business, biophysics, geophysics, information systems, mass communications, medical physics, or statistical process control. A student is advised to work closely with an adviser as emphasis courses are chosen.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Physics Major
Bachelor of Science in Physics
Science Teaching Specialization**

Freshman Year	F	S
Bio 101-102, Biology Survey I and Lab or Bio 151-152, General Biology I and Lab	3-4	
Bio 103-104, Biology Survey II and Lab or Bio 153-154, General Biology II and Lab.....	3-4	
Chem 112-112L*, General Chemistry I and Lab or Chem 106-106L, Chemistry Survey and Lab	4	
Chem 114*, General Chemistry II or Chem 120, Elementary Organic Chemistry	3	
Engl 101*, Composition I	3	
Math 123*, Calculus I.....	5	
Psyc 101*, Introduction to Psychology or Soc 100, Introduction to Sociology	3	
SpCm 101-101A*, Fundamentals of Speech and Lab	3	

Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3
Gen Ed: Social Science*, pp. 35-37, (G).....	3

Sophomore Year	F	S
CSc 150, CSc 213, CSc 218 (a programming language).....	3	
EdFn 338, Foundations of American Education	2	
EdFn 375, Human Relations	3	
Engl 201*, Composition II.....	3	
Math 224, Calculus II.....	4	
Math 225, Calculus III	4	
Phil 200*, Introduction to Logic	3	
Phys 185, Introduction to Astronomy	3	
Phys 211-212**, University Physics I and Lab or Phys 111-112, Introduction to Physics I and Lab	4	
Phys 213-214, University Physics II and Lab or Phys 113-114, Introduction to Physics II and Lab	4	
SeEd 287, Practicum and Professional Lab	2	

Junior Year	F	S
EdFn 365, Integrating Computers into the Curriculum	2	
EPsy 402, Educational and Adolescent Psychology	3	
GE 231**, Technology and Society	3	
Math 321, Differential Equations	3	
Phys 312, Measurement Theory and Experiment Design	2	
Phys 331, Introduction to Modern Physics	3	
SeEd 314, Supervised Clinical/Field Experience	1	
SeEd 413, 7-12 Science Methods	3	
SeEd 450, Teaching of Reading	3	
SDSU Core: Goal 1**, Wellness, p. 39	2	
SDSU Core: Goal 3**, Human Spirit, p. 40	2	
Physics Electives	4	3

Senior Year	F	S
Anth 421**, Indians of North America.....	3	3
Phys 351, Classical Mechanics or Phys 421, Electromagnetism or Phys 471, Quantum Mechanics.....	4	4
Phys 490, Physics Colloquium.....	1	1
SeEd 400, Curriculum and Instruction in Secondary Schools	3	3
SeEd 410, Social Foundations, Management and Law.....	2	2
SeEd 420, Teaching Special Needs Students	1	1
SeEd 488, Supervised Teaching Internship.....	8	8
Chemistry Electives (numbered 300 or greater)	4	4

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Physics Minor: 17 cr

Phys 111-112-113-114, Introduction to Physics I-II and Labs or Phys 211-212-213-214, University Physics I-II and Labs.....	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
 e-mail: roger_sandness@sdstate.edu

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
 e-mail: robert_burns@sdstate.edu

Requirements for Political Science Major

Bachelor of Arts or Bachelor of Science in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
PolS 100*, American Government or PolS 101*, American Government Honors.....	3	
PolS 100 or 200 level elective recommend PolS 165, (G) or PolS 253, (G)		3
SpCm 101-101A*, Fundamentals of Speech and Lab or approved Gen Ed alternative.....	3	or 3
Modern Language* 101 and 102 (B.A. only)	4	4
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37 (Physical Science: Chem, Geog, Phys, or PS) (B.S. Only).....	4	4
Gen Ed: Natural Science*, pp. 35-37 (B.A. Only)	3	3
Gen Ed: Social Science*, pp. 35-37 (Not PolS)	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year	F	S
Engl 201*, Composition II	3	or 3
PolS 100-200 level electives recommend PolS 165, (G) or PolS 253, (G)	3	3
Modern Language 201 and 202 (B.A. only)	3	3
Gen Ed: Humanities and Arts*, pp. 35-37	3	3
SDSU Core: Goal 4**, Science and Sci Methods, p. 41 (Biological Science: Bio, Bot, Micr, NFSH, WL) (B.S. Only)†	3	3
SDSU Core: Goal 4**, Science and Sci Methods, p. 41 (B.A. Only)†.....	2	or 2
Electives (consider Education emphasis, Second Major, or Minor).....	3	3

Junior Year	F	S
PolS 300-400 level†	6-12	6-9
SDSU Core: Goal 2**, Human Community, p. 39 (B.A. and B.S.) (Not PolS)	3	3
SDSU Core: Goal 3**, Human Spirit, p. 40 (B.S. Only)	3	3
Electives (consider Education emphasis, Second Major, or Minor)	3-9	3-9

Senior Year	F	S
PolS 300-400 level	6-12	6-9
SDSU Core: Goal 5**, Stewardship, p. 41	2-3	or 2-3
Electives 100-400 level (consider Education emphasis, Second Major or Minor)	0-9	6-16

Students must complete at least one political science course that has been designated as an information technology literacy course. Consult with your major adviser for course titles.

† The B.S. in Arts and Science requires six credits of biological science and eight credits of physical science. Six of the combined 14 credits must be from the Gen Ed, pp. 35-37 listing and two credits must be from SDSU Core: Goal 4, p. 41 listing. The BA in Arts and Science requires a total of eight credits of natural science. Six credits must be from Gen Ed Natural Science, pp. 35-37 listing and two credits must be from the SDSU Core: Goal 4, p. 41 listing.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

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.

Psychology (Psyc)

Major and Minor

Virginia Norris
 Department of Psychology
 Scobey Hall 336
 605-688-4322
 e-mail: virginia_norris@sdstate.edu

Requirements for Psychology Major – Psychological Services

Specialization

Bachelor of Science in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Math 102*, College Algebra	3	or 3
Psyc 102*, Introduction to Psychology.....	4	
Psyc 202, Advanced General Psychology		3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	4	4
Gen Ed: Social Science*, pp. 35-37 (Not Psyc)	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Electives (as needed)		

Sophomore Year		F	S
Engl 201*, Composition II	3	or	3
Psyc 291, Critical Thinking in Psychology or Psyc 292, Pseudoscience and Psychology	3	or	3
Psyc 362, Theories of Personality	3		3
Psyc 411, Physiological Psychology	3		3
Psyc 414, Drugs and Behavior	3		3
Stat 281, Introduction to Statistics	3		3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or	3
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	3		3
SDSU Core: Goal 2**, Human Community, p. 39 (Not Psyc)	3	or	3
Electives (as needed)			

Junior Year		F	S
Psyc 305, Simple Learning and Conditioning	3		3
Psyc 315, Research Methods in Psychology	3		3
Psyc 358, Behavior Modification	3		3
Psyc 390, Psychology Seminar	1		1
Psyc 441, Social Psychology	3		3
Psyc 451, Abnormal Behavior	3	or	3
SDSU Core: Goal 5**, Stewardship, p. 41	2	or	2
SDSU Core: Goal 3**, Human Spirit, p. 40	2-3	or	2-3
Electives (as needed)			

Senior Year		F	S
Psyc 356, Psychological Assessment	3		3
Psyc 357, Psychological Therapies	3		3
Psyc 494, Internship (6 credits required)	3		3
Electives (as needed)			

The Psychology Department's "Informational Technology Literacy" requirement is met by successfully completing Psyc 315 and Psyc 490.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Psychology Major – Preprofessional Specialization Bachelor of Science in Arts and Science

Freshman Year		F	S
Engl 101*, Composition I	3	or	3
Math 102*, College Algebra	3	or	3
Psyc 102*, Introduction to Psychology	4		4
Psyc 202, Advanced General Psychology	3		3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or	3
Gen Ed: Natural Science*, pp. 35-37	4		4
Gen Ed: Social Science*, pp. 35-37 (Not Psyc)	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
Electives (as needed)			

Sophomore Year		F	S
Engl 201*, Composition II	3	or	3
Psyc 291, Critical Thinking in Psychology or Psyc 292, Pseudoscience and Psychology	3	or	3
Psyc 301, Sensation and Perception	3		3
Psyc 362, Theories of Personality	3		3
Psyc 411, Physiological Psychology	3		3
Stat 281, Introduction to Statistics	3		3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or	3
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	3		3
SDSU Core: Goal 2**, Human Community, p. 39 (Not Psyc)	3	or	3
Electives (as needed)			

Junior Year		F	S
Psyc 302, Psychological Investigations	3		3
Psyc 308, Psychological Investigations Lab	1		1
Psyc 303, Experiments in Psychology	3		3
Psyc 305, Simple Learning and Conditioning	3		3
Psyc 306, Human Learning and Cognitive Behavior	3		3
Psyc 309, Experiments in Psychology Lab	1		1
Psyc 390, Psychology Seminar	1		1
SDSU Core: Goal 5**, Stewardship, p. 41	2	or	2
SDSU Core: Goal 3**, Human Spirit, p. 40	2-3	or	2-3
Electives (as needed)			

Senior Year		F	S
Psyc 409, History and Systems of Psychology	3		3
Psyc 441, Social Psychology	3		3
Psyc 451, Abnormal Behavior	3	or	3
Psyc 491, Problems in Psychology	1-3	or	1-3
Electives (as needed)			

The Psychology Department's "Informational Technology Literacy" requirement is met by successfully completing Psyc 302 and Psyc 490.

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Psychology Major – Applied Specialization Bachelor of Science in Arts and Science

Freshman Year		F	S
Engl 101*, Composition I	3	or	3
Math 102*, College Algebra	3	or	3
Psyc 102*, Introduction to Psychology	4		4
Psychology elective	3		3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or	3
Gen Ed: Natural Science*, pp. 35-37	4		4
Gen Ed: Social Science*, pp. 35-37 (Not Psyc)	3	or	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or	2
Electives (as needed)			

Sophomore Year	F	S
Engl 201*, Composition II	3	or 3
Psyc 291, Critical Thinking in Psychology or		
Psyc 292, Pseudoscience and Psychology	3	or 3
Stat 281, Introduction to Statistics	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39 (not Psyc)	3	or 3
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	3	
Psychology Electives	3	
Electives (as needed)		

Junior Year	F	S
Psyc 315, Research Methods in Psychology	3	or 3
Psyc 390, Psychology Seminar		1
SDSU Core: Goal 3**, Human Spirit, p. 40	2-3	or 2-3
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Psychology Electives	3	
Electives (as needed)		

Senior Year	F	S
Psychology Electives	3	4
Electives (as needed)		

The Psychology Department's "Informational Technology Literacy" requirement is met by successfully completing Psyc 315 and Psyc 490.

* The 30 credit Board of Regents **System General Education** requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Psychology Major – Teaching Specialization Bachelor of Science in Arts and Science

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Math 102*, College Algebra	3	or 3
Psyc 102*, Introduction to Psychology	4	
Psyc 202, Advanced General Psychology		3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
Gen Ed: Natural Science*, pp. 35-37	4	4
Gen Ed: Social Science*, pp. 35-37 (Not Psyc)	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Electives (as needed)		

Sophomore Year	F	S
EdFn 365, Integrating Computers into the Curriculum	2	or 2
Engl 201*, Composition II	3	or 3
Hist 368, History of the American Indians or Anth 421, Indians of North America	3	or 3
Psyc 362, Theories of Personality		3
SeEd 412, Methods of Teaching Social Studies	3	or 3
Stat 281, Introduction to Statistics	3	
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39 (Not Psyc)	3	or 3
SDSU Core: Goal 4**, Science and Sci Methods, p. 41	3	3

PS I, Professional Semester 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
Psyc 291, Critical Thinking in Psychology or		
Psyc 292, Pseudoscience and Psychology	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
Psyc 390, Psychology Seminar		1
Psyc 411, Physiological Psychology	3	
SDSU Core: Goal 3**, Human Spirit, p. 40	2-3	or 2-3
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Electives (as needed)		

PS II, Professional Semester II (the following courses to be taken concurrently):		
EPsy 402, Educational and Adolescent Psychology	3	or 3
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 491, Problems in Psychology	1-3	or 1-3
Electives (as needed)		

PS III, Professional Semester 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		8

The Psychology Department's "Informational Technology Literacy" requirement is met by successfully completing Psyc 315 and Psyc 490.

* The 30 credit Board of Regents **System General Education** requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Psychology Minor: 18 cr

Psyc 101, General Psychology or	
Psyc 102, Introduction to Psychology	3 or 4
Psyc 202, Advanced General Psychology	3
300-400 level courses	11-12

Public Recreation (Recr)

Major and Minor

Greg Place

Department of Health, Physical Education and Recreation

Physical Education Center 267

605-688-6163

e-mail: greg_place@sdstate.edu

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 in the major.

Requirements for Public Recreation Major

Bachelor of Science in Arts and Science

Freshman Year

	F	S
CSc 105, Introduction to Computers or		
CSc 312, Advanced Microcomputer Applications.....3	or	3
Engl 101*, Composition I.....3	or	3
HDFS 141, Individual and the Family.....2	or	2
HPER 180, Introduction to HPER.....1	or	1
Math 102*, College Algebra or		
Math 104, Finite Mathematics.....3	or	3
Recr 260, Recreation Leadership.....		3
SpCm 101-101A*, Fundamentals of Speech and Lab.....3	or	3
Gen Ed: Social Science*, pp. 35-37.....3	or	3
Gen Ed Natural Science*, pp. 35-37.....3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37.....3	or	3
SDSU Core: Goal 1**, Wellness, p. 39.....2	or	2

Sophomore Year

	F	S
Danc 130, Dance Fundamentals.....1		
Econ 201**, Microeconomics Principles or		
Econ 202, Macroeconomics Principles.....3	or	3
Engl 201*, Composition II.....3	or	3
NFSH 221, Survey of Nutrition.....3	or	3
PE 320, Lifeguard Training.....2	or	2
PR 101, Parks and Society.....3		
Psyc 101*, General Psychology or		
Psyc 102, Introduction to Psychology.....3	or	3
Recr 342, Recreation Sports Programming and		
Administration.....2		
Soc 100**, Introduction to Sociology.....3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37.....3	or	3
Gen Ed: Natural Science*, pp. 35-37.....4	or	4

Junior Year

	F	S
BAdm 350, Legal Environment of Business and Contracts...3	or	3
Engl 201, Composition II.....3	or	3
Hlth 250-250A, First Aid and Lab.....2	or	2
Hlth/Hsc 443 or		
WL 110**, Environmental Conservation.....2-3	or	2-3
Recr 330, Therapeutic Recreation.....3		
Recr 395, Practicum in Recreation.....1-3	or	1-3

Recr 440, Administration of Leisure Services.....		3
SpCm 215, Public Speaking or		
SpCm 201, Interpersonal Communications or		
SpCm 340, Oral Interpretation.....3	or	3
Suggested Electives		

Senior Year

	F	S
BAdm 360, Organization and Management.....3	or	3
Econ 370, Marketing or		
MCom 313, Publicity Methods.....2-3	or	2-3
PE 111, Canoeing/Hiking or		
PE 110, Camping Skills.....1		
PolS 210, State and Local Government or		
HDFS 210, Lifespan Development.....3	or	3
Recr 350, Recreational Facilities and Area Design.....3		
Recr 414, Current Issues in Recreation.....		3
Recr 494, Recreation Internship.....8-12		8-12
Suggested Electives		

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Public Recreation Minor: 21 cr

HPER 180, Introduction to HPER.....1	
PR 101, Parks and Society.....3	
Recr 260, Recreation Leadership.....3	
Take two of the following three:	
Recr 330, Therapeutic Recreation or	
Recr 350, Recreational Facilities and Area Design or	
Recr 342, Recreational Sports Programming	
and Administration.....5-6	
Recr 440, Administration of Leisure Services.....3	

Students in the recreation minor will be counseled in selecting six to seven additional semester hours of coursework from the suggested elective list.

Range Science (Rang)

Major and Minor

Don Boggs

Department of Animal and Range Sciences

Animal Science Complex 103A

605-688-5166

e-mail: donald_boggs@sdstate.edu

Requirements for Range Science Major

Bachelor of Science in Agriculture

	F	S
Bio-101-102*, Biology Survey I and Lab.....3		
Bio 103-104*, Biology Survey II and Lab or		
Bot 201-202*, General Botany and Lab.....		3

Chem 106-106L Chemistry Survey and Lab or Chem 112-112L, General Chemistry I and Lab	4		
Engl 101*, Composition I	3	or	3
GS 143, Mastering Lifetime Learning or Wel 100, Skills for Healthy Living	2	or	2
Math 102*, College Algebra	3	or	3
Rang 205-205A**, Introduction to Range Management and Lab.....	3		
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or	3
Gen Ed: Social Science*, p. 35 (G)	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or	3
Electives and Specialization courses.....	0-4		0-4

Sophomore Year

	F		S
Econ 201*, Microeconomics Principles or Econ 202*, Macroeconomics Principles.....	3	or	3
Engl 201*, Composition II.....	3	or	3
Phys 101-102, Survey of Physics and Lab or Micro 231-232, Microbiology and Lab or Chem 361-361L, Biochemistry and Lab.....	4	or	4
PS 213-213A Soils and Lab	3	or	3
Gen Ed: Humanities and Arts*, pp. 35-37	3	or	3
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or	2
Communications Elective†	3	or	3
Electives and Specialization courses.....	0-11		0-11

Junior Year

	F		S
Stat 281**, Introduction to Statistics	3	or	3
Rang 415, Rangeland Improvements and Plant- Herbivore Interactions.....	3		
SDSU Core: Goal 3**, Human Spirit, p. 40.....	2	or	2
Electives and Specialization Courses.....	10-16		10-16

Senior Year

	F		S
Capstone Course††			3
Senior Seminar†††	1	or	1
Electives and Specialization Courses.....	15-16		12-13

† For Range Livestock Production, take SpCm 201. For Rangeland Resource Conservation, select from SpCm 201, SpCm 215, or Engl 379. For Rangeland Ecology and Habitat Management, take Engl 379.

†† For Range Livestock Production, take Rang 485-485A. For other specializations, take ABS 475-475A or other capstone course as approved.

††† For Range Livestock Production, take AS 490. For Rangeland Resource Conservation, take AS 490 or other seminar as approved. For Rangeland Ecology and Habitat Management, take AS 490, Bio 490, or PS 490 or other seminar as approved.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Rangeland Resource Conservation Specialization

AgEc 271-271A, Farm and Ranch Management and Lab.....	4
AS 101-101A, Introduction to Animal Science and Lab.....	3
AS 233-233A, Applied Animal Nutrition and Lab.....	4
AS 474-474A, Beef Cattle Production and Lab or AS 477-477A, Sheep and Wool Production and Lab.....	3
Bot 301-301A, Plant Systematics and Lab or Bot 305-305A, Agrostology and Lab.....	3-4
Bot 327-327A, Plant Physiology and Lab or Bot 421-421A, Plant Anatomy and Lab.....	3-4
PS 310-310A, Soil Geography and Land Use Interpretation and Studio or PS 446, Agroecology.....	3-4
Rang 210-210A, Range Plant Identification and Lab.....	2
Rang 215, Introduction to Integrated Ranch Management.....	3
Rang 321, Wildland Ecosystems.....	3

Communications Electives

Select 1 course not selected above:

Engl 379, Technical Communications	3
SpCm 201, Interpersonal Communications.....	3
SpCm 215, Advanced Public Speaking	3

Ecology Electives

Select 1 course from the following:

Bot 415-415A, Plant Ecology and Lab	4
EnvM 425-425A, Disturbance Ecology and Lab	4
La 440-440A, Restoration Ecology and Lab.....	4

Geography Electives

Select 1 course from the following:

Geog 365, Land Use Planning.....	3
Geog 484, Remote Sensing	3
Geog 487, Geographic Information Systems I.....	3
La 231, Introduction to LandCAAD	3

Natural Resource Management Electives

Select 5 credits from the following:

PR 202-202A, Outdoor Recreation Resource Management and Lab	3
PR 300-300A, Park Operations and Facility Management and Lab	3
PR 303, Forest Ecology and Management	3
PR 401-401A, Advanced Farm Management and Lab.....	3
PS 313-313A, Forage Crops and Pasture Management and Lab	3
PS 362-362A, Environmental Soil Management and Lab	3
WL 220, Introduction to Wildlife and Fisheries Management	3
WL 411-411A, Principles of Wildlife Management and Lab	4
WL 412-412A, Principles of Fisheries Management and Lab	3

Range Science Electives

Select 2 courses from the following:

Rang 325-325A, Measurement Topics: Natural Resource Measurements and Lab.....	3
Rang 325-325A, Measurement Topics: Rangeland Analysis and Monitoring and Lab.....	3
Rang 421-421A, Grassland Fire Ecology and Lab	3
General Electives	8-12

Range Livestock Production Specialization

AgEc 271-271A, Farm and Ranch Management and Lab.....	4
AgEc 354, Agricultural Marketing and Prices.....	3
AgEc 421, Farming and Food Systems Economics.....	3
AS 101-101A, Introduction to Animal Science and Lab.....	3
AS 233-233A, Applied Animal Nutrition and Lab.....	4
AS 433-433A, Livestock Reproduction and Lab.....	3
Econ 201**, Microeconomics Principles or Econ 202**, Macroeconomics Principles (choose course not taken as Gen Ed requirement).....	3
Rang 210-210A, Range Plant Identification and Lab.....	2
Rang 215, Introduction to Integrated Range Management.....	3
Rang 325-325A, Measurement Topics: Rangeland Analysis and Monitoring and Lab.....	3

Animal Science Electives

Select 2 courses from the following:

AS 332-332A, Principles of Animal Breeding and Lab.....	4
AS 365-365A, Horse Production and Lab.....	3
AS 474-474A, Beef Cattle Production and Lab.....	3
AS 477-477A, Sheep and Wool Production and Lab.....	3

Business Electives

Select 2 courses from the following:

AgEc 352, Agricultural Law.....	3
AgEc 478-478A, Agricultural Finance and Lab.....	3
AgEc 479, Agricultural Policy.....	3
BAdm 360, Organization and Management.....	3
BAdm 380, Personal Finance.....	3
Econ 472, Resource and Environmental Economics.....	3

Plant Science Electives

Select 1 course from the following:

PS 313-313A, Forage Crops and Pasture Management and Lab.....	3
PS 343-343A, Weed Science and Lab.....	3
PS 421-421A, Soil Microbiology and Lab.....	3
PS 475, Water Quality in Agriculture.....	3

Support Courses

Select 2 courses from the following:

Acct 210, Principles of Accounting I.....	3
AS 241, Meat: Production to Consumption.....	3
AS 285-285A, Livestock Evaluation and Monitoring and Lab.....	4
AS 332-332A, Principles of Animal Breeding and Lab (if not selected above).....	4
AS 365-365A, Horse Production and Lab (if not selected above).....	3
AS 474-474A, Beef Cattle Production and Lab (if not selected above).....	3
AS 477-477A, Sheep and Wool Production and Lab (if not selected above).....	3
Bio 371, Genetics.....	3
CA 340, Work, Time and Energy Decisions.....	3
PolS 438, The Legislative Process.....	3
Rang 321, Wildland Ecosystems.....	3
Rang 325-325A, Measurement Topics: Natural Resource Measurements.....	3
Rang 421-421A, Grassland Fire Ecology and Lab.....	3
Vet 403, Animal Disease and Their Control.....	3
WL 220, Introduction to Wildlife and Fisheries Management.....	3
WL 411-411A, Principles of Wildlife Management and Lab.....	4
WL 412-412A, Principles of Fisheries Management and Lab.....	3

WL 415-415A, Upland Game Ecology and Management and Lab.....	3
WL 430-430A, Human Dimensions in Wildlife and Fisheries.....	3
Business Courses not selected above.....	3-6
Plant Science Electives not selected above.....	3-6
General Electives.....	10-13

Rangeland Ecology and Habitat Management Specialization

Bot 301-301A, Plants Systematics and Lab or Bot 305-305A, Agrostology and Lab.....	3-4
Bot 415-415A, Plant Ecology and Lab.....	4
Rang 321, Wildland Ecosystems.....	3
Rang 325-325A, Measurement Topics: Natural Resource Measurements and Lab.....	3
Rang 421-421A, Grassland Fire Ecology and Lab.....	3
WL 220, Introduction to Wildlife and Fisheries.....	3
WL 411-411A, Principles of Wildlife Management and Lab.....	4

Group I Electives

Select 6 credits from approved list, p. 54.

Communication Elective

Select 1 course from the following:

SpCm 201, Interpersonal Communications.....	3
SpCm 215, Advanced Public Speaking.....	3

Environmental Electives

Select 1 course from the following:

Bio 311, Principles of Ecology.....	3
EnvM 275, Introduction to Environmental Science.....	3
WL 430-430A, Human Dimensions in Wildlife and Fisheries and Lab.....	3

Select 2 courses from the following:

EnvM 425-425A, Disturbance Ecology and Lab.....	4
La 440-440A, Restoration Ecology and Lab.....	4
PS 446, Agroecology.....	3

Science Electives

Select 12 credits from the following:

Bio 373, Evolution.....	3
Bio 383, Bioethics.....	4
Bot 301-301A, Plant Systematics and Lab (if not selected above).....	4
Bot 305-305A, Agrostology and Lab (if not selected above).....	3
Bot 327-327A, Plant Physiology and Lab.....	4
Bot 421-421A, Plant Anatomy and Lab.....	3
Chem 380, Environmental Chemistry.....	4
La 560, Landscape Ecology.....	4
PS 243, Geology.....	3
PS 310-310A, Soil Geography and Land Use Interpretation and Lab.....	3
PS 313-313A, Forage Crops and Pasture Management and Lab.....	3
PS 343-343A, Weed Science and Lab.....	3
PS 362-362A, Environmental Soil Management and Lab.....	3
PS 421-421A, Soil Microbiology and Lab.....	3
PS 475, Water Quality in Agriculture.....	3
Rang 210-210A, Range Plant Identification and Lab.....	2
Rang 400, Range Judging.....	1
WL 230, Wildlife and Fisheries Techniques.....	3
WL 412-412A, Principles of Fisheries Management.....	3
WL 415-415A, Upland Game Ecology and Management and Lab.....	3

WL 417-417A, Large Animal Ecology and Management and Lab	3
WL 419-419A, Waterfowl Ecology and Management and Lab	3
Zool 301, Animal Behavior	3
General Electives	9-11

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
 e-mail: robert_burns@sdstate.edu

Requirements for Religion Minor: 15 cr

Rel 213, Introduction to Religion	3
Additional Religion Courses	12

Sociology (Soc) Major and Minor

Donna Hess
 Department of Rural Sociology
 Scobey Hall 224
 605-688-4132
 e-mail: donna_hess@sdstate.edu

Teaching Specialization majors confer with adviser in College of Education and Counseling for college requirements.

Requirements for Sociology Major – General Bachelor of Science in Arts and Science (B.S.) Bachelor of Arts in Arts and Science (B.A.)

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Soc 100*, Introduction to Sociology	3	
Soc 150*, Social Problems, (G) or Soc 240*, Sociology of Rural America, (G)		3
SpCm 101*, Fundamentals of Speech	3	or 3
Modern Language (B.A. only)	4	4
Gen Ed: Mathematics*, pp. 35-37	3	or 3
Gen Ed: Natural Science*, pp. 35-37 and Arts and Science requirements, pp. 56-57 (B.S. only)	4	4
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Soc/Anth Electives	3	3
Electives or SDSU Core courses, pp. 39-41	5	5

Sophomore Year	F	S
Anth 210*, Cultural Anthropology, (G)	3	or 3
Engl 201*, Composition II	3	or 3
Modern Language (B.A. only)	3	3
Gen Ed: Humanities and Arts*, pp. 35-37 (B.S. only)	3	3
Gen Ed: Natural Science*, pp. 35-37 and Arts and Science requirements, pp. 56-57	3	3
SDSU Core: Goal 2**, Human Community, p. 39 (outside major) and Arts and Science requirements, pp. 56-57	3	or 3

SDSU Core: Goal 3**, Human Spirit, p. 40 (B.S. only) ...	2-3	or 2-3
SDSU Core: Goal 3**, Human Spirit, p. 40 (outside Modern Language) (B.A. only)	3	or 3
Soc/Anth Electives	3	3
Electives or SDSU Core courses, pp. 39-41, (B.S. only)	2	or 2

Junior Year	F	S
Anth 200**, Physical Anthropology	3	or 3
Soc 307, Research Methods I	3	
Soc 308, Research Methods II		3
SDSU Core: Goal 5**, Stewardship, p. 41	2-3	or 2-3
SDSU Core: Goal 3**, Human Spirit, p. 40 (outside Modern Language) (B.A. only)	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39 (outside major department)	3	or 3
Soc/Anth Electives	3	or 3
General Electives (B.A. only)	11	or 11
General Electives (B.S. only)	14	or 14

Senior Year	F	S
Soc 401, Sociological Theory	3	or 3
General Electives	14	15

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Sociology Major – Social Work (SDSU/USD Cooperative Program)

Bachelor of Science in Arts and Science (B.S.) Bachelor of Arts in Arts and Science (B.A.)	F	S
Freshman Year		
Engl 101*, Composition I	3	or 3
Modern Language (B.A. only)	4	4
Soc 100*, Introduction to Sociology	3	
Soc 150*, Social Problems, (G) or Soc 240*, Sociology of Rural America, (G)		3
Soc 270, Introduction to Social Work		3
SpCm 101*, Fundamentals of Speech	3	or 3
Gen Ed: Mathematics*, pp. 35-37	3	or 3
Gen Ed: Natural Science*, pp. 35-37 and Arts and Science requirements, pp. 56-57 (B.S. only)	4	4
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Electives or SDSU Core courses, pp. 39-41	5	5

Sophomore Year	F	S
Anth 210*, Cultural Anthropology, (G)	3	or 3
Engl 201*, Composition II	3	or 3
Engl 210*, Introduction to Literature	3	or 3
Modern Language (B.A. only)	3	3
Gen Ed: Humanities and Arts*, pp. 35-37 (B.S. only)	3	or 3
Gen Ed: Natural Science*, pp. 35-37 and Arts and Science requirements, pp. 56-57	3	3

SDSU Core: Goal 2**, Human Community, p. 39 (outside major) and Arts and Science requirements, pp. 56-57	3	or	3
SDSU Core: Goal 3**, Human Spirit, p. 40 (B.S. only).....	2-3	or	2-3
Soc/Anth Electives	3		3
Electives or SDSU Core courses, pp. 39-41 (B.S. only).....	2	or	2

Junior Year (First Semester Only)	F	S
Anth 200**, Physical Anthropology	3	
Soc 370, Social Policy.....	3	
Arts and Science Humanities requirements, pp. 56-57 (outside Modern Language, B.A. only)	3	
Arts and Science Social Science requirements, pp. 56-57 (outside major department)	3	
Soc/Anth Electives	6	
General Elective	3	
Upon acceptance to the Social Work program, transfer to University of South Dakota Program for second semester and senior year.		

Senior Year

Enrolled in USD Program

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Sociology Major – Human Services

Bachelor of Science in Arts and Science (B.S.)

Bachelor of Arts in Arts and Science (B.A.)

Freshman Year	F	S
Engl 101*, Composition I	3	or 3
Soc 100*, Introduction to Sociology.....	3	or 3
Soc 150*, Social Problems, (G) or Soc 240*, Sociology of Rural America, (G).....	3	3
SpCm 101*, Fundamentals of Speech	3	or 3
Modern Language (B.A. only)	4	4
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37 and Arts and Science requirements, pp. 56-57 (B.S. only).....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Soc/Anth Elective	3	3
Electives or SDSU Core courses, pp. 39-41	5	5

Sophomore Year

F	S
Anth 210*, Cultural Anthropology, (G)	3 or 3
Engl 201*, Composition II	3 or 3
Soc 270, Introduction to Social Work	3
Modern Language (B.A. only)	3
Gen Ed: Humanities and Arts*, pp. 35-37 (B.S. only)	3
Gen Ed: Natural Science*, pp. 35-37 and Arts and Science requirements, pp. 56-57	3
SDSU Core: Goal 2**, Human Community, p. 39 (outside major) and Arts and Science requirements, pp. 56-57	3 or 3
SDSU Core: Goal 3**, Human Spirit, p. 40 (B.S. only).....	2-3 or 2-3

SDSU Core: Goal 3**, Human Spirit, p. 40 (outside Modern Language) (B.A. only)	3	or	3
Soc/Anth Elective	3	or	3
Electives or SDSU Core courses, pp. 39-41 (B.S. only).....	2	or	2

Junior Year

F	S
Anth 200**, Physical Anthropology	3 or 3
Soc 307, Research Methods I.....	3
Soc 308, Research Methods II	3
Soc 370, Social Policy.....	3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3 or 2-3
SDSU Core: Goal 3**, Human Spirit, p. 40 (outside Modern Language) (B.A. only)	3 or 3
SDSU Core: Goal 2**, Human Community, p. 39 (outside major department)	3 or 3
General Electives (B.A. only)	11 or 11
General Electives (B.S. only)	14 or 14

Senior Year

F	S
Soc 401, Sociological Theory	3 or 3
Soc 471, Social Work Skills and Methods I.....	3
Soc 494, Internship in Sociology (often taken during summer)	12 or 12
General Electives.....	7 7

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Sociology Major – Human Resources

Bachelor of Science in Arts and Science (B.S.)

Bachelor of Arts in Arts and Science (B.A.)

F	S
Freshman Year	
Engl 101*, Composition I	3 or 3
Soc 100*, Introduction to Sociology.....	3
Soc 150*, Social Problems, (G) or Soc 240*, Sociology of Rural America, (G).....	3
SpCm 101*, Fundamentals of Speech	3 or 3
Modern Language (B.A. only)	4
Gen Ed: Mathematics*, pp. 35-37.....	3 or 3
Gen Ed: Natural Science*, pp. 35-37 and Arts and Science requirements, pp. 56-57 (B.S. only).....	4
SDSU Core: Goal 1**, Wellness, p. 39	2 or 2
Soc/Anth Elective	3
Electives or SDSU Core courses, pp. 39-41	5

Sophomore Year

F	S
Acct 210, Principles of Accounting I.....	3
Anth 210*, Cultural Anthropology, (G)	3 or 3
Engl 201*, Composition II	3 or 3
Modern Language (B.A. only)	3
Gen Ed: Humanities and Arts*, pp. 35-37 (B.S. only)	3
Gen Ed: Natural Science*, pp. 35-37 and Arts and Science requirements, pp. 56-57	3
SDSU Core: Goal 2**, Human Community, p. 39 (outside major) and Arts and Science requirements, pp. 56-57	3 or 3

SDSU Core: Goal 3**, Human Spirit, p. 40 (B.S. only).....	3	or	3
SDSU Core: Goal 3**, Human Spirit, p. 40 (outside Modern Language) (B.A. only)	3	or	3
Soc/Anth Elective.....			3
Electives or SDSU Core courses, pp. 39-41 (B.S. only).....	2	or	2

Junior Year

	F		S
Anth 200**, Physical Anthropology	3	or	3
Soc 307, Research Methods I.....	3		
Soc 308, Research Methods II			3
Soc 353, Sociology of Work.....	3		
Soc 453, Industrial Sociology			3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or	2-3
SDSU Core: Goal 3**, Human Spirit, p. 40 (outside Modern Language) (B.A. only)	3	or	3
SDSU Core: Goal 2**, Human Community, p. 39 (outside major)	3	or	3
BAdm/Econ Elective	3		
General Electives (B.A. only)	5	or	5
General Electives (B.S. only)	8	or	8

Senior Year

	F		S
Soc 401, Sociological Theory	3	or	3
Soc 494, Internship in Sociology (strongly recommended; often taken during summer)	12	or	12
General Electives.....	2		3

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

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Requirements for Sociology Minor: 18 cr

Soc 100, Introduction to Sociology	3
300 level or above	6
Additional Soc or Anth credits.....	9

CJus minors may choose any major.

Spanish (Span) Major and Minor

Philip Baker
Department of Modern Languages
NFA 121
605-688-5101
Fax: 605-688-6699
e-mail: philip_baker@sdstate.edu

The major in Spanish requires a minimum of 36 credit hours in Spanish.† Spanish 101 does not count towards the major or minor. The coursework should include 101, 102, 201, 202, 311, 312, and 18 credit hours of upper-division (300-400) classes. Upper-division coursework 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.

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*, Composition I	3	or 3
Span 101-102†, Introductory Spanish I and II.....	4	and 4
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	or 3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
SDSU Core: Goal 3**, Human Spirit, p. 40 (not in Modern Language Department).....	3	or 3
Electives		

Sophomore Year

	F	S
Engl 201*, Composition II.....	3	or 3
Span 201-202, Intermediate Spanish I and II.....	3	and 3
Spanish Electives.....	4	4
Gen Ed: Social Science*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	3	3
SDSU Core: Goal 3**, Human Spirit, p. 40 (not in Modern Language Department).....	3	or 3
Electives		

Junior Year††

	F	S
Spanish coursework (300-400 level).....	3-6	and 3-6
SDSU Core: Goal 2**, Human Community, p. 39.....	2	or 2
SDSU Core: Goal 4**, Science and Science Methods, p. 41.....	2	or 2
SDSU Core: Goal 5**, Stewardship, p. 41	2	or 2
Electives		

Senior Year

	F	S
Spanish coursework (300-400 level).....	3-6	and 3-6
Electives		

NOTE: A minimum grade of "C" is required for a Spanish course to count towards the major or minor.

† Students who have a background in modern 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, with a grade of "C" or better, and the payment of the established fee to the Academic Evaluation and Assessment Office.

†† Junior year course selections, which fulfill the Institutional (SDSU) requirements, must be different from those taken to fulfill the General Education requirements.

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(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

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Requirements for Spanish Minor: 20 cr

Span 101-102, Introductory Spanish I and II	8
Span 201-202, Intermediate Spanish I and II	6
Span 300-400 level Electives	6

Teaching Minors

R. L. Erion, Acting

College of Education and Counseling

Wenona Hall 112, Box 507

605-688-4198

e-mail: ralph_erion@sdstate.edu

website: <http://learn/sdstate.edu/teachered/>

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 specialization in two of the three following subject areas:

- Geog 200, Geog 210 – Geography, elective.....9
- Hist 151, Hist 152 – U.S. History, elective8
- PolS 100, PolS 102, PolS 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, Econ 202 – Economics, elective
- Hist 121, Hist 122 – History of Western Civilization, elective
- Psyc 202 – Psychology, elective
- Soc 100, Soc 150 – Sociology elective

Language Arts Minor

- Engl 101-201, Composition I and II6
- MCom 210-210A, Newswriting and Reporting and Studio3
- SpCm 101-101A, Fundamentals of Speech and Lab.....3
- English electives.....7
- Journalism elective2
- Speech electives3

General Science Minor†

- Bio 101-102, 103-104, Biology Survey I and II and Labs6
- Chem 106-106L and 120-120L or 112-112L and 114-114L,
General Chemistry and Labs7
- Phys 101-102 and 185 or 111-112 and 113-114,
Introductory Physics7
- Electives4
- Any physical geography course:
ABE 353-353A, Physical Climatology and Meteorology and Lab
Bio 353, Introduction to Oceanography
PS 243-244, Geology and Lab
PS 305-305A, Insect Biology and Lab
WL 110, Environmental Conservation
Zool 221-222, Anatomy and Lab

Biological Science Minor†

- Bio 101-102, 103-104, Biology Survey I and II and Labs6
- Bio 311, Principles of Ecology3
- Bio 371-372, Genetics and Lab3
- Electives in Botany, Zoology, Biology, Microbiology,
or Wildlife9

Physical Science Minor†

- Chem 112-112L, 114-115, General Chemistry and Labs.....8
- Chem 120-120L, Elementary Organic Chemistry and Lab...3-4

- Phys 111-112, 113-114, Introduction to Physics I and II and
Labs.....8
- Phys 331, Introduction to Modern Physics3
- Physics elective1

7-12 Science Methods, SeEd 413, strongly recommended as an elective for all science teaching minors.

Those planning to teach should consult the dean of the college, college faculty members, and advisers in college major and minor departments early in the junior year for more detailed interpretation of these regulations.

† These teaching minors do not guarantee certification in the areas listed. Certification requirements are established by the South Dakota Department of Education and Cultural Affairs. Please contact the department head or certification officer to obtain the latest information regarding certification requirements.

(Pre-)Veterinary Science (Vet)

David Zeman

Department of Veterinary Science

Animal Disease Research 105, Box 2175

605-688-5172

e-mail: david_zeman@sdstate.edu

Suggested Pre-Veterinary Medicine Plan of Study

Freshman Year	F	S
Bio 151-152*, General Biology I and Lab and Bio 153-154*, General Biology II and Lab.....4		4
Chem 112-112L*, General Chemistry I and Lab and Chem 114-114L*, General Chemistry II and Lab.....4		4
Engl 101*, Composition I.....3	or	3
Math 102*, College Algebra or Math 115*, Precalculus or Math 120*, Trigonometry or Math 121-121A*, Survey of Calculus and Lab.....		3-5
Soc 100*, Introduction to Sociology.....3	or	3
SpCm 101-101A*, Fundamentals of Speech and Lab.....3	or	3
Vet 103, Introduction to Veterinary Medicine.....1		
SDSU Core: Goal 1**, Wellness, p. 39.....2	or	2
Electives .....3-4	or	3-4
Sophomore Year†		
Chem 120-120L*, Elementary Organic Chemistry and Lab or Chem 326-327, Organic Chemistry I and Lab and Chem 328-329, Organic Chemistry II and Lab.....4		4
Econ 202*, Macroeconomics .....3	or	3
Engl 201*, Composition II.....3	or	3
Micr 231-232**, General Microbiology and Lab.....		4
Phys 111-112*, Introduction to Physics I and Lab and Phys 113-114*, Introduction to Physics II and Lab.....4		4
Vet 223-223A, Anatomy and Physiology of Livestock and Lab.....4		
Gen Ed: Humanities and Arts*, pp. 35-37, (G).....3		3
Electives .....3-4		3-4
Junior Year		
Bio 371-372, Genetics and Lab.....4	or	4
Chem 361-361L, Biochemistry and Lab.....4		
SDSU Core** and requirements for specific B.S. and Electives .....6-10		7-14

Senior Year

SDSU Core** and Electives

Requirements for specific B.S.

Specific requirements for various veterinary colleges

This curriculum meets the pre-veterinary requirements of some Colleges of Veterinary Medicine. The student and his/her adviser may alter the pre-veterinary curriculum to meet specific requirements of certain colleges.

† See adviser for chemistry specializations in sophomore year.

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Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Visual Arts (Art) Major and Minor

Norman Gambill

Department of Visual Arts

Grove Hall 101

605-688-4103

fax: 605-688-6769

e-mail: sdsu_artdept@sdstate.edu

website: http://web.sdstate.edu/departments/visualarts/

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. Modern Languages are required for the B.A. See pp. 165-166 for Graphic Design.

Requirements for Fine Arts Major – Art Education

Bachelor of Arts in Arts and Science

Freshman Year

	F	S
ArtH 100*, Art and Design Appreciation, (G).....	3	3
Engl 101*, Composition I	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	4	4
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Visual Arts Studio Core, p. 108.....	6	6

Sophomore Year

	F	S
Art 251, Ceramics I.....	3	or 3
ArtH 211*, World Art, (G).....	3	3
ArtH 212*, Western Traditions, (G).....	3	3
Engl 201*, Composition II.....	3	or 3
Modern Language.....	4	4
Professional Semester I.....	5	or 5
Gen Ed: Social Science*, pp. 35-37.....	3	3
Visual Arts Studio Core, p. 108.....	3	or 3

Junior Year

	F	S
Art 241, Sculpture I.....	3	3

ArtE 415, Methods of Teaching Art in Public Schools.....	3	or 3
EdFn 427-527 Middle School	2	or 2
SeEd 420 Teaching Special Needs Students	1	or 1
Modern Language.....	3	3
Professional Semester II.....	6	or 6
Visual Arts Studio Core, p. 108.....	3	3
Art History Elective.....	3	or 3
Art Studio Electives.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....	3	or 3

Senior Year

	F	S
EdFn 365, Integrating Computers into the Curriculum	2	or 2
Hist 368, History of American Indians or		
Anth 421, Indians of North America	3	or 3
Professional Semester III.....	14	or 14
Art Elective.....	3	or 3
SDSU Core: Goal 5**, Stewardship, p. 41	2-3	or 2-3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses).....	3	or 3

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Fine Arts Major – Art Education
Bachelor of Science in Arts and Science**

Freshman Year

	F	S
ArtH 100*, Art and Design Appreciation, (G).....	3	3
Engl 101*, Composition I	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	4	4
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Visual Arts Studio Core, p. 108.....	6	6
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2

Sophomore Year

	F	S
Art 251, Ceramics I.....	3	or 3
ArtH 211*, World Art, (G)	3	3
ArtH 212*, Western Traditions, (G).....	3	3
Engl 201*, Composition II.....	3	or 3
Professional Semester I.....	5	or 5
Gen Ed: Humanities and Arts*, pp. 35-37	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
Visual Arts Studio Core, p. 108.....	3	3
General Elective	1	or 1

Junior Year

	F	S
Art 241, Sculpture I.....	3	3
ArtE 415, Methods of Teaching Art in Public Schools.....	3	or 3
EdFn 427-527 Middle School	2	or 2
SeEd 420 Teaching Special Needs Students	1	or 1
Professional Semester II.....	6	or 6
Visual Arts Studio Core, p. 108.....	3	3
SDSU Core: Goal 2**, Human Community, p. 39.....	3	or 3
SDSU Core: Goal 4**, Physical Science, p. 41.....	4	4
Art History Elective.....	3	3

Art Studio Electives.....	3	3
Electives (complete the 300-400 level rule, can be Art/ ArtD/ArtH courses)		
Senior Year	F	S
EdFn 365, Integrating Computers into the Curriculum	2	or 2
Hist 368, History of American Indians or Anth 421, Indians of North America	3	or 3
Professional Semester III.....	14	or 14
SDSU Core: Goal 5**, Stewardship, p. 41	2-3	or 2-3
Art Elective.....	3	or 3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Fine Arts Major – Painting/Printmaking
Bachelor of Arts in Arts and Science**

Freshman Year	F	S
ArtH 100*, Art and Design Appreciation, (G).....	3	3
Engl 101*, Composition I	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	4	4
Visual Arts Studio Core, p. 108.....	6	6

Sophomore Year	F	S
Art 231, Painting I.....	3	or 3
Art 281, Printmaking I	3	or 3
ArtH 211*, World Art, (G)	3	
ArtH 212*, Western Traditions, (G).....	3	
Engl 201*, Composition II.....	3	or 3
Modern Language.....	4	4
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39	2	or 2
Visual Arts Studio Core, p. 108.....	3	

Junior Year	F	S
Art 331, Painting II.....	3	or 3
Art 332, Painting III or Art 382, Printmaking III	3	or 3
Art 381, Printmaking II.....	3	or 3
Modern Language.....	3	3
SDSU Core: Goal 2**, Human Community, p. 39	3	or 3
Visual Arts Studio Core (finish it).....	3	
Art History Elective.....	3	
Art Studio Electives.....	3	3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

Senior Year	F	S
Art 431, Painting IV or Art 481, Printmaking IV	3	or 3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3

Art Electives	3	3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

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(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Fine Arts Major – Painting/Printmaking
Bachelor of Science in Arts and Science**

Freshman Year	F	S
ArtH 100*, Art and Design Appreciation, (G).....	3	3
Engl 101*, Composition I	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	4	4
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
Visual Arts Studio Core, p. 108.....	6	6

Sophomore Year	F	S
Art 231, Painting I.....	3	or 3
Art 281, Printmaking I	3	or 3
ArtH 211*, World Art, (G)	3	
ArtH 212*, Western Traditions, (G).....	3	
Engl 201*, Composition II.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
Gen Ed: Humanities and Arts, pp. 35-37	3	or 3
Visual Arts Studio Core, p. 108.....	3	
General Elective	2	or 2

Junior Year	F	S
Art 331, Painting II.....	3	or 3
Art 332, Painting III or Art 382, Printmaking III	3	or 3
Art 381, Printmaking II.....	3	or 3
SDSU Core: Goal 2**, Human Community, p. 39	3	3
SDSU Core: Goal 4**, Physical Science, p. 41.....	4	4
Art History Elective.....	3	
Art Studio Electives.....	3	3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

Senior Year	F	S
Art 431, Painting IV or Art 481, Printmaking IV	3	or 3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
Art Electives	3	3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the

International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Fine Arts Major – Ceramics/Sculpture Bachelor of Arts in Arts and Science

Freshman Year	F	S
Art 241, Sculpture I.....		3
ArtH 100*, Art and Design Appreciation, (G).....		3
Engl 101*, Composition I.....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	4	4
Visual Arts Studio Core, p. 108.....	6	3

Sophomore Year	F	S
Art 251, Ceramics I.....	3	or 3
Art 341, Sculpture II.....		3
ArtH 211*, World Art, (G).....	3	
ArtH 212*, Western Traditions, (G).....		3
Engl 201*, Composition II.....	3	or 3
Modern Language.....	4	4
Gen Ed: Social Science*, pp. 35-37.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
Visual Arts Studio Core, p. 108.....	3	

Junior Year	F	S
Art 351, Ceramics II.....	3	
Art 352, Ceramics III or Art 342, Sculpture III.....		3
Modern Language.....	3	3
SDSU Core: Goal 2**, Human Community, p. 39.....	3	or 3
Visual Arts Studio Core (finish it).....	3	
Art History Elective.....		3
Art Studio Electives.....		3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

Senior Year	F	S
Art 451, Ceramics IV or Art 441, Sculpture IV.....		3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
Art Electives.....	3	3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Fine Arts Major – Ceramics/Sculpture

Bachelor of Science in Arts and Science

Freshman Year	F	S
Art 241, Sculpture I.....		3
ArtH 100*, Art and Design Appreciation, (G).....		3
Engl 101*, Composition I.....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37, Biological.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
Visual Arts Studio Core, p. 108.....	6	3

Sophomore Year	F	S
Art 251, Ceramics I.....	3	or 3
Art 341, Sculpture II.....		3
ArtH 211*, World Art, (G).....	3	
ArtH 212*, Western Traditions, (G).....		3
Engl 201*, Composition II.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	or 3
Visual Arts Studio Core, p. 108.....	3	3
General Elective.....	2	or 2

Junior Year	F	S
Art 351, Ceramics II.....	3	
Art 352, Ceramics III or Art 342, Sculpture III.....		3
SDSU Core: Goal 2**, Human Community, p. 39.....	3	or 3
SDSU Core: Goal 4**, Physical Science, p. 41.....	4	4
Visual Arts Studio Core (finish it).....	3	or 3
Art History Elective.....		3
Art Electives.....		3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

Senior Year	F	S
Art 451, Ceramics IV or Art 441, Sculpture IV.....		3
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
Art Electives.....	3	3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

* The 30 credit Board of Regents **System General Education** requirements (**Gen Ed**) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Fine Arts Major – General Art Bachelor of Science in Arts and Science

Freshman Year	F	S
ArtH 100*, Art and Design Appreciation, (G).....		3
Engl 101*, Composition I.....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37, Biological.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
Visual Arts Studio Core, p. 108.....	6	6

Sophomore Year	F	S
ArtH 211*, World Art, (G).....	3	
ArtH 212*, Western Traditions, (G).....		3
Engl 201*, Composition II.....	3	or 3
Gen Ed: Social Science*, pp. 35-37.....	3	3
Gen Ed: Humanities and Arts*, pp. 35-37.....	3	or 3
Art Elective.....	3	3
Visual Arts Studio Core, p. 108.....	3	3
General Elective.....	2	or 2

Junior Year	F	S
SDSU Core: Goal 2**, Human Community, p. 39.....		3
SDSU Core: Goal 4**, Physical Science, p. 41.....	4	4
Art History Elective.....	3	
Art Studio Electives.....	3	or 3
ArtD/Art-Area of Specialization †.....	3	3
General Electives (complete 300-400 level rule).....	10-11	or 10-11

Senior Year	F	S
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
Art Elective.....	6	3
ArtD/Art-Area of Specialization †.....	3	or 3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses).....	6-7	6-7

† You need to take three courses in one of the five studio concentrations: Painting, printing, ceramics, sculpture or graphic design. Two courses should be taken during the Junior Year and one course taken during the Senior Year.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

**Requirements for Fine Arts Major – General Art
Bachelor of Arts in Arts and Science**

Freshman Year	F	S
ArtH 100*, Art and Design Appreciation, (G).....		3
Engl 101*, Composition I.....	3	or 3
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
Gen Ed: Mathematics*, pp. 35-37.....	3	or 3
Gen Ed: Natural Science*, pp. 35-37.....	4	4
Visual Arts Studio Core, p. 108.....	6	6

Sophomore Year	F	S
ArtH 211*, World Art, (G).....	3	
ArtH 212*, Western Traditions, (G).....		3
Engl 201*, Composition II.....	3	or 3
Modern Language.....	4	4
Gen Ed: Social Science*, pp. 35-37.....	3	3
Art Elective.....	3	or 3
Visual Arts Studio Core, p. 108.....	3	3

Junior Year	F	S
Modern Language.....	3	3
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
SDSU Core: Goal 2**, Human Community, p. 39.....		3
Art History Elective.....	3	or 3

Art Studio Elective.....	3	or 3
ArtD/Art-Area of Specialization †.....	3	3
Electives		

Senior Year	F	S
SDSU Core: Goal 5**, Stewardship, p. 41.....	2-3	or 2-3
Art Elective.....	6	3
ArtD/Art-Area of Specialization †.....	3	or 3
Electives (complete 300-400 level rule, can be Art/ArtD/ ArtH courses)		

† You need to take three courses in one of the five studio concentrations: Painting, printing, ceramics, sculpture or graphic design. Two courses should be taken during the Junior Year and one course taken during the Senior Year.

* The 30 credit Board of Regents System General Education requirements (Gen Ed) must be completed as part of a student's first 64 credits. See pages 35-37 for details. Courses that are part of these credits are indicated by an asterisk (*).

(G) The BOR System General Education requirements include an International/Global Diversity requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit SDSU Institutional Graduation Requirement (IGR) (referred to as SDSU Core). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Requirements for Fine Arts Minor: 24 cr
To include 6 credits in art history.

Wildlife and Fisheries Sciences (WL) Major

Charles Scalet
Department of Wildlife and Fisheries Sciences
Northern Plains Biostress Laboratory 138C
605-688-6121
e-mail: charles_scalet@sdstate.edu
website: <http://wfs.sdstate.edu>

**Requirements for Wildlife and Fisheries Sciences Major
Bachelor of Science in Biological Science**

Freshman Year	F	S
Bio 101-102*, Biology Survey I and Lab or Bio 151-152, General Biology I and Lab.....	3-4	
Bio 103-104*, Biology Survey II and Lab or Bio 153-154, General Biology II and Lab.....		3-4
Chem 112-112L, General Chemistry I and Lab.....		4
Engl 101*, Composition I.....	3	or 3
Math 102*, College Algebra.....	3	
SpCm 101-101A*, Fundamentals of Speech and Lab.....	3	or 3
WL 220**, Introduction to Wildlife and Fisheries Management.....	3	
SDSU Core: Goal 1**, Wellness, p. 39.....	2	or 2
Gen Ed: Social Science*, pp. 35-37 (G).....	3	or 3
Gen Ed: Humanities and Arts*, pp. 35-37, (G).....	3	or 3

Sophomore Year	F	S
Bio 311**, Principles of Ecology.....	3	
Engl 201*, Composition II.....	3	or 3
Math 121-121A, Survey of Calculus and Lab or Math 123, Calculus I.....	4-5	or 4-5
Stat 281, Introduction to Statistics.....	3	or 3

WL 230, Wildlife and Fisheries Techniques	3	
WL 490, Undergraduate Seminar.....	1	
Gen Ed: Humanities and Arts*, pp. 35-37, (G)	3	or 3
Gen Ed: Social Science*, pp.35-37 (G)	3	or 3
Chemistry Elective (Chem 114-114L, 232-233, 361-361L, or 380).....	4	or 4
Computer Science Elective.....	3	or 3

Junior Year	F	S
Chem 120-120L, Elementary Organic Chemistry and Lab.....	4	or 4
Phys 101-102, Survey of Physics I and Lab or Phys 111-112, University Physics I and Lab.....	4	or 4
WL 363-363A, Ornithology and Lab.....	4	
WL 367-367A, Ichthyology and Lab.....	3	
WL 412-412A, Principles of Fisheries Management and Lab.....	3	
Zool 355-355A, Mammalogy and Lab.....	3	
SDSU Core: Goal 3**, Human Spirit, (G) p. 40.....	2-3	or 2-3
Botany Elective (Bot 201-202, 301-301A, 305-305A, 415-415A, or PR 303).....	3-4	or 3-4
Communications Elective (SpCm 201, 215, 222, or 334)	3	or 3

Senior Year	F	S
ABS 475-475A, Integrated Natural Resource Management and Lab.....	3	
Bio 371, Genetics	3	or 3
WL 411-411A, Principles of Wildlife Management and Lab.....	4	
WL 430-430A**, Human Dimensions in Wildlife and Fisheries and Lab	4	
WL 490, Undergraduate Seminar.....	1	
Botany Elective (Bot 201-202, 301-301A, 305-305A, 415-415A, or PR 303).....	3-4	or 3-4
Communications Elective (Engl 379, MCom 210-210A, MCom 313, or MCom 330-330A).....	2-3	or 2-3
Biological Science Electives	3-4	or 3-4
(choose one course):		
Biol 373, Evolution		
Biol 440-440A, Restoration Ecology and Lab		
Bot 327-327A, Plant Physiology and Lab		
Micr 231-232, General Microbiology and Lab		
PS 305-305A, Insect Biology and Lab		
Vet 223-223A, Anatomy and Physiology of Livestock and Lab		
Vet 403, Animal Diseases and Their Control		
WL 370-370A, Limnology and Lab		
Zool 325-325A, Mammalian Physiology and Lab		
Zool 383-383A, Embryology and Lab		
Zool 441-441A, Vertebrate Histology and Lab		
Zool 467-467A, Parasitology and Lab		

Remaining hours of 128 hour requirement are electives.

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(G) The BOR **System General Education** requirements include an **International/Global Diversity** requirement of 6 credits. Courses may count toward both the International/Global Diversity requirement and the social science and/or humanities and arts requirements. See pages 35-37 for details.

** South Dakota State University has a 10 credit **SDSU Institutional Graduation Requirement (IGR)** (referred to as **SDSU Core**). See pages 39-41 for details. These requirements are indicated by a double asterisk (**).

Students must take the proficiency examination after completing 48 credits. English 101, and a course in each of the General Education areas of social science, mathematics, natural science, and humanities and arts must be taken prior to taking this exam.

Women's Studies (WmSt) Minor

April Brooks
Department of History
Scobey Hall 324
605-688-6042
e-mail: april_brooks@sdstate.edu

Requirements for Women's Studies Minor: 18 cr

WmSt 101, Introduction to Women's Studies.....	3
WmSt 491, Special Problems in Women's Studies	3
Choose one course from the following:	3
WmSt 349, Women in History	
WmSt 305, Women and Politics	
WmSt 366, Psychological Gender Issues	
WmSt 383, Sociology of Sex Roles	
Choose one course from the following:	3
WmSt 248, Women in Literature or	
Appropriate courses in the Humanities and Arts may be substituted with the approval of the Program Coordinator.	
Elective Courses	6
Courses can be selected from the required list above and from the following:	
CA 340, Work, Time, and Energy Decisions	
HDFS 250, The Development of Human Sexuality	
Soc 325, Domestic Violence	
WmSt 392, Topics in Women's Studies	
WmSt 418 Women in Media	

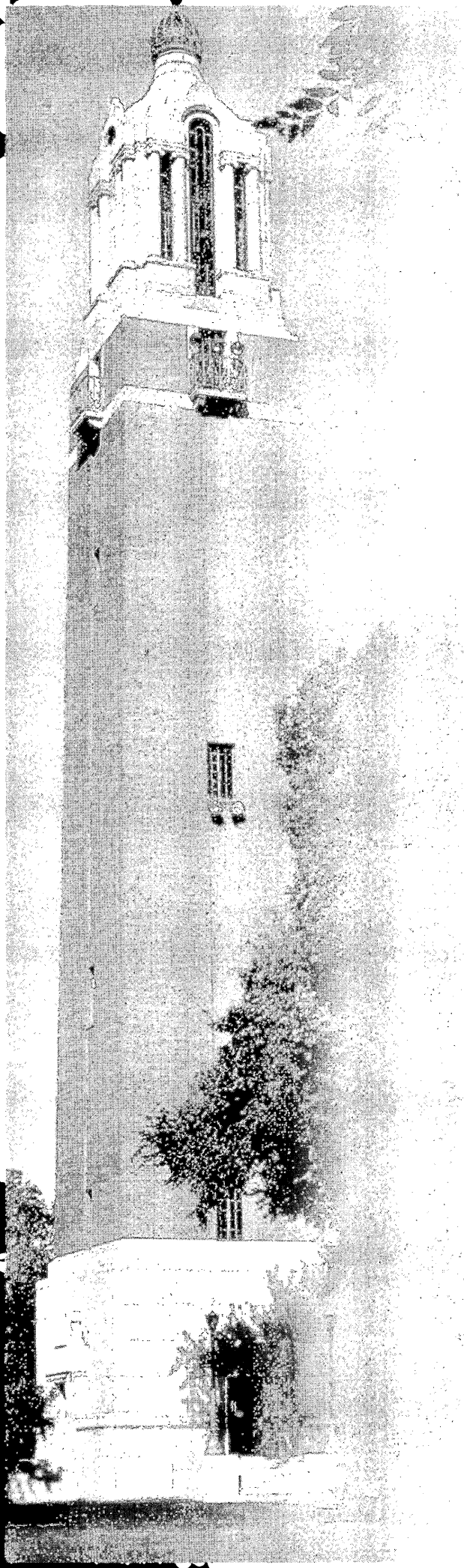
In addition, courses related to the roles of women in society are offered on a periodic basis in various departments. These courses may be used as electives with the approval of the Program Coordinator.

Zoology (Zool) Minor

Tom Cheesbrough
Department of Biology and Microbiology
Agricultural Hall 304
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website: www.abs.sdstate.edu/Bio

Requirements for Zoology Minor: 18 cr

The minor in Zoology consists of Bio 101-102 or 151-152, and additional courses with a Zool prefix for a total of at least 18 credits. Two courses must be at the 300 level or above. A minimum GPA of 2.0 is required in these courses.



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(Arranged alphabetically by prefix)

Curriculum Entries

Course Descriptions

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Bio 101 Biology Survey I 3 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.

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. Semesters in which the course is taught. F Fall; S Spring; Su Summer.
6. 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

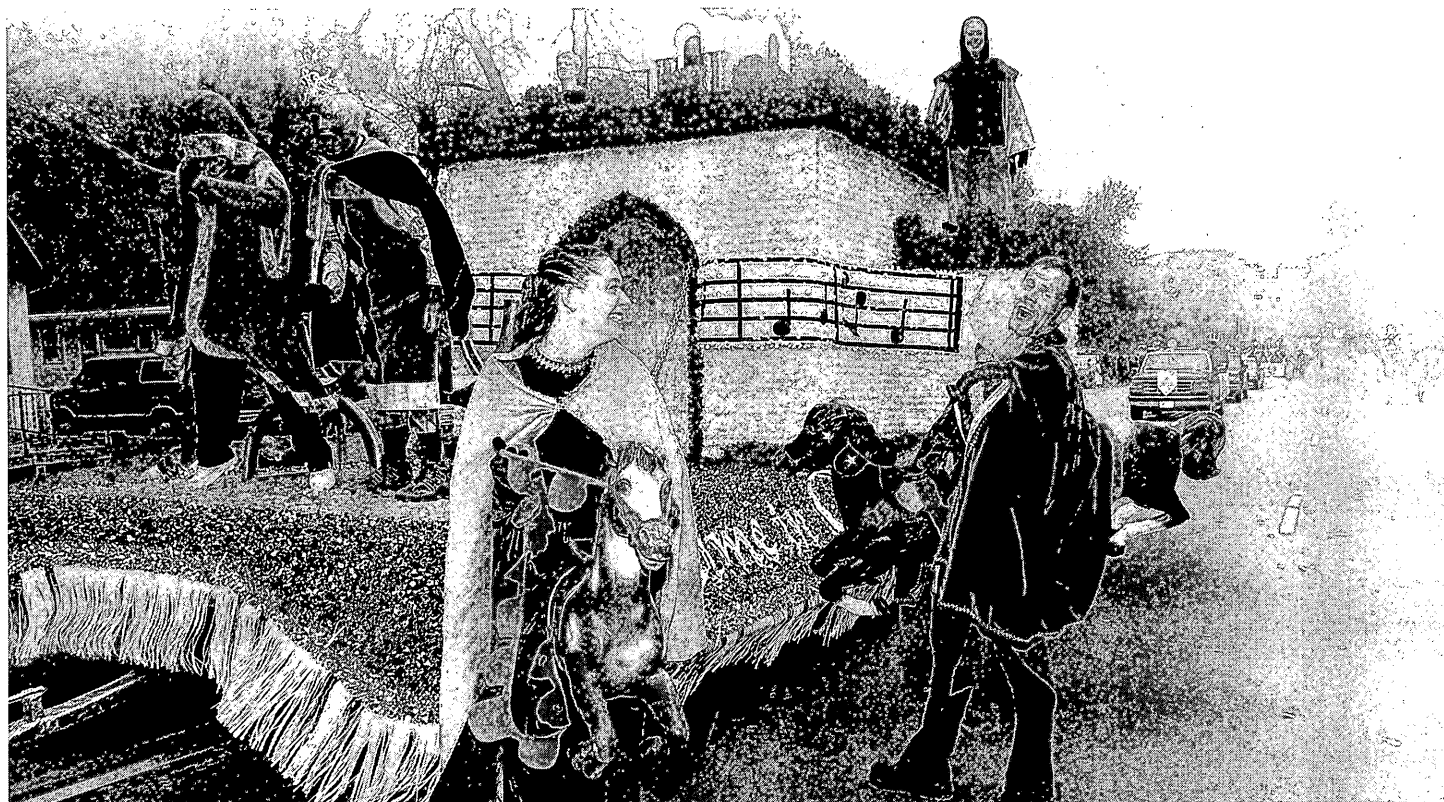
- 001-099 Pre-college, remedial skills, special improvement (non-degree credit)
- 100-199 Freshman level
- 200-299 Sophomore level
- 300-399 Junior level
- 400-499 Senior level (may be dual listed with 500 level graduate course)

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 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

ABE, Agricultural and Biosystems Engineering
ABS, Agriculture and Biological Sciences
Acct, Accounting
AgEc, Agricultural Economics
AgEd, Agricultural Education
AgEx, Agricultural Extension
AHEd, Adult Higher Education
Air, Aerospace Studies
AIS, American Indian 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
CTE, Career and Technical Education
Danc, Dance
DCom, Communication Disorders
DS, Dairy Science
Econ, Economics
EdAd, Educational Administration
EdER, Education Evaluation and Research

EdFn, Educational Foundations
EE, Electrical Engineering
EIEd, Elementary Education
EM, Engineering Mechanics
Engl, English
Ent, Entomology
EnvM, Environmental Management
EPsy, Educational Psychology
EET, Electronics Engineering Technology
EurS, European Studies
FBME, Food and Biomaterials Engineering
FCS, Family and Consumer Sciences
FCSE, Family and Consumer Sciences Education
Fren, French
GCom, General Communication
GE, General Engineering
Geog, Geography
Germ, German
Gero, Gerontology
GIS, Geographic Information Sciences
GS, General Studies
HDCF, Human Development, Child and Family Studies
HDFS, Human Development and Family Studies
HFM, Hotel and Foodservice Management
Hist, History
Hlth, Health
Ho, Horticulture
Hon, Honors
HPER, Health, Physical Education and 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
Micr, Microbiology
Mil, Military Science
ML, Modern Languages
MnET, Manufacturing Engineering Technology
MuAp, Music Applied
MuEn, Music Ensemble
Mus, Music
NFSH, Nutrition, Food Science and Hospitality
Nurs, Nursing
PE, Physical Education
Pha, Pharmacy
Phil, Philosophy
PHST, Physics Teaching
Phys, Physics
Plan, Planning
PolS, Political Science
PR, Park Management
PS, Plant Science
Psyc, Psychology
PT, Physical Therapy
Rang, Range Science
Recr, Recreation
Rel, Religion
RTVF, Radio, Television and Film
SeEd, Secondary Education
Soc, Sociology
Span, Spanish
SpCm, Speech Communication
Stat, Statistics
Thea, Theatre
Vet, Veterinary Science
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
CI, Communication Intensive
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
P, prerequisite
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

Clinical Experience

Students participate in client and client related services that are an integral part of an educational program. Clinical instruction occurs in or outside an institutional setting and involves work with clients who receive professional services from students serving under direct or indirect supervision by a faculty member and/or an approved member of the agency staff.

Clinical Laboratory

The course takes place in a clinical laboratory setting. This includes practice labs, hospitals, or other agencies. Students apply methods and principles of a clinical discipline. Course size varies depending upon accreditation standards, clinical space limitations, level of offering, availability of client experiences, the nature of the clients, and equipment limitations. Faculty members control the assignments and maintain direct and close supervision of the students.

Competency-Based/Self-Paced Study

Students proceed through a course of study at their own rate, or as directed often assisted by computer or other technology. Mastery is based on achieving competencies and benchmarks, rather than attaining a schedule of assignments. An instructor monitors student progress. May be supplemented by individual or group tutorial sessions. Includes self-paced Internet courses.

Design/Research

Courses focusing on design research and do not entail a dissertation or thesis. The plan of study is negotiated by the faculty member and the students. Contact between the two may be extensive and intensive. May be used as a research/design requirement for a degree. Research/Research Problems are included in this course type.

Discussion/Recitation

A course, or a section of a larger course, designed for group discussion or student recitation.

Ensemble

Large group musical performance courses, meaning group of more than 10 performers. Includes: orchestra, bands, and choruses.

Graduate Thesis

A formal treatise presenting the results of study submitted in partial fulfillment of the requirements of an advanced degree. The process requires intensive interaction between the candidate and the thesis director. Masters degrees, Specialist degrees, and Doctorates are included in this course type.

Independent Study

Students complete individualized plans of study. The faculty member and students negotiate the details of the study plans. Meeting depending upon the requirements of the topic. This course type is not for completion of a thesis or dissertation or for meeting the research requirement for a degree. Directed Studies, Special Projects, Mentored, and Special Problems are examples of this course type.

Internship/Practicum

Applied, monitored and supervised, field-based learning experience for which the student may or may not be paid. Students gain practical experience; they follow a negotiated and/or directed plan of study. Includes field work/experience, supervision courses, student teaching, and cooperative education.

Laboratory

Courses meeting in a defined physical setting (i.e. laboratory) for the purpose of the application of methods and principles of a discipline.

Lecture

Faculty members give oral presentations of facts, principles, context, or interpretation. Instruction takes place in a traditional classroom setting.

Modified Physical Education Activity

A course type limited to accommodate students with physical disabilities where numbers are very limited.

Physical Education 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.

Private Instruction

The courses involve individual instruction. One-to-one demonstration, performance critique, music, fine arts or performing arts, or flight instruction are examples.

Seminar

A highly focused, and topical course. The format includes student presentations and discussions of reports based on literature, practices, problems, or research. Seminars may be conducted over electronic media such as Internet and are at the upper division or graduate levels.

Special Topics

A course devoted to a particular issue in a specified field. Course content is not wholly included in the regular curriculum. Guest artists or experts may serve as instructors.

Studio Course/Small Group Instruction/Small Ensemble

Course involves the demonstration and application 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. Students explore and experiment under the guidance of an instructor.

Thesis/Research Sustaining

This is a zero credit hour course type used to track students who are not currently working with faculty on thesis or research activities. Universities may require students to register under this course type to remain active degree candidates.

Tracking Courses

This course type is used to track students for zero credit hours.

Undergraduate Thesis

A formal treatise presenting the results of study submitted in partial fulfillment of the requirements for 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.

Workshop

Special sessions in specific topic areas. Approximately 45 hours of work is required for each hour of credit. Workshops may vary in time range. They may include lectures, conferences, committee work, and group activity.

Other Important Definitions

Dual Numbered Courses – A multiple-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.

Communication Intensive Courses – A **communications skills intensive course** is one that includes either oral, written, or electronic information/technology based communication skill as an outcome and includes assignments in one of those areas to achieve that outcome. In the course description listing that follows, a **communication skills intensive course** is coded at the end of the course title with a (CI). In addition, all 300 and 400 courses in these departments are considered communication intensive (CI) courses: DCom, Engl, Fren, GCom, Germ, Lak, MCom, ML, RTVF, Span, SpCm, and Thea.

South Dakota State University has identified “being communication-able” as one of its major goals for graduates. Students are encouraged to select (CI) courses whenever possible to enhance their own communication skills. You should consult your adviser about working (CI) courses into your plan of study.



ABE (Agricultural and Biosystems Engineering)

Undergraduate Courses

ABE 122 Introduction to Agricultural and Biosystems

Engineering2 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.

ABE 311 Design Project I

.....1 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.

ABE 314 Ag Power and Machines (CI)

.....4 F
Analysis of factors affecting field machines and tractor performance, engine design, transmissions, traction, hitches, hydraulic systems, economics. P, EM 222. Corequisite courses: ABE 314A.

ABE 314A Ag Power and Machines Lab (CI)

.....0 F
Corequisite courses: ABE 314.

ABE 321 Design Project II

.....1 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.

ABE 324 Ag Structures and Indoor Environment (CI)

.....4 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. Corequisite courses: ABE 324A.

ABE 324A Ag Structures and Indoor Environment Lab (CI)

.....0 S
Corequisite courses: ABE 324.

ABE 343 Physical Properties of Biological Material (CI)

.....3 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. Corequisite courses: ABE 343A.

ABE 343A Physical Properties of Biological Materials

Lab (CI)0 F
Corequisite courses: ABE 343.

ABE 353 Physical Climatology and Meteorology

.....3 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. Corequisite courses: ABE 353A.

ABE 353A Physical Climatology and Meteorology Lab

.....FS
Corequisite courses: ABE 353.

ABE 372 Microcomputer Applications AE (CI)

.....2 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. Offered first half of semester. P, CSc 218. Corequisite courses: ABE 372A.

ABE 372A Microcomputer Applications AE Lab (CI)

.....0 S
Corequisite courses: ABE 372.

ABE 411 Design Project III (CI)

.....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.

ABE 422 Design Project IV (CI).....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.

ABE 434 Natural Resources Engineering (CI)

.....4 F
Precipitation, infiltration, evapotranspiration and runoff from small agricultural watersheds and application to design of conservation structures, water erosion control practices. design of drainage and irrigation systems. Feedlot pollution control principles. P, EM 331. Corequisite courses: ABE 434A.

ABE 434A Natural Resources Engineering Lab (CI)

.....0 F
Corequisite courses: ABE 434.

ABE 444 Unit Operations of Biological Materials Processing

.....4 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, reverse osmosis), mechanical separation processes, extrusion. P, senior standing or consent. Corequisite courses: ABE 444A.

ABE 444A Unit Operations of Biological Materials Processing

Lab.....0 S

Corequisite courses: ABE 444.

ABE 454 Advanced Unit Operations of Biological Materials

Processing4

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. Corequisite courses: ABE 454A.

ABE 454A Advanced Unit Operations of Biological Materials

Processing Lab0

Corequisite courses: ABE 454.

ABE 463 Applied Instrumentation (CI)

.....3 F
The generalized measurement system consisting of the detector/transducer, intermediate modifying 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 300. Corequisite courses: ABE 463A.

ABE 463A Applied Instrumentation Lab (CI)

.....0 F
Corequisite courses: ABE 463.

ABE 490 Seminar and Inspection Trip (CI)

.....1 F
Review of current technical literature in agricultural and biosystems engineering. Oral and written reports and discussion. P, senior standing.

ABE 491 Special Problems in Ag Engineering

.....1-3 (on demand)
The solution must be written up in a final report. P, must have approval of the adviser and head of department. Individual or group study.

ABE 492 Special Topics

.....1-4

ABE 492A Special Topics Lab

.....0

ABE 494 Internship

.....1-6
Planned and supervised professional experience related to agricultural and biosystems engineering which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

ABE 496 Field Experience

.....1-6
Planned and supervised professional experience related to agricultural and biosystems engineering which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

ABE 497 Cooperative Education.....1-6
 Planned and supervised professional experience related to agricultural and biosystems engineering which takes place outside the formal classroom with private business or industry, or public agencies. P, consent of department program coordinator.

Dual Number Courses

ABE 444-544 Unit Operations of Biological Materials Processing4 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, reverse osmosis), mechanical separation processes, extrusion. P, senior standing or consent. Corequisite courses: ABE 444A-544A.

ABE 444A-544A Unit Operations of Biological Materials Processing Lab0 S

Corequisite courses: ABE 444-544.

ABE 454-554 Advanced Unit Operations in Food/Biomaterials Processing.....4

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. Corequisite courses: ABE 454A-554A.

ABE 454A-554A Advanced Unit Operations in Food/Biomaterials Processing Lab.....0

Corequisite courses: ABE 454-554.

Graduate Courses

ABE 503 Energy and Environment	3
ABE 512 Advanced Agricultural Tractors and Machine	2
ABE 522 Bio-Environmental Engineering	2
ABE 533 Advanced Irrigation Engineering	3
ABE 533A Advanced Irrigation Engineering Lab	0
ABE 732 Advanced Hydrology in Agriculture	2
ABE 733 Ground Water Engineering in Agriculture	3
ABE 752 Theoretical Micro-Climatology	2
ABE 763 Instrumentation	3
ABE 763A Instrumentation Lab	0
ABE 772 Similitude	2
ABE 772A Similitude Lab	0
ABE 773 Programming Agricultural Systems	3
ABE 773A Programming Agricultural Systems Lab	0
ABE 787 Research	1-9
ABE 788 Research Report/Design Paper	1-2 (on demand)
ABE 790 Graduate Seminar	1
ABE 791 Special Problems in Ag Engineering	1-2 (on demand)
ABE 792 Special Topics	1-3 (on demand)
ABE 792A Special Topics Lab	0
ABE 798 Thesis	1-7
ABE 898D Dissertation – Ph.D.	1-12

ABS (Agriculture and Biological Sciences)

Undergraduate Courses

ABS 203 Global Food Systems3 FS
 Introduction to global food systems and agricultural diversity. Food production techniques, economics, society/cultural values, and agricultural constraints in several countries will be studied. The course is team taught with faculty from Economics, Animal and Range Sciences, and Plant Science.

ABS 381 Multicultural Agriculture/Biological Science Experience2-4 (on demand)

This will be a team-mentored class. Students will work one on one or in small groups with professors that have knowledge of the region and one-to-three week experience to an area in the United States that is different from their home agricultural community, to experience and evaluate diverse food/ agricultural systems. For the Bachelor's degree, a maximum of 8 credits is allowed for domestic multicultural travel/study experience (ABS 381) and/or an international travel/study experience (ABS 382). ABS 203 is recommended. P, instructor consent required.

ABS 382 International Multicultural Agriculture/Biological Science Experience.....2-4 (on demand)

This will be a team-mentored class. Students will work one on one or in small groups with professors that have knowledge of the global region and culture that will be visited. Students will participate in a one-to-three week travel/study abroad experience to another nation(s) to experience and evaluate diverse food/agricultural systems. For the Bachelor's degree, a maximum of 8 credits is allowed for domestic multicultural travel/study experience (ABS 381) and/or an international travel/study experience (ABS 382). ABS 203 is recommended. P, instructor consent required.

ABS 475 Integrated Natural Resources Management (CI)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. Corequisite courses: ABS 475A.

ABS 475A Integrated Natural Resources Management Lab (CI)0 S

Corequisite courses: ABS 475.

ABS 476 Integrated Management of Agricultural Resources (CI)6 FS

Advanced undergraduate study in integrated management of agricultural resources through a multidisciplinary team approach to planning and problem solving to positively impact agriculture and rural vitality in an economically and environmentally sustainable manner. Teams of students will develop an extensive plan for a given set of natural resources. Modules include leadership, team building, critical thinking, communication, and global perspectives. Several field trips to farms, ranches, and businesses are required. P, senior standing in an ABS major and admission into the Biostress Center of Excellence and take ABS 203.

Graduate Courses

ABS 701 Animal Systems	1-10
ABS 702 Genetics	1-10
ABS 703 Microbial Systems	1-10
ABS 704 Plant Systems	1-10
ABS 705 Research Methodology	1-10
ABS 706 Natural Resources Management	1-10
ABS 706A Natural Resources Management Lab	0
ABS 720 Molecular Genetics	1-9
ABS 730 Natural Resources/Ecology	1-9

AEWR (Atmosphere, Environment, and Water Resources)

Graduate Courses

AEWR 790 Research Seminar	1
AEWR 898D Dissertation Ph.D.....	1-12

Acct (Accounting)

Undergraduate Courses

Acct 210 Principles of Accounting I.....3 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 FS
Accounting for partnerships and corporations; cost accounting, budgeting, and other accounting reports for management, creditors, and investors. P, Acct 210.

Acct 310 Intermediate Accounting I.....3 F
Financial accounting relating to preparation and analysis of financial statements, corporate accounting, current and fixed assets, and working capital items. P, Acct 211.

Acct 311 Intermediate Accounting II.....3 S
Financial accounting relating to tangible properties, investments, liabilities, stockholders' equity, statements from incomplete records, tax allocation, price level impacts. P, Acct 310.

Acct 320 Cost Accounting.....3 F
Cost accounting for planning and control. Budgets, standards, and profitability analysis. Job-order, process, and standard accounting systems. P, Acct 211.

Acct 430 Income Tax Accounting.....3 S
Internal Revenue Service Codes and Regulations for individuals, including all supporting schedules. P, Acct 211.

Acct 450 Auditing.....3
The theory and practice of auditing. Topics covered include generally accepted auditing standards, ethical responsibilities and legal liabilities of auditors, internal control, audit evidence, audit programs, preparation of working papers and the audit report. P, Acct 311 or consent.

Acct 492 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. P, Acct 492.

AgEc (Agricultural and Resource Economics)

Undergraduate Courses

AgEc 271 Farm and Ranch Management.....4 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, 1 course; from Subject MATH; except courses Math 021 Math 101 Math 100T. Corequisite courses: AgEc 271A.

AgEc 271A Farm and Ranch Management Lab.....FS
Corequisite courses: AgEc 271.

AgEc 352 Agricultural Law.....3 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, junior standing. BADM 350.

AgEc 354 Agricultural Marketing and Prices.....3 FS
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 Econ 202.

AgEc 364 Introduction to Cooperatives.....3

AgEc 373 Rural Real Estate Appraisal.....3 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. Crosslisted with PS 373. Equivalent to PS 373. P, AgEc 271 or PS 213. Corequisite courses: AgEc 373A.

AgEc 373A Rural Real Estate Appraisal Lab.....0
Corequisite courses: AgEc 373.

AgEc 421 Farming and Food Systems Economics (CI).....3 S
Use of economic concepts in analyzing farming and food system alternatives. Using multidisciplinary approach, the course examines the critical linkages in the food system and engages in problem solving at each step of the process. P, AgEc 271 or Econ 201.

AgEc 454 Economics of Grain and Livestock Marketing.....3 FS
Application of economic and marketing principles to the price discovery process and alternative exchange mechanisms; economics of technological innovation, and the impact of federal government policies on marketing. P, AgEc 354.

AgEc 471 Advanced Farm and Ranch Management.....3 (alternate years)
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.

AgEc 478 Agricultural Finance (CI).....3 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, AgEc 271, Econ 201, Acct 210. Corequisite courses: AgEc 478A.

AgEc 478A Agricultural Finance Lab (CI).....0
Corequisite courses: AgEc 478.

AgEc 479 Agricultural Policy (CI).....3 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 Econ 202.

AgEc 491 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 492 Special Topics1-4
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 421-521 Farming and Food Systems Economics3 S
Use of economic concepts in analyzing farming and food system alternatives. Using multidisciplinary approach, the course examines the critical linkages in the food system and engages in problem solving at each step of the process. P, AgEc 271 or Econ 201.

AgEc 471-571 Advanced Farm and Ranch Management3 (alternate years)
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 621 Advanced Production Economics3
AgEc 630 Advanced Agricultural Marketing and Prices3
AgEc 691 Special Problems1-3 FS

AgEd (Agricultural Education)

Undergraduate Courses

AgEd 404 Program Planning in Agricultural Education4 FS
FFA, Adult Education, and supervised occupational experience programs; policy development.

AgEd 434 Special Methods in Agricultural Education3 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, PSII-Professional Semester II. CTE 287 CTE 405 EPsy 302 EdFn 475 SeEd 314 SeEd 450 AgEd 404.

AgEd 454 Teaching Ag Systems Technology Labs2 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. Equivalent to AST 452. P, CTE 287 CTE 405 EPsy 302 EdFn 475 SeEd 314 SeEd 450 AgEd 404. Corequisite courses: AgEd 454A.

AgEd 454A Teaching Agricultural Mechanic LabFS
Equivalent to AST 452A. Corequisite courses: AgEd 454.

AgEd 475 Supervised Teaching Internship8
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. P, CTE 287 CTE 405 EPsy 302 EdFn 475 SeEd 314 SeEd 450 AgEd 404.

AgEd 491 Problems1-3
Selected studies and activities to meet the needs of undergraduate students. Written permission of Department Head required.

AgEd 494 Internship1-12
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.

AgEd 496 Field Experience1-12
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.

AgEd 497 Cooperative Education1-12
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.

Graduate Courses

AgEd 591 Problems1-3
AgEd 690 Seminar1-2
AgEd 706 Adult Ed in Agriculture2 Su
AgEd 707 Supervised Occupational Experience and Students Groups in2 Su
AgEd 776 Curriculum in AgEd2 Su
AgEd 788 Research Problems in AgEd2

AHed (Adult Higher Education)

Undergraduate Courses

AHed 496 Field Practice Training in Extension2-5
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.

Graduate Courses

AHed 600 Special Problems in Extension2-6
AHed 691 Problems1-3
AHed 693 Workshop in Adult and Continuing Education1-3
AHed 710 Adult Curriculum and Instruction3 F
AHed 711 Organization & Administration of Adult Education3 S
AHed 751 Principles of College Teaching3 S
AHed 772 Administration and Leadership in Student Affairs3
AHed 788 Research Problems in Adult Ed2
AHed 790 Seminar1-3
AHed 794 Internship in Education1-6

Air (Aerospace Studies/Air Force ROTC)

Undergraduate Courses

- Air 101 Aerospace Studies 100**1 F
Professional appearance, customs and courtesies, officership/core values, basic communication, officer opportunities/benefits, and Air Force installations. Corequisite courses: Air 101A.
- Air 101A Aerospace Studies 100 Lab** 0 F
Corequisite courses: Air 101.
- Air 102 Aerospace Studies 100**.....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. Corequisite courses: Air 102A.
- Air 102A Aerospace Studies 100 Lab**.....0 S
Corequisite courses: Air 102.
- Air 201 Aerospace Studies 200**1 F
Air power from balloons and dirigibles through 1947; Air Force mission, concepts, doctrine and use of air power. Corequisite courses: Air 201A.
- Air 201A Aerospace Studies 200 Lab** 0 F
Corequisite courses: Air 201.
- Air 202 Aerospace Studies 200**.....1 S
History of air power from 1947 to present. Air Force relief missions and civic action programs in the late 1960's. Corequisite courses: Air 202A.
- Air 202A Aerospace Studies 200 Lab**.....0 S
Corequisite courses: Air 202.
- Air 301 Aerospace Studies 300**3 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 Force quality concepts and techniques. Corequisite courses: Air 301A.
- Air 301A Aerospace Studies 300 Lab** 0 F
Corequisite courses: Air 301.
- Air 302 Aerospace Studies 300**.....3 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. Corequisite courses: Air 302A.
- Air 302A Aerospace Studies 300 Lab**.....0 S
Corequisite courses: Air 302.
- Air 401 Aerospace Studies 400**3 F
Commissioned military service as a profession. The complex interaction between military and civilian society. Theory and workings of National Defense policy. Roles and mission of the Air Force. Corequisite courses: Air 401A.
- Air 401A Aerospace Studies 400 Lab** 0 F
Corequisite courses: Air 401.
- Air 402 Aerospace Studies 400**.....3 S
Evolution of defense strategy and the methods of managing conflict. Analysis of the system of Military Justice. Corequisite courses: Air 402A.
- Air 402A Aerospace Studies 400 Lab**.....0 S
Corequisite courses: Air 402.

AIS (American Indian Studies)

Undergraduate Courses

- AIS 100 Introduction to American Indian Studies**.....3 S
Introduction to indigenous cultures of North America with emphasis on those inhabiting the United States. Contemporary issues facing Indian people today are covered along with relevant historical, geographical, legal, cultural, and philosophical information.
- AIS 101 Introductory Lakota I**.....4
Introduction to Lakota language and culture. Classwork may be supplemented with required aural/ oral practice outside of class. Crosslisted with Lak 101 Equivalent to Lak 101.
- AIS 102 Introductory Lakota II**.....4
Introduction to Lakota language and culture. Classwork may be supplemented with required aural/ oral practice outside of class. Crosslisted with Lak 102 Equivalent to Lak 102.
- AIS 201 Intermediate Lakota I**.....3
Aims of the first year continued with emphasis on speaking and reading skills. Crosslisted with Lak 201 Equivalent to Lak 201. P, Lak 101 Lak 102.
- AIS 202 Intermediate Lakota II**.....3
Aims of the first year continued with emphasis on speaking and reading skills. Crosslisted with Lak 202 Equivalent to Lak 202. P, Lak 101 Lak 102.
- AIS 238 Native American Religions**3 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. Crosslisted with Rel 238. Equivalent to Rel 238.
- AIS 310 Tribal Government and Politics**.....3 S
A comparative examination of the structures and the politics of several contemporary tribal governments and their relationship to both the movements and their impact on politics at both the tribal and federal levels. Crosslisted with PolS 310. Equivalent to PolS 310.
- AIS 351 American Indian Literature of the Past**3 F
Concentration of myths and legends of major language groups, particularly the Siouan. Crosslisted with Engl 351. Equivalent to Engl 351.
- AIS 352 American Indian Literature of Present**.....3 S
Twentieth-century autobiography, fiction, and poetry by Native American authors. Crosslisted with Engl 352. Equivalent to Engl 352.
- AIS 368 History of the American Indians**.....3
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. Crosslisted with Hist 368. Equivalent to InEd 411, Hist 368.
- AIS 410 North American Ethnology**.....3 (on demand)
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. Crosslisted with Anth 410. Equivalent to Anth 410.
- AIS 421 Indians of North America (CI)**.....3
Provides prospective teachers and those interested in Indian people with a basic knowledge of Indian heritage and culture. Emphasis on the Dakota Indians. Crosslisted with Anth 421/521. (Fulfills Teacher Ed. requirement.)

AIS 467 Geography of the American Indian3 (on demand)
 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 issues. Crosslisted with Geog 467. P, Hist 368 or Anth 410 or 421, or Geog 219 or consent. Equivalent to Geog 467.

AM (Apparel Merchandising)

Undergraduate Courses

AM 121 Dress in Popular Culture3
 Social and cultural factors affecting dress. A look at socio-cultural dynamics of contemporary times and how they affect fashion.

AM 172 Introduction to Apparel Merchandising.....3
 Introduction to organization and operation of businesses which plan, produce and distribute apparel and fashion goods for men, women and children. Examination of the impact of mass media in the communication of merchandising information.

AM 231 Ready-To-Wear Analysis.....3
 Analysis of construction, fabric, fit, defects, and pricing of ready-to-wear. Product knowledge, including garment classifications. Examination of consumer attitudes toward product quality. Corequisite courses: AM 231A.

AM 231A Ready-To-Wear Analysis Lab.....0
 Corequisite courses: AM 231.

AM 242 Textiles I.....3
 An investigation of fiber, yarn, fabrication, finishes and their interrelationship to specific end use and consumer satisfaction. P, sophomore standing. Corequisite courses: AM 242A.

AM 242A Textiles I Lab.....0
 Corequisite courses: AM 242.

AM 274 Fashion Promotion and Visual Merchandising3
 Principles in the promotion of merchandise to varied consumer groups by all segments of the fashion industry. Study of the techniques used for fashion promotion. Experience in planning, execution, installation and evaluation of advertisements, displays, and fashion shows (events). Corequisite courses: AM 274A.

AM 274A Fashion Promotion and Visual Merchandising Studio0
 Corequisite courses: AM 274.

AM 292 Current Topics1-3
 Discussion of current literature and issues. Investigation of topics for which there is a current need but are not part of any class. P, instructor's consent required.

AM 315 Apparel Design (CI).....3
 Course develops aesthetic judgement and design literacy of students. Fashion design for various levels of the industry including protective and functional clothing markets are studied. P, Art 121 AM 121 AM 172. Corequisite courses: AM 315A.

AM 315A Apparel Design Studio (CI).....0
 Corequisite courses: AM 315.

AM 331 Aesthetics of Dress (CI).....3
 Aesthetic aspects of dress. Analysis of elements and principles of art in the study of dress for application of clothing selection to personal and client use. Corequisite courses: AM 331A.

AM 331A Aesthetics of Dress Lab (CI).....0
 Corequisite courses: AM 331.

AM 350 Dress in World Cultures.....3
 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.

AM 352 History of Dress in the Western World (CI)3
 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 a resource material. P, Hist 121 or Hist 122.

AM 372 International Trade in Textiles and Apparel (CI).....3
 Examination of the textiles and apparel industries in a global context including history and development, organization and operation, domestic and international trade policies. P, Econ 202.

AM 373 Fashion Forecasting.....2
 Study of selected fashion trends of the 20th century and their relationship to social, political, economic and lifestyle trends. Experience with trend analysis.

AM 381 Social Skills in Business Environment.....2
 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. Equivalent to CA 381.

AM 442 Textiles II2
 Effect of fiber blends on fabric properties and performance with emphasis on textile needs of specialty markets. Comparison of origin and cost relative to quality in apparel and household textiles. P, AM 242. Corequisite courses: AM 442A.

AM 442A Textiles II Lab0
 Corequisite courses: AM 442.

AM 453 Socio-Psychological Aspects of Dress (CI)3
 Examination of clothing behavior from sociological, psychological and cultural perspectives. P, Soc 100 Psyc 101.

AM 472 Retailing (CI)3
 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.

AM 473 Merchandising and Buying (CI)3 (alternate years)
 Analysis of merchandising components for profitability. Develop strategies for planning profitable and acceptable merchandise lines. Construct a buying plan. Case study approach. P, Math 102.

AM 480 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 487 Pre-Practicum in Apparel Merchandising (CI)1
 Discussion of professional practices and issues. Experience in goal setting, reporting and evaluation. Organization and preparation of professional documents. P, AM 472. Corequisite courses: AM 473.

AM 489 Post-Practicum in Apparel Merchandising (CI)3 S (alternate years)
 Discussion and application of practicum work experiences. Refinement of decision-making and leadership techniques. P, AM 497.

AM 491 Special Problems1-3
 Problems for independent study selected according to special interests and needs. Arranged by contract with instructor.

AM 492 Current Topics1-3
 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.

AM 495 Professional Practicum (CI).....1-12
 Planned and supervised work experience in a cooperating retail firm provides opportunity for integration of course work in the occupational setting. P, 90 semester credits and consent of the department; GPA 2.2. Take AM 472 AM 487.

Dual Numbered Courses

- AM 480-580 Travel Studies**1-5
- AM 491-591 Special Problems**1-3
Problems for independent study selected according to special interests and needs. Arranged by contract with instructor.
- AM 492-592 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 790 Seminar in Apparel Merchandising and Textiles**1-2
- AM 791 Special Problems**1-3

Anth (Anthropology)

Undergraduate Courses

- Anth 199 Introduction to American Indian Study**3
- Anth 210 Cultural Anthropology**3
Meaning of culture, its significance for humans, its diverse forms and among peoples, past and present.
- Anth 220 Physical Anthropology**3
- Anth 410 North American Ethnology**3
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. Crosslisted with AIS 410 Equivalent to AIS 410.
- Anth 421 Indians of North America (CI)**3
Provides prospective teachers and those interested in Indian people with a basic knowledge of Indian heritage and culture. Emphasis on the Dakota Indians. Crosslisted with AIS 421. (Fulfills Teacher Ed. requirement.)
- Anth 491 Special Problems**1-3
P, open to undergraduate and graduate students with sufficient background and consent of instructor. Instructor's consent required.
- Anth 492 Topics in Anthropology**1-3
Selected topics pertaining to theory and methods in cultural, physical anthropology and archaeology. P, undergraduate/graduate and consent of instructor.
- Anth 494 Internship**1-12
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. P, Anth 494 or Anth 496; maximum 12 credits.
- Anth 496 Field Experience**1-12
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. P, Anth 495 or Anth 496; maximum 12 credits.

Dual Numbered Courses

- Anth 421-521 Indians of North America**3
Provides prospective teachers and those interested in Indian people with a basic knowledge of Indian heritage and culture. Emphasis on the Dakota Indians. Crosslisted with AIS 421. (Fulfills Teacher Ed. requirement).

- Anth 491-591 Special Problems**1-3
P, open to undergraduate and graduate students with sufficient background and consent of instructor.
- Anth 492-592 Topics in Anthropology**1-3
Selected topics pertaining to theory and methods in cultural, physical anthropology and archaeology. P, undergraduate/graduate and consent of instructor.

Art (Art Studies)

Undergraduate Courses

- Art 111 Drawing I**3
Development of visual perception in representational and expressive drawing in various media, stressing visual thinking through observation, analysis and expression. P, department written consent.
- Art 112 Drawing II**3
Continuation of Drawing I with additional emphasis on developing conceptual and critical abilities related to the expression of visual ideas. P, department written consent. P, Art 111.
- Art 121 Design I**3
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. P, department written consent.
- Art 123 Three Dimensional Design**3
History, theory, aesthetics and materials of the three dimensional design language. Organization of the visual and design elements in 3-D problem solving. P, department written consent.
- Art 212 Figure Drawing**3
A continuation of Drawing I with an emphasis on developing the visual, intellectual, and technical aspects by drawing the human figure. P, Art 111.
- Art 222 Color Theory**3
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, department written consent and Art 121.
- Art 231 Painting I-Beginning Level**3
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, Art 111.
- Art 241 Sculpture I-Beginning**3
An introduction to sculpture approaches through projects involving various 3-D traditional and contemporary materials and techniques. P, Art 123.
- Art 251 Ceramics I-Beginning Level**3
The study of the ceramic heritage from various cultures in relation to contemporary clay objects. Projects expose students to hand-building, glazing and firing techniques.
- Art 281 Printmaking I-Beginning Level**3
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, Art 111.
- Art 331 Painting II-Intermediate Level**3
A continuation of Art 231, Painting I, with an increased emphasis on composition and expression. P, Art 231.
- Art 332 Painting III-Intermediate Level**3
Continuation of Painting II. Emphasis on composition and expression. P, Art 331.

Art 341 Sculpture II-Intermediate Level	3
A continuation of Sculpture I. Exploring individual concepts and various techniques and materials. P, Art 241.	
Art 342 Sculpture III-Intermediate Level.....	3
A continuation of Sculpture II. Further exploration of individual concepts and various techniques and materials. P, Art 341.	
Art 351 Ceramics II-Intermediate Level.....	3
A continued exploration of clay through individual concepts, techniques and glazing and firing methods. P, Art 251.	
Art 352 Ceramics III-Intermediate Level.....	3
Continuation of Ceramics II. Emphasis on individual concepts developed through hand-building and/or throwing techniques. Also more advanced glazing and firing techniques, kiln maintenance, and studio operations. P, Art 351.	
Art 381 Printmaking II-Beginning Level.....	3
A continuation of Printmaking I. P, Art 281.	
Art 382 Printmaking-Advanced.....	3
Continuation of Printmaking II. Creative use of advanced printmaking techniques and processes in relief, intaglio, and serigraphy. P, Art 381.	
Art 391 Problems in Visual Arts	3
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. P, written consent of the instructor.	
Art 430 Watercolor.....	3
Creative experience in developing and evaluating visual ideas expressed through the watercolor medium. Discussion and utilization of master artists' watercolor approaches and techniques. P, Art 111.	
Art 431 Painting IV-Advanced Level	3
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, Art 332.	
Art 441 Sculpture IV-Advanced.....	3
Continuation of Sculpture III. Advanced exploration of sculpture concepts. P, Art 342.	
Art 451 Ceramics IV-Advanced.....	3
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, Art 352.	
Art 481 Printmaking IV-Advanced Level.....	3
A continuation of Printmaking III. P, Art 382.	
Art 491 Directed Studies Program.....	1-12
P, written consent of 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). Instructor's consent required.	
Art 492 Topics in Visual Arts	1-5
Selected topics of current interest in the discipline.	
Art 494 Internship.....	1-9
You may elect to initiate and complete a major problem off campus. All Visual Art 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, written consent of instructor.	

ArtD (Art Design)

Undergraduate Courses

ArtD 251 Graphic Design I.....	3
Introduction to visual communications and graphic design theory. Primary emphasis on basic visual design language and process.	
ArtD 255 Computer Graphics I.....	3
A non-programming introduction to drawing, painting and page layout design software with an emphasis on the production of computer-generated design projects. P, instructor's consent required. P, ArtD 251.	
ArtD 350 Graphic Design II.....	3
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, ArtD 251 and ArtD 255 or consent of instructor.	
ArtD 351 Visual Communication I:	
Advanced Graphic Design (CI)	3
A course in Visual Communication theory and technology that explores problem solving methodologies in advanced design. P, ArtD 350.	
ArtD 352 Design Media I (CI).....	3
Introduction to multimedia and electronic prepress. Instructor's consent required. P, ArtD 355 ArtD 350 ArtD 351.	
ArtD 355 Computer Graphics II (CI)	3
A non-programming intermediate computer graphics course focusing on digital-imaging and page-layout applications for graphic designers. Instructor's consent required. P, ArtD 255 ArtD 350.	
ArtD 450 Visual Communication II:	
Senior Portfolio (CI)	3
A Visual Communication course in portfolio preparation that applies advanced practice, theory, and emerging technology. P, ArtD 351	
ArtD 452 Design Media II (CI)	3
A continuation of Design Media I with emphasis on completed multimedia and web page projects as portfolio works. Instructor's consent required. P, ArtD 352.	
ArtD 465 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 MCom 471.) Equivalent to MCom 471. P, ArtD 351 or MCom 371.	

ArtE (Art Education)

Undergraduate Courses

ArtE 414 K-12 Art Methods.....	3
P, art education major and junior standing.	
ArtE 491 Special Problems in Visual Arts.....	1-3
Instructor's consent required.	

Dual Numbered Courses

ArtE 591 Special Problems in Visual Arts.....	1-3
Instructor's consent required.	

ArtH (Art History)

Undergraduate Courses

ArtH 100 Art and Design Appreciation.....	3
Introduction to traditional and new visual media in art and design with a stress on practical knowledge. Primarily for non-art majors.	

- ArtH 211 Survey of World Art and Architecture.....3**
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. P, ArtH 100.
- ArtH 212 Western Traditions in Art and Architecture.....3**
Principal artistic styles in western culture: Renaissance to present. Emphasis on international studies and cultural diversity. P, ArtH 100.
- ArtH 310 History of U.S. Art and Architecture.....3**
From colonial times to present. P, ArtH 212.
- ArtH 320 Modern Art and Architecture Survey3**
Survey of Modern Art and Architecture from its beginnings in the 19th century. Emphasis on international studies and cultural diversity. P, ArtH 212.
- ArtH 492 Topics in Art or Design History and Criticism1-3**
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, ArtH 100 ArtH 212.

AS (Animal Science)

Undergraduate Courses

- AS 100 Opportunities in Animal Science1**
An overview of opportunities in Animal Science.
- AS 101 Introduction to Animal Science2**
Adaptation, breeding, feeding, marketing, behavior, classification, growth, genetics, reproduction and animal health as they apply to farm animals. Corequisite courses: AS 101A.
- AS 101A Introduction to Animal Science Lab1**
Corequisite courses: AS 101.
- AS 104 Introduction to Horse Management.....2**
Basic principles in caring for horses, and introduction to the horse industry. Topics include: horse breeds and registry; grooming and safe handling, care and feeding practices; vital signs, body condition scoring, pre-purchase examination, recognition of common lameness and health problems and facilities. Corequisite courses: AS 104A.
- AS 104A Introduction to Horse Management Lab 0 F**
Laboratory sessions will include involvement with the SDSU Horse Unit's activities and field trips to nearby facilities. Corequisite courses: AS 104.
- AS 105 Light (Saddle) Horses1**
Breeds of horses, gaits, grooming, equipment, diets; basic instruction with suitable equipment. Corequisite courses: AS 105A.
- AS 105A Light (Saddle) Horses Studio0**
Corequisite courses: AS 105.
- AS 200 Introduction to Meats Judging1**
Identifying, judging and grading of carcasses and wholesale cuts; training in writing reasons. P, AS 101 and sophomore standing.
- AS 201 Introduction to Livestock and Wool Judging1**
Livestock selection criteria and terminology for beef, sheep, swine, horse and wool; performance selection parameters and EPD's will be discussed. P, AS 101 and sophomore standing.
- AS 233 Applied Animal Nutrition.....4**
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, AS 101. Corequisite courses: AS 233A.
- AS 233A Applied Animal Nutrition Lab0**
Corequisite courses: AS 233.

- AS 241 Meat: Product to Consumption3**
Survey of meat industry. Composition of meat animals. Product identification, preservation, cooking, nutritive value, pricing and curing.
- AS 285 Livestock Evaluation and Marketing.....4**
Live and carcass evaluation of market animals. Methods of marketing and pricing livestock and carcasses. P, AS 101. Corequisite courses: AS 285A.
- AS 285A Livestock Evaluation and Marketing Lab0**
Corequisite courses: AS 285.
- AS 322 Jr Livestock Judging Team1**
Type studies and selection for individual excellence; judging and oral discussion of classes of beef cattle, horses, sheep and swine. P, AS 200 AS 285.
- AS 323 Advanced Animal Nutrition3**
Functions of various nutrients; digestion and metabolism of nutrients by different animal species. P, AS 233.
- AS 332 Principles of Animal Breeding4**
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. Corequisite courses: AS 332A.
- AS 332A Principles of Animal Breeding Lab0**
Corequisite courses: AS 332.
- AS 341 Fresh Meat Operations (CI).....3**
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 AS 241 or instructor consent.
- AS 345 Processed Meat Technology.....3**
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, AS 241. Corequisite courses: AS 345A.
- AS 345A Processed Meat Technology Lab.....0**
Corequisite courses: AS 345.
- AS 365 Horse Production3**
Feeding, breeding and management principles for horses. P, AS 101. Corequisite courses: AS 365A.
- AS 365A Horse Production Lab.....0**
Corequisite courses: AS 365.
- AS 390 Animal Science Junior Seminar (CI)1**
Review of current research, discussions and reports. P, junior standing.
- AS 400 Judging Teams (Section 1 and 2 CI).....1**
SECTION 1: MEATS Identifying, judging and grading carcasses and cuts; training in writing reasons; participation in intercollegiate meat judging contests.
SECTION 2: LIVESTOCK Trips to purebred herds; training in Oral Reasons; participation in American Royal and International Livestock Judging contests.
SECTION 3: WOOL Wool judging and grading, training in written reasons, participation in National Western Wool Judging contests.
SECTION 4: RANGE PLANT ID Instruction and practice in identification of important range plants of North America.
SECTION 5: URME Instruction and practice in general range science knowledge and problem solving. Participation in the national Undergraduate Range Management Exam (URME) contest. P, 205 or 215 or consent of instructor.
- AS 433 Livestock Reproduction.....3**
Basic physiological processes of reproduction in domestic animals, factors affecting and methods of improving reproductive efficiency. P, Vet 223. Corequisite courses: AS 433A.

AS 433A Livestock Reproduction Lab.....0	
Corequisite courses: AS 433.	
AS 474 Beef Cattle Production.....3	
Feeding, breeding and management principles of beef cattle production under farm and ranch conditions. P, AS 101 AS 233. Corequisite courses: AS 474A.	
AS 474A Beef Cattle Production Lab.....0	
Corequisite courses: AS 474.	
AS 477 Sheep and Wool Production .....3	
Feeding, breeding and management principles for maximum production of meat and wool in farm and range flocks. P, AS 101 AS 233. Corequisite courses: AS 477A.	
AS 477A Sheep and Wool Production Lab .....0	
Corequisite courses: AS 477.	
AS 478 Swine Production .....3	
Feeding, breeding and management principles for swine production. Breeds, production trends and equipment. Student participation in management techniques. P, AS 101 AS 233. Corequisite courses: AS 478A.	
AS 478A Swine Production Lab.....0	
Corequisite courses: AS 478.	
AS 490 Animal Science Senior Seminar: Current Issues (CI).....1	
Review of current research, discussions and reports. Limit 2 credits. P, senior standing. P, AS 390.	
AS 491 Research Problems .....1-3	
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 Special Topics .....1-6	
Advanced study of one or more selected topics: breeding, management, product technology, physiology, nutrition, research methods or marketing.	
AS 494 Internship .....1-12	
Supervised experience with a livestock enterprise or related agribusiness for exposure to industry problems and solutions, evaluation of career objectives and final career preparation.	
AS 497 Cooperative Education.....1-12	
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	
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	
Advanced study of one or more selected topics: breeding, management, product technology, physiology, nutrition, research methods or marketing.	

Graduate Courses

AS 711 Ruminology.....3	
AS 712 Ruminant Nutrition .....3	
AS 713 Animal Systems .....1-9	
AS 723 Population Genetics .....3	
AS 731 Experimental Procedures .....2	
AS 732 Advanced Physiology of Reproduction .....3	
AS 732A Advanced Physiology of Reproduction Lab.....0	

AS 733 Vitamins and Minerals.....3	
AS 734 Protein and Energy Nutrition .....3	
AS 736 Monogastric Nutrition .....3	
AS 750 Animal Growth and Development.....3	
AS 753 Meat Science .....3	
AS 753A Meat Science Lab .....0	
AS 790 Graduate Seminar .....1	
AS 798 Thesis.....1-7	
AS 799 Animal Growth and Development.....3	
AS 898D Dissertation-Ph.D. .....1-12	

AST (Agricultural Systems Technology)

Undergraduate Courses

AST 202 Construction Techniques and Materials .....2	
Wood and concrete building materials; efficient construction procedures; hand tools, portable and stationary power tools; safe working practices. Corequisite courses: AST 202A.	
AST 202A Construction Techniques and Materials Lab.....0	
Corequisite courses: AST 202.	
AST 213 Ag, Industrial and Outdoor Power .....3	
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. Corequisite courses: AST 213A.	
AST 213A Ag, Industrial and Outdoor Power Lab .....0	
Corequisite courses: AST 213.	
AST 252 Auto Mechanics.....2	
Engine tune-up, servicing and repairing engine accessories; testing valves, carburetors, ignition systems; installing new rings, valves, and general work required of mechanics. Corequisite courses: AST 252A.	
AST 252A Auto Mechanics Lab.....0	
Corequisite courses: AST 252.	
AST 262 Environmental Safety and Society.....2	
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 safe practices.	
AST 273 Microcomputer Applications in Agriculture.....3	
Basics of micro/transducer/control interfacing used for farm machinery and equipment. Popular agricultural software, data management for agricultural applications. Practical experience in monitoring and controlling agricultural processes, equipment and systems. Corequisite courses: AST 273A.	
AST 273A Microcomputer Applications in Agriculture Lab.....0	
Corequisite courses: AST 273.	
AST 303 Design Management Experience (CI).....3	
Collaboration on designs with Agricultural and Biosystems 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, GE 121 GE 123. Corequisite courses: AST 303A.	
AST 303A Design Management Experience Research (CI).....0	
Corequisite courses: AST 303.	
AST 313 Farm Machinery Systems Management (CI) .....3	
Farm machine selection and operation (including power requirements) tillage, spraying, planting, harvesting, storage, and ergonomics. P, Phys 101 or Phys 111. Corequisite courses: AST 313A.	

AST 313A Farm Machinery System Management Lab (CI).....0	AST 463 Agricultural Waste Management (CI).....3
Corequisite courses: AST 313.	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, Instructor consent and take PS 213 take Phys 101 or Phys 111.
AST 333 Soil and Water Mechanics (CI).....3	AST 482 Advanced Farm Engines .....2
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. Corequisite courses: AST 333A.	Operation, selection, care, adjustment, and new development of internal combustion engines as applied to farm power units. Corequisite courses: AST 482A.
AST 333A Soil and Water Mechanics Lab (CI) .....0	AST 482A Advanced Farm Engines Lab .....0
Corequisite courses: AST 333.	Corequisite courses: AST 482.
AST 342 Applied Electricity (CI).....3	AST 491 Special Problems .....1-3
Basic wiring, electrical circuits, controls, lighting, electric motor selection and operation. National Electric Code covering residential, farm and light industrial applications. Corequisite courses: AST 342A.	Must have approval of adviser and department head. Instructor's consent required.
AST 342A Applied Electricity Lab (CI).....0	AST 492 Special Topics.....1-4
Corequisite courses: AST 342.	AST 492A Special Topics Lab .....0
AST 412 Hydraulic and Pneumatic Systems and Controls.....2	AST 494 Internship.....1-12
Principles of fluid power, hydraulic and pneumatic components and system function. Component selection and off-the-shelf system design. Manual, microprocessor and electronic control of systems. Corequisite courses: AST 412A.	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. Instructor's consent required.
AST 412A Hydraulic and Pneumatic Systems and Controls Lab....0	AST 496 Field Experience.....1-12
Corequisite courses: AST 412.	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. Instructor's consent required.
AST 422 Environmental Control in Structures.....2	AST 497 Cooperative Education .....1-12
Study of heat and moisture balance, gases, dust, and odors. Selection and design of fans, ducts, diffusers and efficient ventilation patterns. Corequisite courses: AST 422A.	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. Instructor's consent required.
AST 422A Environmental Control in Structures Lab.....0	
Corequisite courses: AST 422.	
AST 423 Rural Structures (CI).....3	
Stud-frame and post-frame design specifications and techniques. Snow and wind loads, truss and header design, mechanical properties of lumber, plywood, and composite wood materials, insulation and concrete reinforcement. Corequisite courses: AST 423A.	
AST 423A Rural Structures Lab (CI) .....0	
Corequisite courses: AST 423.	
AST 443 Food Processing and Engineering Fundamentals (CI) .....3	
Mechanics, refrigeration, heat transfer, instrumentation, and equipment operation as applied to materials, handling, storing, preserving, packaging and processing agricultural products. Corequisite courses: AST 443A.	
AST 443A Food Processing and Engineering Fundamentals Lab (CI).....0	
Corequisite courses: AST 443.	
AST 452 Teaching Ag Systems Technology Labs (CI).....2	
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. Equivalent to AgEd 454. P, AST 202. Corequisite courses: AST 452A.	
AST 452A Teaching Agricultural Mechanics Lab (CI) .....0	
Equivalent to AgEd 454A. Corequisite courses: AST 452.	
AST 462 Advanced Topics in Natural Resources Technologies .....2	
Examination of topics related to the natural resources management technologies. Potential topics include irrigation systems and water management, livestock waste facilities, soil erosion control, drainage systems and economics, wetlands, water supply and quality, watershed hydrology, water measurement and data acquisition equipment. (May be repeated when topic is different.)	
	Dual Numbered Courses
	AST 412-512 Hydraulic and Pneumatic Systems and Controls .....2
	Principles of fluid power, hydraulic and pneumatic components and system function. Component selection and off-the-shelf system design. Manual, microprocessor and electronic control of systems. Corequisite courses: AST 412A-512A.
	AST 412A-512A Hydraulic and Pneumatic Systems and Controls Lab.....0
	AST 422-522 Environmental Control in Structures .....2
	Study of heat and moisture balance, gases, dust, and odors. Selection and design of fans, ducts, diffusers and efficient ventilation patterns. Corequisite courses: AST 422A-522A.
	AST 422A-522A Environmental Control in Structures Lab.....0
	AST 462-562 Advanced Topics in Natural Resource Technologies ..2
	Examination of topics related to the natural resources management technologies. Potential topics include irrigation systems and water management, livestock waste facilities, soil erosion control, drainage systems and economics, wetlands, water supply and quality, watershed hydrology, water measurement and data acquisition equipment. (May be repeated when topic is different.)
	AST 482-582 Advanced Farm Engines.....2
	Operation, selection, care, adjustment, and new development of internal combustion engines as applied to farm power units. Corequisite courses: AST 482A-582A.
	AST 482A-582A Advanced Farm Engines Lab.....0
	Graduate Courses
	AST 791 Special Problems .....1-3
	AST 792 Special Topics.....1-4

AT (Athletic Training)

Undergraduate Courses

AT 164 Introduction to Athletic Training2
A basic introductory course designed to acquaint students interested in athletic training with all aspects of the profession.

AT 361 Athletic Training Techniques I (CI).....3
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. 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. Instructor's consent required.

AT 362 Athletic Training Techniques II (CI)3
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. 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. Instructor's consent required. P, AT 361.

AT 363 Athletic Training Techniques III (CI)3
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. 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. Instructor's consent required. P, AT 362.

AT 364 Athletic Training Techniques IV3
This course is designed to cover the athletic training competencies in organization and administration. It will cover knowledge, skills and values that an athletic trainer must possess to develop, administer, and manage a health care facility and associated venues that provide health care to athletes and others involved in physical activity. P, permission.

AT 371 Athletic Training Clinical Experience I2
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. Instructor's consent required.

AT 372 Athletic Training Clinical Experience II.....2
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. Instructor's consent required. P, AT 371.

AT 373 Athletic Training Clinical Experience III2
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. Instructor's consent required. P, AT 372.

AT 374 Athletic Training Clinical Experience IV2
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. Instructor's consent required.

AT 454 Athletic Injury Assessment-Lower Extremity2
This course is designed to have the student athletic trainers develop a sound understanding of the assessment of athletic related injuries and conditions occurring to the lower extremities. The course will incorporate anatomy of the lower extremity, the athletic related injuries or conditions which may occur, and evaluation techniques used to assess this area of the body.

AT 456 Athletic Injury Assessment-Upper Extremity2
This course is designed to have the student athletic trainers develop a sound understanding of the assessment of athletic related injuries and conditions occurring to the upper extremities. The course will incorporate anatomy of the upper extremity, the athletic related injuries or conditions which may occur, and evaluation techniques used to assess this area of the body.

AT 464 Therapeutic Modalities in Athletic Training2
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 Experience1
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 (CI).....2
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. Instructor's consent required.

AT 490 Senior Seminar in Athletic Training (CI)2
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 101 Introduction to General Aviation**1
- Avia 270 Private Pilot Theory**3
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. Corequisite courses: Avia 272.
- Avia 272 Private Pilot Flight I**.....2
Individual flight instruction for the FAA Private Pilot Certificate. Topics include aircraft preflight, weather briefings, basic flight maneuvers, and basic flight regulations. Students will complete, under the supervision of SDSU flight instructors, State 2 requirements of the Private Pilot Syllabus as a requirement for course completion. Instructor consent is required for enrollment. Additional fees apply for aircraft rental and flight instruction. Instructor's consent required. Corequisite courses: Avia 270.
- Avia 273 Private Pilot Flight II**3
Individual flight instruction for the FAA Private Pilot Certificate. 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. Student will obtain, under the supervision of SDSU flight instructors, the FAA Private Pilot Airplane Single Engine Land Certificate, as a requirement of course completion. Instructor consent is required for enrollment. Additional fees apply for aircraft rental and flight instruction. P, Avia 270 Avia 272. Instructor's consent required.
- Avia 370 Commercial Pilot Theory**.....3
Theory preparing students for commercial flight operations. Includes federal regulations, complex aircraft performance and operation, high performance aircraft characteristics, and safe operation of commercial aircraft in the United States air transportation system. Student will successfully complete the FAA Commercial Pilot Certificate written examination as a requirement of course completion. Instructor's consent required. P, Avia 371 Avia 372.
- Avia 371 Instrument Pilot Theory**3
Theory preparing students for FAA Instrument Rating. Topics include navigation principles and procedures, air traffic control procedures, applicable FAA regulations, and meteorological considerations for flight in the airspace system. Students completing this course will successfully complete the FAA Instrument Pilot written examination as a requirement for course completion. Instructor's consent required. P, Avia 273. Corequisite courses: Avia 372.
- Avia 372 Instrument Flight**.....2
Individual flight instruction for the FAA Instrument flight rating. Students will obtain, under the supervision of SDSU flight instructors, the FAA Airplane Single Engine Land Instrument rating as a requirement for course completion. Instructor consent is required for enrollment. Additional fees apply for aircraft rental and flight instruction. P, Avia 273. Instructor's consent required. Corequisite courses: Avia 371.
- Avia 373 Commercial Flight I**.....3
Individual flight instruction for the FAA Commercial Pilot Certificate. Student will complete, under the supervision of SDSU flight instructors, Stage IV requirements of the Commercial Pilot Syllabus of instruction as a requirement for course completion. Instructor consent is required for enrollment. Additional fees apply for aircraft rental and flight instruction. P, Avia 372. Instructor's consent required. Corequisite courses: Avia 370.

- Avia 374 Commercial Flight II**.....3
Completion of individual flight instruction for the FAA Commercial Pilot Certificate. Students will obtain, under the supervision of SDSU flight instructors, the FAA Commercial Pilot Certificate as a requirement for course completion. Instructor consent is required for enrollment. Additional fees apply for aircraft rental and flight instruction. P, Avia 373. Instructor's consent required.
- Avia 470 Flight Instructor Theory/Flight**.....3
P, Avia 372; maximum 8 credits.

BAdm (Business Administration)

Undergraduate Courses

- BAdm 260 Production and Operations Management**.....3
A broad analytical 'systems' viewpoint is used to develop competency in management decision-making and problem solving in operations setting in various businesses and especially manufacturing. This course involves the study of the production end of business, where resources are transferred into goods and services, and the management of operations through effective planning, implementing, and monitoring for continuous improvement. Crosslisted with MnET 260. Equivalent to MnET 260. P, 1 course; from Subject MATH; except courses Math 021 Math 101 Math 100T.
- BAdm 310 Business Finance (CI)**3
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. Junior standing or consent. P, Acct 210 Acct 211.
- BAdm 324 Operations Research**4
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 281.
- BAdm 334 Small Business Management (CI)**.....3
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
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
Legal rights and duties of parties to business transactions-sales security devices and insurance, partnerships, corporations, real property, estates and bankruptcy. P, BAdm 350.
- BAdm 360 Organization and Management (CI)**.....3
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
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
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, BAdm 310 take Econ 330 or AgEc 478.

BAdm 474 Principles of Selling (CI)3
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 (CI)3
Applications of Accounting, Finance, managerial concepts, quantitative techniques, and Business Law to management problem situations. Case study approach. P, senior standing. P, BAdm 360.

BAdm 490 Seminar in Business Consulting3
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 492 Special Topics1-4
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. P, BAdm 493.

Bio (Biology)

Undergraduate Courses

Bio 101 Biology Survey I.....3
Study of the nature, diversity, and classification of life; ecology; cells and cell cycles, Mendelian and modern Genetics evolution and evolution theory. Intended for those not majoring in Biology. Duplicate credit for 101 and 151 not allowed. Equivalent to Bio 151. Corequisite courses: Bio 102.

Bio 102 Biology Survey I Lab.....0
Equivalent to Bio 152. Corequisite courses: Bio 101.

Bio 103 Biology Survey II.....3
Study of energetics, plant growth, development, and reproduction; animal structure and function. Intended for those not majoring in Biology. Duplicate credit for 103 and 153 not allowed. Equivalent to Bio 153. P, Bio 101 or Bio 151. Corequisite courses: Bio 104.

Bio 104 Biology Survey II Lab.....0
Equivalent to Bio 154. Corequisite courses: Bio 103.

Bio 105 Human Biology3
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 106 Genetics and Society.....2

Bio 151 General Biology I.....4
The introductory course for those majoring in Biology and Microbiology. Presents the concepts of cell biology, evolution, heredity, molecular genetics and ecology. Equivalent to Bio 101. Corequisite courses: Bio 152.

Bio 152 General Biology I Lab.....0
Equivalent to Bio 102. Corequisite courses: Bio 151.

Bio 153 General Biology II.....4
A continuation of Bio 151, the introductory course for those majoring in Biology and Microbiology. Presents the concepts of animal and plant structure and function, energetics, and reproduction. Equivalent to Bio 103. P, 1 course take Bio 151 or take Bio 101 with lab; minimum grade B. Corequisite courses: Bio 154.

Bio 154 General Biology II Lab.....0
Equivalent to Bio 104. Corequisite courses: Bio 153.

Bio 200 Biological Diversity.....4
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, Bio 101 or Bio 151. Corequisite courses: Bio 200A.

Bio 200A Biological Diversity Lab.....0
Corequisite courses: Bio 200.

Bio 201 Genetics and Organismal Biology.....3
First course in a 2-semester sequence designed to teach students current concepts in genetics, cellular and molecular biology. This course prepares students in the biological sciences for advanced courses in their emphasis areas. Topics covered in this course include: mendelian inheritance; mitosis and meiosis; basic cell structure; chromosomal basis of inheritance and linkage; extranuclear genes; chromosomal mutations; epistasis, alleles and the environment; gene function; genetic mapping; population genetics; quantitative genetics; evolution and natural selection. This course is designed to be taken in conjunction with Bio 202, Genetics and Organismal Lab. P, 1 group (take Bio 151 Bio 152 Bio 153 Bio 154 Chem 112 Chem 112L Chem 114 Chem 114L /take Bio 101 Bio 102 Bio 103 Bio 104 Chem 112 Chem 112L Chem 114 Chem 114L). Corequisite courses: Bio 202.

Bio 202 Genetics and Organismal Lab.....1
This is the first course in a 2-semester laboratory sequence designed to teach students current techniques in genetics, cellular and molecular biology as well as providing hands-on reinforcement of concepts taught in Bio 201. This course will introduce students to basic techniques fundamental to advanced courses in their emphasis areas. Concepts covered will include: basics of experimental design and data analysis; analysis of single and multi gene traits; complementation/allelism; genetic mapping with phages, bacterial conjugation and nuclear recombination; quantitative inheritance and QTLs; Hardy-Weinberg analysis; natural selection; and constructing evolutionary trees. This course must be taken in conjunction with Bio 201. P, take 1 group (take Bio 151 Bio 152 Bio 153 Bio 154 Chem 112 Chem 112L Chem 114 Chem 114L /take Bio 101 Bio 102 Bio 103 Bio 104 Chem 112 Chem 112L Chem 114 Chem 114L). Corequisite courses: Bio 201.

Bio 203 Genetics and Cellular Biology.....3
Second course in a 2-semester sequence designed to teach students current concepts in genetics, cellular and molecular biology. This course will prepare students in the biological sciences for advanced courses in their emphasis areas. Topics covered in this course include: DNA and chromosomal structure; mobile genetic elements; transcription; RNA processing; translation; enzymes and metabolism; membrane structure and function; respiration and photosynthesis; the endomembrane system and trafficking; cytoskeleton; cell signaling; genetic engineering and biotechnology. This course is designed to be taken in conjunction with Bio 204. One semester of Organic Chemistry is highly recommended. P, Bio 201. Corequisite courses: Bio 204.

Bio 204 Genetics and Cellular Lab.....1
This is the second course in a 2-semester laboratory sequence designed to teach students current techniques in genetics, cellular and molecular biology as well as providing hands-on reinforcement of concepts taught in Bio 203. This course will introduce students to basic techniques fundamental to advanced courses in their emphasis areas. Concepts covered will include: use of laboratory equipment; basic tissue culture techniques; DNA and RNA isolation; electrophoresis of nucleic acids and proteins; physical mapping using restriction enzymes and PCR probes; DNA and protein sequence analysis; using genome databases; and karyotype analysis. This course must be taken in conjunction with Bio 203. One semester of Organic Chemistry is highly recommended. P, take Bio 201 Bio 202. Corequisite courses: Bio 203.

Bio 290 Undergraduate Seminar1
Student will explore the various career opportunities in the biological sciences and procedures for employment.

Bio 291 Special Problems	1-4
Independent study in specialized area of the biological sciences. Objectives, scope of work and plan of study specified by instructor and student(s). P, consent of instructor and department. Take Bio 101 or Bio 151.	
Bio 311 Principles of Ecology (CI)	3
Environmental interactions with organisms, populations and communities; population interactions and evolution, community organization and succession, energy flow, biogeochemical cycles; human ecology. P, take Bio 101 or Bio 151.	
Bio 371 Genetics (CI)	3
Principles governing the nature, transmission and function of hereditary material with application to plants, animals, humans, and microorganisms. P, Bio 101 or Bio 151.	
Bio 373 Evolution (CI)	3
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, Bio 101 or Bio 151.	
Bio 383 Bioethics (CI)	4
Ethical, social and policy dilemmas in medicine and biology. Crosslisted with Phil 383. Equivalent to Phil 383. P, Bio 101 or Bio 151.	
Bio 415 Mycology	3
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. Equivalent to PS 415. Corequisite courses: Bio 415A.	
Bio 415A Mycology Lab	0
Equivalent to PS 415A. Corequisite courses: Bio 415.	
Bio 425 Biology of Aging	3
Physical, sensory, and physiological changes with age, aging of cells and tissues. Cellular, developmental, endocrine and other theories of aging. Pathologies of aging. P, take Zool 325.	
Bio 425A Disturbance Ecology Lab	0
Bio 440 Restoration Ecology (CI)	4
Scientific principles involved in restoration of natural ecosystems. Crosslisted with La 440. Equivalent to La 440. Corequisite courses: Bio 440A.	
Bio 440A Restoration Ecology Lab (CI)	0
Equivalent to La 440A. Corequisite courses: Bio 440.	
Bio 445 Histological Techniques	3
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. Corequisite courses: Bio 445A.	
Bio 445A Histological Techniques Lab	0
Corequisite courses: Bio 445.	
Bio 453 Advanced Genetics	3
Procedures in genetic studies as they relate to molecular and classical genetic applications. Crosslisted with PS 453-553. Equivalent to PS 453. P, Bio 371.	
Bio 462 Molecular Biology I	2
Charge, partitioning migration of molecules; protein structure, enzymes; DNA structure and properties, pro-caryotic and eukaryotic 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. Crosslisted with PS 462-562. Equivalent to PS 462. P, Micr 436 Chem 361.	
Bio 464 Molecular Biology II	2
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. Crosslisted with PS 464-564. Equivalent to PS 464. P, Bio 462.	
Bio 465 Molecular Biology II Lab	2
Screening recombinant DNA libraries; DNA sequencing; analysis of proteins; detection of proteins; RNA transfer and hybridization analyses; use of nucleic acid and protein databases. Crosslisted with PS 465-565. Equivalent to PS 465. P, Bio 462.	
Bio 467 Environmental Toxicology and Contaminants	3
This course will prepare students in the area of Ecological Effects of Toxic Substances and other contaminants. Wildlife toxicology and impacts of agriculture on the Northern Plains will be emphasized. Topics covered will include pesticides, heavy metals, aquatic and terrestrial ecotoxicity and other topics related to Wildlife Toxicology.	
Bio 475 Water Quality in Agriculture	3
Equivalent to PS 475. P, take Chem 106 take Bio 101 or Bio 151.	
Bio 480 Environmental Stress Physiology (CI)	3
Physiological and cellular response of plants to environmental stresses. Crosslisted with Ho 480-580 and PS 480-580. Equivalent to Ho 480, PS 480.	
Bio 490 Senior Seminar (CI)	1
Presentation of topics based on biological literature in scientific journals. P, three years of coursework.	
Bio 491 Biological Problems	1-4
Individually assigned investigative problems in biology. Instructor's consent required. P, take Bio 101 or Bio 151.	
Bio 492 Special Topics	1-5
Field Ecology, Human Ecology, Mammalian Developmental Genetics. Instructor's consent required.	
Bio 492A Special Topics Lab	0
Instructor's consent required.	
Bio 494 Internship	1-12
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. Instructor's consent required.	
Bio 496 Field Experience	1-12
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. Instructor's consent required.	
Bio 497 Cooperative Education	1-12
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. Instructor's consent required.	
Dual Numbered Courses	
Bio 415-515 Mycology	3
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. Equivalent to PS 515. Corequisite courses: Bio 415A-515A.	
Bio 415A-515A Mycology Lab	0
Equivalent to PS 515A. Corequisite courses: Bio 415-515.	
Bio 425-525 Biology of Aging	3
Physical, sensory, and physiological changes with age, aging of cells and tissues. Cellular, developmental, endocrine and other theories of aging. Pathologies of aging. P, Zool 325.	

Bio 445-545 Histological Techniques3
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. Corequisite courses: Bio 454A-545A.

Bio 445A-545A Histological Techniques Lab.....0
Corequisite courses: Bio 454-545.

Bio 453-553 Advanced Genetics3
Procedures in genetic studies as they relate to molecular and classical genetic applications. Crosslisted with PS 453-553. P, Bio 371.

Bio 462-562 Molecular Biology I.....2
Charge, partitioning migration of molecules; protein structure, enzymes; DNA structure and properties, pro-caryotic and eukaryotic 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. Crosslisted with PS 462-562. P, Micr 436 Chem 361.

Bio 464-564 Molecular Biology II.....2
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. Crosslisted with PS 464-564. P, Bio 562.

Bio 465-565 Molecular Biology II Lab.....2
Screening recombinant DNA libraries; DNA sequencing; analysis of proteins; detection of proteins; RNA transfer and hybridization analyses; use of nucleic acid and protein databases. Crosslisted with PS 465-565. P, Bio 562.

Bio 467-567 Environmental Toxicology and Contaminants.....3
This course will prepare students in the area of Ecological Effects of Toxic Substances and other contaminants. Wildlife toxicology and impacts of agriculture on the Northern Plains will be emphasized. Topics covered will include pesticides, heavy metals, aquatic and terrestrial ecotoxicity and other topics related to Wildlife Toxicology.

Bio 480-580 Environmental Stress Physiology3
Physiological and cellular response of plants to environmental stresses. Crosslisted with Ho 480-580 and PS 480-580.

Bio 492-592 Special Topics1-5
Field Ecology, Human Ecology, Mammalian Developmental Genetics. Instructor's consent required.

Bio 492A-592A Special Topics Lab.....0
Instructor's consent required.

Graduate Courses

Bio 762 Eukaryotic Molecular Bio Lab.....1

Bio 773 Cytogenetics3

Bio 773A Cytogenetics Lab0

Bio 788 Biological Research Problem1-3

Bio 791 Special Problems1-4

BiSt 692 Biology Topics for Educators.....1-12

BioS (Biological Sciences)

BioS 790 Graduate Seminar1

BioS 798 Thesis.....1-7

BioS 890 Ph.D. Seminar1

BioS 898D Dissertation-Ph.D.1-7

Bot (Botany)

Undergraduate Courses

Bot 201 General Botany.....3
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 Bio 151. Corequisite courses: Bot 202.

Bot 202 General Botany Lab.....0
Corequisite courses: Bot 201.

Bot 301 Plant Systematics.....4
Principles of phylogeny, classification and nomenclature; demonstrations, field study and laboratory practice in collecting, preserving and identifying plants. P, Bot 201 Bio 103 or Bio 153. Corequisite courses: Bot 301A.

Bot 301A Plant Systematics Lab.....0
Corequisite courses: Bot 301.

Bot 305 Agrostology3
Systematic study of grasses, their classification and nomenclature; laboratory practice in recognition and identification of grasses. P, Bot 201 Bio 103 or Bio 153. Corequisite courses: Bot 305A.

Bot 305A Agrostology Lab.....0
Corequisite courses: Bot 305.

Bot 327 Plant Physiology (CI).....4
Plant functions and adjustments. P, Bot 201 Bio 101-Bio 103 Bio 151 or Bio 153. Corequisite courses: Bot 327A.

Bot 327A Plant Physiology Lab0
Corequisite courses: Bot 327.

Bot 412 Morphology of Non-Vascular Plants.....1-3
A systematic survey of vascular plants that grow in wetland habitats, and a study of their adaptations to life in the water. Field and laboratory practice in identification and recognition of common aquatic plants. P, Bot 301 or consent of instructor. Corequisite courses: Bot 412A.

Bot 412A Morphology of Non-Vascular Plants Lab0
Corequisite courses: Bot 412.

Bot 413 Morphology of Vascular Plants.....3
Corequisite courses: Bot 413A.

Bot 413A Morphology of Vascular Plants Lab.....0
Morphology has been defined as philosophical anatomy. This course addresses comparative structure and evolutionary patterns existing in the diverse vascular plant groups including club mosses, ferns, gymnosperms and angiosperms. The student will gain insight into unity from homeostasis and diversity through evolution of this group of plants. Corequisite courses: Bot 413.

Bot 415 Plant Ecology4
Descriptions of plant communities, their dynamics and distribution. Environmental factors and their relationships with plants. Field trips. P, Bot 201 Bio 103 or Bio 153. Corequisite courses: Bot 415A.

Bot 415A Plant Ecology Lab0
Corequisite courses: Bot 415.

Bot 421 Plant Anatomy3
Developmental anatomy of seed plant axis and its appendages. Structural fitness of tissues and organs for functions they perform. P, Bot 201 Bio 103 or Bio 153. Corequisite courses: Bot 421A.

Bot 421A Plant Anatomy Lab0
Corequisite courses: Bot 421.

Bot 491 Special Problems1-4
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**1-3
A systematic survey of vascular plants that grow in wetland habitats, and a study of their adaptations to life in the water. Field and laboratory practice in identification and recognition of common aquatic plants. P, Bot 301 or consent of instructor. Corequisite courses: Bot 412A-512A.
- Bot 412A-512A Morphology of Non-Vascular Plants Lab**0
- Bot 413-513 Morphology of Vascular Plants**3
Corequisite courses: Bot 413A-513A.
- Bot 413A-513A Morphology of Vascular Plants Lab**0
Morphology has been defined as philosophical anatomy. This course addresses comparative structure and evolutionary patterns existing in the diverse vascular plant groups including club mosses, ferns, gymnosperms and angiosperms. The student will gain insight into unity from homeostasis and diversity through evolution of this group of plants. Corequisite courses: Bot 413-513.

Graduate Courses

- Bot 705 Aquatic Plants**3
- Bot 705A Aquatic Plants Lab**0
- Bot 715 Advanced Plant Ecology**4
- Bot 715A Advanced Plant Ecology Lab**0
- Bot 730 Plant Molecular Biology**3
- Bot 781 Plant Biotechnology**3
- Bot 781A Plant Tissue Culture Lab**0
- Bot 791 Special Problems**1-4
- Bot 792 Special Topics**1-5

CA (Consumer Affairs)

Undergraduate Courses

- CA 130 Coping Skills for Consumers**2
Principles of consumer education applied to various areas of consumer information. Decision making skills needed for competent purchasing. Open to all students.
- CA 150 Early Experience in Consumer Affairs**1
Course introduces the various roles of consumer affairs professionals in business, public service, and government. Students will analyze personal skills and the level of knowledge needed to attain a position in the desired area of consumer affairs. Performance of volunteer service to the community is required.
- CA 289 Consumers and the Market**3
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 291 Special Problems**1-3
Problems selected according to students' special needs and interests. P, consent of instructor. Instructor's consent required.
- CA 292 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 (CI)**3
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 341 Management Personal/Family Living (CI)**3
Resource management related to the economic aspects of family decision-making and financial planning. P, junior or consent.
- CA 361 Household Technology**2
Selection, principles of operation, use and care of household equipment. Impact of technology on individuals and families. Corequisite courses: CA 361A.
- CA 361A Household Technology Lab**0
Corequisite courses: CA 361.
- CA 371 Issues in Consumer Affairs (CI)**2
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 Business Environment**2
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. Equivalent to AM 381.
- CA 412 Strategies for Consumer Affairs Professionals (CI)**3
Preparation for the internship 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 internship will be completed. Shadowing and/or site visit experiences in the workplace will be required. P, 2.5 GPA; senior standing in Consumer Affairs or consent of instructor. Take CA 487. Corequisite courses: CA 412A.
- CA 412A Strategies for Consumer Affairs Professionals Lab (CI)**0
Corequisite courses: CA 412.
- CA 421 Diversity in the Workplace (CI)**3
Course addresses the role of culture and its effect on organizational behavior. Issues in the workplace include personal and cultural values, group norms, workplace policies and procedures, and diversity in culture, gender, age and physical differences. Crosslisted with NFSH 421. Equivalent to NFSH 421.
- CA 442 Family Resource Management Lab (CI)**3
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, CA 341.
- CA 450 Consumer Protection (CI)**3
Examination of consumer protection laws, regulations, and agencies at the federal and state levels. Analysis of the necessity for and effectiveness of consumer protection efforts. Examination of the role of business and the consumer in consumer protection.
- CA 487 Transition to the Professional World**1
Transition to the professional world will identify expectations for the world of work. Emphasis on effective written and verbal communication skills as related to work experiences, issue analysis, and goal setting for the future. Students will prepare for professional experiences such as internships, graduate school and professional positions upon graduation. P, senior standing or consent. Crosslisted with NFSH 487.
- CA 491 Special Problems**1-3
Problems selected according to students' special needs and interests. Instructor's consent required.

- CA 492 Current Topics**1-3
For students needing additional study of a topic or experience not offered as part of a regular class.
- CA 494 Professional Internship (CI)**10
A minimum of ten weeks during the Spring Semester. Explores roles and responsibilities of the consumer affairs professional. Student will have field experience in approved business or agency. P, 2.5 GPA and senior standing in Consumer Affairs, take CA 487. Corequisite courses: CA 412, CA 412A.

Dual Numbered Courses

- CA 492-592 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 595 Practicum in Family Financial Planning**3-6
The course provides an opportunity for students in the Family Financial Planning Program to gain experience in an applied setting in their subject matter specialization. A learning plan for the applied practicum experience will be developed by the student in collaboration with the faculty member/adviser prior to the start of the practicum. Instructor's consent required.
- CA 620 Family Economics**.....3
- CA 791 Special Problems**1-3
- CA 792 Current Topics**.....1-3

CEE (Civil and Environmental Engineering)

Undergraduate Courses

- CEE 106 Elementary Surveying**3
Use, adjustment, and care of surveying instruments; analysis of errors in observation. P, GE 121 take Math 120 or Math 115. Corequisite courses: CEE 106A.
- CEE 106A Elementary Surveying Lab**0
Corequisite courses: CEE 106.
- CEE 111 Survey of Environmental Engineering Practices**2
This course will be an introduction to the environment. It will highlight the role of the engineer, describe the design process, and explain how various engineering practices impact the environment (i.e. water, air, and soil quality).
- CEE 208 Engineering Surveys**3
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, CEE 106. Corequisite courses: CEE 208A.
- CEE 208A Engineering Surveys Lab**0
Corequisite courses: CEE 208.
- CEE 211 Materials of Construction**2
(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
Basic structure of materials and its effect on material properties. Laboratory tests on materials, principles of concrete mixes. P, Phys 211 Chem 112. Corequisite courses: CEE 216A.
- CEE 216A Materials Lab**0
Corequisite courses: CEE 216.

- CEE 304 Land Surveying**3
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, CEE 208.
- CEE 306 Photo Interpretation and Photogrammetry**3
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, CEE 208. Corequisite courses: CEE 306A.
- CEE 306A Photo Interpretation and Photogrammetry Lab**0
Corequisite courses: CEE 306.
- CEE 311 Structural Materials Lab**1
Laboratory tests on structural materials and elements, and interpretation of test results. Careful laboratory techniques are emphasized. P, CEE 216. Corequisite courses: EM 321.
- CEE 327 Water Supply Engineering**3
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. Corequisite courses: CEE 327A.
- CEE 327A Water Supply Engineering Lab**0
Corequisite courses: CEE 327.
- CEE 331 Fluid Mechanics Lab**1
Measurement of properties of common fluids, and tests on fluids in motion. P, EM 331.
- CEE 333 Hydrology**3
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. Corequisite courses: CEE 333A.
- CEE 333A Hydrology Lab**.....0
Corequisite courses: CEE 333.
- CEE 336 Engineering Geology**.....3
From an Engineering perspective, 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, CEE 216. Corequisite courses: CEE 336A.
- CEE 336A Engineering Geology Lab**.....0
Corequisite courses: CEE 336.
- CEE 353 Structural Theory**3
Reactions, internal forces, use of influence lines for beams, frames, and trusses for moving loads. P, EM 321.
- CEE 363 Highway and Traffic Engineering**3
Highway administration, traffic characteristics, highway standards, drainage, geometric design, construction methods. P, CEE 208.
- CEE 411 Bituminous Materials**3
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, CEE 216. Corequisite courses: CEE 411A.
- CEE 411A Bituminous Materials Lab**0
Corequisite courses: CEE 411.
- CEE 423 Wastewater Engineering**.....3
Systems for collecting waste water, waste water disposal and treatment processes, solid waste disposal. P, CEE 327. Corequisite courses: CEE 423A.
- CEE 423A Wastewater Engineering Lab**.....0
Corequisite courses: CEE 423.

CEE 424 Industrial Waste Treatment	2
Characteristics and composition of industrial wastes, sampling and methods of analysis of these wastes and remedial measures for treatment and disposal. P, CEE 423.	
CEE 427 Environmental Engineering Instrumentation	3
Analysis of water and waste water samples, using environmental laboratory instrumentation. Design of treatment facility process instrumentation and controls. P, CEE 423. Corequisite courses: CEE 427A.	
CEE 427A Environmental Engineering Instrumentation Lab	0
Corequisite courses: CEE 427.	
CEE 428 Solid Waste Engineering and Management	3
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, CEE 446. Corequisite courses: CEE 428A.	
CEE 428A Solid Waste Engineering and Management Lab	0
Corequisite courses: CEE 428.	
CEE 433 Hydraulic Engineering	3
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 435 Water Resources Engineering	3
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, CEE 433.	
CEE 436 Foundation Engineering	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, CEE 446. Corequisite courses: CEE 436A.	
CEE 436A Foundation Engineering Lab	0
Corequisite courses: CEE 436.	
CEE 443 Matrix Analysis of Structures	3
Theory and application of matrix methods in structural analysis. P, CEE 353.	
CEE 444 Precast Concrete Structures	3
Advantages of precast concrete. Structural and architectural precast elements. Building systems. Design concepts and structural design. Connections, specifications, and detailing. P, CEE 456.	
CEE 446 Geotechnical Engineering	4
Soil principles, index properties, moisture density relations, compressibility, stresses, embankments, foundations, soil compaction and stabilization, laboratory tests on fundamental soil properties. P, senior standing. Take CEE 216 CEE 336 EM 321. Corequisite courses: CEE 446A, EM 331.	
CEE 446A Geotechnical Engineering Lab	0
Corequisite courses: CEE 446.	
CEE 447 Advanced Geotechnical Engineering	3
Development of a fundamental understanding of engineering properties of soils and the factors controlling their magnitude and changes with time and environment. Development of why this knowledge is important and how it can be used in the solution of geotechnical and geoenvironmental problems. P, CEE 446.	
CEE 452 Prestressed Concrete	3
Theory and design of prestressed concrete including pre-tensioning and post-tensioning. P, CEE 456.	
CEE 455 Steel Design	3
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, CEE 353. Corequisite courses: CEE 455A.	
CEE 455A Steel Design Lab	0
Corequisite courses: CEE 455.	
CEE 456 Concrete Theory and Design	3
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, CEE 353. Corequisite courses: CEE 456A.	
CEE 456A Concrete Theory and Design Lab	0
Corequisite courses: CEE 456.	
CEE 457 Indeterminant Structural Analysis	3
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, CEE 353. Corequisite courses: CEE 457A.	
CEE 457A Indeterminant Structural Analysis Lab	0
Corequisite courses: CEE 457.	
CEE 458 Design of Timber Structures	3
Gravity and lateral loads, physical and mechanical properties of wood, properties of dimension lumber and glued laminated timber, design of beams and columns, properties of structural wood panels. Design of sheathing, diaphragms and shearwalls. Design of connections. P, CEE 353.	
CEE 459 Advanced Structural Mechanics	3
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, CEE 353. Corequisite courses: CEE 459A.	
CEE 459A Advanced Structural Mechanics Lab	0
Corequisite courses: CEE 459.	
CEE 464 Senior Design Project I (CI)	1
Development of a comprehensive civil engineering project design. P, senior standing and consent.	
CEE 465 Senior Design Project II (CI)	2
Completion of a comprehensive civil engineering project design. P, CEE 464.	
CEE 467 Transportation Engineering	3
Engineering principles in various common modes of transportation. P, CEE 363.	
CEE 472 Geosynthetics	3
Detailed study of the types of geosynthetic materials used in environmental, geotechnical, and transportation engineering as well as how they are used and manufactured. Particular emphasis will be placed on erosion control, landfill, transportation, drainage, tiltration and reinforcement applications. P, CEE 336.	
CEE 475 Engineering Administration (CI)	3
Law of contracts, agency, and other legal aspects of engineering. Preparation of specifications. Economic aspects of engineering. P, senior standing. Equivalent to CM 475.	
CEE 483 Municipal Engineering	3
Design/construction of municipal facilities including subdivisions, drainage, streets, water and wastewater systems, and solid waste disposal. Duties and responsibilities of city engineer. P, CEE 208. Corequisite courses: CEE 483A.	
CEE 483A Municipal Engineering Lab	0
Corequisite courses: CEE 483.	

CEE 490 Seminar (CI)	0
Current literature on professional and technical aspects of Civil Engineering. P, junior standing. Pass/Fail Grading.	
CEE 491 Special Problems	1-3
Individual investigation. P, consent.	
CEE 492 Special Topics	1-3
P, consent. Instructor's consent required.	
CEE 492A Special Topics Lab	0
Instructor's consent required.	
CEE 494 Internship	1-6
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. Instructor's consent required.	
CEE 496 Field Experience	1-6
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. Instructor's consent required.	
CEE 497 Cooperative Education	1-6
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. Instructor's consent required.	

Dual Numbered Courses

CEE 411-511 Bituminous Materials	3
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, CEE 216. Corequisite courses: CEE 411A-511A.	
CEE 411A5-11A Bituminous Materials Lab	0
Corequisite courses: CEE 411-511.	
CEE 424-524 Industrial Waste Treatment	2
Characteristics and composition of industrial wastes, sampling and methods of analysis of these wastes and remedial measures for treatment and disposal. P, CEE 423.	
CEE 427-527 Environmental Engineering Instrumentation	3
Analysis of water and waste water samples, using environmental laboratory instrumentation. Design of treatment facility process instrumentation and controls. P, CEE 423. Corequisite courses: CEE 427A-527A.	
CEE 427A-527A Environmental Engineering Instrumentation Lab	0
Corequisite courses: CEE 427-527.	
CEE 428-528 Solid Waste Engineering and Management	3
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, CEE 446. Corequisite courses: CEE 428A-528A.	
CEE 428A-528A Solid Waste Engineering and Management Lab	0
Corequisite courses: CEE 428-528.	
CEE 435-535 Water Resources Engineering	3
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, CEE 433.	

CEE 436-536 Foundation Engineering	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, CEE 446. Corequisite courses: CEE 436A-536A.	
CEE 436A-536A Foundation Engineering Lab	0
Corequisite courses: CEE 436-536.	
CEE 443-543 Matrix Analysis of Structures	3
Theory and application of matrix methods in structural analysis. P, CEE 353.	
CEE 444-544 Precast Concrete Structures	3
Advantages of precast concrete. Structural and architectural precast elements. Building systems. Design concepts and structural design. Connections, specifications, and detailing. P, CEE 456.	
CEE 447-547 Advanced Geotechnical Engineering	3
Development of a fundamental understanding of engineering properties of soils and the factors controlling their magnitude and changes with time and environment. Development of why this knowledge is important and how it can be used in the solution of geotechnical and geoenvironmental problems. P, CEE 446.	
CEE 452-552 Prestressed Concrete	3
Theory and design of prestressed concrete including pre-tensioning and post-tensioning. P, CEE 456.	
CEE 458-558 Design of Timber Structures	3
Gravity and lateral loads, physical and mechanical properties of wood, properties of dimension lumber and glued laminated timber, design of beams and columns, properties of structural wood panels. Design of sheathing, diaphragms and shearwalls. Design of connections.	
CEE 459-559 Advanced Structural Mechanics	3
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, CEE 353. Corequisite courses: CEE 459A-559A.	
CEE 459A-559A Advanced Structural Mechanics Lab	0
Corequisite courses: CEE 459-559.	
CEE 472-572 Geosynthetics	3
Detailed study of the types of geosynthetic materials used in environmental, geotechnical, and transportation engineering as well as how they are used and manufactured. Particular emphasis will be placed on erosion control, landfill, transportation, drainage, tiltration and reinforcement applications. P, CEE 336.	
CEE 492-592 Special Topics	1-3
P, consent.	
CEE 492A-592A Special Topics Lab	0
Instructor's consent required.	

Graduate Courses

CEE 623 Advanced Sanitary Engineering	3
CEE 625 Environmental Engineering Planning	3
CEE 632 Advanced Foundation Engineering	3
CEE 632A Advanced Foundation Engineering Lab	0
CEE 633 Open Channel Hydraulics	3
CEE 634 Fluvial Hydraulics	3
CEE 639 Geotechnical Testing	3
CEE 639A Geotechnical Testing Lab	0
CEE 654 Advanced Design of Steel Structures	3
CEE 656 Advanced Reinforced Concrete Design	3
CEE 664 Highway Capacity Analysis	3
CEE 692 Special Topics	1-3

CEE 702 Advanced Civil and Environmental Engineering.....	1-13
CEE 702A Advanced Civil and Environmental Engineering	0
CEE 721 Environmental Engineering	3
CEE 722 Hazardous/Toxic Waste Disposal.....	3
CEE 722A Hazard/Toxic Waste Disposal Lab.....	0
CEE 724 Land Treatment of Wastes	3
CEE 724A Land Treatment of Waste Lab	0
CEE 725 Biological Principles of Environmental Engineering	3
CEE 725A Biological Principles of Environmental Engineering Lab.....	0
CEE 726 Physical/Chemical Principles of Environmental Engineering.....	3
CEE 726A Physical/Chemical Principles of Environmental Engineering Lab.....	0
CEE 727 Water Treatment Plant Design	3
CEE 727A Water Treatment Plant Design Lab.....	0
CEE 728 Waste Water Treatment Plant Design	3
CEE 728A Waste Water Treatment Plant Design Lab	0
CEE 733 Water Resources Engineering.....	3
CEE 734 Surface Water Quality Model.....	3
CEE 737 Hydraulic Design.....	3
CEE 738 Advanced Hydraulics.....	3
CEE 738A Advanced Hydraulics Lab	0
CEE 749 Structural Dynamics.....	3
CEE 756 Reinforced Masonry Design	3
CEE 762 Pavement Management and Rehabilitation	3
CEE 762A Pavement Management and Rehabilitation Lab	0
CEE 765 Pavement Design	3
CEE 769 Design of Steel and Concrete Bridges	3
CEE 787 Research.....	1-9
CEE 788 Engineering Research or Design Paper	1-2
CEE 790 Seminar	0-1
CEE 791 Special Engineering Problems.....	1-3
CEE 792 Special Topics	1-3
CEE 792A Special Topics Lab.....	0
CEE 798 Thesis.....	1-7

Chem (Chemistry)

Undergraduate Courses

Chem 106 Chemistry Survey.....	3
A one-semester introduction to chemistry. Not intended for those needing extensive chemistry background. Duplicate credit for Chem 106 and 112 not allowed. Corequisite courses: Chem 106L.	
Chem 106L Chemistry Survey Lab.....	1
Corequisite courses: Chem 106.	
Chem 108 Organic and Biochemistry	3
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. Equivalent to Chem 361, Chem 120, Chem 326. P, Chem 106. Corequisite courses: Chem 108L.	
Chem 108L Organic and Biochemistry Lab.....	1
Equivalent to Chem 120L, Chem 327, Chem 361L. Corequisite courses: Chem 108.	

Chem 112 General Chemistry I.....	3
Comprehensive coverage of general chemistry. Preferred for those needing extensive background in chemistry. Duplicate credit for Chem 106 and 112 not allowed. Corequisite courses: Chem 112L.	
Chem 112L General Chemistry I Lab	1
Corequisite courses: Chem 112.	
Chem 114 General Chemistry II.....	3
Continuation of 112. P, 1 course take Chem 112 take Chem 106 minimum grade B.	
Chem 114L General Chemistry II Lab	1
Corequisite courses: Chem 114.	
Chem 120 Elementary Organic Chemistry	3
Compounds of carbon with emphasis on those of interest to students of Agriculture, Family and Consumer Sciences. Duplicate credit for Chem 108, 120, and 326 not allowed. Equivalent to Chem 108, Chem 326. P, Chem 106 or Chem 112.	
Chem 120L Elementary Organic Chemistry Lab.....	1
Equivalent to Chem 108L, Chem 327. Corequisite courses: Chem 120.	
Chem 232 Analytical Chemistry I.....	4
Fundamental principles and laboratory practice in gravimetric and volumetric analysis; introduction to instrumental analysis. P, Chem 114; minimum 4 credits. Corequisite courses: Chem 233.	
Chem 233 Analytical Chemistry I Lab.....	0
Corequisite courses: Chem 232.	
Chem 326 Organic Chemistry I (CI).....	3
Fundamentals of organic chemistry. Duplicate credit for Chem 120, 326 not allowed. Equivalent to Chem 108, Chem 120. P, Chem 114; minimum 4 credits. Corequisite courses: Chem 327.	
Chem 327 Organic Chemistry I Lab.....	1
Equivalent to Chem 108L, Chem 120L. Corequisite courses: Chem 326.	
Chem 328 Organic Chemistry II (CI).....	3
Fundamentals of organic chemistry. P, Chem 326. Corequisite courses: Chem 329.	
Chem 329 Organic Chemistry II Lab	1
Corequisite courses: Chem 328.	
Chem 342 Physical Chemistry (CI).....	3-5
Fundamentals of physical chemistry. P, Chem 232 take 2 courses from Subject PHYS. Corequisite courses: Chem 342L.	
Chem 342L Physical Chemistry Lab (CI).....	0
Corequisite courses: Chem 342.	
Chem 344 Physical Chemistry (CI).....	3-5
Fundamentals of physical chemistry. P, Chem 342.	
Chem 344L Physical Chemistry Lab (CI).....	0
Corequisite courses: Chem 344.	
Chem 352 Inorganic Chemistry (CI).....	4
Theoretical and periodic aspects of inorganic chemistry. P, Chem 232. Corequisite courses: Chem 352L.	
Chem 352L Inorganic Chemistry Lab (CI).....	0
Corequisite courses: Chem 352.	
Chem 361 Biochemistry (CI).....	4
Introduction to biochemical processes and the study of compounds of biological interest. Duplicate credit for Chem 108 and 361 not allowed. Equivalent to Chem 108. P, Chem 120 or Chem 326. Corequisite courses: Chem 361L.	
Chem 361L Biochemistry Lab (CI)	0
Equivalent to Chem 108L. Corequisite courses: Chem 361.	
Chem 380 Environmental Chemistry (CI).....	4
Emphasis on the role of chemistry in understanding and solution of environmental problems. P, Chem 112 or Chem 106 take Chem 114 or Chem 120 minimum 4 credits.	

Chem 381 Techniques in Clinical Laboratory Technology	3
Chem 382 Techniques in Clinical Laboratory Technology I (CI)....	2
Introduction to techniques used in the clinical laboratory including urinalysis, hematology and clinical chemistry.	
Chem 383 Techniques in Clinical Laboratory Technology II (CI) ...	2
Continuation of 382. P, Chem 382.	
Chem 416 Chemical Communication Skills (CI)	2
Searching chemical literature by traditional and computer assisted methods; techniques of written and oral communication of chemical information.	
Chem 434 Instrumental Analysis (CI).....	4
Theory and practice in instrumental analysis. P, Chem 232 Chem 328 Chem 344. Corequisite courses: Chem 434L.	
Chem 434L Instrumental Analysis Lab	0
Corequisite courses: Chem 434.	
Chem 461 Intermediate Biochemistry (CI)	3
Intermediate level study of biochemical processes of plants and animals, emphasizing the integration and control of their metabolic processes. P, Chem 361.	
Chem 491 Special Problems	1-9
P, consent. Instructor's consent required.	
Chem 492 Special Topics in Chemistry	1-3
Chem 494 Internship	1-4
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.	

Dual Numbered Courses

Chem 416-516 Chemical Communication Skills	2
Searching chemical literature by traditional and computer assisted methods; techniques of written and oral communication of chemical information.	

Graduate Courses

Chem 622 Advanced Organic Chemistry I	3
Chem 632 Advanced Analytical Chemistry	3
Chem 642 Advanced Physical Chemistry	3
Chem 654 Advanced Inorganic Chemistry	3
Chem 662 Principles of Biochemistry	2-5
Chem 691 Special Problems	1-4
Chem 699 Research Regulations Compliance	1
Chem 720 Special Topics Organic Chemistry	1-6
Chem 722 Synthesis of Natural Products	3
Chem 724 Structural Determination of Organic Compounds.....	3
Chem 724A Structural Determination of Organic Compounds Lab	0
Chem 725 Polymer Chemistry	4
Chem 725A Polymer Chemistry Lab	0
Chem 726 Advanced Organic Chemistry II	3
Chem 728 Bioorganic Chemistry	3
Chem 730 Special Topics in Analytical Chemistry	1-6
Chem 732 Analytical Ag and Environmental Chemistry	4
Chem 732A Analytical Ag and Environmental Chemistry Lab	0
Chem 734 Analytical Spectroscopy.....	3
Chem 736 Chromatography and Separations	3
Chem 738 Electroanalytical Chemistry.....	3
Chem 740 Special Topics in Physical Chemistry	1-6
Chem 741 Quantum Chemistry I	3

Chem 742 Quantum Chemistry II.....	3
Chem 744 Chemical Thermodynamics	3
Chem 745 Statistical Thermodynamics.....	3
Chem 746 Atomic and Molecular Structure.....	3
Chem 748 Chemical Kinetics	3
Chem 750 Special Topics in Inorganic Chemistry	1-6
Chem 752 Descriptive Inorganic Chemistry.....	3
Chem 752A Descriptive Inorganic Chemistry Lab.....	0
Chem 753 Organometallic Chemistry	3
Chem 754 Physical Methods of Inorganic Chemistry	3
Chem 760 Special Topics in Biochemistry	1-6
Chem 764 Biochemistry I	3
Chem 766 Biochemistry II.....	3
Chem 767 Biophysical Chemistry.....	3
Chem 768 Plant Biochemistry	3
Chem 769 Nutritional Biochemistry.....	3
Chem 772 Seminar Preparation.....	1
Chem 781 Bioinorganic Chemistry.....	3
Chem 782 Radioisotope Techniques	4
Chem 782A Radioisotope Techniques Lab	0
Chem 790 Seminar	1
Chem 798 Thesis.....	1-7
Chem 898D Dissertation Ph.D.....	2
ChSt 692 Chemistry Topics for Educators	1-12

CHRD (Counseling and Human Resource Development)

Undergraduate Courses

CHRD 430 Gender Issues in Counseling	3
CHRD 471 Gerontology Issues in Counseling.....	3

Dual Numbered Courses

CHRD 430-530 Gender Issues in Counseling.....	3
CHRD 471-571 Gerontology Issues in Counseling.....	3

Graduate Courses

CHRD 601 Introduction to Counseling.....	3
CHRD 602 Research and Evaluation in Counseling	3
CHRD 610 Developmental Issues in Counseling.....	3
CHRD 651 Mental Health and Personality Development.....	3
CHRD 661 Theories of Counseling.....	3
CHRD 690 Seminar	1-3
CHRD 692 Special Topics.....	1-3
CHRD 693 Workshop	1-3
CHRD 700 Public School Administration.....	3
CHRD 706 Counseling the Victim	3
CHRD 713 Administration and Management of Mental Health Organizations.....	3
CHRD 716 Human Resource Management in Business and Industry	3
CHRD 721 School Counseling.....	3
CHRD 722 Administration and Management of School Counseling Programs	3

CHRD 723 Counseling the Family.....	3
CHRD 736 Appraisal of the Individual.....	3
CHRD 742 Career Counseling and Planning.....	3
CHRD 755 Clinical Diagnosis and Treatment Planning	3
CHRD 756 Counseling the Addictive Client.....	3
CHRD 757 Advanced Test: Intellectual Assessment	3
CHRD 759 Advanced Test: Personality Assessment	3
CHRD 766 Group Counseling.....	3
CHRD 770 Student Development: Theory and Practice.....	3
CHRD 771 Student Personnel Services.....	3
CHRD 772 Administration and Leadership in Student Affairs	3
CHRD 785 Pre-Practicum	3
CHRD 786 Counseling Practicum.....	3-5
CHRD 787 Group Counseling Practicum.....	3
CHRD 788 Research Problems in Counseling and Guidance	2
CHRD 791 Problems.....	1-3
CHRD 794 Internship.....	2-6
CHRD 798 Thesis.....	1-6

CJUS (Criminal Justice)

Undergraduate Courses

CJus 201 Introduction to Criminal Justice.....	3
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
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 (CI).....	3
Individual First Amendment guarantees, constitutional right of the accused in the criminal process and equal protection of the law as interpreted through United States Supreme Court decisions. P, PoLS 100 (or 101) or consent. Crosslisted with PoLS 331. Equivalent to PoLS 331.	
CJus 333 Fundamentals of Criminal Procedures	3
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
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 Defense3
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 Justice3
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.

CJus 491 Problems in Criminal Justice3
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. Instructor's consent required.

Dual Numbered Courses

CJus 491-591 Problems in Criminal Justice.....3
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. Instructor's consent required.

CM (Construction Management)

Undergraduate Courses

CM 101 Introduction to Construction.....	1
Students are introduced to the concept of being a professional and the ethics required of a professional person with influence on the construction industry. A breadth of ideas are presented to the students which helps them in their career choice.	
CM 200 CM Off Campus Orientation	0
CM enrollment sustaining	
CM 205 Project Visiting Construction Sites	1
Field trips to local construction sites. P, sophomore standing. This course meets the first eight weeks of the semester.	
CM 210 Construction Surveying	4
Elements of construction surveying including 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, GE 121 take Math 115 or Math 120. Corequisite courses: CM 210A.	
CM 210A Construction Surveying Lab.....	0
Corequisite courses: CM 210.	
CM 216 Construction Materials	3
Source, processing, applications and testing of construction materials. Corequisite courses: CM 216A, MnET 241.	
CM 216A Construction Materials Lab	0
Corequisite courses: CM 216.	
CM 232 Plans, Specification and Blueprint Reading	3
Introduction to the basic concepts of reading construction plans, specifications and blueprints. Equivalent to CM 232. P, GE 121.	

CM 291 Independent Study1-3
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. Instructor's consent required.

CM 292 Special Topics.....1-3

CM 320 Construction Soil Materials and Hydrology3
Introduces updated information developed in research and practices for application to construction operations. An overview of the nature of soil materials and their engineering properties is coupled with simple, direct examples of analysis to show how common construction methods and operation may be controlled or influenced. Corequisite courses: CM 320A.

CM 320A Construction Soil Materials and Hydrology Lab0
Corequisite courses: CM 320.

CM 321 Strength of Materials3
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, GE 241. Corequisite courses: CM 321A.

CM 321A Strength of Materials Lab.....0
P, GE 241. Corequisite courses: CM 321.

CM 332 Building Systems in Construction (CI)3
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 and take CM 321. Corequisite courses: CM 332A.

CM 332A Building Systems in Construction Lab.....0
P, CM 321. Corequisite courses: CM 332.

CM 333 Practical Hydrology/Hydraulics.....3
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 and take GE 241.

CM 352 Cost Estimating Techniques (CI)3
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, CM 232.

CM 353 Structural Theory for Technologists (CI).....3
Reactions, internal forces and use of influence lines. P, CM 321.

CM 374 Construction Methods and Equipment (CI).....3
Detailed study of the various methods, equipment and techniques of construction. Interaction between contractor, design engineer, inspector and owner will be emphasized. P, junior standing or consent.

CM 400 Risk Management and Construction Safety (CI).....3
Causes and effects of risk loss in construction and methods of minimizing risk with effective management strategies. What is construction safety and why we need to effectively manage it. P, senior standing.

CM 410 Construction Supervision (CI)3
This course introduces the student to the basic supervisory concepts, practices and skills to improve construction supervision. The student will develop leadership skills required to be an effective leader. P, senior standing.

CM 443 Construction Planning and Scheduling (CI).....3
Planning and scheduling construction projects. Both manual methods and computer programs will be used to schedule activities, control cost and manage resources. P, CM 352.

CM 452 Cost Estimating II (CI)2
A project oriented course where a bid is performed on a local project including site visits, take off, computerized estimates and the presentation of the bid. P, CM 352.

CM 473 Construction Management (CI)3
Construction management, payroll, labor relations, company structure, and operating characteristics. P, senior standing or consent.

CM 475 Engineering Administration3
Law of contracts, agency, and other legal aspects of engineering. Preparation of specifications. Economic aspects of engineering. P, senior standing. Crosslisted with CEE 475. Equivalent to CEE 475.

CM 491 Independent Study1-3

CM 492 Special Topics.....1-3
Instructor's consent required.

CM 494 Internship.....1-3

CM 497 Cooperative Education1-3
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. Instructor's consent required.

CSc (Computer Science)

Undergraduate Courses

CSc 105 Introduction to Computers.....3
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 WIN 95 as well as the use of a wordprocessor, spreadsheet, graphics and database manager. P, 1 year of high school math.

CSc 130 Basic Programming.....3
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
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 213 Introduction to Programming with FORTRAN3
FORTRAN programming for engineering and computer science majors. P, 2 years of high school algebra or equivalent of Math 113 or take Math 115.

CSc 218 Introduction to C/C++/UNIX for Engineering.....3
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 or take Math 115.

CSc 241 Computer Logic.....3	CSc 330 COBOL Programming.....3
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, CSc 250.	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, CSc 213 or CSc 150.
CSc 250 Computer Science II .....3	CSc 331 Advanced Cobol Programming.....3
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, CSc 150.	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, CSc 330.
CSc 285 Data Structures.....3	CSc 354 Introduction to Systems Programming (CI).....3
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, CSc 250.	The study of macros, subroutines, subroutine linkage, conditional assembly, input-output, interrupt processing, assemblers, loaders and linkers. P, CSc 285 CSc 314.
CSc 290 Programming Languages.....3	CSc 426 Computer Architecture and Organization.....3
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, CSc 285.	Elementary computer architecture, gates and digital logic, register transfer, microprocessors and micro operations, computer arithmetic and processor studies of existing systems. P, CSc 241.
CSc 303 Ethical and Security Issues in Computing (CI) .....3	CSc 428 Compiler Construction .....3
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, junior status.	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, CSc 285 CSc 328.
CSc 312 Advanced Microcomputer Applications (CI).....3	CSc 456 Operating Systems.....3
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.	Operating systems structure; memory, process and I/O management; concurrent processes and case studies of existing operating systems. P, CSc 285 CSc 314 take Stat 281 or Math 381.
CSc 314 Assembly Language.....3	CSc 470 Software Engineering (CI).....3
ASSEMBLY language programming, organization and operating principles of the IBM computer, and others. For students seriously interested in computers or computer programming. P, CSc 250.	The principles, techniques and tools used to design and construct accurate, reliable, maintainable and dependable software will be studied. P, CSc 285.
CSc 316 PL/1 Programming .....3	CSc 472 Artificial Intelligence.....3
Introduction to PL/1 programming. Includes scientific and business oriented programming applications, data structures, structured programming and file processing. P, CSc 150.	Introduction to ideas, issues and applications of Artificial Intelligence. Knowledge representation, problem solving, search, inference techniques, theorem proving. Expert systems. Artificial intelligence programming languages.
CSc 318 Object Oriented Programming in C++.....3	CSc 474 Computer Networks.....3
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, CSc 285.	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, CSc 285.
CSc 325 Management Information Systems.....3	CSc 476 Computer Graphics.....3
Introduction to application software development and design methods. Data base and management information systems are also presented.	Principles of computer graphics. A study of the algorithms used to generate raster and vector graphics. P, CSc 285 Math 215 Math 125.
CSc 328 Introduction to Automata Theory.....3	CSc 480 Methods of Teaching Computer Science.....3
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, CSc 250 Math 253 Math 316.	The principles, methods and theories in teaching computer science subjects to secondary school students will be studied. P, CSc 285.
	CSc 484 Database Management Systems (CI).....3
	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, CSc 285.
	CSc 491 Special Problems in Computer Science .....1-3
	Informal independent study experience meant to provide emphasis in a particular area of of computer science of special interest to a student and a CSc faculty member. P, instructor's consent required.
	CSc 492 Special Topics in Computer Science.....1-3
	Formal study of selected topics of interest in Computer Science. P, instructor's consent required.

CSc 494 Internship.....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. Instructor's consent required.

CSc 496 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. Instructor's consent required.

CSc 497 Cooperative Education1-6
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. Instructor's consent required.

Dual Numbered Courses

CSc 472-572 Artificial Intelligence.....3
Introduction to ideas, issues and applications of Artificial Intelligence. Knowledge representation, problem solving, search, inference techniques, theorem proving. Expert systems. Artificial intelligence programming languages.

CSc 474-574 Computer Networks.....3
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, CSc 285.

CSc 476-576 Computer Graphics3
Principles of computer graphics. A study of the algorithms used to generate raster and vector graphics. P, CSc 285 Math 215 Math 125.

CSc 492-592 Special Topics in Computer Science1-3
Formal study of selected topics of interest in Computer Science. P, consent.

Graduate Courses

CSc 630 Principles of Data Base System Design	3
CSc 643 System Analysis and Design	3
CSc 705 Design and Analysis of Computer Algorithms	3
CSc 710 Structure and Design of Programming Languages	3
CSc 720 Theory of Computation	3
CSc 740 Management Information Systems.....	3
CSc 750 Recent Advances in Parallel Process	3
CSc 770 Software Engineering Management	3
CSc 787 Research.....	1-9
CSc 788 Research Report/Design Paper	1-2
CSc 790 Seminar	0-1
CSc 791 Special Problems in Computer Science	1-3
CSc 792 Special Topics in Computer Science.....	1-3
CSc 798 Thesis.....	1-7

CScA (Computer Science Application)

Undergraduate Courses

CScA 100 Keyboarding/Introduction to Computers.....1-3
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 Windows1
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, CScA 100 or permission of instructor.

CScA 142 Introduction to Microcomputer Software Applications3
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, CScA 100 CScA 120 or permission of instructor.

CScA 242 Word Processing Applications.....2
An in-depth study of a word processing software package such as DisplayWrite, Wordstar, WordPerfect, etc., will be presented. Microcomputers will be utilized. P, CScA 100 CScA 120 CScA 142 or permission of instructor.

CScA 243 Spreadsheet Applications.....3
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, CScA 100 CScA 120 CScA 142 or permission of instructor.

CScA 244 Database Applications.....3
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, CScA 100 CScA 120 CScA 142 or permission of instructor.

CScA 264 Integrated Software.....3
A tightly integrated software program that offers a word processor, a database manager, data communications and a spreadsheet with charting. P, CScA 100 CScA 120 CScA 142 or permission of instructor.

CScA 265 Artificial Intelligence Integrated Software Packages.....3
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, CScA 100 CScA 120 CScA 142 or permission of instructor.

CScA 292 Advanced Topics in Microcomputer Applications1-3
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.

CTE (Career and Technical Education)

Undergraduate Courses

CTE 105 Principles of Career and Technical Education1-3

A study of career and technical education terminology, service areas, instructional programs and basic principles of vocational technical education.

CTE 189 Technical Specialty:1-32

(Name of technical program.) Granted to students who have: 1. successfully completed approval coursework related to a Technical Specialty from a vocational technical institute or school 2. documentation of a chronological history of relevant occupational work experience leading to identifiable competencies completed in a Technical Specialty approved by granting institution 3. successfully passing an occupational competency evaluation, such as : National Occupational Competency Testing Institute (NOCTI) exam for a specific Technical Specialty 4. validated military experiences that are related to a technical specialty.

CTE 201 Mentorship/Practicum I2

This course is the first class in a two-year mentorship/practicum program designed for new faculty entering secondary and post-secondary education. Course content will focus on teaching and learning, philosophy, curriculum development, assessment and evaluation, program planning and management, and individual and organizational development.

CTE 202 Mentorship/Practicum II2

This course is the second class in a two-year mentorship/practicum program designed for new faculty entering secondary and post-secondary education. Course content will focus on teaching and learning, philosophy, curriculum development, assessment and evaluation, program planning and management, and individual and organizational development, but at higher cognitive, affective, and psychomotor levels than CTE 201.

CTE 208 Occupational Internship I1-3

Coordinated work experience in an occupation related to a specific vocational education content area. Prior application is required. P, permission of instructor.

CTE 251 Occupational Analysis1-3

An analysis breakdown of a trade or occupation to determine units for instruction.

CTE 295 Practicum in Career and Technical Education1

Introduction to effective instructional practices and the roles of the vocational educator in competency-based vocational education: agriculture or family and consumer sciences. Observation and field experience in middle school and/or high school vocational classroom.

CTE 301 Mentorship/Practicum III2

This class is the third class in a two-year mentorship/practicum program designed for new faculty in their second year in secondary and post-secondary education. Course content will focus on teaching and learning, philosophy, curriculum development, assessment and evaluation, program planning and management, and individual and organizational development, but at higher cognitive, affective, and psychomotor levels than CTE 201 and 202. Emphasis will be placed on developing leadership skills and abilities in the education profession.

CTE 302 Mentorship/Practicum IV2

This course is the fourth class in a two-year mentorship/practicum program designed for new faculty in their second year in secondary and post-secondary education. Course content will focus on teaching and learning, philosophy, curriculum development, assessment and evaluation, program planning and management, and individual and organizational development, but at higher cognitive, affective, and psychomotor levels than CTE 201, 202 and 301. Emphasis will be placed on developing leadership skills and abilities in the education profession.

CTE 308 Occupational Internship II1-3

Coordinated work experience in an occupation related to a specific vocational education content area. Coordinated plan must build upon CTE 208 and substantiate a progressive educational experience. Prior application is required. P, CTE 208 and prior approval of instructor.

CTE 311 Career and Technical Adult Education1-3

Objectives, principles, methods and practices to be used in the teaching of adult classes. Emphasis will be placed upon classes for retraining and upgrading adults in skilled or technical occupations.

CTE 312 Technical Education1-3

Technical education programs are studied in regard to their development, curriculum content, equipment, and staff requirements.

CTE 313 Organization and Coordinating of Cooperative

Educational Programs3

The development of an effective cooperative relationship between school based coordinator and the business/industrial sponsor; the selection, orientation and training of sponsors; reporting and record keeping; the evaluation and selection of students; and program evaluation.

CTE 314 The Special Needs Learner3

Introduction to vocational education for learners with special needs. Historical and current issues and trends, including review of existing programs.

CTE 352 Instructional Resources Development2

Study of instructional materials, sources and application; emphasis on principles for making resources useful to CTE teachers. Construction and application of materials required.

CTE 371 Laboratory Organization and Management1-3

The basic elements of organizing and managing a vocational program, the selection of equipment, faculty development, legal responsibilities of laboratory instructors, inventory, storage control and safety.

CTE 380 Technical Industrial Training0.50-6

(Registration is initiated by submitting CTE Form No. 149 to the Coordinator of Vocational Technical Teacher Education.) Manufacturers, industries, and service firms offer many special technical courses that are available to vocational trade, industrial and technical instructors or prospective instructors. Some of these courses are suitable for college credit, and upon approval credit may be granted. The following guidelines are used to award such credit: 1. The student must submit CTE Form No. 149 to receive approval for registration. 2. The student must make all the necessary arrangements with the industrial firm offering the industrial training session. 3. Credit is awarded on the basis of one-half credit for twenty hours of attendance.

CTE 405 Philosophy of Career and Technical Education2

Overview of vocational-technical and practical arts education, its place in the community and school; organization and characteristics of instructional programs at secondary, post-secondary and adult levels in agriculture, family and consumer sciences education, 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.

CTE 408 Occupational Internship III.....	1-3
Coordinated work experience in an occupation related to a specific vocational education content area. Coordinated plan must build upon CTE 308 and substantiate a progressive educational experience. Prior application is required. P, CTE 308 and prior approval of instructor.	
CTE 419 Methods of Teaching.....	3
This course will feature lesson presentation and methods of delivering instruction in vocational technical education. The course is designed for individuals who are presently teaching in the vocational technical education field. Content builds upon existing knowledge of the program participants in order to increase comprehension of the field of vocational technical education. Instructional techniques appropriate for vocational technical education are developed based on models identified in competency-based or performance-based education. Special emphasis is placed upon teaching methods which coexist with a performance-based philosophy. Participants are actively involved in current teaching assignments which creates an enormous opportunity for reflection and debate.	
CTE 420 Entrepreneurship in Career and Technical Education.....	3
This course is designed to help educators in all areas of vocational education to incorporate basic concepts of entrepreneurship into the curriculum. Topics include: small business plans, government regulations, site locations, record keeping, financing, legal considerations, business promotions, managing human resources, small business contributions to the economy and economic development, educational resources for entrepreneurship, placement of the entrepreneurship concept in vocational education programs and review of basic concepts related to entrepreneurship such as business ownership options and entrepreneur characteristics.	
CTE 425 Development of Career and Technical Education Thought and Practice.....	3
Philosophy, origins, and development of vocational, technical and practical arts, educations at adult, postsecondary, secondary, and pre-vocational levels. Current and emerging principles, practices, and issues are stressed.	
CTE 430 Cooperative Education Coordination Techniques.....	3
This course emphasizes the organization of cooperative work experience in vocational education programs: agriculture, marketing education, health occupations, family consumer sciences education, business education, and trade and industrial. Emphasizes strategies and techniques for coordinating classroom instruction with on-the-job work experience. Topics include: program organization, coordinator responsibilities, student selection, placement, advisory councils, public relations, training stations, training plans, legal aspects, and program and student evaluation.	
CTE 438 Industrial Safety.....	2
Industrial accident prevention considering the nature and extent of the accident problem. Emphasis upon the development of a safety program for instructional programs and industrial management.	
CTE 440 Curriculum Design in Career and Technical Education...	3
A development process of selection, organization and management of instructional content and supplemental materials; development of objectives; the integration of teaching/learning strategies; implementation of evaluation measures.	
CTE 457 Instructional Technology.....	2
Visual aids used in vocational and technical education and their relationship to the various occupational areas.	
CTE 472 Public Relations and Advisory Committee.....	1-3
Techniques and media for communicating with the public information on different types of advisory committees used in vocational technical education and industrial firms.	

CTE 474 Industrial Conference Leading.....	1-3
Methods, procedures and techniques utilized by the vocational technical educator in arranging and conducting conferences with industrial personnel.	
CTE 475 Vocational Youth Organizations.....	1-3
Methods of establishing organizations at the local level.	
CTE 477 Job Analysis and Employee Evaluation.....	3
Analyzing jobs and evaluating employee performance for purposes of training, promotion, salary adjustments, and establishing hiring criteria.	
CTE 488 Student Teaching.....	8
Full time off-campus supervised teaching in a secondary or post-secondary Vocational Technical setting for 10 weeks. Student teaching fee assessed.	
CTE 490 Seminar in Career and Technical Education.....	2-3
Discussion and research concerning selected problems in vocational technical teaching and in industry.	
CTE 491 Special Problems.....	1-4
Directed reading and research in selected individual topics.	
CTE 492 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.	
CTE 497 Cooperative Education Coordination Techniques.....	3
Dual Numbered Courses	
CTE 419-519 Methods of Teaching.....	3
CTE 420-520 Entrepreneurship in Career and Technical Education.....	3
CTE 425-525 Development of Career and Technical Education Thought and Practice.....	3
CTE 430-530 Cooperative Education Coordination Techniques.....	3
CTE 440-540 Curriculum Design in Career Education.....	3
CTE 491-591 Special Problems.....	1-4
CTE 492-592 Special Topics.....	1-3
Graduate Courses	
CTE 598 Cooperative Education Coordination Techniques.....	3
CTE 700 Technology in Career Education.....	3
CTE 720 Entrepreneurship Career Education.....	3
CTE 731 Administration and Supervision Career Education.....	3
CTE 751 Curriculum in Home Economics Education.....	2
CTE 761 Evaluation in Home Economics.....	2
CTE 776 Curriculum in Agricultural Education.....	2
CTE 788 Research Problems.....	2
CTE 790 Seminar.....	1-3
CTE 791 Problems.....	1-3
CTE 792 Special Topics.....	1-3
CTE 794 Graduate Internship.....	1-3
CTE 798 Thesis in CTE.....	5

Danc (Dance)

Undergraduate Courses

- Danc 130 Dance Fundamentals**.....1
Basic skills course required of all physical education and public recreation majors. Includes analysis, skill development, and leadership of round, folk, square and social dances, traditional and contemporary.
- Danc 240 Multicultural Dance Activities**1
Folk dances from around the world, including cultural background, costumes, skill differences for elementary, middle and high school, or adults.
- Danc 241 Creative Movement for Children**.....2
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. Corequisite courses: Danc 241A.
- Danc 241A Creative Movement for Children Lab**0
Corequisite courses: Danc 241.
- Danc 420 Techniques of Teaching Dance**2 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, Danc 130 Danc 240.
- Danc 491 Special Problems in Dance**1-3
Independent studies and/or research activities related to Dance. P, consent. Instructor's consent required.
- Danc 492 Topics in Dance**.....1-5
Instructor's consent required.

DCom (Communication Disorders)

Undergraduate Courses

- DCom 112 Voice and Articulation**.....3 F (alternate years)
The study of vocal production and phonology/articulation.
- DCom 131 Introduction to Communication Disorders**.....3 F (even years)
A study of the basic processes of speech, language, and hearing, and the major speech, language and hearing disorders.
- DCom 212 Language Development**3 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.

DS (Dairy Science)

Undergraduate Courses

- DS 130 Introduction to Dairy Science**.....3
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. Corequisite courses: DS 130A.
- DS 130A Introduction to Dairy Science Lab**0
Corequisite courses: DS 130.
- DS 202 Dairy Products Judging**1 S
Quality of milk, cheddar cheese, ice cream, and cottage cheese.

- DS 212 Dairy Cattle Evaluation**2 S
Fundamental aspects of evaluation of dairy cattle for type; type classification of dairy cattle.
- DS 231 Dairy Foods**3 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 (CI)**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. Corequisite courses: DS 301A.
- DS 301A Dairy Microbiology Lab (CI)**0
Corequisite courses: DS 301.
- DS 311 Dairy Cattle Judging**1 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, DS 212 take DS 311.
- DS 313 Technical Control of Dairy Products I (CI)**.....3
Fundamental properties of milk and its products as they affect testing. Common laboratory tests for procurement and grading milk. Compositional tests for control of dairy products during processing. P, DS 130 Chem 106. Corequisite courses: DS 313A.
- DS 313A Technical Control of Dairy Products I Lab (CI)**.....0
Corequisite courses: DS 313.
- DS 321 Dairy Product Processing I (CI)**5 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, DS 130 DS 313 (or concurrent) and Micr 231 or consent. Corequisite courses: DS 321A.
- DS 321A Dairy Product Processing I Lab (CI)**0
Corequisite courses: DS 321.
- DS 322 Dairy Product Processing II (CI)**.....5 S (even years)
Processing or manufacturing of relatively nonperishable dairy products such as butter, cheese, dried milk, casein, lactose, and anhydrous milkfat. P, 130, 313 (or concurrent) and Micr 231 or consent. Corequisite courses: DS 322A.
- DS 322A Dairy Product Processing II Lab (CI)**.....0
Corequisite courses: DS 322.
- DS 401 Advanced Dairy Products Judging**1 F
Quality evaluation of dairy products. Usually includes participation in regional and national collegiate dairy products contest. P, take DS 202 take DS 401 and written consent. Maximum of 2 credits.
- DS 411 Dairy Breeds and Breeding**2 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, DS 130.
- DS 412 Dairy Farm Management (CI)**3 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, DS 130 or consent.
- DS 413 Physiology of Lactation (CI)**3
Anatomy, physiology, and biochemistry of mammary glands. Factors affecting quality and quantity of milk. P, Vet 223.
- DS 421 Dairy Plant Management (CI)**.....3 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 (CI).....4 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, DS 313 Chem 120. Corequisite courses: DS 422A.

DS 422A Technical Control of Dairy Products II Lab (CI)0
Corequisite courses: DS 422.

DS 432 Dairy Cattle Feeding (CI).....3 F (even years)
Practical considerations involved in feeding dairy cattle. P, AS 233.

DS 452 Environmental Management of Dairy Systems2 S (even years)
Discussion of environmental issues concerning dairy farms and dairy manufacturing plants with a focus on nutrient balances, by-product usage, odors, social consequences, and government policies which affect the dairy industry. P, junior standing or consent.

DS 490 Dairy Seminar (CI).....1 F
Review of scientific literature and other items of special interest to dairy majors. P, senior standing.

DS 491 Special Problems in Dairy Science.....1-3
Investigation of problems in dairy production or dairy manufacturing. Results to be submitted as a technical paper. P, junior or senior standing. Maximum of 3 cr. for B.S. degree. Instructor's consent required.

DS 492 Special Topics1-4
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, junior or senior standing. Instructor's consent required.

DS 494 Internship3-12
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. Instructor's consent required.

DS 496 Field Experience.....3-12
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. Instructor's consent required.

DS 497 Cooperative Education3-12
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. Instructor's consent required.

Dual Numbered Courses

DS 413-513 Physiology of Lactation3
Anatomy, physiology, and biochemistry of mammary glands. Factors affecting quality and quantity of milk. P, Vet 223.

DS 452-552 Environmental Management of Dairy Systems2 S (even years)
Discussion of environmental issues concerning dairy farms and dairy manufacturing plants with a focus on nutrient balances, by-product usage, odors, social consequences, and government policies which affect the dairy industry. P, junior standing or consent.

Graduate Courses

DS 711 Ruminology3
DS 722 Advanced Dairy Microbiology3
DS 722A Advanced Dairy Microbiology Lab0
DS 731 Laboratory Techniques in Dairy Science.....3
DS 791 Dairy Science Problems.....1-4
DS 798 Thesis.....1-7
DS 898D Dissertation-Ph.D.1-12

ECE (Early Childhood Education)

Undergraduate Courses

ECE 150 Early Experience.....2
Experimental-based introduction to professional contexts within early childhood education (ECE) and/or human development and family studies (HDFS). Students serve as volunteers in community-based human services and educational settings, shadowing professionals to better understand professional roles and opportunities. Equivalent to HDFS 150. Corequisite courses: ECE 150A.

ECE 150A Early Experience.....0
Equivalent to HDFS 150A. Corequisite courses: ECE 150.

ECE 220 Health, Safety and Nutrition of Young Child.....3
Exploration of school health, safety, first aid/ CPR, disease control and nutrition; development of health and nutrition policies and standards in early childhood settings based on current public policy; creating a healthy and safe school environment for young children; exploration of materials and methods for teaching health, safety and nutrition in early childhood. Equivalent to NFSH 220.

ECE 227 Human Development and Personality I: Childhood3
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. Equivalent to HDFS 227.

ECE 228 Experiences with Young Children3
Opportunity to more fully understand children as well as oneself and other adults while observing and working with children in Pre-School Laboratory. Sophomore level. Instructor's consent required. P, HDFS 227; minimum grade "C". Corequisite courses: ECE 228A.

ECE 228A Experiences with Young Children Clinical Lab.....0
P, HDFS 227. Corequisite courses: ECE 228.

ECE 292 Current Topics1-3
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. Equivalent to HDFS 293.

ECE 361 Methods and Materials/Early Childhood Education (CI).....5
Applications for early childhood classrooms will be studied and explored. Methods that are both developmentally appropriate and inclusive for all children from birth to age 8 will be discussed. Hands-on activities and their application to children's positive development will be examined and demonstrated. Admission to PS II (Professional Semester II) concurrent with 362. P, HDFS 227 ECE 228. Corequisite courses: ECE 362.

ECE 362 Early Childhood Education Curriculum (CI).....5
Curricular models that have evolved from historical and theoretical bases will be studied. Rules and regulations, ethical standards, as well as principles of developmentally appropriate practice that are inclusive for all children from birth to age 8, will be discussed. An emphasis will be placed on multicultural perspectives. P, Admission to PS II (Professional Semester II); concurrent with 361, take HDFS 227 ECE 228. Corequisite courses: ECE 361.

ECE 364 Parent/Child Relationships in a Professional Context (CI).....3
The focus of this course is effective communication with families through a parent education needs assessment, parent education programs, conferencing, parental involvement in schools, newsletter development, and interaction with other agencies for referral purposes. Equivalent to HDFS 364. P, HDFS 227.

ECE 371 Infants and Toddlers: Developmentally Appropriate Practices (CI).....3
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. P, ECE 228 ECE 228A HDFS 227. Corequisite courses: ECE 371A.

ECE 371A Infants and Toddlers: Developmentally Appropriate Practices Lab (CI).....0
P, ECE 228 ECE 228A HDFS 227. Corequisite courses: ECE 371.

ECE 400 Orientation to Elementary Education Program.....0
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.

ECE 441 Professional Issues in Children and Family Studies (CI).....3
Study of professional issues in the Child and Family Studies field. Course materials are inclusive of public policy, advocacy, leadership, professional development and ethics and workplace issues. Equivalent to HDFS 441.

ECE 455 Administration and Supervision of Early Childhood Setting (CI).....3
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, ECE 228 ECE 361 ECE 362.

ECE 465 Introduction to Developmental Assessment of Young Children (CI).....3
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, HDFS 227 ECE 228. Corequisite courses: ECE 472.

ECE 468 Early Intervention in Family-Centered Practices (CI).....3
An overview of current theories, issues and practices in early intervention including: historical, philosophical and attitudinal attributes, early intervention legislation, and service delivery models. Teaming with families and other professionals will be emphasized with attention to cultural sensitivity and family-centered practices. P, HDFS 241 ECE 361 ECE 362 ECE 364.

ECE 470 Early Childhood Inclusion Strategies (CI).....3
An introduction to teaching strategies and curriculum adaptations to include children who have disabilities in 0-5 early childhood educational settings. An overview of the following current early childhood intervention issues will be covered: risk determinants, disability characteristics, medical issues, assistive technology, and other resources both online and traditional. Family-centered practices will be emphasized.

ECE 472 Student Teaching in Early Childhood Education.....3-12
Planning and conducting various phases of early childhood programs. Student takes increasing responsibility, finally taking complete charge of the program. Weekly conferences. Concurrent with 465. (Note: Admission to PSIII required.) Instructor's consent required. P, HDFS 227 or ECE 227 minimum grade "C" take ECE 228 ECE 361 ECE 362 minimum grade "C". Corequisite courses: ECE 465.

ECE 487 Orientation to Child and Family Services Practicum.....1
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 HDFS 495. Equivalent to HDFS 487.

ECE 491 Special Problems.....1-3
Individual study for quality students. P, consent of instructor. Equivalent to HDFS 491.

ECE 492 Current Topics1-3
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.

ECE 495 Practicum: (CI).....1-12
Field experience with agencies delivering social services to children and families. P, instructor's consent required. Equivalent to HDFS 495.

Graduate Courses

ECE 592 Special Problems.....1-3
Individual study for quality students. P, consent of instructor. Equivalent to HDFS 591.

ECE 593 Current Topics1-3

ECE 601 Orientation in Graduate Study.....1

ECE 665 Parent Education: Theory and Issues.....3
Equivalent to HDFS 665.

ECE 676 Early Childhood Education Administration Practice1-4

ECE 700 Research Methods.....4
Equivalent to HDFS 700. Corequisite courses: ECE 700A.

ECE 700A Research Methods Studio.....0
Equivalent to HDFS 700A. Corequisite courses: ECE 700.

ECE 711 Child Development Theory and Application.....3
Equivalent to HDFS 711.

ECE 788 Individual Research and Study1-7
Equivalent to HDFS 788.

ECE 790 Seminar1-3
Equivalent to HDFS 790.

ECE 791 Special Problems.....1-3
Instructor's consent required. Equivalent to HDFS 791.

ECE 792 Current Topics1-3
Equivalent to HDFS 792.

ECE 794 Graduate Internship.....1-7
Equivalent to HDFS 794, NFSH-794.

ECE 798 Thesis.....1-7
Equivalent to HDFS 798.

Econ (Economics)

Undergraduate Courses

Econ 101 Global Economy.....3

A study of basic economic principles presented from a global perspective and focused at individuals with little or no previous economic skills. Topics include: modern economic systems, foreign exchange rates, import and export trade, labor flows, government policy, and consumer behavior and welfare.

Econ 201 Microeconomics Principles3

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, 1-course; from Subject MATH; except courses Math 021 Math 101 Math 100T.

Econ 202 Macroeconomics Principles3

United States 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, 1 course; from Subject MATH; except courses Math 021 Math 101 Math 100T.

Econ 301 Intermediate Microeconomics3

Economic analysis. Pricing process under varying degrees of competitive conditions and role of price in allocation of resources. Income distribution. P, Econ 201 Math 121.

Econ 302 Intermediate Macroeconomics3

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, Econ 201 Econ 202 take 1 course from Subject MATH except courses Math 021 Math 101 Math 100T.

Econ 330 Money and Banking (CI)3

Money, banking, and credit; financial institutions, their significant functions and policies. P, sophomore standing, Econ 201 Econ 202.

Econ 370 Marketing3

Marketing; market organization and cooperative marketing functions; pricing; efficiency, and role and management of marketing activities. P, Econ 201.

Econ 404 History of Economic Thought (CI)3

The historical development of economic ideas. Various schools of economic thought and the economic environment which produced them. P, Econ 301 Econ 302 or consent.

Econ 405 Comparative Economic Systems (CI).....3

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, Econ 201 plus 9 hours of Hist, Econ, PolS, and/or Soc.

Econ 420 Economics of the Public Sector (CI).....3

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, Econ 201 or consent.

Econ 423 Statistics II.....3

Probability, point and interval estimation, tests of hypotheses, multiple regression and correlation, chi-square analysis, and analysis of variance. P, Stat 281 Math 121.

Econ 428 Mathematical Economics.....3

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, Econ 301 Econ 302 Math 121.

Econ 431 Managerial Economics.....3

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, Econ 301 Math 121 Stat 281.

Econ 433 Public Finance.....3

Public revenues and expenditures. Attaining equitable distribution of burdens and benefits. P, Econ 201 Econ 301.

Econ 440 Economics of International Sector.....3

International flow of trade and balance of payments. Monetary and fiscal policies. Trade controls and their effect upon the agricultural and domestic economics. Significant current developments in trade and finance. P, Econ 201 Econ 202 Econ 330 or consent.

Econ 450 Industrial Organization3

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, Econ 201 Econ 202 Econ 301 or consent.

Econ 453 Risk Management-Personal and Business3

Protection against or adaptation to risk and uncertainty. Principles and practices of fire, casualty, surety and life insurance and other risk management techniques.

Econ 460 Economic Development (CI).....3

Developing and developed national economies. Factors impacting economic development. Role of public policies in development. Agricultural and rural development issues emphasized. P, Econ 201 Econ 202, or consent.

Econ 467 Labor Law and Economics.....3

History and development of the United States labor movement; the labor market in a market economy from firm's and union's viewpoint; collective bargaining; public policy toward collective bargaining. P, Econ 201 or Econ 202, junior standing.

Econ 472 Resource and Environmental Economics.....3

Allocation, conservation, and development of natural resources. Environmental economics, water and land use, and methods of evaluating projects and programs. P, Econ 201.

Econ 476 Marketing Research3 (on demand)

Marketing problems confronting agribusinesses and businesses. Descriptive and analytical techniques in a research methods approach. Marketing research techniques. P, Econ 370 Stat 281.

Econ 491 Economics Problems1-3

Individual study. May involve case studies, special reports, assigned readings, analysis of data and report preparation. Maximum of 4 hours. P, consent.

Econ 492 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 Internship (CI).....1-3
 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. Instructor's consent required.

Econ 496 Field Experience (CI).....1-3
 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
 The historical development of economic ideas. Various schools of economic thought and the economic environment which produced them. P, Econ 301 Econ 302 or consent.

Econ 420-520 Economics of the Public Sector.....3
 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, Econ 201 or consent.

Econ 431-531 Managerial Economics.....3
 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, Econ 301 Math 121 Stat 281.

Econ 440-540 Economics of the International Sector.....3
 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
 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
 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
 Allocation, conservation, and development of natural resources. Environmental economics, water and land use, and methods of evaluating projects and programs. P, Econ 201.

Graduate Courses

Econ 601 Economic Study in Industrial Management.....3
Econ 610 Financial Management.....3
Econ 624 Advanced Mathematical Economics.....3
Econ 653 Advanced Market Research.....3
Econ 660 Operations Management.....3
Econ 691 Special Problems.....1-3
Econ 703 Advanced Macroeconomics.....3
Econ 704 Advanced Microeconomics.....3
Econ 705 Econometrics.....3

Econ 782 Personnel and Labor Relations.....3
Econ 788 Research Paper.....2
Econ 792 Graduate Special Topics.....1-4
Econ 798 Thesis.....1-7

EdAd (Educational Administration)

Graduate Courses

EdAd 700 Introduction to School Administration.....3
EdAd 707 The Principalsip.....2
EdAd 708 Elementary Principalsip Practicum.....1
EdAd 709 Secondary Principalsip Practicum.....1
EdAd 710 Elementary School Administration.....3
EdAd 711 Secondary School Administration.....3
EdAd 715 Supervision.....3
EdAd 730 School Finance.....2
EdAd 732 School Buildings and Grounds.....2
EdAd 735 School Law.....3
EdAd 788 Research Problems in Educational Administration.....3
EdAd 790 Seminar.....1-3
EdAd 791 Problems.....1-3
EdAd 792 Special Topics.....1-3
EdAd 793 Workshop.....1-3
EdAd 794 Internship in Education.....1-6

EdER (Education Evaluation and Research)

Undergraduate Courses

EdER 492 Special Topics.....1-3
 Advanced courses will be taught upon sufficient demand covering such topics as least restrictive environment, computers in education, observation techniques for classroom evaluation.

Dual Numbered Courses

EdER 492-592 Special Topics.....1-3
 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
EdER 761 Informational Literacy.....3
EdER 763 Educational Inquiry.....3
EdER 788 Research Problems in Education.....2

EdFn (Education Foundations)

Undergraduate Courses

EdFn 338 Foundation of American Education1-2
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. Corequisite courses: EdFn 475.

EdFn 365 Computer-Based Technology and Learning (CI)2
An overview of the application of computer technology in the classroom. Topics include computer literacy, educational software, applications in special education, and introductions to word processing, databases, spreadsheets, and presentation software.

EdFn 399 Fundamentals of Flight Instruction3

EdFn 420 History and Philosophy of Education2
An overview of the history of education coupled with the development and application of educational philosophy in contemporary practice.

EdFn 427 Middle School: Philosophy and Application2
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 Middle School Curriculum and Instruction3
The essential methods and materials of judging high/middle school instruction. Methods and 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 Curriculum and Instruction in Gifted Education3
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 460 Applied Linguistics in Teaching English as a Second Language3
The study of social and linguistic structures which undergird different discourse forms. Emphasis will be on discourse forms which are particularly important for full participation in United States culture such as the rhetoric of public and school interactions. Crosslisted with Ling 460-560. Equivalent to Ling 460. P, Ling 203.

EdFn 461 Cultural and Psychological Perspectives in the Acquisition of English as a Second Language3
Addresses the social and cognitive processes involved in the acquisition of a second language including developmental influences. P, EdFn 460 or EdFn 560.

EdFn 462 Teaching Language Arts for English as a Second Language Curriculum3
The teaching of reading and writing to students with limited English proficiency. Emphasis will be on reading and writing as it pertains to performance in educational and public settings. P, EdFn 460 or EdFn 560.

EdFn 463 Methods of Teaching English as a Second Language3
Develops the central concepts, tools of inquiry, and structure of teaching English to students with limited English proficiency. Includes the evaluation of instructional processes, learning resources, curriculum, and programs. Emphasis will be on teaching students to use English in educational and public settings. Crosslisted with Engl 463/563. Equivalent to Engl 463. P, EdFn 460 or EdFn 560.

EdFn 475 Human Relations (CI)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. Instructor's consent required. Corequisite courses: EdFn 338.

EdFn 489 Professional Issues in Education1

EdFn 492 Special Topics1-3
Advanced study covering such topics as Introduction to Multi-Cultural Education, Introduction to Law Related Education, and Interpretation and Implementation of Individuals with Disabilities Act (IDEA).

Dual Numbered Courses

EdFn 427-527 Middle School: Philosophy and Application2
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 Instruction3
The essential methods and materials of judging high/middle school instruction. Methods and 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 Education3
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 460-560 Applied Linguistics for Teaching English as a Second Language3
The study of social and linguistic structures which undergird different discourse forms. Emphasis will be on discourse forms which are particularly important for full participation in United States culture such as the rhetoric of public and school interactions. Crosslisted with Ling 460-560. Equivalent to Ling 560. P, Ling 203.

EdFn 461-561 Cultural and Psychological Perspectives in the Acquisition of English as a Second Language3
Addresses the social and cognitive processes involved in the acquisition of a second language including developmental influences. P, EdFn 460 or EdFn 560.

EdFn 462-562 Teaching Language Arts for English as a Second Language Across the Curriculum3
The teaching of reading and writing to students with limited English proficiency. Emphasis will be on reading and writing as it pertains to performance in educational and public settings. P, EdFn 460 or EdFn 560.

EdFn 463-563 Methods of Teaching English as a Second Language.....3
 Develops the central concepts, tools of inquiry, and structure of teaching English to students with limited English proficiency. Includes the evaluation of instructional processes, learning resources, curriculum, and programs. Emphasis will be on teaching students to use English in educational and public settings. Crosslisted with Engl 463-563. Equivalent to Engl 563. P, EdFn 460 or EdFn 560.

EdFn 492-592 Special Topics1-3
 Advanced study covering such topics as Introduction to Multi-Cultural Education, Introduction to Law Related Education, and Interpretation and Implementation of Individuals with Disabilities Act (IDEA).

Graduate Courses

EdFn 605 Computers in the Classroom2
EdFn 648 Learning Styles3
EdFn 700 Working With Exceptional Children3
EdFn 725 Education in a Pluralistic Society3
EdFn 727 Group Processes3
EdFn 730 Current Issues in Education3
EdFn 745 Effective Teaching: Theory Into Practice3
EdFn 747 Curriculum: Theory and Practice2
EdFn 750 Technology in Education3
EdFn 751 Teaching Reading Across Disciplines3
EdFn 752 Foundations of Reading3
EdFn 753 Diagnosis and Remediation of Reading Problems3
EdFn 754 Clinical Practice in Reading2
EdFn 790 Seminar1-3
EdFn 794 Internship1-6

EE (Electrical Engineering)

Undergraduate Courses

EE 220 Circuits I3
 Ohm's law, Kirchhoff's laws, mesh and nodal equations, source transformations, superposition, RLC circuits, and introduction of PSPICE and MATLAB. P, Math 125 Phys 211.

EE 221 Circuits II3
 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, EE 220 EE 222; minimum grade "C".

EE 222 Circuits I Laboratory1
 This course introduces the student to laboratory practices and closely follows the lecture topics in EE 220 Circuits I. Corequisite courses: EE 220.

EE 223 Circuits II Laboratory1
 This laboratory course enhances understanding of the lecture topics in EE 221 Circuits II. Corequisite courses: EE 221.

EE 260 Materials Science for Electrical Engineering2
 The science and engineering of materials, emphasizing electrical and magnetic properties and applications. P, Chem 114 Phys 213.

EE 300 Basic Electrical Engineering I2
 Circuit analysis and measurement concepts applicable to dc and sinusoidal ac electrical systems, including Ohm's Law and Kirchhoff's Laws. Non-EE students. P, Math 225 Phys 213. Corequisite courses: EE 301.

EE 301 Basic Electrical Engineering I Lab1
 Hands-on exposure to electrical components, circuits, test equipment and safety issues. Experiments are designed to reinforce the theoretical concepts presented in EE 300. For non-EE students. Corequisite courses: EE 300.

EE 302 Basic Electrical Engineering II2
 Introduction to analog and digital electronic devices and applications. For non-EE students. P, EE 300 EE 301. Corequisite courses: EE 303.

EE 303 Basic Electrical Engineering II Lab1
 Hands-on exposure to electronic devices, analog and digital circuits, and electrical measurement issues. Experiments are designed to reinforce the theoretical concepts presented in EE 302. For non-EE students. Corequisite courses: EE 302.

EE 316 Signals and Systems I3
 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, EE 221 Math 321.

EE 317 Signals and Systems II3
 Continuation of 316, emphasizing discrete time signals and systems and digital signal processing. Extensive use of MATLAB. P, EE 316.

EE 320 Electronics I3
 Analysis of electronic devices and circuits. Introduction to electronic circuit design. P, EE 220 EE 221; minimum grade "C".

EE 321 Electronics II3
 Design and analysis concepts for linear and digital electronic circuits. Emphasis on integrated circuit design. P, EE 320.

EE 322 Electronics Laboratory I1
 Experimental design and analysis of basic electronic circuits. P, EE 223. Corequisite courses: EE 320.

EE 323 Electronics Laboratory II1
 Experimental design and analysis of electronic circuits. Corequisite courses: EE 321.

EE 345 Digital Systems3
 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, EE 320.

EE 346 Digital Systems Laboratory1
 Laboratory topics which enhance the design concepts of the lecture course, EE 345. Corequisite courses: EE 345.

EE 347 Microcontroller Systems Design3
 Hardware concepts, organization and design of microcomputer systems, including single-chip microcomputers. Principles of microcomputer programming and operation using machine and assembly language. P, EE 345. Corequisite courses: EE 348.

EE 348 Microcontroller Systems Design Lab1
 Laboratory topics which enhance the design concepts of the concurrent lecture course, EE 347. Corequisite courses: EE 347.

EE 360 Electronic Devices3
 Introduction to microelectronic devices, semiconductor and junction theory, semiconductor devices, other solid-state devices. P, EE 260. Corequisite courses: EE 320.

EE 385 Electromagnetics3
 Experimental results of Coulomb, Ampere, and Faraday, 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, EE 221 Math 225.

EE 386 Electromagnetics Laboratory1
 Laboratory topics which enhance the concepts presented in the lecture course EE 385. Corequisite courses: EE 385.

EE 410 Probabilistic Methods in Electrical Engineering.....3	EE 454 Biomedical Instrumentation and Electrical Safety (CI) .....3
Basic probability and random variables. Applications to system reliability and effect of tolerance specifications. Description of engineering systems and problems using nondeterministic modeling. P, EE 316.	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, EE 321.
EE 415 Linear Control Systems (CI).....3	EE 460 Sensor Theory and Design (CI) .....3
Feedback control systems by operational and differential methods. Topics include differential and Laplace system modeling, Nyquist and Routh-Hurwitz stability analysis, and cascade PID/lead/lag and state-space feedback compensation design using Root-locus, Bode and Ackermann's pole-placement methods. P, EE 316 Math 225.	Introduction to the operation, design, testing and applications of modern sensors in use and under development. Signal conditioning and system integration are also reviewed. P, EE 360. Corequisite courses: EE 460A.
EE 416 Passive and Active Filters (CI).....3	EE 460A Sensor Theory and Design Lab (CI) .....0
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.	P, EE 360. Corequisite courses: EE 460.
EE 420 Electronics III (CI).....3	EE 464 Senior Design I.....2
Selected topics in the design of analog and digital electronics. Provides increased understanding of theory, simulation, and application of semiconductor devices. P, EE 321 EE 323 EE 345.	Capstone senior design team project. Students write specifications for a team design project and complete the initial design. Oral and written reports are required. To be taken in Fall or Spring term immediately before graduation. P, senior EE standing. Corequisite courses: EE 464A.
EE 421 Electronics Laboratory III.....1	EE 464A Senior Design I.....0
Experimental design and analysis of analog and digital electronic circuits. Corequisite courses: EE 420.	Corequisite courses: EE 464.
EE 422 Engineering Economy.....2	EE 465 Senior Design II.....2
Economic aspects of engineering, annual cost-percent worth calculations, decisions among alternatives. P, senior standing.	Capstone senior design team project. Students build and test the design specified in 464. Final oral presentation and written reports are required. To be taken in same term as graduation. P, EE 464. Corequisite courses: EE 465A.
EE 424 RF Electronics (CI).....3	EE 465A Senior Design II Research.....0
Performance analysis and design methods for the functional blocks of radio frequency systems operating below the microwave bands. P, EE 321 EE 316.	Corequisite courses: EE 465.
EE 430 Energy Conversion (CI) .....3	EE 470 Communications Engineering (CI) .....3
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, EE 385.	Modulation and detection methods including circuit analysis and design for digital and analog communication systems are presented. P, EE 316 EE 320.
EE 431 Energy Laboratory (CI).....1	EE 471 Fiber Optic Communications (CI) .....3
Experimental work with energy transfer and energy conversion devices. Corequisite courses: EE 430.	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, EE 316 or consent.
EE 432 Power Systems (CI).....3	EE 472 Fiber Optic Communications Lab .....1
Basic parameters of transmission lines. Representation of power systems, symmetrical components, network equations and solutions, load-flow studies and load-flow control, and symmetrical faults on synchronous machines. P, EE 430.	This laboratory reinforces the theoretical concepts presented in the lecture course, EE 471-571. Topics include basic knowledge and skills needed for handling and testing optical fibers, characteristics of optical components, fiber optic communication systems and fiber optic sensing systems. P, concurrent with 471-571 Corequisite courses: EE 471.
EE 433 Computer Analysis Power Systems (CI).....3	EE 475 Digital Image Processing (CI).....3
Concepts used in formulating load flow and fault study problems and stability analysis of power systems using computer solutions. P, EE 430 take EE 415 or EE 515.	Introduction to the fundamentals of digital image processing. Topics include image formation, transforms, enhancement, restoration, compression, and analysis. P, EE 317 or consent.
EE 435 Seminar in Power Systems (CI).....1	EE 491 Special Problems in Electrical Engineering.....1-3
Guest speakers, field trips, panel discussions and selected films on pertinent electric power and energy topics. Senior standing or consent.	An informal independent study experience meant to provide emphasis in a particular area of electrical engineering of special interest to a student and EE faculty member. P, consent.
EE 440 VLSI Circuit Design (CI) .....3	EE 492 Special Topics in Electrical Engineering .....1-3
An introduction to custom VLSI design in Complementary MOS (CMOS) technologies. Extensive use of computer software for VLSI circuit layout and simulation. P, EE 320 EE 345 EE 360. Corequisite courses: EE 440A.	Current topics in selected areas of engineering.
EE 440A VLSI Circuit Design Studio .....0	EE 497 Cooperative Education (CI).....1-3
P, EE 320 EE 345 EE 360. Corequisite courses: EE 440.	Planned supervised professional experience related to electrical engineering which takes place outside the formal classroom with private business or industry, or public agencies. Further information is found in the department's Cooperative Education Department Policy. P, consent of EE Department program coordinator. Instructor's consent required.
EE 450 Biomedical Signal Processing .....3	
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, EE 317.	

Dual Numbered Courses

EE 415-515 Linear Control Systems	3
Feedback control systems by operational and differential methods. Topics may include differential and Laplace system modeling, Nyquist and Routh-Hurwitz stability analysis, and cascade PID/lead/lag and state-space feedback compensation design using Root-locus, Bode and Ackermann's pole-placement methods. Corequisite courses: EE 515A.	
EE 416-516 Passive and Active Filters	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, EE 321 or consent.	
EE 424-524 RF Electronics	3
Performance analysis and design methods for the functional blocks of radio frequency systems operating below the microwave bands. P, EE 321 EE 316.	
EE 433-533 Computer Analysis of Power Systems	3
Concepts used in formulating load flow and fault study problems and stability analysis of power systems using computer solutions. P, EE 430 take EE 415 or EE 515.	
EE 440-540 VLSI Circuit Design	3
An introduction to custom VLSI design in Complementary MOS (CMOS) technologies. Extensive use of computer software for VLSI circuit layout and simulation. P, EE 320 EE 345 EE 360. Corequisite courses: EE 440A-540A.	
EE 440A-540A VLSI Circuit Design Studio	0
P, EE 320 EE 345 EE 360. Corequisite courses: EE 440-540.	
EE 450-550 Biomedical Signal Processing	3
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, EE 317.	
EE 454-554 Biomedical Instrumentation and Electrical Safety	3
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 healthcare facilities. P, EE 321.	
EE 460-560 Sensor Theory and Design	3
Introduction to the operation, design, testing and applications of modern sensors in use and under development. Signal conditioning and system integration are also reviewed. P, EE 360. Corequisite courses: EE 460A-560A.	
EE 460A-560A Sensor Theory and Design Lab	0
P, EE 360. Corequisite courses: EE 460-560.	
EE 471-571 Fiber Optic Communications	3
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, EE 316 or consent.	
EE 472-572 Fiber Optic Communications Lab	1
This laboratory reinforces the theoretical concepts presented in the lecture course, EE 471-571. Topics include basic knowledge and skills needed for handling and testing optical fibers, characteristics of optical components, fiber optic communication systems and fiber optic sensing systems. P, concurrent with EE 471-571.	

EE 475-575 Digital Image Processing	3
Introduction to the fundamentals of digital image processing. Topics include image formation, transforms, enhancement, restoration, compression, and analysis. P, EE 317 or consent.	
EE 492-592 Special Topics in Electrical Engineering	1-3
Current topics in selected areas of engineering.	

Graduate Courses

EE 570 Digital Communication Systems	3
EE 615 Linear Systems Theory	3
EE 620 Advanced Digital Hardware	3
EE 660 Electrical Properties of Materials	3
EE 670 Information and Signal Process	3
EE 685 Microwave Theory	3
EE 691 Special Electrical Problems	1-3
EE 692 Special Topics in Electrical Engineering	1-3
EE 788 Engineering Research or Design Paper	1-2
EE 790 Seminar	0-1
EE 791 Research	1-9
EE 792 Special Topics in Electrical Engineering	1-3
EE 798 Thesis	1-7

EET (Electronics Engineering Technology)

Undergraduate Courses

EET 100 Survey of Electronics	4
Nonmathematical survey of fundamental electronic components and circuits. Corequisite courses: EET 100A.	
EET 100A Survey of Electronics Lab	0
Corequisite courses: EET 100.	
EET 114 DC Concepts	4
Direct Current Circuits. Topics covered are basic laws and theorems directed toward resistive circuits. Kirchhoff's Laws, series and parallel circuits. P, Math 102. Corequisite courses: EET 114A.	
EET 114A DC Concepts Lab	0
Corequisite courses: EET 114.	
EET 116 AC Concepts	4
Alternating Current Circuits. Study of series and parallel circuits, network analysis, capacitance, inductance, and impedance. P, EET 114. Corequisite courses: EET 116A.	
EET 116A AC Concepts Lab	0
Corequisite courses: EET 116.	
EET 122 Introductory Circuits	4
Active devices including diodes and BJTs, transistor circuits, and discrete component amplifiers. P, EET 114. Corequisite courses: EET 122A.	
EET 122A Introductory Circuits Lab	0
Corequisite courses: EET 122.	
EET 200 EET Off Campus Orientation	0
EET enrollment sustaining.	
EET 220 Advanced Circuits	4
Advanced BJT and FET Circuit Designs with in-depth study of circuit parameters. P, EET 122. Corequisite courses: EET 220A.	
EET 220A Advanced Circuits Lab	0
Corequisite courses: EET 220.	

EET 222 Radio Frequency Systems I.....4	EET 324 Radio Frequency Systems II .....4
Radio wave propagation, transmission line theory, and antennas, and practical applications of each. Emphasis is placed on conduction of radio waves from a source to a load and its propagation through space. P, EET 220. Corequisite courses: EET 222A.	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 the opportunity to study the operation and theory of a variety of electronic instruments used in industry. P, EET 222. Corequisite courses: EET 324A.
EET 222A Radio Frequency Systems I Lab .....0	EET 324A Radio Frequency Systems II Lab .....0
Corequisite courses: EET 222.	Corequisite courses: EET 324.
EET 230 Introductory Digital .....4	EET 330 Microprocessors.....4
Binary and hexadecimal number systems, switching theory, Boolean Algebra, logic diagrams, Karnaugh mapping, counter circuits, and pulse circuits. P, EET 114. Corequisite courses: EET 230A.	Design and usage of the microprocessor in microcomputers and process control applications. Includes concepts, properties and basic architectures of Intel-type microprocessors. Programming on an assembly language level. P, EET 232 EET 232A. Corequisite courses: EET 330A.
EET 230A Introductory Digital Lab .....0	EET 330A Microprocessors Lab.....0
Corequisite courses: EET 230.	Equivalent to ET-335. Corequisite courses: EET 330.
EET 232 Advanced Digital .....4	EET 370 Computer Systems (CI) .....4
More advanced digital theory and circuits coverage. Programmable digital circuits, memory mapping, and basic architecture of Intel microprocessor/microcomputer circuits. P, EET 230. Corequisite courses: EET 232A.	A course to familiarize students with hardware/software configurations, installations, usage, and basic troubleshooting techniques of past and current personal computers. P, EET 330. Corequisite courses: EET 370A.
EET 232A Advanced Digital Laboratory .....0	EET 370A Computer Systems Lab (CI) .....0
P, EET 230A. Corequisite courses: EET 232.	Corequisite courses: EET 370.
EET 240 Techniques of Servicing .....2	EET 422 Video Systems .....4
The practical aspects of servicing many types of electronic equipment. The latest techniques and equipment will be available for demonstration and laboratory usage. P, EET 220.	The study of circuits used in television and video displays. Color and monochrome video systems are studied simultaneously. Modern digital TV standards studied. P, EET 320. Corequisite courses: EET 422A.
EET 251 Electricity and Electronics I.....3	EET 422A Video Systems Laboratory.....0
The course is designed to provide students with a background and understanding of the essential topics in AC/DC circuits, electrical circuit materials, electrical energy and sources of electricity, basic circuits and their analysis, magnetism, and applications of motors, generators, and power distribution. Equivalent to MnET 251. P, 1 course; from Subject MATH; except courses Math 021 Math 101 Math 100T Math 102.	Corequisite courses: EET 422.
EET 251A Electricity and Electronics I Lab.....0	EET 426 Communication Systems .....4
Equivalent to MnET 251A. Corequisite courses: EET 251.	Study of transmitter and receiver circuits. Principles of modulation and demodulation are investigated. Basic fiber optics are discussed. Basic telephone circuits, both analog and digital are studied. P, EET 320. Corequisite courses: EET 426A.
EET 252 Electricity and Electronics II .....3	EET 426A Communication Systems Lab.....0
This course is the continuation of MnET 251 and is designed to provide students with a background and understanding of the essential topics in semiconductor devices, semiconductor power supply and technology, and semiconductor amplifiers and their applications. Other topics include digital logic, integrated circuits, oscillators, AM/FM communications, TV signal transmissions, and computer structure and operations. Equivalent to MnET 252. P, MnET 251. Corequisite courses: EET 252A.	Corequisite courses: EET 426.
EET 252A Electricity and Electronics II Lab .....0	EET 428 Advanced Communication Systems .....4
Equivalent to MnET 252A. Corequisite courses: EET 252.	Complex radio systems including repeaters, mobile telephone, and paging systems. Systems design and troubleshooting techniques are studied as well as microwave and basic radar. P, EET 426. Corequisite courses: EET 428A.
EET 291 Independent Study .....1-3	EET 428A Advanced Communication Systems Lab.....0
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.	Corequisite courses: EET 428.
EET 292 Special Topics .....1-3	EET 440 Prototype Techniques (CI).....4
Current selected topic areas in Electronic Engineering Technology. P, permission of the instructor.	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. Project management techniques will be introduced and followed in the student's projects. P, EET 320. Corequisite courses: EET 440A.
EET 320 Analog Devices .....4	EET 440A Prototype Techniques Lab (CI).....0
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, EET 220 take Math 123 or Math 121. Corequisite courses: EET 320A.	Corequisite courses: EET 440.
EET 320A Analog Devices Lab .....0	EET 451 Industrial Electronics and Control.....3
Corequisite courses: EET 320.	This course teaches industrial motion control (servomechanisms) and process control (instrumentation) systems. The course describes the concepts and the operation of electronic devices, circuits, systems, and applications used in industry. Crosslisted with MnET 451. Equivalent to MnET 451. P, MnET 252 or EET 320. Corequisite courses: EET 451A.
	EET 451A Industrial Electronics Control Lab .....0
	Equivalent to MnET 451A. Corequisite courses: ET-384.

EET 453 Manufacturing Automation.....3
The course offers advanced topics in manufacturing automation including automation hardware/software, system design and integration, and management techniques for improving design and manufacturing operations. Hand-on lab activities provide the students the opportunity to develop and program automated systems. Crosslisted with MnET 453. Equivalent to MnET 453. Corequisite courses: EET 453A.

EET 453A Manufacturing Automation Lab.....0
Crosslisted with MnET 453A. Equivalent to MnET 453A. Corequisite courses: EET 453.

EET 469 Project Management (CI).....3
A Team-Oriented and Project-Based Course providing the students the additional opportunities to conduct research, build and test products, and manage projects in a team environment. Record keeping, documentation, team evaluations, and presentations are parts of course activities. Crosslisted with MnET 469. Instructor's consent required. Equivalent to MnET 469. Corequisite courses: EET 469A.

EET 469A Project Management Lab (CI).....0
Crosslisted with MnET469A. Equivalent to GE 469A, MnET 469A. Corequisite courses: EET 469.

EET 472 Networking I (CI).....4
The study of personal computer systems, concentrating on Intel-type personal computers, networking and data connections from a software and management point of view. Microsoft NT and Novell are explored. P, EET 370. Corequisite courses: EET 472A.

EET 472A Networking I Lab (CI).....0
Corequisite courses: EET 472.

EET 474 Networking II4
Further study of personal computer systems, concentrating on Intel-type personal computers, networking and data communications from a software and management point of view. Microsoft NT and Novell are explored. P, EET 472. Corequisite courses: EET 474A.

EET 474A Networking II Lab.....0
Corequisite courses: EET 474.

EET 488 Technology Certification.....1
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.

EET 491 Independent Study1-3
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.

EET 492 Special Topics1-3
Current selected topic areas in Electronic Engineering Technology. P, permission of the instructor.

EET 494 Internship.....1-8
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.

EET 497 Cooperative Education (CI).....1-8
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. Instructor's consent required.

EEd (Elementary Education)

Undergraduate Courses

EEd 488 K-8 Student Teaching.....1-4
Supervised teaching placement in an elementary classroom for HPER, Art, Music and Modern Language K-12 education majors. Application must be made through the Placement Supervisor. P, Professional Semesters I and II and acceptance into Professional Semester III. Application procedure is required.

EEd 493 Workshop1-3
Special areas in elementary education are comprehensively explored in an intensive time framework. Designed to increase specific skills and understanding in a current area.

Dual Numbered Courses

EEd 493-593 Workshop1-3
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

EEd 748 Elementary Curriculum Practicum.....1

EEd 773 Elementary School Curriculum3

EM (Engineering Mechanics)

Undergraduate Courses

EM 221 Statics3
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.

EM 222 Dynamics.....3
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, EM 221.

EM 223 Engineering Mechanics3
Basics of statics and dynamics. P, Math 225 and Phys 211 or consent.

EM 321 Mechanics of Materials3
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, EM 221.

EM 331 Fluid Mechanics.....3
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, EM 222 Math 321 take ME 311 minimum grade "C".

EM 421 Introduction to Mechanics of a Continuous Medium.....3
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, EM 331 Math 331.

EM 422 Theory of Elasticity.....3
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, EM 321 Math 331.

EM 423 Theory of Plasticity3
 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, EM 422-522 or consent.

Dual Numbered Courses

EM 421-521 Introduction to Mechanics of a Continuous Medium3
 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, EM 331 Math 331.

EM 422-522 Theory of Elasticity3
 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, EM 321 Math 331.

EM 423-523 Theory of Plasticity3
 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 and Shells.....3
EM 631 Advanced Fluid Mechanics3
EM 641 Finite Element Analysis.....3

Engl (English)

Undergraduate Courses

Engl 101 Composition I3
 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 200 Introduction to English Studies2
 This course, required of all first year English majors, will provide students with the background and professional skills to read critically and write analytically about literary text. Students will learn to write from a variety of critical and theoretical stances. In addition, the course provides training in research methods for the discipline, including use of print and electronic sources, and in MLA documentation style. Students will generate bibliographies, source studies, and both documented and undocumented critical papers. Papers will be based on readings from poetry, fiction, and drama.

Engl 201 Composition II.....3
 Advanced course in reading critically and in writing clearly, correctly, and persuasively. P, junior standing. P, Engl 101.

Engl 210 Introduction to Literature.....3
 Readings in fiction, drama, and poetry to acquaint students with literature and aesthetic form.

Engl 211 World Literature I.....3
 Literary masterpieces of world literature in translation, from ancient times through the Renaissance.

Engl 212 World Literature II.....3
 Literary masterpieces of world literature in translation, from the Renaissance to the present.

Engl 221 British Literature I.....3
 English literature survey from Beowulf through the 18th century.

Engl 222 British Literature II.....3
 English literature survey from the early 19th century to the present.

Engl 240 Juvenile Literature.....3
 A survey of the history of literature written for children and adolescents, and a consideration of the various types of juvenile literature.

Engl 241 American Literature I.....3
 American literature survey from colonial times through 1870.

Engl 242 American Literature II.....3
 American literature survey from 1870 to the present.

Engl 248 Women in Literature.....3
 Study of literature by and about women. Course materials may range from early times to the present and may also include non-American literature. Crosslisted with WmSt 248. Equivalent to WmSt 248.

Engl 249 Literature of Diverse Cultures.....3
 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 250 Science Fiction.....3
 A survey of short stories and novels from the 19th century, the Golden Age of Pulp, 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 256 Literature of the American West.....3
 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
 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 308 7-12 Language Arts Methods (CI).....3
 Techniques, materials, and resources for teaching English language and literature to middle and secondary school students. Required of students in the English Education Option. Equivalent to SeEd 424.

Engl 330 Shakespeare (CI).....3
 Representative comedies, tragedies, and histories of Shakespeare.

Engl 334 English Drama: (CI).....3
 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: (CI).....3
 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 351 American Indian Literature of the Past (CI).....3
 Concentration on myths and legends of major language groups, particularly the Siouan. Accepted as credit for American Indian Studies minor. Equivalent to AIS 351.

Engl 352 American Indian Literature of Present (CI).....3
 Twentieth-century autobiography, fiction, and poetry by Native American authors. Crosslisted with AIS 352. Equivalent to AIS 352.

Engl 356 American Poetry: (CI)	3
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: (CI)	3
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: (CI)	3
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 Communication (CI)	3
Study of and practice in writing of a technical nature; expository writing will be stressed. P, 6 hours of composition (Except for Engineering students). P, Engl 101 Engl 201.	
Engl 383 Creative Writing (CI)	3
Writing of fiction, drama, biography, or poetry. P, consent of instructor. Engl 201, take 12 credits from Department ENGL.	
Engl 410 Mythology and Literature (CI)	3
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 411 Bible As Literature (CI)	3
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 422 Chaucer (CI)	3
Major works of Chaucer, with some attention to his sources and his language.	
Engl 423 Old and Middle English Literature (CI)	3
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 (CI)	3
Major writers of the 16th and early 17th centuries excluding Shakespeare.	
Engl 427 Advanced Shakespeare (CI)	3
Selected plays of Shakespeare and significant Shakespearean criticism.	
Engl 434 18th Century English Literature (CI)	3
Literature of the later 17th and 18th centuries (1660-1800), including major works and developments in literature and thought.	
Engl 437 English Romantic Literature (CI)	3
English literature of the romantic movement (1789-1832).	
Engl 438 English Victorian Literature (CI)	3
English literature of the Victorian Period (1840-1900).	
Engl 439 Modern English Literature (CI)	3
English literature from 1900 to WWII.	
Engl 440 Contemporary English Literature (CI)	3
English literature since WWII.	
Engl 453 American Renaissance (CI)	3
American literature of the mid nineteenth-century, including the Transcendentalists and Romantics.	
Engl 454 American Realism and Naturalism (CI)	3
American literature of the realist and naturalist movements of the late 19th and early 20th centuries.	
Engl 459 American Literature Between the Wars (CI)	3
American literature of the modernist movement from 1917 to 1945.	
Engl 460 Contemporary American Literature (CI)	3
American literature since WWII.	
Engl 463 Methods of Teaching English as a Second Language (CI)	3
Develops the central concepts, tools of inquiry, and structure of teaching English to students with limited English proficiency. Includes the evaluation of instructional processes, learning resources, curriculum, and programs. Emphasis will be on teaching students to use English in educational and public settings. Crosslisted with EdFn 463-563. Equivalent to EdFn 463. P, EdFn 460 or Ling 460.	
Engl 483 Advanced Creative Writing (CI)	3
A course allowing students with experience in creative writing to specialize in a particular genre (poetry, fiction, etc.). P, Engl 383 or consent of instructor.	
Engl 484 Literary Criticism (CI)	3
The theory and practice of various critical approaches to literature.	
Engl 490 Seminar in English (CI)	1-4
Engl 492 Topics in English (CI)	1-5
Engl 494 Internship (CI)	1-12
Dual Numbered Courses	
Engl 422-522 Chaucer	3
Major works of Chaucer, with some attention to his sources and his language.	
Engl 423-523 Old and Middle English Literature	3
Emphasizing pre-Norman heroic and Christian literature, the work of Chaucer and his contemporaries, and folk literature such as the ballads.	
Engl 424-524 English Renaissance Literature	3
Major writers of the 16th and early 17th centuries excluding Shakespeare.	
Engl 427-527 Advanced Shakespeare	3
Selected plays of Shakespeare and significant Shakespearean criticism.	
Engl 434-534 English 18th Century Literature (CI)	3
Literature of the later 17th and 18th centuries (1660-1800), including major works and developments in literature and thought.	
Engl 437-537 English Romantic Literature (CI)	3
English literature of the romantic movement (1789-1832).	
Engl 438-538 English Victorian Literature	3
English literature of the Victorian Period (1840-1900).	
Engl 439-539 Modern English Literature to WW II	3
English literature from 1900 to WWII.	
Engl 440-540 Contemporary English Literature	3
English literature since WWII.	
Engl 453-553 American Renaissance Literature	3
American literature of the mid nineteenth-century, including the Transcendentalists and Romantics.	
Engl 454-554 American Realist and Naturalist Literature	3
American literature of the realist and naturalist movements of the late 19th and early 20th centuries.	
Engl 459-559 American Literature Between the Wars	3
American literature of the modernist movement from 1917 to 1945.	
Engl 460-560 Contemporary American Literature	3
American literature since WWII.	
Engl 463-563 Methods of Teaching English as a Second Language	3
Develops the central concepts, tools of inquiry, and structure of teaching English to students with limited English proficiency. Includes the evaluation of instructional processes, learning resources, curriculum, and programs. Emphasis will be on teaching students to use English in educational and public settings. Crosslisted with EdFn 463-563. Equivalent to EdFn 563.	

Engl 483-583 Advanced Creative Writing.....3
 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 704 Introduction to Graduate Studies.....3
Engl 705 Seminar in Teaching Composition.....3
Engl 710 Seminar in Rhetoric.....3
Engl 724 Seminar in English Literature to 1660.....3
Engl 725 Seminar in English Literature Since 1660.....3
Engl 728 Seminar in American Literature to 1900.....3
Engl 729 Seminar in American Literature Since 1900.....3
Engl 742 Seminar in American Indian Literature.....3
Engl 755 Seminar in Minority Literature.....3
Engl 791 Independent Research and Study.....1-3
Engl 792 Special Topics in Composition and Literature.....1-3
Engl 798 Thesis.....1-7

EnvM (Environmental Management)

Undergraduate Courses

EnvM 275 Introduction to Environmental Science.....3
 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, Chem 112 take 1 course take Bio 101 or Bio 103 take Bio 151 or Bio 153.

EnvM 425 Disturbance Ecology (CI).....4
 Introduction to basic concepts of disturbance ecology. Demonstration and discussion of linkages between basic biology and management of natural resources. Introduction to field and laboratory techniques for monitoring and assessment of ecological responses to pollution and other forms of disturbance. P, Bio 153 Bio 311. Corequisite courses: EnvM 425A.

EnvM 425A Disturbance Ecology Lab (CI).....0
 Corequisite courses: EnvM 425.

Dual Numbered Courses

EnvM 425-525 Disturbance Ecology.....4
 Introduction to basic concepts of disturbance ecology. Demonstration and discussion of linkages between basic biology and management of natural resources. Introduction to field and laboratory techniques for monitoring and assessment of ecological responses to pollution and other forms of disturbance. Corequisite courses: EnvM 425A-525A.

EnvM 525A Disturbance Ecology Lab.....0
 Corequisite courses: EnvM 425-525.

EPsy (Educational Psychology)

Undergraduate Courses

EPsy 302 Educational Psychology (CI).....3
 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 in Elementary Education Professional Semester II. Instructor's consent required. Take EdFn 338 or SeEd 287, take EdFn 475. Corequisite courses: SeEd 450, SeEd 314.

EPsy 303 The Exceptional Child.....3
 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.

EPsy 426 Psychology of Adolescence.....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- to 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

EPsy 450 Gifted and Talented.....3
 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 Enhancing Creativity.....3
 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.

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- to 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, graduate student.

EPsy 450-550 Gifted and Talented.....3
 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 Creativity3
 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 Disabilities3
EPsy 723 Adolescent Psychology.....3
EPsy 740 Advanced Educational Psychology3
EPsy 761 Testing Practicum: Intellectual Assessment.....2
EPsy 762 Testing Practicum: Personality Assessment.....3
EPsy 763 Testing Practicum: Projective Techniques2

EurS (European Studies)

Undergraduate Courses

EurS 300 Topics in European Culture3
 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 Topics in European Society (CI)3
 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.)

EurS 311 European Exchange Orientation1
 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, EurS 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, EurS 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, EurS 311.

EurS 492 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, EurS 311.

FCS (Family and Consumer Sciences)

Undergraduate Courses

FCS 101 FCS-Professional Foundations1
 Introduction to the Family and Consumer Science profession: orientation to careers and college and university resources.

FCS 292 Current Topics1-3
 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 491 Special Problems.....1-3
 Individual research and study in family and consumer sciences. May be repeated for a total of 3 credits. Consent of instructor and department is required. P, FCS 491.

FCS 492 Current Topics1-3
 For students needing additional study of a topic or experience not offered as part of a regular class.

FCS 495 Practicum in Family and Consumer Sciences2-6
 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.

Dual Numbered Courses

FCS 491-591 Special Problems1-3
 Individual research and study in family and consumer sciences. May be repeated for a total of 3 credits. Consent of instructor and department is required.

FCS 492-592 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 611 History and Philosophy of Family and Consumer Sciences.....2

FCSE (Family and Consumer Sciences Education)

Undergraduate Courses

FCSE 292 Current Topics1-3
 For students needing additional study of a topic or experience not offered as part of a regular class.

FCSE 331 Work Force Preparation in Family and Consumer Sciences (CI)2
 Strategies for developing curriculum and designing methods of instruction for teaching employability skills, career decision making and occupational areas of family and consumer sciences. A field experience will be included.

FCSE 411 Philosophy and Methods FCSE (CI).....4
 The philosophical foundations and history of vocational family and consumer sciences programs in school systems. 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 student teaching experience. Must be taken in semester immediately preceding FCSE 412. P, 2.5 GPA

FCSE 412 Preparation for Student Teaching (CI).....5
 Planning and developing instruction for various types of family and consumer sciences programs to meet the needs of selected age groups in structured situations. Professionalism, workplace environment/issues and job seeking skills will be addressed in preparation for a career in an educational setting. P, Professional Semester II and 2.6 GPA in professional classes and 2.5 GPA overall, FCSE 411. Corequisite courses: FCSE 412A.

FCSE 412A Preparation for Student Teaching and Extra Practice Lab (CI).....0
 Corequisite courses: FCSE 412.

FCSE 421 Adult Education (CI)3
 Theories, strategies and trends related to working with diverse adult audiences within the context of family and consumer sciences. Experience in working with adults will be included. Open to all majors.

FCSE 473 Supervised Student Teaching (CI).....10
 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, a 2.6 GPA in professional classes and 2.5 GPA overall, and senior standing in family and consumer sciences. Corequisite courses: FCSE 412.

FCSE 491 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 492 Current Topics1-3
 For students needing additional study of a topic or experience not offered as part of a regular class.

FCSE 496 Field Experience1-12
 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 491-591 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 492-592 Current Topics1-3
 For students needing additional study of a topic or experience not offered as part of a regular class.

Graduate Courses

FCSE 741 Supervision in Family and Consumer Sciences Education2

FCSE 751 Curriculum in Family and Consumer Sciences Education2

FCSE 791 Special Problems.....1-3

FCSE 792 Current Topics1-3

Fren (French)

Undergraduate Courses

Fren 101 Introductory French I.....4
 Fundamentals of language structure and introduction to French culture enabling students to converse, read, and write simple French. Classwork may be supplemented with required aural/ oral practice outside of class.

Fren 102 Introductory French II.....4
 Fundamentals of language structure and introduction to French culture enabling students to converse, read, and write simple French. Classwork may be supplemented with required aural/ oral practice outside of class.

Fren 201 Intermediate French I.....4
 Goals of the introductory course continued. Emphasis on cultural and intellectual aspects of French life and literature. Classwork may be supplemented with required aural/oral practice outside of class.

Fren 202 Intermediate French II.....4
 Goals of the introductory course continued. Emphasis on cultural and intellectual aspects of French life and literature. Classwork may be supplemented with required aural/oral practice outside of class.

Fren 310 French Language Skills (CI).....3
 A video and computer-assisted, advanced-level course designed to strengthen and expand aural comprehension, conversation and composition within the context of contemporary French culture.

Fren 333 Topics in Francophone Culture (CI)3
 Overview of the historical events in Francophone civilizations as they relate to contemporary culture. Second semester emphasizes contemporary Francophone culture and civilization. P, 310 or consent of instructor.

Fren 350 Business Communications in French (CI).....3
 An introduction to the language of business and business practices in French-speaking countries. Included are commercial terminology, business forms, office correspondence and the common expressions used in a business setting.

Fren 353 Exploring Literature in French (CI).....3
 Study of literary texts from throughout the French-speaking world.

Fren 395 Travel Study Abroad Francophone (CI).....1-6
 Offered to students engaged in an approved program of studies under faculty supervision. Hours of credit as contracted with instructor and approved by the cooperating institutions.

Fren 415 French Language Skills Workshop (CI).....1-6
 An advanced level course that uses both technology and conventional resources to expand students' competency within their specialized emphases. P, 310 or instructor permission.

Fren 450 Business French II (CI)3
 An advanced course in the language of business in French-speaking countries. Graded readings in commerce and marketing, finance and accounting, and economics. P, 310 or permission of instructor.

Fren 453 Topics in French Literature (CI)3
 An in-depth study of authors writing in French. P, 310 or permission of instructor.

Fren 480 French Study Capstone Experience (CI).....3 (on demand)
 The senior capstone experience is designed and approved by the faculty member supervising the course in collaboration with the other faculty and administrators at the cooperating institutions. Typical experiences require service-learning projects, internships and study abroad. A report and/or public presentation may be required as a part of this experience. P, students should be in their senior year and have completed a minimum of 28 hours toward the major before undertaking the capstone experience.

Fren 491 Directed Readings/Independent Study (CI).....1-3
Students may select a topic or a problem of interest to them and may research it independently or in collaboration with one or more students at other institutions under the supervision of a faculty member at one of the three primary institutions. Instructor permission is required; course offered only when staff is available. Instructor’s consent required. P, Fren 202.

Fren 492 Special Topics (CI)3
Topics of interest to faculty and students. May include, but is not limited to, film, translation and intensive practice of oral skills. P, 310 or permission of instructor.

Graduate Courses

Fren 591 Directed Readings/Independent Study1-3

GCom (General Communications)

Undergraduate Courses

GCom 211 Phonetics3
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 Studies3
An overview of the communication discipline, theory, and practice. P, Advanced Placement in Speech or consent.

GCom 345 Organizational Communication (CI).....3
An examination of organizational theory and research as it relates to communication within the organization.

GCom 492 Topics in General Communications (CI).....1-5
Selected topics of current interest in the discipline.

GCom 494 Internship (CI)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 Communication3

GCom 792 Special Topics in Communication1-3

GE (General Engineering)

Undergraduate Courses

GE 101 Introduction to Engineering.....1
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 120 Engineering Drawing/CAD3
This course will cover the fundamentals of technical drawing including design processes, geometric construction, multi-view projection, dimensioning, sectional views, auxiliary views, and assembly and working drawings. Integral to this course is the use of Computer-Aided Drawing (CAD) in both 2D and 3D modes emphasizing visualization concepts. P, 1 course; from Subject MATH; except courses Math 021 Math 101 Math 100T. Corequisite courses: GE 120A.

GE 120A Engineering Drawing/CAD Lab.....0
Corequisite courses: GE 120.

GE 121 Engineering Design Graphics I.....1
A course in graphical communication, expression and interpretation. The ability to visualize in three dimensions is developed through shape description, sketching and multi-view projection exercises. The emphasis is on visualization and free hand sketching. Also includes Engineering, Mechanical, and Architectural scales, geometric constructions, use of instruments, dimensioning, and sectional views. P, 1 course; from Subject MATH; except courses Math 021 Math 101 Math 100T.

GE 122 Engineering Design Graphics II1
This course provides a basic in graphical descriptive geometry as applied to solving spatial problems. Graphical conventions including but not limited to section, scales, and dimensions are also covered. P, GE 121.

GE 123 Computer Aided Drawing1
A course with Major emphasis on 2-dimensional drafting skills and 3-dimensional solid modeling utilizing microcomputer software. All work requires a “hands-on” approach. P, GE 121 or ID 122.

GE 200 Engineering – Off Campus Orientation.....0
Engineering College Enrollment Sustaining.

GE 225 Survey of Machine Tool Applications1
A survey course introducing machine tools and their applications. Automation in machining and CNC programming and operations are also topics addressed in this course.

GE 231 Technology and Society3
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 their environmental impacts.

GE 241 Applied Mechanics.....3
Basic Statics, dynamics, and two-dimensional analysis of stress and strain. Laboratory verification of fundamental principles of structural and machine elements. Crosslisted with MnET 241. Equivalent to MnET 241. P, 1 course from Subject MATH except courses Math 021 Math 101 Math 100T Math 102 take 1 course from Subject PHYS except courses Phys 101 Phys 102.

GE 291 Independent Study1-3
P, consent.

GE 292 Special Topics.....1-3
P, consent.

GE 410 Human Factors in Design3
P, Math 102.

GE 425 Occupational Safety and Health Management.....3

GE 469 Project Management3

GE 469A Project Management Lab0
Crosslisted with EET 469A and MnET 469A. Equivalent to EET 469A, MnET 469A. Corequisite courses: MnET 469.

GE 491 Independent Study1-3
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 492 Special Topics.....1-3
Timely topics relating to Physical Science and Engineering. P, junior or senior standing in Engineering and consent of instructor.

Dual Numbered Courses

GE 491-591 Independent Study.....1-3
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 492-592 Special Topics1-3
 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.....3
GE 543 Project Management3
GE 601 Technical Studies in Industrial Management3
GE 603 Designing the Workplace for Production3
GE 610 Human Factors in Engineering and Design.....3
GE 620 Industrial Safety3
GE 691 Independent Study1-3
GE 692 Special Topics.....1-3
GE 788 Research Report/Design Paper1-2
GE 791 Independent Study1-9
GE 792 Special Topics.....1-3
GE 798 Thesis.....1-7

Geography (Geography)

Undergraduate Courses

Geog 101 Introduction to Geography.....3
 The course presents a broad, introductory overview of geographic concepts, themes, and elements designed to help students better understand and analyze the world from a geographic perspective. It provides a background to Earth's physical and human elements and systems. It also emphasizes the unique quality of world regions, and the spatial interaction of people, elements, and regions, as well as major global and regional problems and prospects.

Geog 131 Physical Geography I.....4
 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. Corequisite courses: Geog 131A.

Geog 131A Physical Geography I Lab0
 Corequisite courses: Geog 131.

Geog 132 Physical Geography II4
 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. P, Geog 131. Corequisite courses: Geog 132A.

Geog 132A Physical Geography II Lab.....0
 Corequisite courses: Geog 132.

Geog 200 Introduction to Human Geography.....3
 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
 A survey of the Earth from a broad global framework through 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
 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
 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.....2
 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. May count toward Geography major. P, 132-132A or PS 213-213A. Crosslisted with PS 310. Equivalent to PS 310. Corequisite courses: Geog 310A.

Geog 310A Soil Geography and Land Use Interpretation Studio....1
 Equivalent to PS 310A. Corequisite courses: Geog 310.

Geog 313 Geography of Latin America.....3
 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
 Appraisal of the physical resource base of Russia and estimates of industrial and agricultural strengths.

Geog 315 Geography of Europe.....3
 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 Asia3
 Asian nations, physical and cultural environments, their role in world relations.

Geog 317 Geography of Africa.....3
 This course focuses on the changing geography of Africa. It studies the physical and ecological patterns of the continent, historical development, issues of ethnicity, and population trends. It examines various types of economic activity and how they relate to the development and in many instances lack of development in Africa. This course also will look at Africa's regional geography from both a broad geographic perspective and country particular examples. Specific attention will be directed to the main features of crises of today's Africa that include drought, desertification, famine, conflict, disease, aid and indebtedness.

Geog 337 Atmospheric Sciences.....3
 Systematic methodological investigation of the meteorological elements (weather, climate, altitude, etc.) and their effects on geographic features.

Geog 338 Astrogeography.....2
 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 Landforms2
 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 Environmental Disasters and Human Hazards.....3**
An in-depth examination of various geophysical events (earthquakes, volcanic eruptions, tsunamis, earth failures), meteorological events (floods, severe storms–tornados, 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**
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**
Character of American countryside as shaped by private and public decision-making processes. Case studies of major United States and European rural planning efforts to understand the present landscape and the problems of rural populations.
- Geog 365 Land Use Planning.....3**
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, Geog 200 Geog 212 or Geog 219.
- Geog 382 Geographic Research Methods (CI).....3**
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**
History and principles of cartography. Emphasis on field mapping; map projections; cartographic design; map interpretations; and exercises in map making. Corequisite courses: Geog 383A.
- Geog 383A Cartography Studio.....0**
Corequisite courses: Geog 383.
- Geog 384 Advanced Cartography.....3**
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, Geog 383. Corequisite courses: Geog 384A.
- Geog 384A Advanced Cartography Studio.....0**
Corequisite courses: Geog 384.
- Geog 388 Geodesy.....3**
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 measurements of terrestrial gravitation. P, Math 115, 120 or consent.
- Geog 400 Cultural Geography (CI).....3**
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 406 Seminar in Systematic Geography.....1-4**
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.
- Geog 415 Environmental Geography.....3**
Geographical aspects of environmental issues including historical geography of environmental problems, global driving forces, land ethics and stewardship, environmental externalities, population, resources, climate change, and environmental restoration. Focus on connections between human and natural systems; consequence chains between cause and effect; impact of time and space on problem perception, analysis, and solution; and natural and human laws. Term paper required.
- Geog 425 Population Geography.....3**
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 and Soil Resources.....3**
Crosslisted with PS 433. May count toward Geography major.
- Geog 447 Geography of the Future (CI).....3**
A futuristic analysis of Earth’s natural environmental elements, natural resources, population and settlement, and cultural institutions at the global, national, and state levels.
- Geog 454 Site Selection and Development.....3**
Analysis of geographic factors involved in selection of locations and sites for manufacturing, commercial and agricultural enterprises.
- Geog 461 Urban Geography.....3**
Geography of cities: types, functions, and distribution of world cities. Special emphasis on planning of cities in the United States
- Geog 464 Local and Regional Planning.....3**
Regional planning with particular reference to the upper Mid-West.
- Geog 467 Geography of the American Indian.....3**
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. Crosslisted with AIS 467. Equivalent to AIS 467.
- Geog 476 Historical Geography.....3**
Historical periods portrayed against geographical background. Crosslisted with Hist 476.
- Geog 483 Air Photo Interpretation.....3**
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**
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**
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, Geog 383 take 1 course from Subject MATH.
- Geog 487 Geographic Information Systems I (CI).....3**
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 488 Geographic Information Systems II (CI).....3
 This course introduces advanced tools and techniques of data creation, data integration, mapping, and spatial analysis in geographic information systems (GIS). It provides basic approaches for solving problems of data integration including format identification, conversion, and registration. It gives a conceptual base to many methods and techniques associated with vector and raster-based spatial analysis. It provides an in-depth examination of the functions and capabilities of Arc View Desktop GIS, its extensions and ARC/INFO GIS software. It introduces basic concepts and practical applications of global positioning systems (GPS) technology in GIS especially in creating GIS-compatible data sets. This course gives hands-on experience with PC and UNIX workstations, tablet digitizers, scanners, printers and plotters, GPS equipment, digital camera systems and all supporting software. Students work with real applications and are expected to complete an individual/small group project during the course.

Geog 489 Geographic Information Systems III (CI)3
 This course introduces many of the basic concepts of raster modeling in geographic information systems (GIS) with special emphasis on construction and use of digital elevation models (DEMs) in GIS. It provides an in-depth examination of the functions and capabilities of Arc View Desktop GIS extensions (Spatial Analyst and 3D Analyst) and ARC/INFO GRID GIS software. Building on the skills and techniques learned in GIS I and GIS II courses, it gives a conceptual base to many of the quantitative methods associated with raster-based GIS spatial analysis. Topics include raster data formats and sources, data conversion, merging and projecting raster data sets, DEM displays including image drapes and other visualizations, overlay functions, hydrologic modeling tools and applications, visual analyses, friction and dispersion models and change detection studies. Students are expected to complete an individual/small group project in Arc View or ARC/INFO with a raster data component during the course.

Geog 491 Special Problems in Geography.....1-4
 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. P, Geog 491; maximum 12 credits.

Geog 491A Special Problems in Geography Lab0
 Instructor's consent required. P, Geog 491; maximum 12 credits.

Geog 492 Topics in Geography1-5

Geog 494 Internship.....1-12
 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. Instructor's consent required.

Geog 496 Field Experience.....1-12
 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. Instructor's consent required.

Dual Numbered Courses

Geog 406-506 Seminar in Systematic Geography.....1-4
 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.

Geog 415-515 Environmental Geography3
 Geographical aspects of environmental issues including historical geography of environmental problems, global driving forces, land ethics and stewardship, environmental externalities, population, resources, climate change, and environmental restoration. Focus on connections between human and natural systems; consequence chains between cause and effect; impact of time and space on problem perception, analysis, and solution; and natural and human laws. Term paper required.

Geog 488-588 Geographic Information Systems II.....3
 This course introduces advanced tools and techniques of data creation, data integration, mapping, and spatial analysis in geographic information systems (GIS). It provides basic approaches for solving problems of data integration including format identification, conversion, and registration. It gives a conceptual base to many methods and techniques associated with vector and raster-based spatial analysis. It provides an in-depth examination of the functions and capabilities of Arc View Desktop GIS, its extensions and ARC/INFO GIS software. It introduces basic concepts and practical applications of global positioning systems (GPS) technology in GIS especially in creating GIS-compatible data sets. This course gives hands-on experience with PC and UNIX workstations, tablet digitizers, scanners, printers and plotters, GPS equipment, digital camera systems and all supporting software. Students work with real applications and are expected to complete an individual/small group project during the course.

Geog 489-589 Geographic Information Systems III3
 This course introduces many of the basic concepts of raster modeling in geographic information systems (GIS) with special emphasis on construction and use of digital elevation models (DEMs) in GIS. It provides an in-depth examination of the functions and capabilities of Arc View Desktop GIS extensions (Spatial Analyst and 3D Analyst) and ARC/INFO GRID GIS software. Building on the skills and techniques learned in GIS I and GIS II courses, it gives a conceptual base to many of the quantitative methods associated with raster-based GIS spatial analysis. Topics include raster data formats and sources, data conversion, merging and projecting raster data sets, DEM displays including image drapes and other visualizations, overlay functions, hydrologic modeling tools and applications, visual analyses, friction and dispersion models and change detection studies. Students are expected to complete an individual/small group project in Arc View or ARC/INFO with a raster data component during the course.

Graduate Courses

Geog 620 Advanced Regional Studies in Geography1-4
Geog 690 Seminar in Geography.....1-4
Geog 692 Topics in Geography Education.....1-4
Geog 710 Evolution in Geographic Thought3
Geog 714 Research and Writing3
Geog 732 Geomorphology3
Geog 734 Climatology3
Geog 742 Cultural Geography3
Geog 752 Urban Geography.....3
Geog 765 Advanced Studies in Land Utilization1-4
Geog 770 Advanced Geographic Techniques.....1-4
Geog 785 Quantitative Methods in Geography3
Geog 786 Geographic Information Systems3
Geog 788 Research Paper in Geography1-3
Geog 791 Special Problems in Geography.....1-4
Geog 794 Internship.....1-3
Geog 798 Thesis.....1-7

Germ (German)

Undergraduate Courses

Germ 101 Introductory German I.....4
Study of the fundamentals of the German language aimed at preparing the student to understand, speak, read, and write simple German.

Germ 102 Introductory German II4
Study of the fundamentals of the German language aimed at preparing the student to understand, speak, read, and write simple German.

Germ 201 Intermediate German I.....3
Goals of introductory German continued with emphasis on modern cultural aspects of German speaking countries. Reading and speaking skills are emphasized. Students pursuing a German major or minor are encouraged to enroll in 311-312.

Germ 202 Intermediate German II3
Goals of introductory German continued with emphasis on modern cultural aspects of German speaking countries. Reading and speaking skills are emphasized. Students pursuing a German major or minor are encouraged to enroll in 311-312.

Germ 311 German Composition and Conversation (CI)2
Development of proficiency in German composition and conversation focusing on typical situations in everyday German life. P, Germ 202.

Germ 312 German Composition and Conversation (CI)2
Development of proficiency in German composition and conversation focusing on typical situations in everyday German life. P, Germ 202.

Germ 353 German Literature I (CI).....2-3
Introduction to German literature through readings and discussion in German of literary works from various genres and epochs. P, Germ 312 or consent.

Germ 354 German Literature II (CI)2-3
Introduction to German literature through readings and discussion in German of literary works from various genres and epochs. P, Germ 312 or consent.

Germ 380 Deutschland Heute (CI).....1-3
An examination of contemporary German life, current interests, issues and problems. P, Germ 312 or consent.

Germ 411 Advanced Composition and Conversation I (CI).....2-3
More intensive development of ability in composition and conversation, placing special emphasis on idiomatic expressions and flexibility within the language. Topics vary. May be repeated once for credit. P, Germ 311 Germ 312.

Germ 412 Advanced Composition and Conversation II (CI)2-3
More intensive development of ability in composition and conversation, placing special emphasis on idiomatic expressions and flexibility within the language. Topics vary. May be repeated once for credit. P, Germ 311 Germ 312.

Germ 433 German Civilization I (CI).....2-3
The culture of the German-speaking countries from the beginning to modern times including literary and artistic trends, governmental structures, and the life and customs of the people. Reading and discussions in German. P, Germ 311 Germ 312 or consent.

Germ 434 German Civilization II (CI)2-3
The culture of the German-speaking countries from the beginning to modern times including literary and artistic trends, governmental structures, and the life and customs of the people. Reading and discussions in German. P, Germ 311 Germ 312 or consent.

Germ 491 Special Problems (CI).....1-3
Readings and discussions in German as directed by the instructor. May be repeated for credit. P, Germ 202 and consent of the instructor. Instructor's consent required.

Germ 492 Topics in German (CI).....1-3
Special courses designed to complement the existing curriculum in such areas as business, politics, economy, literature, and history of the language.

Graduate Courses

Germ 591 Special Problems1-3

Gero (Gerontology)

Undergraduate Courses

Gero 201 Introduction to Gerontology.....3
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.

Gero 491 Independent Study in Gerontology.....1-3
Individual study for quality students. May be repeated for a total of 4 credits. P, consent of the instructor. Gero 491.

Gero 492 Current Topics in Gerontology1-3
Selected topics of current interest and concern in gerontology.

Dual Numbered Courses

Gero 491-591 Independent Study in Gerontology1-3
Individual study for quality students. May be repeated for a total of 4 credits. P, consent of instructor. Gero 591.

Gero 492-592 Current Topics in Gerontology1-3
Selected topics of current interest and concern in gerontology.

GS (General Studies)

Undergraduate Courses

GS 101 Academic and Career Exploration.....1
The course applies developmental theory to assist students in exploring career and major options and help them prepare for academic, career and employment transitions. Includes 15 lecture hours and up to 8 out of class advising sessions.

GS 143 Mastering Lifetime Learning Skills2
Instruction to enhance learning in a college environment and throughout life. Topics include organizational and time management skills, strategies to improve learning, a recognition of learning styles and creating positive learning environments.

GS 200 Orientation to General Studies Program0

HDFS (Human Development and Family Sciences)

Undergraduate Courses

HDFS 110 Parenting3
Study of parent-child relations in the context of Western and Native American cultures. Included are historical perspectives on parenthood and children, parenting roles, strategies for contemporary parenting, developmental interaction from infancy through adulthood and selected special concerns of parents.

HDFS 141 Individual and the Family2
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.

HDFS 150 Early Experience	2
Experimental-based introduction to professional contexts within early childhood education (ECE) and/or human development and family studies (HDFS). Students serve as volunteers in community-based human services and educational settings, shadowing professionals to better understand professional roles and opportunities. Equivalent to ECE 150. Corequisite courses: HDFS 150A.	
HDFS 150A Early Experience Clinical Experience	0
Equivalent to ECE 150A. Corequisite courses: HDFS 150.	
HDFS 210 Lifespan Development	3
Study of the changes that take place during an individual's life, from conception till death. Emphases on theory, psychosocial, biosocial, and cognitive development.	
HDFS 227 Human Development and Personality I: Childhood	3
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. Equivalent to ECE 227.	
HDFS 241 Family Relations	3
A survey course of family development across the lifespan including the study of the family as a system, family interaction and family roles. Consideration is given to the cultural diversity and heritage of families.	
HDFS 250 Development of Human Sexuality	3
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.	
HDFS 292 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. Equivalent to ECE 292.	
HDFS 337 Human Development and Personality II:	
Adolescence	3
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.	
HDFS 341 Family Theories (CI)	3
Various theoretical approaches to marriage and family. Explores strengths and weaknesses, similarities and differences among theories. How each theoretical framework influences views and approaches to marriage and family issues. P, HDFS 141 HDFS 241.	
HDFS 347 Human Development and Personality III:	
Adulthood	3
Developmental approach to Human Development across adulthood. 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.	
HDFS 350 The Helping Relationship (CI)	3
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.	
HDFS 355 Prevention Programs in Human Development and Family Studies (CI)	3
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, HDFS 241 HDFS 341 HDFS 227.	

HDFS 364 Parent/Child Relationships in a Professional Context	3
The focus of this course is effective communication with families through a parent education needs assessment, parent education programs, conferencing, parental involvement in schools, newsletter development, and interaction with other agencies for referral purposes. Equivalent to ECE 364. P, HDFS 227.	
HDFS 414 Research Applications in HDCFS (CI)	3
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, HDFS 227 take HDFS 241 HDFS 341 Math 102.	
HDFS 441 Professional Issues in Child and Family Studies (CI)	3
Study of professional issues in the Child and Family Studies field. Course materials are inclusive of public policy, advocacy, leadership, professional development and ethics and workplace issues. Equivalent to ECE 441.	
HDFS 457 Family Assessment (CI)	3
Designed to introduce students to individual, family and community assessment tools that are used in prevention and intervention programs and approaches. P, senior or graduate student standing. HDFS 141 HDFS 241 HDFS 341.	
HDFS 487 Orientation to Child and Family Services Practicum (CI)	1
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 HDFS 497. Equivalent to ECE 487.	
HDFS 491 Special Problems	1-3
Individual study for quality students. P, consent of instructor required. Equivalent to ECE 491.	
HDFS 492 Current Topics	1-3
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.	
HDFS 495 Practicum (CI)	1-12
Field experience with agencies delivering social services to children and families. P, instructor's consent required. Equivalent to ECE 495.	
Dual Numbered Courses	
HDFS 457-557 Family Assessment	3
Designed to introduce students to individual, family and community assessment tools that are used in prevention and intervention programs and approaches. P, senior or graduate student standing.	
HDFS 491-591 Special Problems	1-3
Individual study for quality students. P, consent of instructor. Equivalent to ECE 591.	
HDFS 492-592 Current Topics	1-3
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. Equivalent to HDFS 592, ECE 592.	
Graduate Courses	
HDFS 601 Orientation in Graduate Study	1
HDFS 614 Adult Development	3
HDFS 665 Par Education: Theory and Issues	3
HDFS 700 Research Methods	4
HDFS 700A Research Methods Studio	0
HDFS 711 Child Development Theory and Application	3

HDFS 742 Family Relations	3
HDFS 753 Family Public Policy	3
HDFS 777 Child and Family Counseling	3
HDFS 788 Individual Research and Study	1-7
HDFS 790 Seminar	1-3
HDFS 791 Special Problems	1-3
HDFS 792 Current Topics	1-3
HDFS 794 Graduate Internship	1-7
HDFS 798 Thesis	1-7

Hist (History)

Undergraduate Courses

Hist 121 Western Civilization to 1650	3
Introduction to the major developments, events, and personalities in western civilization from prehistoric times through the Thirty Years War (1648).	
Hist 122 Western Civilization since 1650	3
Survey of western civilization from the Thirty Years War to the present.	
Hist 151 U. S. History to 1877	3
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
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
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
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
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 19th 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
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
British history from the Roman occupation to The Glorious Revolution.	
Hist 342 English History since 1688	3
A study of the political and cultural history of the British Isles and the Empire to the present.	
Hist 345 History of Russia	3
From the earliest times to present. Treats cultural and social as well as political aspects.	
Hist 346 History of Canada	3
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. Selected women and their careers will be highlighted. The course will focus on either European or American women at the discretion of the instructor. Crosslisted with WmSt 349. Equivalent to WmSt 349.	
Hist 350 Colonial History of the U.S.	3
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 Revolution and Early National U.S.	3
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 353 Division and Reunion, 1840-1876	3
Development of the ante-bellum South; social, political, and economic factors leading up to the outbreak of the Civil War; Reconstruction period and problems of the post war nation.	
Hist 354 Jefferson and Jackson, 1800-1840	3
Jefferson's administration, War of 1812, Jackson's administration.	
Hist 355 American Civil War	3
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 U.S. Rise to Power, 1877-1920 (CI)	3
Examination of political, economic, social, and cultural developments in the United States from 1877-1920. Emphasis on urban and industrial growth, reform movements, imperialism, war.	
Hist 357 America Between The Wars, 1918-41	3
Major political, social, economic, and cultural developments in the United States during the crucial decades of the 1920s, 1930s.	

Hist 358 The U.S. since 1941.....3
Social, economic, and political change. The consequences, domestic and foreign, of global power and rising affluence.

Hist 362 History of American West3
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 History3
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 Indians3
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. Crosslisted with AIS 368. Equivalent to InEd 411, AIS 368.

Hist 371 European Ethnic Groups in the U.S.....3
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 South Dakota.....3
Physical environment, Native American presence, European settlement, economic developments, political institutions, and social life.

Hist 377 Economic History of U.S.3
Emphasis on economic factors but also correlated political and social developments, colonial period to present.

Hist 378 Social History of the U.S.....3
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 379 Environmental History of the U.S.3
A study of the American environment from a historical perspective. The changes that have occurred to the United States landscape will be systematically surveyed, beginning with activities of native American peoples through the Euro-American presence to the Cold War. The temporal aspects of land transformation will be emphasized.

Hist 380 Methods and Philosophy of History (CI).....3
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 401 History of Western Religious Thought I.....3
This course surveys important issues in western religious thought from first century Christian origins through the “great medieval synthesis” of the thirteenth century. While both Jewish and Islamic developments are examined, emphasis is placed upon emergence and growth of Christian doctrine and ecclesiology. Crosslisted with Rel 401. Equivalent to Rel 401.

Hist 402 History of Western Religious Thought II.....3
This course surveys important issues in western religious thought from “great medieval synthesis” of the thirteenth century through the Reformation and Counterreformation of the sixteenth century. While both Jewish and Islamic developments are examined, emphasis is placed upon the development of Christian doctrine. Crosslisted with Rel 402. Equivalent to Rel 402.

Hist 418 History of Latin America3
A study of the national development of Mexico, Argentina, Chile, Brazil and Cuba in the 19th and 20th centuries.

Hist 420 Contemporary Europe.....3
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 preeminence. This course covers the history, politics and culture of Europe from 1890 to the present.

Hist 440 Nazi Germany.....3
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
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 American Foreign Relations.....3
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 491 Special Problems in History.....1-4
Opportunity for qualified students to investigate special problems or carry out independent study under supervision of department staff. Major or minor status. Instructor’s consent required.

Hist 492 Topics in History1-5
An intensive examination of significant historical themes, issues, or problems.

Hist 494 Internship1-12
Planned and supervised professional experience related to history which takes place outside the formal classroom with private business, industry, or public agencies. Major or minor status.

Dual Numbered Courses

Hist 492-592 Topics in History.....1-5
An intensive examination of significant historical themes, issues, or problems.

Graduate Courses

Hist 591 Special Problems in History.....1-3

Hlth (Health Education)

Undergraduate Courses

Hlth 120 Community Health2
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. Open to all students. Crosslisted with HSc 120. Equivalent to HSc 120.

Hlth 200 Complementary and Alternative Health Care.....3
This interdisciplinary course introduces complementary and alternative health care (CAH) practices. Increasing numbers of Americans are choosing CAH in combination with traditional health care. This course explores definitions, backgrounds, examples, and on-going research of CAH practices including Mind/Body Medicine, European Herbs, Traditional Chinese Medicine, Naturopathy, Homeopathy, Spiritual Healing, Acupuncture, Dietary and Nutritional Supplements, and Ayurvedic Medicine.

Hlth 212 Contemporary Health Problems.....2
 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 HSc 212. Equivalent to HSc 212.

Hlth 250 First Aid.....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 a basic first aiders as well as nurses, teachers, athletic trainers, and other special interest groups. Instructor's consent required. Corequisite courses: Hlth 250A.

Hlth 250A First Aid Lab.....0
 Corequisite courses: Hlth 250.

Hlth 262 Instructor Course Home Nursing.....1
 Workshop of 36 hours in effective methods of teaching home care of the sick. Limited to 14 students. P, consent.

Hlth 295 Allied Health Technical Training.....20-48
 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 302 Wellness and the Family2
 Planning for promotion of family health. Open to all students.

Hlth 364 Emergency Medical Technician4
 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. Corequisite courses: Hlth 364A.

Hlth 364A Emergency Medical Technician Lab.....0
 Corequisite courses: Hlth 364.

Hlth 420 Methods of Health Instruction (CI).....2
 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
 This course provides information on the epidemiological concepts, principles, and methods for understanding the distribution and determinants of selected diseases, conditions and indices of health in control and evaluation are analyzed. P, junior or senior standing or consent of the instructor. Crosslisted with HSc 440. Equivalent to HSc 440.

Hlth 443 Public Health Science.....3
 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. Introduces the student to public health by describing its history and its bases in sociology, economics, philosophy and government. The relationship of environmental factors to health and illness is examined. The course will provide the student with an understanding of administrative and political processes of operation of health agencies by examining traditional and new innovative programs of federal, state and local health agencies. Cost-benefit, cost-effectiveness, and risk assessment are addressed as in the relationship of public law and policies to the delivery of health care. Crosslisted with HSc 443. Equivalent to HSc 443.

Hlth 480 Wellness Programming (CI)2
 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 required. Corequisite courses: Hlth 480A.

Hlth 480A Wellness Programming Lab0
 Corequisite courses: Hlth 480.

Ho (Horticulture)

Undergraduate Courses

Ho 111 Introduction to Horticulture3
 Culture and growth processes involved in production of fruit, vegetables, flowers, lawn grasses, trees and shrubs; planning and care of home grounds. Corequisite courses: Ho 111A.

Ho 111A Introduction to Horticulture Lab0
 Corequisite courses: Ho 111.

Ho 220 Landscape Maintenance3
 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, Ho 111. Corequisite courses: Ho 220A.

Ho 220A Landscape Maintenance Lab0
 Corequisite courses: Ho 220.

Ho 230 Greenhouse and Nursery Crops3
 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, Ho 111. Corequisite courses: Ho 230A.

Ho 230A Greenhouse and Nursery Crops Lab0
 Corequisite courses: Ho 230.

Ho 240 Fruit and Vegetable Crops3
 Survey of vegetable and fruit crop distribution and production in temperate climates. Various topics include site and soil selection, factors affecting plant growth, cultural practices and integrated pest management. P, Ho 111 Bio 101. Corequisite courses: Ho 240A.

Ho 240A Fruit and Vegetable Crops Lab.....0
 Corequisite courses: Ho 240.

Ho 250 Woody Plants: Trees.....3
 Nomenclature, identification and classification of hardy coniferous and deciduous trees. Landscape use as affected by inherent ornamental qualities, hardiness, environmental factors, and pests. P, Ho 111 Bio 101. Corequisite courses: Ho 250A.

Ho 250A Woody Plants: Trees Lab.....0
 Corequisite courses: Ho 250.

Ho 260 Woody Plants: Shrubs and Vines.....2
 Nomenclature, identification, and classification of shrubs and vines hardy for the Northern Plains. P, Ho 250 or consent.

Ho 311 Herbaceous Plants (CI).....3
 Identification, description, landscape uses, propagation, culture and adaptability of selected non-woody ornamental plants with emphasis on annuals, perennials and indoor plants. P, Ho 111, Bot 201, or consent. Corequisite courses: Ho 311A.

Ho 311A Herbaceous Plants Lab (CI).....0
 Corequisite courses: Ho 311.

Ho 312 Plant Propagation (CI)3
 Fundamental anatomical and physiological principles and methods of reproducing herbaceous and woody plants by seeds, cuttings, grafts, layers and division. P, Ho 111, Bot 201, or consent. Corequisite courses: Ho 312A.

Ho 312A Plant Propagation Lab (CI)0
 Corequisite courses: Ho 312.

Ho 314 Turf Management (CI)3
 Maintenance and culture of turfgrass for lawns, parks, golf courses, athletic fields and special purpose turf. P, Ho 220 PS 213. Corequisite courses: Ho 314A.

Ho 314A Turf Management Lab (CI).....0
 Corequisite courses: Ho 314.

Ho 383 Principles of Crop Improvement3
 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. Crosslisted with PS 383. Equivalent to PS 383. P, 1 group (take PS 103 PS 103A /take Ho 111 Ho 111A Bio 103 Bio 104 /take Bio 153 Bio 154 /take Bot 201 Bot 202). Corequisite courses: Ho 383A.

Ho 383A Principles of Crop Improvement Lab0
 Equivalent to PS 383A. Corequisite courses: Ho 383.

Ho 411 Fruit Production (CI).....3
 Small fruit and tree fruit culture. Fundamentals of cultural and management practices in relation to soils, moisture, temperature, cultivars, pruning, rootstocks, growth regulators. P, Ho 111 Ho 240 Bot 201. Corequisite courses: Ho 411A.

Ho 411A Fruit Production Lab (CI).....0
 Corequisite courses: Ho 411.

Ho 412 Greenhouse Management (CI).....3
 Greenhouse construction, environmental control, production and scheduling of major greenhouse crops. Trips to commercial greenhouse operations and laboratory work in greenhouse crop production. P, 230, 311, 312, Bot 201, and PS 213, or consent. Corequisite courses: Ho 412A.

Ho 412A Greenhouse Management Lab (CI).....0
 Corequisite courses: Ho 412.

Ho 413 Arboriculture3
 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, Ho 220 Ho 250 Bot 201. Corequisite courses: Ho 413A.

Ho 413A Arboriculture Lab0
 Corequisite courses: Ho 413.

Ho 415 Nursery Management3
 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, Ho 111 PS 213.

Ho 416 Advanced Turfgrass Science (CI)3
 Methods used by home gardeners and commercial growers in vegetable production.

Ho 480 Environmental Stress Physiology3
 Physiological and cellular response of plants to environmental stresses. Crosslisted with Bio 480-580 and PS 480-580. Equivalent to Bio 480, PS 480. P, Bot 327.

Ho 490 Seminar (CI)1
 Required of all major students; limited to two credits. P, senior standing.

Ho 491 Problems1-2
 Special investigation in horticulture area. Maximum four hours credit. P, written consent of instructor.

Ho 492 Special Topics1-4

Ho 494 Internship1-12
 a. Work experience in horticulture. Generally, 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. Written consent of instructor. Generally 3 cr. maximum.

Ho 496 Field Experience.....1-12
 a. Work experience in horticulture. Generally, 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. Generally 3 cr. maximum. Written consent of instructor.

Ho 497 Cooperative Education1-12
 a. Work experience in horticulture. Generally, 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. Written consent of instructor. Generally 3 cr. maximum.

Dual Numbered Courses

Ho 480-580 Environmental Stress Physiology3
 Physiological and cellular response of plants to environmental stresses. Crosslisted with Bio 480-580 and PS 480-580. Equivalent to Bio 580, PS 580. P, Bot 327.

Graduate Courses

Ho 592 Special Topics in Horticulture1-3
Ho 746 Plant Breeding3

Hon (Honors College)

Undergraduate Courses

Hon 301 Honors Colloquium1-4
 History of ideas. May be repeated once.

Hon 302 Honors Colloquium1-4
 The Arts. May be repeated once.

Hon 303 Honors Colloquium1-4
 The Social Sciences. May be repeated once.

Hon 304 Honors Colloquium1-4
 History and/or Philosophy of Science. May be repeated once.

Hon 491 Honors Independent Study.....1-6
 Creative work in student's area of interest subject to approval by the Honors Program Committee. Instructor's consent required.

HPER (Health, Physical Education and Recreation)

Undergraduate Courses

HPER 180 Introduction to HPER1
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 Development2
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. Corequisite courses: HPER 252A.

HPER 252A Motor Learning and Development Lab0
Corequisite courses: HPER 252.

HPER 440 Organization and Administration of HPER (CI).....2
Curricula, intramural and athletic programs. Administration of facilities, equipment and budgets. P, junior standing.

HPER 451 Tests and Measurements in HPER2
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. Corequisite courses: HPER 451A.

HPER 451A Tests and Measurement HPER Lab0
Corequisite courses: HPER 451.

HPER 453 Psychological Aspects of Coaching.....2
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 490 Senior Seminar (CI).....2
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. Crosslisted with Recr 414. Equivalent to Recr 414.

HPER 491 Problems in HPER.....1-3
Directed studies and/or research activities related to HPER. P, instructor's consent required.

HPER 492 Topics in HPER1-5
P, instructor's consent required.

HPER 493 Workshops in HPER.....1-3
Lectures, conferences, and outside assignments to increase understanding of a specific area. Instructor's consent required.

HPER 494 Internship (CI)1-12
Planned and supervised professional experience which takes place outside the formal classroom with private business or industry, or public agencies. Instructor's consent required. P, Hlth 250 PE 350 PE 400 Hlth 480.

HPER 496 Field Experience.....1-12
Provide student with professional experience related to their chosen field of study. Instructor's consent required. P, Hlth 250 Hlth 480 PE 350 PE 400.

Dual Numbered Courses

HPER 493-593 Workshops in HPER1-3
Lectures, conferences, and outside assignments to increase understanding of a specific area. Instructor's consent required.

Graduate Courses

HPER 690 Seminar in HPER	2
HPER 742 Psychological Aspects of Sport and Exercise	3
HPER 745 Sports Medicine	2
HPER 760 Motor Learning and Development	3
HPER 780 Introduction to Graduate Study and Research	1
HPER 783 Research Methods in HPER	3
HPER 788 Individual Research and Study in HPER	1-3
HPER 791 Special Problems in HPER	1-3
HPER 798 Thesis	1-5

HSc (Health Science)

Undergraduate Courses

HSc 120 Community Health.....2
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. Open to all students. Crosslisted with Hlth 120. Equivalent to Hlth 120.

HSc 200 Complementary and Alternative Health Care3
This interdisciplinary course introduces complementary and alternative health care (CAH) practices. Increasing numbers of Americans are choosing CAH in combination with traditional health care. This course explores definitions, backgrounds, examples, and on-going research of CAH practices including Mind/Body Medicine, European Herbs, Traditional Chinese Medicine, Naturopathy, Homeopathy, Spiritual Healing, Acupuncture, Dietary and Nutritional Supplements, and Ayurvedic Medicine.

HSc 212 Contemporary Health Problem2
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. Equivalent to Hlth 212.

HSc 253 Disaster Preparedness.....2
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 Course Home Nursing.....1
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 Family2
Overview of health promotion as applied to the family throughout all stages of development. Planning for promotion of family health. Open to all students. Crosslisted with Hlth 302.

HSc 420 Methods of Health Instruction.....2
Curriculum content and methods in health education. Emphasis on elementary and secondary. Demonstration of teaching strategies. Organization of health/safety education. The course will present an overview of the need for health education in schools as well as the teacher's role in promoting health instruction. Included will be strategies for planning, implementing, and evaluating health education for grades K-12. Students will also be introduced to useful academic and community resources. Crosslisted with Hlth 420. P, HSc 212.

HSc 432 Occupational Health2

HSc 433 Industrial Health.....3
Industrial health 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.

HSc 440 Epidemiology	3
This course provides information on the epidemiological concepts, principles, and methods for understanding the distribution and determinants of selected diseases, conditions and indices of health in human populations. Factors that influence programs for prevention, control and evaluation are analyzed. P, junior or senior standing or consent of instructor. Crosslisted with Hlth 440. Equivalent to Hlth 440.	
HSc 443 Public Health Science	3
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. Introduces the student to public health by describing its history and its bases in sociology, economics, philosophy and government. The relationship of environmental factors to health and illness is examined. The course will provide the student with an understanding of administrative and political processes of operation of health agencies by examining traditional and new innovative programs of federal, state and local health agencies. Cost-benefit, cost-effectiveness, and risk assessment are addresses as in the relationship of public law and policies to the delivery of health care. Crosslisted with Hlth 443. Equivalent to Hlth 443.	
HSc 490 Seminar	1-4
HSc 493 Workshop	1-4
HSc 494 Internship	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.	
HSc 496 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.	
HSc 497 Cooperative Education	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 Health.....	3
Industrial health 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 121 Interior Design Foundations.....	2
Introduction to core concepts of design including Aesthetics, creativity, international design, and function. Theoretical applications to analysis of products and interiors. Overview of design specializations and related issues. Equivalent to ID 121. Corequisite courses: Art 121.	
ID 122 Design Graphics.....	3
Introduction to the architectural symbol system. Ability to draft site, building, lighting, furnishings, and equipment plans and to interpret construction drawings. Introduction to perspective and axiomatic drawings. Equivalent to ID 122.	
ID 150 Introduction to Interior Design I	3
Introduction to origins of design, to theory and processes, and to space planning. Solving basic interior design setting problems. Equivalent to ID 150. Corequisite courses: ID 150A.	

ID 150A Introduction to Interior Design I Studio	0
Corequisite courses: ID 150.	
ID 151 Introduction to Interior Design II.....	3
Introduction to furnishings, fixtures, and equipment, architectural systems, and environmental concerns. Equivalent to ID 151. Corequisite courses: ID 151A.	
ID 151A Introduction to Interior Design II Studio.....	0
Corequisite courses: ID 151.	
ID 215 Materials	3
Study of the characteristics of interior finishes and furnishings that includes textile history, resources, environmental issues, selection and installation. Design projects focused on material selection and application for interior design. P, AM 242. Corequisite courses: ID 215A.	
ID 215A Materials Studio.....	0
P, AM 242. Corequisite courses: ID 215.	
ID 230 Presentation Techniques.....	2
Introduction to one-and two-point perspectives, various color rendering techniques, composition of presentation boards, and oral presentation techniques.	
ID 231 Computer Aided Design	2
Introduction to the basic principles of computer aided design. Experience with methodologies and basic commands related to two dimensional drafting. These skills will be applied to the virtual three dimensional world to see the design potential the computer allows. P, ID 122.	
ID 250 The Design Process	3
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. Corequisite courses: ID 250A.	
ID 250A The Design Process Studio	0
Corequisite courses: ID 250.	
ID 260 Product Design	3
Exploring elements and issues associated with the design of objects and spaces through modeling and three-dimensional representations with emphasis on creativity. P, ID 250. Corequisite courses: ID 260A.	
ID 260A Product Design Studio	0
P, ID 250. Corequisite courses: ID 260.	
ID 292 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 310 Interior Design Fabrics (CI)	3
Relationship of weight, color, texture, design of textiles in their application in interiors. Review of textile history. Sources of traditional and contemporary fabrics are explored. P, AM 242. Corequisite courses: ID 310A.	
ID 310A Interior Design Fabrics Lab (CI)	0
Design projects focused on fabric selections and applications for interior design. Corequisite courses: ID 310.	
ID 316 Codes and Specifications (CI).....	2
Study and application of disability and life safety standards, of fire and building codes, and of environmental issues, plan specification writing.	
ID 317 Interior Design Practices (CI)	2
Study of the professional practices of interior design firms. Preparation of specifications and installation documents. Review of installation procedures. P, upper division student.	

ID 319 Building Systems.....2
Examination of structural systems of several building types plus support systems such as HVAC, electrical and plumbing. P, ID 250. Corequisite courses: ID 319A.

ID 319A Building Systems Studio.....0
Corequisite courses: ID 319.

ID 320 Color and Lighting Design (CI)3
Issues and factors about the interaction of color and light. Fundamentals of lighting are investigated including the impact of aesthetics and physical properties of color in a variety of interior spaces. Preparation of lighting plans and specifications. P, upper division student and ID 231. Corequisite courses: ID 320A.

ID 320A Color and Lighting Design Lab (CI).....0
Corequisite courses: ID 320.

ID 322 Intermediate Interior Design I (CI)4
Introduction to the design process, developing skills specifying materials for interiors. Application of design theory to practical situations. P, ID 250.

ID 323 Intermediate Interior Design II (CI)4
Development of the basic knowledge and skills needed to specify materials for interiors. P, ID 322.

ID 422 Advanced Interior Design I (CI)4
Experience in solving commercial design problems within the frame of a business. P, ID 323.

ID 423 Advanced Interior Design II (CI).....4
Experience in solving design problems of commercial and contract interiors. P, ID 422.

ID 424 History of Interiors I (CI)3
Historical backgrounds: from Antiquity through the Renaissance.

ID 425 History of Interiors II (CI)3
Historical backgrounds: from Renaissance to present. P, ID 424.

ID 431 Advanced Computer Aided Design2
Advanced problems in design using the computer. P, ID 231.

ID 450 Shelter and Families3
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 472 Retailing.....3
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.

ID 473 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.

ID 477 Portfolio and Senior Exhibit.....3
Discussion of professional practice and issues. Revision and extension of portfolio materials in job-seeking. P, ID 422. Corequisite courses: ID 477A.

ID 477A Portfolio and Senior Exhibit Studio.....0
Corequisite courses: ID 477.

ID 487 Pre-Practicum Interior Design and Housing (CI)1
Organization and preparation of professional documents. Examination of practicum handbook. Experiences in goal setting, reporting, and evaluation. P, ID 322.

ID 491 Special Problems.....1-3
Problems for independent study selected according to special interests and needs. Arranged by contract with instructor.

ID 492 Current Topics1-3
Discussion of current literature and issues. Investigation of topics for which there is a current need but not part of any class. P, consent.

ID 495 Professional Practicum1-12
Supervised work experience in a cooperating retail design firm or design studio. Provides opportunities for interaction between business, community and the University. P, 90 semester credits and consent of the department. Minimum GPA 2.2. ID 487.

Dual Numbered Courses

ID 473-573 Travel Studies1-5
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.

ID 491-591 Special Problems1-3
Problems for independent study selected according to special interests and needs. Arranged by contract with instructor.

ID 492-592 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.

InEd (Indian Education)

Undergraduate Courses

InEd 411 South Dakota Indian Studies.....3
Provides prospective teachers and those interested in Indian people with a basic knowledge of Indian heritage and culture. Emphasis on the Dakota Indians. Crosslisted with AIS 421. (Fulfills Teacher Ed. requirement.) Equivalent to AIS 368, Hist 368.

La (Landscape Design)

Undergraduate Courses

La 201 Introduction to Landscape Design.....3
A survey of the field of Landscape Design and Environmental Planning. Introduction to conceptual aspects of the discipline with a focus on landscape appreciation, environmental problems of land use, conservation, landscape design and planning, and land ethics and stewardship.

La 231 Introduction to LandCADD3
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, GE 123 or consent.

La 241 History of Landscape Architecture.....3
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 284 Graphics and Theory of Design4
Basic free hand graphic techniques and design theory for landscape design. Graphics used in landscape design (plan drawings, elevations, isometrics, perspective and models). Form and spatial relationships are stressed as applied to materials of landform, vegetation, water, and architecture. P, ID 122 La 201.

La 314 Landscape Design Studio (CI).....4
Basic landscape design problem solving on smaller scale sites (residential, small commercial, rural and urban). Development of aesthetic sensitivity and awareness of site problems. Site analysis, programming, concept formation, master plan development and plan presentation. P, La 284.

La 322 Site Planning	3
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 or CM 210.	
La 323 Landscape Construction (CI)	3
Design and construction of walks, terraces, fences, walls, pools, and other landscape structures and systems. P, La 284.	
La 324 Planning Public Grounds (CI)	3
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, La 284. Corequisite courses: La 324A.	
La 324A Planning Public Grounds Lab	0
Corequisite courses: La 324.	
La 332 Residential Landscape Design	3
Advanced theory and practice of residential design focusing on indoor-outdoor relationships, regional and functional design styles, and the works of famous designers. P, 284 or consent.	
La 364 Planting Design and Specification (CI)	4
Preparation of planting designs, plans, and specifications for projects of increasing complexity. Emphasis on northern plains landscapes. Focus on use of native plants and sustainable design. Projects from small residential scale to larger regional scale. Design applications emphasizing the space forming potential and functional use of natural and man-made plant groups. P, 314 or consent.	
La 421 City Planning (CI)	3
City planning in the United States, planning practice and theory, urban design, and land use planning. Local planning efforts observed. P, La 322 La 324. Corequisite courses: La 421A.	
La 421A City Planning Lab (CI)	0
Corequisite courses: La 421.	
La 423 Construction Specifications	2
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. Corequisite courses: La 423A.	
La 423A Construction Specifications Lab	0
Corequisite courses: La 423.	
La 424 Recreational Facilities Design (CI)	3
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. Corequisite courses: La 424A.	
La 424A Recreational Facilities Design Lab (CI)	0
Corequisite courses: La 424.	
La 440 Restoration Ecology	4
Scientific principles involved in restoration of natural ecosystems on degraded and disturbed lands. P, Bio 311 Principles of Ecology or equivalent. Crosslisted with Bio 440. Equivalent to Bio 440. Corequisite courses: La 440A.	
La 440A Restoration Ecology Lab	0
Equivalent to Bio 440A. Corequisite courses: La 440.	
La 442 Landscape Design III	3
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, 314 or consent.	

La 464 Landscape Professional Practice Studio (CI)	4
An advanced design studio with an emphasis on environmental design, land use ethics, current issues in landscape design and professional practice. Senior exit examination requirement is completed during this class. P, senior standing.	

La 491 Problems	1-2
Special investigations in Landscape Design. Maximum of 5 hours credit. P, instructor consent.	

La 492 Special Topics	1-4
Special Landscape Architectural topics offered for group study.	

La 494 Internship	1-12
See course description under Horticulture curriculum. Generally 3 cr. maximum. P, written consent of instructor.	

La 497 Cooperative Education	1-12
See course description under Horticulture curriculum. Generally 3 cr. maximum. P, written consent of instructor.	

Graduate Courses

La 560 Landscape Ecology	4
La 560A Landscape Ecology Lab	0

LAAS (Latin American Studies Program)

Undergraduate Courses

LAAS 301 Latin American Cultures	3
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
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 Study in Latin American Cultures	1-3
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 Introductory Lakota I	4
Introduction to Lakota language and culture. Classwork may be supplemented with required aural/oral practice outside of class. Crosslisted with AIS 101. Equivalent to AIS 101.	

Lak 102 Introductory Lakota II	4
Introduction to Lakota language and culture. Classwork may be supplemented with required aural/oral practice outside of class. Crosslisted with AIS 102. Equivalent to AIS 102.	

Lak 201 Intermediate Lakota I	3
Aims of the first year continued with emphasis on speaking and reading skills. Crosslisted with AIS 201. Equivalent to AIS 201.	

Lak 202 Intermediate Lakota II3
 Aims of the first year continued with emphasis on speaking and reading skills. Crosslisted with AIS 202. Equivalent to AIS 202.

Ling (Linguistics)

Undergraduate Courses

Ling 203 English Grammar.....3
 Instruction in the theory and practice of traditional grammar including the study of parts of speech, parsing, and practical problems in usage.

Ling 420 The New English.....3
 Diverse new theories and applications in English linguistics: lexicography, pragmatics, stylistics, socio-semantics, semiotics, and discourse theory.

Ling 425 The Structure of English3
 Use of traditional, structural, and transformational grammars for describing the English language. Practical application in teaching. Strongly recommended for majors planning to teach.

Ling 443 Development of the English Language.....3
 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 General Semantics.....3
 Relations between symbols; human behavior in reaction to symbols including unconscious attitudes, linguistics assumptions; and the objective systematization of language. Crosslisted with SpCm 452-552. Equivalent to SpCm 452.

Ling 460 Applied Linguistics in Teaching English as a Second Language.....3
 The study of social and linguistic structures which undergird different discourse forms. Emphasis will be on discourse forms which are particularly important for full participation in United States culture such as the rhetoric of public and school interactions. P, Ling 203 or equivalent or instructor's permission. Crosslisted with Ling 560. Equivalent to EdFn 460.

Dual Numbered Courses

Ling 420-520 The New English3
 Diverse new theories and applications in English linguistics: lexicography, pragmatics, stylistics, socio-semantics, semiotics, and discourse theory.

Ling 425-525 The Structure of English3
 Use of traditional, structural, and transformational grammars for describing the English language. Practical application in teaching. Strongly recommended for majors planning to teach.

Ling 443-543 Development of the English Language3
 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 Semantics3
 Relations between symbols; human behavior in reaction to symbols including unconscious attitudes, linguistics assumptions; and the objective systematization of language. Crosslisted with SpCm 452-552. Equivalent to SpCm 552.

Ling 460-560 Applied Linguistics for Teaching English as a Second Language.....3
 The study of social and linguistic structures which undergird different discourse forms. Emphasis will be on discourse forms which are particularly important for full participation in United States culture such as the rhetoric of public and school interactions. P, Ling 203 or equivalent or instructor's permission. Equivalent to EdFn 460-560.

Math (Mathematics)

Undergraduate Courses

Math 101 Intermediate Algebra.....3
 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 115. P, Math ACT2 Math CMP3 or Math 021.

Math 102 College Algebra3 FS
 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 115. Equivalent to Math 115. P, Math ACT3 Math ACT4 Math CMP4 Math CMP5 or Math 101.

Math 104 Finite Mathematics4
 Linear systems of equations and matrices, linear programming and the simplex algorithm, mathematics of finance, probability, statistics, Markov chains and game theory. P, Math ACT3 Math ACT4 Math CMP4 Math CMP5 or Math 101.

Math 115 Precalculus.....^{math 113}5
 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 and series. Credit will not be allowed for Math 115 in addition to credit in Math 102 or 120. Equivalent to Math 102, Math 120. P, Math CMP6 Math CMP7 or Math 101.

Math 120 Trigonometry3 FS
 Trigonometric functions, equations, and identities; inverse trigonometric functions; exponential and logarithmic functions, and applications of these functions. Equivalent to Math 115. P, Math CMP6 Math CMP7 or Math 102.

Math 121 Survey of Calculus4
 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 121 and 123. Equivalent to Math 123. P, Math CMP6 Math CMP7 Math 102 or Math 115. Corequisite courses: Math 121A.

Math 121A Survey of Calculus Applications Lab.....1
 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 121 and 123. P, 102 or 113 or placement. Equivalent to Math 123A. Corequisite courses: Math 121.

Math 123 Calculus I.....4
 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. Equivalent to Math 121. P, Math CMP8 or Math 115. Corequisite courses: Math 123A.

Math 123A Calculus I Lab1
 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, 115 or placement. Equivalent to Math 121A. Corequisite courses: Math 123.

Math 125 Calculus II	4
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, Math 123.	
Math 141 Survey of Mathematics	3 FS
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. Instructor's consent required.	
Math 215 Matrix Algebra	2 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, Math 115 or Math 123 or consent.	
Math 225 Calculus III	4
Three dimensional analytic geometry and vectors, partial derivatives, multiple integrals, selected physical applications. P, Math 125.	
Math 241 Mathematics of Finance	3 (on demand)
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 and Sets	3 FS
Logical connectives, quantifiers, arguments, and proof. Set operations, index sets, relations, functions, cardinality, and mathematical induction. P, Math 123.	
Math 261 Geometry for Teachers	3 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, Math 125, SeEd 287, or consent.	
Math 271 Math Applications with Computers	3 F
Problems from college algebra, the calculus sequence, matrix algebra and beyond are revisited numerically with the aid of current software packages. P, Math 215, Math 125, CSc 150.	
Math 281 Introduction to Statistics	3
Concepts in probability, data description, distributions, sampling, statistical inferences (parametric and non-parametric). P, 1 course; from Subject MATH; except courses Math 021, Math 101, Math 100T, Math 104.	
Math 292 Special Topics I	1-5
Math 315 Linear Algebra	3
Vector spaces, linear transformations and matrices. P, Math 215, Math 253 or consent.	
Math 316 Discrete Mathematics	3
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, Math 215 Math 253.	
Math 321 Differential Equations	3
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, Math 125.	
Math 327 Calculus of Several Variables	3
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 Mathematics	3
Fourier series, vector analysis, matrices, determinants, and topics selected from: complex variables, partial differential equations, numerical methods. P, Math 321.	
Math 355 Methods of Teaching Mathematics	3
Techniques, materials and resources for teaching mathematics to junior high school and high school students. Required of majors and minors planning to teach. May not be used for upper division math elective for majors not in Secondary Teaching Option. Instructor's consent required. Equivalent to SeEd 418. P, Math 125, Math 261, SeEd 287. Corequisite courses: Math 355A.	
Math 355A Methods of Teaching Mathematics Lab	0
Equivalent to SeEd 418A. Corequisite courses: Math 355.	
Math 361 Modern Geometry	3
Axiomatic study of elementary Euclidean geometry including various advanced topics. P, Math 253.	
Math 373 Introduction to Numerical Analysis	3
Mathematical models, algorithms, sources of error, computer solution of systems of linear equations, non-linear equations; quadrature, approximation, and interpolation using the computer. P, Math 125 take CSc 150 or CSc 213.	
Math 381 Introduction to Problems and Statistics	3
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, Math 125 or consent. Crosslisted with Stat 381. Equivalent to Stat 381.	
Math 392 Special Topics II	1-5
Math 411 Theory of Numbers	3
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, Math 125, Math 253.	
Math 413 Abstract Algebra I	3
Groups, rings and fields. Homomorphism theorems. P, Math 125, Math 253, or consent.	
Math 423 Advanced Calculus I	3
P, Math 225.	
Math 424 Advanced Calculus II	3
P, Math 423.	
Math 425 Real Analysis I	3
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, Math 225, Math 253.	
Math 426 Real Analysis II	3
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, Math 225, Math 253.	
Math 430 Fractals and Chaos	3
An internet course. An introduction to the mathematics of fractals and chaos at two levels. Non-calculus based classroom activities suited for secondary students are introduced using inexpensive, easy-to-use software. Concepts are then investigated more deeply with calculus-based techniques. P, Math 123.	
Math 433 Laplace Transform	3
Main features of Laplace transform theory. P, 321 or consent.	

Math 450 History of Mathematics.....3	
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, Math 125 or consent.	
Math 461 Introduction to Topology.....3	
Math 466 Projective Geometry.....3	
P, Math 125.	
Math 471 Numerical Analysis I.....3	
P, Math 321.	
Math 490 Senior Seminar (CI).....1	
A capstone experience that includes readings from the mathematical literature, an oral presentation, and an assessment process. Open only to mathematics majors. P, Math 253.	
Math 491 Directed Studies.....1-3	
Math 492 Special Topics Advanced.....1-5	
Math 494 Internship.....1-6	
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.	
Math 496 Field Experience.....1-6	
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.	
Math 497 Cooperative Education.....1-6	
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 423-523 Advanced Calculus I.....3	
P, Math 225.	
Math 424-524 Advanced Calculus II.....3	
Corequisite courses: Math 423-523.	
Math 430-530 Fractals and Chaos.....3	
An internet course. In addition to the material covered in Math 423-523, more advanced concepts are introduced to prepare the student for an advanced course in chaotic dynamical systems and further work in the field. Additional topics include: invariant measures, Lyapunov exponents, and attractors in two or more dimensions. P, Math 123.	
Math 461-561 Introduction to Topology.....3	
Math 466-566 Projective Geometry.....3	
P, Math 125.	
Math 471-571 Numerical Analysis I.....3	
P, Math 321.	
Math 491-591 Directed Studies.....1-3	
Math 492-592 Special Topics.....1-3	

Graduate Courses

Math 672 Numerical Analysis.....3	
Math 716 Theory of Algebraic Structures I.....3	
Math 717 Theory of Algebraic Structures II.....3	
Math 726 Real Variables I.....3	
Math 727 Real Variables II.....3	
Math 728 Complex Variables I.....3	
Math 729 Complex Variables II.....3	

Math 731 Ordinary Differential Equations.....3	
Math 732 Partial Differential Equations.....3	
Math 770 Numerical Linear Algebra.....3	
Math 780 Advanced Mathematics.....1-18	
Math 784 Applied Probability Theory.....3	
Math 788 Research Paper.....1-2	
Math 790 Seminar.....1	
Math 791 Special Problems.....1-3	
Math 792 Advanced Topics.....1-3	
Math 798 Thesis.....1-7	
MaSt 692 Mathematics Topics for Educators.....1-12	

MCom (Journalism and Mass Communication)

Undergraduate Courses

MCom 130 Introduction to Radio and TV.....3	
History, structure, regulations, and financial support; potentialities and limitations; public responsibilities, impact on society. Crosslisted with RTVF 130. Equivalent to RTVF 130.	
MCom 151 Introduction to Mass Communication.....2	
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	
Beginning camera and darkroom techniques, including processing and printing and digitizing black and white photographs. The student will also survey the field of photography and its uses. Corequisite courses: MCom 160A.	
MCom 160A Basic Photography Studio.....0	
Corequisite courses: MCom 160.	
MCom 210 Newswriting and Reporting.....3	
Gathering, evaluating and writing news. P, freshman English grade no lower than "C". Not open to freshmen without consent. P, Engl 101; minimum grade "C". Corequisite courses: MCom 210A.	
MCom 210A Newswriting and Reporting Studio.....0	
Corequisite courses: MCom 210.	
MCom 212 Desktop Publishing.....3	
Basic principles, techniques, and technology of electronic layout and production. Corequisite courses: MCom 212A.	
MCom 212A Desktop Publishing Studio.....0	
Corequisite courses: MCom 212.	
MCom 213 Journalism Typography.....2	
Fundamentals of effective visual communication in printed materials. Includes using type, design principles, illustrations, information graphics, color, and printing processes. Corequisite courses: MCom 213A.	
MCom 213A Journalism Typography Studio.....0	
Corequisite courses: MCom 213.	
MCom 261 Photojournalism.....2	
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, MCom 160. Corequisite courses: MCom 261A.	
MCom 261A Photojournalism Studio.....0	
Corequisite courses: MCom 261.	

- MCom 310 Newspaper Editing (CI)**.....2
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, MCom 210. Corequisite courses: MCom 311.
- MCom 311 Editing Laboratory (CI)**1
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, MCom 210. Corequisite courses: MCom 310.
- MCom 313 Publicity Methods (CI)**2
News writing, organizing publicity campaigns, press relations. (Cannot be taken for credit by journalism majors.)
- MCom 314 Sales, Promotion and Marketing (CI)**.....3
Promotion, sales, advertising, circulation, practices and theories of marketing in advertising and graphic arts.
- MCom 315 Magazine Writing and Editing (CI)**3
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 (CI)**3
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. Corequisite courses: MCom 316A.
- MCom 316A Public Affairs Reporting Studio (CI)**0
Corequisite courses: MCom 316.
- MCom 330 Writing for Radio and TV (CI)**.....3
Preparation of continuities such as commercials, public service announcements, talks, interviews, drama, documentaries, and educational programs. Crosslisted with RTVF 330. Equivalent to RTVF 330. Corequisite courses: MCom 330A.
- MCom 330A Writing for Radio and TV Lab (CI)**.....0
Corequisite courses: MCom 330.
- MCom 331 Television Production (CI)**.....3
Includes preparation and presentation of talks, interviews, discussion and extension and community services for broadcast. Crosslisted with RTVF 331 Equivalent to RTVF 331. Corequisite courses: MCom 331A.
- MCom 331A Television Production Lab (CI)**.....0
Equivalent to RTVF 331A. Corequisite courses: MCom 331.
- MCom 332 Radio News Reporting (CI)**.....3
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. Equivalent to RTVF 332. Corequisite courses: MCom 332A.
- MCom 332A Radio News Reporting Studio (CI)**.....0
Equivalent to RTVF 332A. Corequisite courses: MCom 332.
- MCom 333 Television News Reporting (CI)**3
TV news videography, reporting, writing and video editing. Lab practice with videotape. Crosslisted with RTVF 333. P, MCom/RTVF 331, 332, or consent. Equivalent to RTVF 333. Corequisite courses: MCom 333A.
- MCom 333A Television News Reporting Studio (CI)**0
Equivalent to RTVF 333A. Corequisite courses: MCom 333.
- MCom 335 Broadcast Programming (CI)**3
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 Equivalent to RTVF 335.
- MCom 365 Advanced Photography (CI)**.....2
Exploration of photojournalism and electronic photojournalism. Emphasis on putting together a professional photojournalism portfolio including black and white and color. P, 160 and instructor's consent required. Corequisite courses: MCom 365A.
- MCom 365A Advanced Photography Studio (CI)**0
Instructor's consent required. Corequisite courses: MCom 365.
- MCom 370 Principles of Advertising (CI)**3
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 (CI)**.....3
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, MCom 370. Corequisite courses: MCom 371A.
- MCom 371A Advertising Copy and Layout Studio (CI)**.....0
Corequisite courses: MCom 371.
- MCom 372 Media and Markets (CI)**.....3
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, MCom 370.
- MCom 405 Theories of Communications (CI)**3
Major theories of communication, including media and interpersonal communication.
- MCom 406 Public Opinion and Propaganda (CI)**3
Formation and measurement of public opinion; role of the media; propaganda techniques, agencies, theories. P, senior standing, consent.
- MCom 410 Advanced Reporting (CI)**3
Political, scientific, social issues done in in-depth reporting. P, MCom 210.
- MCom 412 Advanced Editing Lab (CI)**1
Advanced editing and production.
- MCom 413 Computer Assisted Information Gathering (CI)**.....2
Use of computers to gather information online for journalists and to analyze data. Corequisite courses: MCom 413A.
- MCom 413A Computer Assisted Information Studio (CI)**0
Corequisite courses: MCom 413.
- MCom 414 Mass Communication Law (CI)**3
Libel, privacy, news gathering rights and press freedom in America.
- MCom 415 Editorial Writing and Policy (CI)**.....2
Opinion function of periodicals; great editorials and editorial writers; writing editorials; shaping policy.
- MCom 416 Mass Media in Society (CI)**3
Rights and responsibilities of the press; relation of the media to individuals and society; role of media in a free society.
- MCom 417 History of Journalism (CI)**3
Development, impact and importance of individual journalists and media in United States
- MCom 418 Women in Media (CI)**3
This course examines contributions of women to the mass media from colonial era to present. It also studies the portrayal of women by the news media and by advertising, and it studies the roles currently played by women in the media and in supporting areas of advertising and public relations. Crosslisted with WmSt 418. Equivalent to WmSt 418.

MCom 433 Advanced TV News Reporting (CI).....3
 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. Corequisite courses: MCom 433A.

MCom 433A Advanced TV News Reporting Studio (CI).....0
 Corequisite courses: MCom 433.

MCom 437 Educational Radio and TV (CI).....3
 Preparation, presentation of educational and instructional materials for radio, TV, and film and classroom use. Crosslisted with RTVF 437-537. Equivalent to RTVF 437.

MCom 471 Advertising Design (CI)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. Equivalent to ArtD 465.

MCom 472 Advertising and Media Research (CI).....3
 This course develops the ability to conduct and analyze advertising and media research, and to prepare and execute a comprehensive consumer or audience plan.

MCom 473 Advertising Campaigns (CI)3
 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 instructor's consent required.

MCom 475 Public Relations (CI).....3
 Interpreting institutional and industrial policies and programs to the public.

MCom 476 International and Ethnic Advertising (CI)3
 This course develops an understanding of international and ethnic advertising and marketing. Students gain experience in marketing decisions that reflect an understanding of intercultural and international markets and explore the social and ethical issues in such marketing.

MCom 481 Media Administration and Management (CI).....3
 Business practices, newspaper, magazine, and broadcast management.

MCom 491 Special Problems (CI).....1-2
 P, senior standing. Instructor's consent required.

MCom 492 Topics in Journalism (CI).....1-5

MCom 494 Internship (CI)1-12
 Supervised media experience; print, broadcast, public relations. P, consent of department program coordinator. Instructor's consent required.

Dual Numbered Courses

MCom 405-505 Theories of Communications3
 Major theories of communication, including media and interpersonal communication.

MCom 406-506 Public Opinion and Propaganda3
 Formation and measurement of public opinion; role of the media; propaganda techniques, agencies, theories. P, senior standing, consent.

MCom 414-514 Mass Communication Law3
 Libel, privacy, news gathering rights and press freedom in America.

MCom 415-515 Editorial Writing and Policy.....2
 Opinion function of periodicals; great editorials and editorial writers; writing editorials; shaping policy.

MCom 416-516 Mass Media in Society3
 Rights and responsibilities of the press; relation of the media to individuals and society; role of media in a free society.

MCom 417-517 History of Journalism3
 Development, impact and importance of individual journalists and media in United States

MCom 418-518 Women in Media3
 This course examines contributions of women to the mass media from colonial era to present. It also studies the portrayal of women by the news media and by advertising, and it studies the roles currently played by women in the media and in supporting areas of advertising and public relations. Crosslisted with WmSt 418.

MCom 437-537 Educational Radio and TV3
 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
 Interpreting institutional and industrial policies and programs to the public.

MCom 476-576 International and Ethnic Advertising3
 This course develops an understanding of international and ethnic advertising and marketing. Students gain experience in marketing decisions that reflect an understanding of intercultural and international markets and explore the social and ethical issues in such marketing.

MCom 481-581 Media Administration and Management3
 Business practices, newspaper, magazine, and broadcast management.

Graduate Courses

MCom 693 Workshop in Communications1-4

MCom 762 Special Problems in Radio, TV or Film.....1-2

MCom 787 Research Methods in Communications.....3

MCom 791 Special Problems in Communication.....1-3

MCom 798 Thesis.....1-7

ME (Mechanical Engineering)

Undergraduate Courses

ME 240 Introduction of Mechanical Design.....3
 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, GE 225, or consent.

ME 241 Engineering Materials3
 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
 Thermodynamic properties of gases, vapors and mixtures. Zeroth, First and Second Laws of Thermodynamics. Entropy. Availability and irreversibility. P, Phys 211, Math 225.

ME 312 Thermodynamics II3
 Thermodynamic power cycles using vapors and gases. Refrigeration cycles. Mixtures and psychrometry. Maxwell's relations, Combustion and Thermochemistry. P, ME 311, Math 321.

ME 313 Analytical Thermodynamics3
 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
 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	ME 415 Heat Transfer .....3
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, EM 222, ME 240 take CSc 213 or CSc 218.	Basic principles of steady and unsteady conduction, convection of heat and mass transfer and thermal radiation. Computational methods of heat transfer. P, ME 311, EM 331 Math 321.
ME 322 Vibrations.....3	ME 416 Computer-Aided Engineering .....3
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.	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 stressed 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, EM 222, GE 123, or consent. Corequisite courses: ME 416A.
ME 341 Metallurgy .....3	ME 416A Computer-Aided Engineering Lab.....0
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. Corequisite courses: ME 341A.	Corequisite courses: ME 416.
ME 341A Metallurgy Lab .....0	ME 418 Design of Thermal Systems.....3
Corequisite courses: ME 341.	Systems approach to design, mathematical modeling, simulation and optimization of systems, with particular emphasis on thermal systems. P, ME 312, ME 415, EM 331.
ME 361 Methods Engineering and Work Measurement.....2	ME 419 Heating and Air Conditioning Design .....3
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.	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. Corequisite courses: ME 419A.
ME 362 Industrial Engineering (CI).....3	ME 419A Heating and Air Conditioning Design Lab.....0
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.	Corequisite courses: ME 419.
ME 376 Measurements and Instrumentation (CI).....2	ME 421 Design of Machine Elements.....3
Instruments for measuring pressure, temperature, flow, strain, vibration and sound. Experimental data analysis for accuracy, error and uncertainty. Corequisite courses: ME 376A.	Fundamentals of mechanics. Energy methods. Working stresses and failure in materials. Design considerations of basic machine elements – shafts, springs, belts, clutches, brakes, chains, gears, bearings, fasteners and flywheels. Lubrication. Classification of engineering materials. P, ME 321, EM 321.
ME 376A Measurements and Instrumentation Lab (CI).....0	ME 427 Gas Dynamics I .....3
Corequisite courses: ME 376.	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 381 Mechanical Equipment of Buildings.....3	ME 428 Machine Design – Case Studies .....3
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.	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. Corequisite courses: ME 428A.
ME 411 Environmental Engineering.....3	ME 428A Machine Design – Case Studies Lab .....0
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, ME 312, EM 331, ME 415.	Corequisite courses: ME 428.
ME 412 Internal Combustion Engines.....3	ME 431 Aerodynamics .....3
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, ME 312, EM 331.	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 413 Turbomachinery .....3	ME 440 Computer-Aided Design.....3
Theory, design, operation and energy transfer in Turbo-machines. Steam, gas and hydraulic turbines. Pumps, fans and centrifugal and axial flow compressors. P, ME 312, EM 331.	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.
ME 414 Air Pollution Controls .....3	
Control of particulates and gaseous pollutants. Design and operating characteristics of gravity settlers, cyclones, electrostatic precipitators, fabric filters, scrubbers, incinerators, adsorption beds and absorption towers. P, 311 or consent.	

ME 451 Automatic Controls.....3
 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, ME 322, EE 302, EE 303.

ME 456 Dynamic Systems Laboratory (CI).....1
 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, ME 322. Corequisite courses: ME 451.

ME 461 Analysis and Design of Industrial Systems (CI).....3
 Problems in product design and development, marketing, forecasting, capacity evaluation, plant layout, materials handling from standpoint of interrelated and integrated systems. P, ME 362.

ME 476 Thermo-Fluids Lab (CI).....1
 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, ME 376, ME 312, EM 331, ME 415.

ME 477 Mechanical Systems Design I (CI).....1
 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, ME 421, take Math 331 or Math 571.

ME 478 Mechanical Systems Design II (CI).....2
 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, ME 477. Corequisite courses: ME 478A.

ME 478A Mechanical Systems Design II Lab (CI).....0
 P, ME 477. Corequisite courses: ME 478.

ME 480 Inspection Trip.....0
 Short inspection trips arranged to give students opportunity to observe and evaluate manufacturing and industrial processes, operations and facilities. P, senior standing.

ME 491 Special Problems.....1-5

ME 492 Special Topics.....1-5
 May be analytical, design, or laboratory studies.

ME 494 Internship (CI).....1-6
 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.

ME 496 Field Experience.....1-6
 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.

ME 497 Cooperative Education (CI).....1-6
 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
 Control of particulates and gaseous pollutants. Design and operating characteristics of gravity settlers, cyclones, electrostatic precipitators, fabric filters, scrubbers, incinerators, adsorption beds and absorption towers. P, 311 or consent.

ME 427-527 Gas Dynamics I.....3
 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
 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 592 Special Topics.....1-3

ME 603 Thermo-Fluid Energy Systems.....3

ME 606 Statistical Thermodynamics.....3

ME 611 Advanced Heat Transfer I.....3

ME 612 Convection Heat Transfer.....3

ME 621 Viscous Flow I.....3

ME 628 Gas Dynamics II.....3

ME 631 Advanced Analytical Methods.....3

ME 635 Modeling and Simulation.....3

ME 635A Modeling and Simulation Lab.....0

ME 639 Advanced Metallurgy.....3

ME 641 Advanced Stress Analysis in Mechanical Design.....3

ME 645 Advanced Machine Design.....3

ME 661 Operations Research.....3

ME 662 Quality Control.....3

ME 663 Topics in Reliability Engineering.....3

ME 665 Systems Analysis.....3

ME 667 Decision Theory.....3

ME 690-790 Seminar.....0-1

ME 691 Special Problems.....1-5

ME 692 Special Topics.....1-3

ME 787 Research.....1-9

ME 788 Research Or Design Paper.....1-2

ME 791 Special Problems.....1-3

ME 792 Special Topics.....1-3

ME 798 Thesis.....1-7

MedT (Clinical Laboratory Technology)

Undergraduate Courses

MedT 486 Pre-Internship1
MedT 487 Internship Orientation1
Discussion of internship procedures, licensing examinations and registration requirements.

MedT 494 Medical Technology Internship (CI).....8-16
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. Register for a total of 40 credits.

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.

MFL (Modern Foreign Languages)

Undergraduate Courses

Mfl 420 K-12 Foreign Language Methods (CI)1-3
This seminar focuses on methods of teaching modern modern languages. Topics include teaching and assessment techniques, use of technology, choice of materials and curriculum design. It is required of all modern language majors and minors who are planning to teach. P, 201 and instructor consent.

Micr (Microbiology)

Undergraduate Courses

Micr 231 General Microbiology.....4
Principles of basic and applied Microbiology. P, Chem 106 or Chem 112. Corequisite courses: Micr 232.

Micr 232 General Microbiology Lab.....0
Corequisite courses: Micr 231.

Micr 310 Environmental Microbiology.....4
Microbiology of water, air and surfaces in the environment. Standard methods for detecting and controlling pathogens and non pathogens. P, Micr 231. Corequisite courses: Micr 310A.

Micr 310A Environmental Microbiology Lab0
Corequisite courses: Micr 310.

Micr 311 Food Microbiology (CI).....4
Microbiology of fresh and processed meats, dairy products, vegetables and modern convenience foods. Laboratory quality study of food preservation, processing and spoilage. P, Micr 231. Corequisite courses: Micr 311A.

Micr 311A Food Microbiology Lab0
Corequisite courses: Micr 311.

Micr 323 Medical Microbiology (CI).....3
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, Micr 231, Chem 106 or Chem 112.

Micr 324 Medical Microbiology Lab.....1
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.

Micr 332 Microbial Physiology2
Cytology, nutrition, metabolism, and growth of microorganisms. P, Micr 231.

Micr 333 Microbial Physiology Lab2
Media preparation, sterilization, microscopy, assay of microbial enzymes, DNA purification.

Micr 390 Undergraduate Seminar (CI)1
Student will explore the various career opportunities in the biological sciences and procedures for employment.

Micr 414 Anaerobic Microbiology (CI).....3
Anaerobic metabolism and ecology of bacteria, culturing techniques for anaerobic microorganisms. P, Micr 231. Corequisite courses: Micr 414A.

Micr 414A Anaerobic Microbiology Studio (CI).....0
Corequisite courses: Micr 414.

Micr 421 Soil Microbiology3
Microbial species of agricultural soils and biochemical changes brought about by these microorganisms. Equivalent to PS 421. P, 1 group (take Bio 151 Bio 152 Bio 153 Bio 154 /take Bot 201 Bot 202). Corequisite courses: Micr 421A.

Micr 421A Soil Microbiology Lab0
Equivalent to PS 421A. P, 1 group (take Bio 151 Bio 152 Bio 153 Bio 154 /take Bot 201 Bot 202). Corequisite courses: Micr 421.

Micr 422 Immunology (CI)	4	Micr 497 Cooperative Education	1-12
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, Micr 231. Corequisite courses: Micr 422A.		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 required.	
Micr 422A Immunology Lab (CI)	0	Dual Numbered Courses	
Corequisite courses: Micr 422.		Micr 414-514 Anaerobic Microbiology	3
Micr 424 Medical and Veterinary Virology	4	Anaerobic metabolism and ecology of bacteria, culturing techniques for anaerobic microorganisms. Corequisite courses: Micr 414A-514A.	
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. Equivalent to Vet 424. Corequisite courses: Micr 424A.		Micr 414A-514A Anaerobic Microbiology Studio	0
Micr 424A Medical and Veterinary Virology Lab	0	Corequisite courses: Micr 414-514.	
Equivalent to Vet 424A. Corequisite courses: Micr 424.		Micr 421-521 Soil Microbiology	3
Micr 425 Pathogenesis	3	Microbial species of agricultural soils, environmental factors affecting their numbers and activity, and biochemical changes brought about by these microorganisms. P, consent. Crosslisted with PS 421-521. Equivalent to PS 521. P, 1 group (take Bio 151, Bio 152, Bio 153, Bio 154 or take Bot 201, Bot 202). Corequisite courses: Micr 421A-521A.	
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, Micr 231 take Micr 323, Micr 422 or Chem 361.		Micr 421A-521A Soil Microbiology Lab	0
Micr 436 Molecular and Microbial Genetics	4	Equivalent to PS 521A. P, 1 group (take Bio 151 Bio 152 Bio 153 Bio 154 /take Bot 201 Bot 202). Corequisite courses: Micr 421-521.	
A basic course in molecular genetics. Examples to illustrate genetic principles are drawn from all forms of life. P, Micr 231, Bio 371.		Micr 424-524 Medical and Veterinary Virology	4
Micr 437 Systematic Bacteriology	4	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. Corequisite courses: Micr 424A-524A.	
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, Micr 231. Corequisite courses: Micr 437A.		Micr 424A-524A Medical and Veterinary Virology Lab	0
Micr 437A Systematic Bacteriology Lab	0	Equivalent to Vet 524A. Corequisite courses: Micr 424-524.	
Corequisite courses: Micr 437.		Micr 437-537 Systematic Bacteriology	4
Micr 438 Molecular Microbial Genetics Lab	2	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, Micr 231. Corequisite courses: Micr 437A-537A.	
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.		Micr 437A-537A Systematic Bacteriology Lab	0
Micr 490 Seminar (CI)	1	Corequisite courses: Micr 437-537.	
Familiarization with the Microbiology profession and presentation of topics based on microbiological literature in scientific journals. P, senior status or consent, Micr 231.		Micr 492-592 Advances in Microbiology	1-4
Micr 491 Microbiology Problems	1-3	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. Corequisite courses: Micr 492A-492A.	
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, Micr 492.		Micr 492A-592A Advances in Microbiology Lab	0
Micr 492 Advances in Microbiology	1-4	Instructor's consent required. P, Micr 231. Corequisite courses: Micr 492-592.	
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 492A Advances in Microbiology Lab	0	Micr 713 Industrial Microbiology	4
Instructor's consent required. P, Micr 231.		Micr 713A Industrial Microbiology Lab	0
Micr 494 Internship	1-12	Micr 722 Molecular and Cell Biology of the Immune Response	3
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 required, Micr 231.		Micr 726 Cell Physiology of Signal Transduction	3
		Micr 738 Microbial Metabolism	4
		Micr 738A Microbial Metabolism Lab	0
		Micr 790 Graduate Seminar	1
		Micr 791 Microbiology Problem	1-4
		Micr 798 Thesis	1-7

Mil (Military Science)

Undergraduate Courses

Mil 101 Introduction to ROTC1
Increase self-confidence through team study and activities in basic drill and ceremonies, physical fitness, rappelling, first aid, presentations and basic marksmanship. One hour class per week and a monthly leadership lab. Optional one hour session for physical fitness. Weekend field exercise is optional, but highly encouraged.

Mil 102 Introduction to Leadership1
Learn/apply principles of effective leading. Reinforce self-confidence through challenging exercises with upper division ROTC students. Develop communication skills to improve individual performance and group interaction. One hour class per week and a leadership lab. Optional one hour session for physical fitness. Weekend field exercise is optional, but highly encouraged.

Mil 201 Self/Team Development2
Learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of teams of people. Develop skills in planning, presentations, advanced first aid, land navigation and basic military tactics. Two one-hour classes per week and a leadership lab. Participation in physical fitness sessions is optional, but highly encouraged.

Mil 202 Individual/Team Military Tactics2
Introduction to individual and team aspects of military tactics in small unit operations. Includes use of radio communications, safety assessments, movement techniques. Two one-hour classes per week and a leadership lab. Participation in physical fitness sessions is encouraged. Weekend field exercise is optional, but highly encouraged.

Mil 294 ROTC Summer Leadership Internship4
Substitutes for freshman and sophomore on-campus instruction by giving practical experience in a field training environment. Completion of Mil 294 qualifies a student for entry into the Advanced Course. Student should be a second semester sophomore or junior with about 2 years remaining before graduation.

Mil 301 Military Tactics and Leadership3
Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead in situations of increasing complexity. Plan and conduct training for lower division students to develop leadership skills. Laboratories include physical fitness, land navigation, drill and ceremonies and leadership reaction practical exercises. Three hours per week and a required leadership lab plus three physical fitness sessions per week. Participation in one weekend field exercise is required. Corequisite courses: Mil 301A.

Mil 301A Military Tactics and Leadership Lab0
Corequisite courses: Mil 301.

Mil 302 Military Operations and Communications.....3
Continues methodology of Mil 301. Analyze tasks; prepare written and oral guidance for team members to accomplish tasks. Delegate and supervise. Examine and apply lessons from leadership and ethical decision making in a positive climate that enhances team performance. Three hours per week and a required leadership lab plus three physical fitness sessions per week. Participation in one weekend field training exercise is required. Corequisite courses: Mil 302A.

Mil 302A Military Operations and Communications Lab.....0
Corequisite courses: Mil 302.

Mil 401 Leadership Challenges and Goal-Setting.....3
Plan, conduct and evaluate activities for the ROTC cadet organization. Articulate goals, put plans into action and attain them. Assess organizational cohesion and develop confidence in skills to lead people and manage resources. Learn/apply various Army policies and programs. Provide leadership to Mil 301 and 302 cadets to be successful at the ROTC Advanced Camp. Three hours per week and a required leadership lab plus three physical fitness sessions per week. Participation in one weekend field exercise is required. Corequisite courses: Mil 401A.

Mil 401A Leadership Challenges and Goal-Setting Lab.....0
Corequisite courses: Mil 401.

Mil 402 Transition to Lieutenant3
Continues the methodology from Mil 401. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques. Examine aspects of tradition and law as relating to an officer in the Army. Prepare for a future as a successful Army lieutenant. Three hours per week and a required leadership lab plus three physical fitness sessions per week. Participation in one weekend field exercise is required. Corequisite courses: Mil 402A.

Mil 402A Transition to Lieutenant Lab0
Corequisite courses: Mil 402.

Mil 492 Special Topics in Military Science.....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 (PMS). The PMS will approve the individual proposal and assign credits.

Mil 494 ROTC Advanced Camp4
A 35-day camp conducted at an Army post. Open to students who have completed Mil 301 and 302. The student receives pay, travel, lodging and most meal costs are defrayed by the U.S. Army. The Advanced Camp environment is structured to assess small unit leadership and is physically and mentally demanding. This class is required for students pursuing a minor in Military Science. Instructor's consent required.

Mil 495 ROTC Nurse Summer Training Program3
Consists of 35-day training at ROTC Advanced Camp and up to four weeks serving as a nurse in a military medical treatment facility. Only open to (and optional for) nursing students who have completed Mil 301 and 302. Individual leadership and basic nursing skills performance are evaluated throughout the program. With approval of the College of Nursing, experience may be substituted for three of six required credits of Nurs 491 Directed Studies in Nursing (See Nurs 491 description). Instructor's consent required. P, Mil 302.

ML (Modern Languages)

Undergraduate Courses

ML 101 Introduction to Foreign Language and Culture.....1-4
Fundamentals of the language and introduction to the culture where the language is spoken. Classwork may be supplemented with required aural/oral practice outside of class. May be repeated for credit.

ML 102 Introduction to Foreign Language and Culture.....1-4
Fundamentals of the language and introduction to the culture where the language is spoken. Classwork may be supplemented with required aural/oral practice outside of class. May be repeated for credit.

ML 134 Foreign Cultures3
 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 modern language major, minor, or to the 14-hour B.A. language requirement.

ML 195 Living and Study Abroad1-6
 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 the country. For students who will not be using a modern language in their travels. This course may not be used to satisfy requirements for modern language majors or minors, nor can it be used in partial fulfillment of the 14-hour B.A. requirement. Instructor's consent required.

ML 292 Special Topics1-5
 Students who wish to study in which a faculty member is competent may propose a Special Topic. 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.

ML 292A Special Topics Lab0

ML 395 Living and Study Abroad (Language) (CI).....1-6
 Prior approval by the department head required. Instructor's consent required.

ML 460 Topics – French, German, or Spanish Literature (CI)1-4
 An intensive examination of a significant writer(s), period or theme in French, German, or Spanish literature. This course may be repeated for credit if topic is different.

ML 490 Seminar in French, German, or Spanish (CI)1-3
 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.

ML 491 Special Problems (CI)1-3
 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. Instructor permission required. Instructor's consent required.

ML 492 Topics in Foreign Language (CI)1-5
 Selected topics of current interest in the discipline.

ML 494 Internship (CI).....3-12
 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.

ML 496 Field Experience (CI).....3-12
 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

ML 460-560 Topics in French, German or Spanish Literature.....1-4
 An intensive examination of a significant writer(s), period or theme in French, German, or Spanish literature. This course may be repeated for credit if topic is different.

Graduate Courses

ML 591 Special Problems.....1-3
ML 592 Special Topics in Language and Culture.....1-3
ML 595 Graduate Level Living and Study Abroad.....1-6

MnET (Manufacturing Engineering Technology)

Undergraduate Courses

MnET 131 Machining Technology.....3
 An introduction to machine tools used in industry and their usage, principles of operations, and production methods. Hands-on laboratory activities provide the students with the opportunity to use various machining equipment, become familiar with various cutting tools, and perform measurement using precision measuring devices. Corequisite courses: MnET 131A.

MnET 131A Machining Technology Lab.....0
 Corequisite courses: MnET 131.

MnET 132 Welding Technology3
 An introduction to welding processes used in industry and their usage, principles of operations, and production methods. Hands-on laboratory activities provide the students with the opportunity to use various welding processes for joining of ferrous and non-ferrous materials. Corequisite courses: MnET 132A.

MnET 132A Welding Technology Lab0
 Corequisite courses: MnET 132.

MnET 200 MnET Off Campus Orientation0
 MnET enrollment sustaining.

MnET 231 Manufacturing Processes I.....3
 The topics in this course cover the fundamentals of traditional and non-traditional manufacturing processes including mass reducing, mass conserving, joining, material treatment, and surface treatment processes. Hands-on experiences in laboratories provide the class participants with basic skills in machining and welding processes. Corequisite courses: MnET 231A.

MnET 231A Manufacturing Processes I Lab.....0
 Corequisite courses: MnET 231.

MnET 232 Manufacturing Processes II.....3
 This course is designed to provide students with the opportunity to expand on the topics covered in MnET 231. The course extends the manufacturing processes topics to include effects on work materials properties, tool materials and geometry and analysis of factors effecting the output of various processes. The second course will include numerous local industry tours that include plastics, metal fabrication, electronics, wood, etc. P, MnET 231. Corequisite courses: MnET 232A.

MnET 232A Manufacturing Processes II Lab0
 Corequisite courses: MnET 232.

MnET 241 Applied Mechanics.....3	MnET 320A Computer Aided Design/Drawing Lab (CI) .....0
Basic statics, dynamics, and two-dimensional analysis of stress and strain. Fundamental principles of structural and machine elements. Equivalent to GE 241. P, 1 course from Subject MATH except courses Math 021, Math 101, Math 102. Take 1 course from Subject PHYS except courses Phys 101, Phys 102.	Corequisite courses: MnET 320.
MnET 243 Introduction to Materials Science.....3	MnET 334 CAM/CNC .....3
Basic concepts presented in relation to common engineering materials. Topics include physical and mechanical properties of materials. Laboratories utilize common materials science apparatus and relate to common industrial practices. Corequisite courses: MnET 243A.	This course focuses on Computer Numerical Control (CNC) machines programming and operations. Automatic programming of CNC machines using Computer Aided Manufacturing (CAM) software is also the focus of this course. Corequisite courses: MnET 334A.
MnET 243A Introduction to Materials Science Lab .....0	MnET 334A CAM/CNC Lab .....0
Corequisite courses: MnET 243.	Corequisite courses: MnET 334.
MnET 251 Electricity and Electronics I .....3	MnET 338 Industrial Plastics .....3
The course is designed to provide students with a background and understanding of the essential topics in AC/DC circuits, electrical circuit materials, electrical energy and sources of electricity, basic circuits and their analysis, magnetism, and applications of motors, generators, and power distribution. Crosslisted with EET 251. Equivalent to EET 251. P, 1 course; from Subject MATH; except courses Math 021, Math 101, Math 100T, Math 102. Corequisite courses: MnET 251A.	Study of plastic materials and processes including characteristics and properties and various manufacturing processes used for production of plastic products. P, MnET 231, MnET 243. Corequisite courses: MnET 338A.
MnET 251A Electricity and Electronics I Lab.....0	MnET 338A Industrial Plastics Lab.....0
Crosslisted with EET 251A. Equivalent to EET 251A. Corequisite courses: MnET 251.	Corequisite courses: MnET 338.
MnET 252 Electricity and Electronics II.....3	MnET 343 Properties of Materials.....3
This course is the continuation of MnET251 and is designed to provide students with a background and understanding of the essential topics in semiconductor devices, semiconductor power supply and technology, and semiconductor amplifiers and their applications. Other topics include digital logic, integrated circuits, oscillators, AM/FM communications, TV signal transmissions, and computer structure and operations. Crosslisted with EET 252. Equivalent to EET 252. P, MnET 251. Corequisite courses: MnET 252A.	Material properties are studied and related to various phenomena that occur in metals, composites, plastics, and ceramics. Topics include bonding, strengthening mechanisms, fracture mechanics, casting processes, powder metallurgy, corrosion and surface engineering. Corequisite courses: MnET 343A.
MnET 252A Electricity and Electronics II Lab .....0	MnET 343A Properties of Materials Lab .....0
Crosslisted with EET 252A. Equivalent to EET 252A. Corequisite courses: MnET 252.	Corequisite courses: MnET 343.
MnET 260 Production and Operations Management .....3	MnET 350 Fluid Power Technology .....3
A broad analytical 'systems' viewpoint is used to develop competency in management decision-making and problem solving in operations setting in various businesses and specially manufacturing. This course involves the study of the PRODUCTION end of business, where resources are transferred into goods and services, and the MANAGEMENT of operations through effective planning, implementing, and monitoring for continuous improvement. Crosslisted with BAdm 260. Equivalent to BAdm 260. P, 1 course; from Subject MATH; except courses Math 021, Math 101, Math 100T.	Basic fluid mechanics, pneumatics, hydraulics, control systems and common industrial circuits. P, Phys 113 or Phys 213 take Math 123 or Math 121. Corequisite courses: MnET 350A.
MnET 291 Independent Study.....1-3	MnET 350A Fluid Power Technology Lab .....0
Provides the student with the opportunity to identify a problem and develop a hypothesis, gather information which might be used in solving the problem, and report actual findings and accomplishments. P, sophomore or junior level standing and permission of the instructor. Instructor's consent required.	Corequisite courses: MnET 350.
MnET 292 Special Topics.....1-3	MnET 361 Metrology and Process Control .....3
Current selected topics in the manufacturing engineering technology field. P, Sophomore or junior level standing and permission of the instructor. Instructor's consent required.	Fundamentals of quality measurement and control is the focus of this course. Statistical process control (SPC), inspection equipment and techniques, dimensional metrology and geometric conformance, and surface texture and integrity are topics that are covered in support of this course. P, GE 120 or GE 123 take MnET 231 take Stat 281. Corequisite courses: MnET 361A.
MnET 320 Computer Aided Design/Drawing (CI) .....3	MnET 361A Metrology and Process Control Lab .....0
Major course emphasis will be on creating 3-Dimensional solid models using current design software. Course will include the basic concepts of a feature-based parametric design, and the generation of mass properties, part drawings, assembly drawings and documentation. Corequisite courses: MnET 320A.	Corequisite courses: MnET 361.
	MnET 362 Time and Motion Studies (CI) .....3
	Methods engineering in business and industry: improving methods of performing and measuring work done by individuals or groups through motion analysis, charting techniques, and principles of motion economy. P, MnET 231, MnET 260.
	MnET 365 Occupational Safety and Health (CI) .....3
	This course is designed to provide knowledge of the practice of providing safe environments. Study will involve developing safety concepts, recognition of OSHA and Worker's Compensation regulations, hazard recognition, identifying the cost of accidents, ergonomics, and emphasis on a proactive approach to accident prevention.
	MnET 367 Plant Layout and Material Handling (CI) .....3
	Analysis and design of facilities and material handling systems for efficient and economical production. P, GE 231, MnET 260 take GE 120 or GE 123.
	MnET 436 Tool and Die Fundamentals .....3
	An overview of design and applications of jigs and fixtures, molds, tools, and dies in various production settings. Material selection and hands-on experiences in precision machining, metallurgy, and general manufacturing processes are integral to this course. P, MnET 243, MnET 334. Corequisite courses: MnET 436A.
	MnET 436A Tool and Die Fundamentals Lab .....0
	Corequisite courses: MnET 436.

MnET 451 Industrial Electronics and Control	3
This course teaches industrial motion control (servomechanisms) and process control (instrumentation) systems. The course describes the concepts and the operation of electronic devices, circuits, systems, and applications used in industry. Crosslisted with EET 451. Equivalent to EET 451. P, MnET 252 or EET 320. Corequisite courses: MnET 451A.	
MnET 451A Industrial Electronics and Control Lab	0
Equivalent to EET 451A. Corequisite courses: MnET 451.	
MnET 453 Manufacturing Automation	3
The course offers advanced topics in manufacturing automation including automation hardware/software, system design and integration, and management techniques for improving design and manufacturing operations. Hands-on lab activities provide the students the opportunity to develop and program automated systems. Crosslisted with EET 453. Equivalent to EET 453. Corequisite courses: MnET 453A.	
MnET 453A Manufacturing Automation Lab.....	0
Crosslisted with EET 453A. Equivalent to EET 453A. Corequisite courses: MnET 453.	
MnET 460 Manufacturing Cost Analysis (CI)	3
The main focus of this course is on cost estimating related to various manufacturing processes and products and developing budget proposals for analysis and evaluation of manufacturing capital expenditure. P, MnET 231, take MnET 260 or BAdm 260.	
MnET 462 Quality Management	3
Course focus is on managerial philosophies and techniques of quality planning and control. This includes quality improvement tools, reliability, cost of quality, and human factors that effect the quality initiatives. P, MnET 260, Stat 281.	
MnET 463 Production and Inventory Management.....	3
Study and analysis of activities in the flow of materials from the supplier to the consumer. These include physical supply, operations planning and control, storage and warehousing, and physical distribution. P, MnET 231, MnET 260.	
MnET 468 Manufacturing Plant Management (CI).....	3
A case-oriented capstone course designed to integrate the technical, managerial, analytical, and communication skills which have been acquired. P, MnET 367, MnET 463.	
MnET 469 Project Management (CI)	3
A Team-Oriented and Project-Based Course providing the students the additional opportunities to conduct research, build and test products, and manage projects in a team environment. Record keeping, documentation, team evaluations, and presentations are part of course activities. Crosslisted with EET 469. Instructor's consent required. Equivalent to EET 469. Corequisite courses: MnET 469A.	
MnET 469A Project Management Lab (CI).....	0
Crosslisted with EET 469A. Equivalent to GE 469A, EET 469A. Corequisite courses: MnET 469.	
MnET 491 Independent Study.....	1-3
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, junior or senior level standing and permission of the instructor.	
MnET 491A Independent Study Lab	0
MnET 492 Special Topics	1-3
Current selected topic areas in the manufacturing technology field. P, junior or senior level standing and permission of the instructor. Instructor's consent required.	

MnET 494 Internship	1-3
Supervised work experience in program related areas by a manufacturing firm. The work experience must be performed under institutional and discipline guidelines governing this type of educational experience. P, consent of department program coordinator. Instructor's consent required.	
MnET 497 Cooperative Education.....	1-3
Supervised work experience and training in program related areas by a manufacturing firm. The training must be performed under institutional and discipline guidelines governing this type of educational experience. P, departmental approval, sophomore standing or higher. Instructor's consent required.	

MuAp (Applied Music)

Undergraduate Courses

MuAp 100, 110, 120, 130, 140, and 150 may be used to meet SDSU Core Goal 3, Human Spirit. These courses may be repeated twice for credit.

Individual Instruction in Voice

MuAp 100-101-102-103	1
MuAp 200-201-202-203	1
MuAp 300-301-302-303	2
MuAp 400-402.....	2

Class Instruction in Voice

MuAp 105-106.....	1
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Individual Instruction in Keyboard

MuAp 110-111-112-113	1
MuAp 210-211-212-213	1
MuAp 310-311-312-313	2
MuAp 410-412.....	2

Class Instruction in Piano

MuAp 115-116.....	1
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Individual Instruction in Woodwinds

MuAp 120-121-122-123	1
MuAp 220-221-222-223	1
MuAp 320-321-322-323	2
MuAp 420-422.....	2

Class Instruction in Woodwinds

MuAp 125	1
MuAp 225	1
MuAp 325	2

Individual Instruction in Brass

MuAp 130-131-132-133	1
MuAp 230-231-232-233	1
MuAp 330-331-332-333	2
MuAp 430-432.....	2

MuAp 135 Class Instruction in Brass	1
MuAp 235 Class Instruction in Brass	1
MuAp 335 Class Instruction in Brass	2
Individual Instruction in Percussion	
MuAp 140-141-142-143	1
MuAp 240-241-242-243	1
MuAp 340-341-342-343	2
MuAp 440-442	2
MuAp 145 Class Instruction Percussion	
MuAp 245 Class Instruction Percussion	1
MuAp 345 Class Instruction Percussion	2
Individual Instruction in Strings	
MuAp 150-151-152-153	1
MuAp 250-251-252-253	1
MuAp 350-351-352-353	2
MuAp 450-452	2
Class Instruction in Strings	
MuAp 155	1
MuAp 155	1
MuAp 355	2
MuAp 181 Accompanying (Pianist Only)	1

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 Ensembles. 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. MuEn 100, 101, 102, 110, 120, 121, 122, and 180 may be used to meet SDSU Core Goal 3, Human Spirit.

University Women's Chorus (Pasquettes)

MuEn 100-300	1
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Concert Choir

MuEn 101-301	1-2
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University Men's Chorus (Statesmen)

MuEn 102-302	1
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Opera Workshop

MuEn 107-207-307-407	1-2
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Civic-University Orchestra

MuEn 110-310	1
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Marching Band

MuEn 120-320	1
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Symphonic Band

MuEn 121-321	1
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Concert Band

MuEn 122-322	1
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String Ensembles

MuEn 140-340	1
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Woodwind Ensembles

MuEn 150-350	1
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Brass Ensembles

MuEn 160-360	1
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Percussion Ensemble

MuEn 170-370	1
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Jazz Ensemble

MuEn 180-380	1
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Mus (Music)

Undergraduate Courses

Mus 100 Music Appreciation	2
An introductory music course whose purpose is to help non-major students discover how sound is organized in time to produce musical expression. Study will focus on music fundamentals, styles, forms, genres, history and listening.	
Mus 110 Basic Theory and Musicianship I	4
Emphasis on fundamentals and basic skills: terminology, fundamentals of musicianship, ear training, sight singing, chord structures, score analysis. Introduction to four-part writing. Corequisite courses: Mus 110A.	
Mus 110A Basic Theory and Musicianship I Lab	0
Corequisite courses: Mus 110.	
Mus 111 Basic Theory and Musicianship II	4
Continuation of Mus 110. Continued development of fundamental skills: melodic dictation, sight singing, score analysis, and four-part writing. P, Mus 110. Corequisite courses: Mus 111A.	
Mus 111A Basis Theory and Musicianship II Lab	0
Corequisite courses: Mus 111.	
Mus 130 Music Literature and History I	2
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.	
Mus 131 Music Literature and History II	2
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.	

Mus 195 Recital Attendance.....0	Mus 294 Explore Music in Western Europe.....3
Designed to expose students to a large and varied body of music through attendance at recitals, forums, concerts, and other performances. Required of all music majors and minors each semester they are enrolled in applied music. Student teaching and internship semesters excepted.	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. Corequisite courses: Mus 294A.
Mus 201 History of Country Music.....3	Mus 294A Explore Music in Western Europe Ensemble .....0
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.	Corequisite courses: Mus 294.
Mus 202 The Music Industry .....3	Mus 302 Introduction to the Recording Industry.....2
This course examines the many facets of the music industry: songwriting, music publishing, copyright, licensing, unions and guilds, concert promotion, music and theatre, music product merchandising, arts management, and career options in music. P, consent.	This course explores the music business system: the scope of the recording industry; record markets; artists' recording contracts; record production promotion, distribution and retailing; studios and pictures and television and career options and development. Off-campus speakers will be utilized in their specialty areas.
Mus 203 Blues, Jazz and Rock.....3	Mus 311 Counterpoint.....2-3
This course examines the origins and developments of three uniquely American musics and their cultural impact upon, and within, American society.	Analysis and composition in contrapuntal techniques, with a concentration on the music of J.S. Bach. P, Mus 211.
Mus 210 Intermediate Theory and Musicianship III .....4	Mus 313 Form and Analysis (CI) .....2-3
Continuation of Mus 111. Harmonic and melodic techniques of the Romantic period – analysis, composition, dictation, sight singing and ear training. P, Mus 111. Corequisite courses: Mus 210A.	Analysis of small and large forms. Concentrated study of selected scores and writing of original compositions. P, 211 or consent.
Mus 210A Intermediate Theory and Musicianship III Lab .....0	Mus 351 Music Education I: Elementary Concepts (CI).....2
Corequisite courses: Mus 210.	This course deals primarily with curriculum appropriate for grades K-5 with suggested materials to implement the music concepts presented. An eclectic approach to music education curriculum, methods and materials is taken. There is a special focus on materials from the curriculums of Karl Orff, Zoltan Kodaly, and noted 20th century music educators. Instructor's consent required. Corequisite courses: Mus 351A.
Mus 211 Intermediate Theory and Musicianship IV.....4	Mus 351A Music Education I: Elementary Concepts Lab (CI).....0
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, Mus 210. Corequisite courses: Mus 211A.	Corequisite courses: Mus 351.
Mus 211A Intermediate Theory and Musicianship IV Lab.....0	Mus 361 Music Education II: Conducting.....2
Corequisite courses: Mus 211.	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. Corequisite courses: Mus 361A.
Mus 230 Music Literature and History III.....2	Mus 361A Music Education II: Conducting Lab.....0
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.	Corequisite courses: Mus 361.
Mus 231 Music Literature and History IV .....2	Mus 362 Music Education III: Methods and Materials (CI).....2
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.	<i>Section 1:</i> 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. <i>Section 2:</i> 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. Corequisite courses: Mus 362A.
Mus 260 Conducting Fundamentals.....2	Mus 362A Music Education III: Methods and Materials Lab (CI).....0
Basic principles in conducting – rehearsal and performance. Score reading and preparation. P, Mus 110, Mus 111. Corequisite courses: Mus 260A.	Corequisite courses: Mus 362.
Mus 260A Conducting Fundamentals Lab.....0	Mus 365 Music Education IV: Supervision and Administration of School Music (CI) .....2
Corequisite courses: Mus 260.	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. Corequisite courses: Mus 365A.
Mus 270 Pedagogy I.....1-2	Mus 365A Music Education IV: Supervision and Administration of School Music Lab (CI) .....0
Pedagogical considerations in teaching music. Methods and concepts in specialized areas: <i>Section 1</i> – Voice; <i>Section 2</i> – Strings; <i>Section 3</i> – Keyboard; <i>Section 4</i> – Clarinet and Flute; <i>Section 5</i> – Double Reeds and Saxophone; <i>Section 6</i> – High Brass; <i>Section 7</i> – Low Brass; <i>Section 8</i> – Percussion. Voice offered even years only; Keyboard odd years only.	Corequisite courses: Mus 365.
Mus 271 Pedagogy II .....1-2	
Continuation of Mus 270 sections 1-8 as in 270. Voice offered odd years only; Keyboard even years only.	
Mus 292 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 370 Pedagogy III	1-2
Continuation of Mus 271, section 1-8 as in 270. Voice offered odd years only; Keyboard even years only.	
Mus 371 Pedagogy IV	1-2
Continuation of Mus 370, sections 1-8 as in 270. Voice offered even years only; Keyboard odd years only.	
Mus 391 Directed Studies/Independent Studies	1-6
Special projects in music for which there is no course. Projects must be approved by Music Department staff. Consent. May be used as substitute for music requirement.	
Mus 420 Orchestration and Arranging	2-3
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 (CI)	2
This course examines the musical and cultural developments associated with contemporary music. The focus is upon developing a knowledge of and an appreciation for the genres, styles, techniques, philosophies, and forms utilized by the major compositional figures of the 20th century.	
Mus 465 Music Education V: Instrumental Techniques	2
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	0-2
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
Students may register for 5 hours under SeEd 488 and 5 hours under Mus 488.	
Mus 491 Independent Studies	1-3
Consent. May be used as substitute for music requirement.	
Mus 492 Special Topics	1-5
Mus 494 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 491-492 Independent Studies	1-3
Consent. May be used as substitute for music requirement.	
Mus 492-592 Special Topics	1-5

NFSH (Nutrition, Food Science and Hospitality)

Undergraduate Courses

NFSH 110 Perspectives in Nutrition	3
Interdependence of the principles of human nutrition and food behavior to health of individuals and groups.	
NFSH 111 Food and People	3
Considerations of the role of food and nutrition in the development of human cultures. Study of the cultural, social and economic impacts of food.	
NFSH 141 Food Principles	4
Scientific investigation of basic foods used to maintain optimum nutrition. Corequisite courses: NFSH 141A.	

NFSH 141A Food Principles Lab	0
Corequisite courses: NFSH 141.	
NFSH 151 Food Technology	2
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.	
NFSH 171 Introduction to Hospitality and Tourism	3
A review of the basic components of the hospitality and tourism industry in the state, national and international economy. Future trends and career opportunities within these areas will be explored.	
NFSH 198 Introduction to Food Preparation	2
NFSH 220 Health, Safety and Nutrition of Young Children	3
Exploration of school health, safety, first aid/ CPR, disease control and nutrition; development of health and nutrition policies and standards in early childhood settings based on current public policy; creating a healthy and safe school environment for young children; exploration of materials and methods for teaching health, safety and nutrition in early childhood. Equivalent to ECE 220.	
NFSH 221 Survey of Nutrition	3
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.	
NFSH 251 Meal Service Management	3
Planning, costing, preparing and serving nutritious meals for various events in commercial and institutional operations. P, NFSH 141. Corequisite courses: NFSH 251A.	
NFSH 251A Meal Service Management Lab	0
Corequisite courses: NFSH 251.	
NFSH 261 Food Service Operations	3
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, NFSH 141 or consent.	
NFSH 271 Lodging and Casino Operations	3
Functions of management as applied to the lodging and casino industries, including terminology, the organizational structure, staffing, management, responsibilities, front office, guest services, and controller. Lab portion will include on-site workshops as well as field experience. P, NFSH 171 or consent. Corequisite courses: NFSH 271A.	
NFSH 271A Lodging and Casino Operations Lab	0
Corequisite courses: NFSH 271.	
NFSH 291 Special Problems	1-3
A program of directed studies in specialized areas not covered by normal class offerings. May be repeated for credit. Instructor's consent required.	
NFSH 295 Professional Practicum	1-6
Supervised work or clinical experience in dietetics, foodservice or lodging operations, nutrition programs or in the food industry. May be repeated for credit. P, instructor's consent required.	
NFSH 298 Service Management	2
NFSH 321 Human Nutrition	3
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.	
NFSH 322 Assessment Skills in Nutrition (CI)	4
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 dietician. P, 321 or consent. Corequisite courses: NFSH 322A.	

NFSH 322A Assessment Skills in Nutrition Lab (CI).....0	NFSH 423A Clinical Nutrition I Lab (CI) .....0
Corequisite courses: NFSH 322.	This course introduces the role of nutritional intervention in pathological conditions. Students will demonstrate the ability to screen for nutritional risk, collect data for nutritional assessment and calculate and/or define diets for common conditions. P, NFSH 422. Corequisite courses: NFSH 423.
NFSH 341 Food Science (CI).....4	NFSH 424 Community Nutrition (CI) .....3
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, NFSH 141 Chem 120. Corequisite courses: NFSH 341A.	Application of learning principles, teaching methods and knowledge of nutrition in community nutrition education programs and out-patient nutrition counseling. P, NFSH 321. Corequisite courses: NFSH 424A.
NFSH 341A Food Science Lab (CI).....0	NFSH 424A Community Nutrition Lab (CI).....0
Corequisite courses: NFSH 341.	Corequisite courses: NFSH 424.
NFSH 351 Principles of Food Processing.....3	NFSH 425 Clinical Nutrition II (CI) .....3
Study of 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. Corequisite courses: NFSH 351A.	Continuation of NFS 423. Corequisite courses: NFSH 425A.
NFSH 351A Principles of Food Processing Lab.....0	NFSH 425A Clinical Nutrition II Lab (CI) .....0
Corequisite courses: NFSH 351.	Corequisite courses: NFSH 425.
NFSH 360 Food Chemistry.....4	NFSH 450 Food Analysis .....4
The study of chemical properties of basic food constituents and chemical changes occurring during storage and processing. P, Chem 120 or consent. Corequisite courses: NFSH 360A.	Principles and techniques of physical and chemical analysis of food products. It will include proximate analysis of moisture, protein, lipid, and carbohydrates and chemical or instrumental analysis of vitamins, minerals and food additives. P, 360, Chem 120, or consent. Corequisite courses: NFSH 450A.
NFSH 360A Food Chemistry Lab.....0	NFSH 450A Food Analysis Lab .....0
Corequisite courses: NFSH 360.	Corequisite courses: NFSH 450.
NFSH 361 Hospitality Industry Law (CI) .....2	NFSH 451 Advanced Food Processing (CI) .....4
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. P, BAdm 350.	This course is designed as a capstone course for undergraduate Food Science students and an introductory course for graduate students in food-related majors. The principles and technologies of food storage, process and packaging will be discussed in depth. Emphasis will be placed in the development of new food products. P, consent. NFSH 351, Micr 311. Corequisite courses: NFSH 451A.
NFSH 371 Food Service Purchasing (CI).....3	NFSH 451A Advanced Food Processing Lab (CI) .....0
Purchasing food, equipment and supplies for restaurants and institutions. Functions of management as applied to supplier selection, procurement, receipt, storage, issue, record keeping, and inventory control systems. This course involves in-depth analysis and development of purchase specifications and quality evaluation. P, NFSH 261.	Corequisite courses: NFSH 451.
NFSH 372 Property Maintenance and Housekeeping (CI).....3	NFSH 455 Meeting and Convention Management .....3
Application of various systems, procedures and controls associated with the housekeeping and maintenance departments of lodging and foodservice operations. The course will include the decision-making process used in planning, site selection, layout, and equipment selection and purchase.	The roles and responsibilities of professional hospitality meeting planners and convention sales and service managers are examined for purposes of securing, planning, hosting and rebooking a major convention or corporate, association, or special meeting event. P, junior, senior, or consent.
NFSH 381 Quantity Food Production and Service (CI).....3	NFSH 465 Cost Controls in the Hospitality Industry (CI) .....3
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. NFS majors only. P, NFSH 261. Corequisite courses: NFSH 381A.	The application of financial systems to control food, beverage and labor costs in hospitality operations. P, BAdm 310.
NFSH 381A Quantity Food Production and Service Lab (CI).....0	NFSH 480 Travel Studies.....1-5
Corequisite courses: NFSH 381.	This travel-study course is designed to provide extra-mural educational experiences, as approved by and under the direction of a faculty member, and may be in cooperation with faculty and administrators at other institutions. Students will participate in hands-on activities and design educational activities for presentation at selected locations. Includes pre-travel orientation, post-travel self-evaluation, and a written report.
NFSH 421 Diversity in the Workplace (CI) .....3	NFSH 481 Professional Issues in Nutrition, Food Science and Hospitality (CI).....3
Course addresses the role of culture and its effect on organizational behavior. Issues in the workplace include personal and cultural values, group norms, workplace policies and procedures, and diversity in culture, gender, age and physical differences. Crosslisted with CA 421. Equivalent to CA 421.	This course is the capstone experience for students in Nutrition, Food Science and Hospitality. Course will integrate knowledge with breakout sessions for the different subject matter areas in NFSH. Professionalism and professional ethics, management and employment principles, diversity issues, leadership styles, networking and mentoring will be discussed. P, senior standing in dietetics, food science or hotel and foodservice management.
NFSH 422 Advanced Human Nutrition .....4	NFSH 482 Hospitality Marketing (CI).....3
Principles of physiological chemistry and physiology applied to nutrition. P, 321, Zool 221 and 325, Chem 108 or 361 or consent.	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.
NFSH 423 Clinical Nutrition I (CI).....3	
This course introduces the role of nutritional intervention in pathological conditions. Students will demonstrate the ability to screen for nutritional risk, collect data for nutritional assessment and calculate and/or define diets for common conditions. P, NFSH 422. Corequisite courses: NFSH 423A.	

NFSH 487 Transition to Professional World1
 Transition to the professional world will identify expectations for the world of work. Emphasis on effective written and verbal communication skills as related to work experiences, issue analysis, and goal setting for the future. Students will prepare for professional experiences such as internships, graduate school and professional positions upon graduation. P, senior standing or consent. Crosslisted with CA 487. Equivalent to CA 487.

NFSH 490 Seminar in Food and Nutrition (CI)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.

NFSH 491 Special Problems1-3
 A program of directed studies in specialized areas not covered by normal class offerings. May be repeated for credit. Instructor's consent required.

NFSH 492 Current Topics1-3
 Study of selected topics in the fields of nutrition, clinical dietetics, foodservice systems management, food science, hospitality industries. P, junior standing in dietetics, food science or hotel and foodservice management and consent.

NFSH 495 Professional Practicum (CI)1-6
 Supervised work or clinical experience in dietetics, food service or lodging management, nutrition programs or in the food industry. May be repeated for credit. P, instructor's consent required.

Dual Numbered Courses

NFSH 450-550 Food Analysis4
 P, NFSH 360, Chem 120. Corequisite courses: NFSH 450A-550A.

NFSH 450A-550A Food Analysis Lab0
 Corequisite courses: NFSH 450-550.

NFSH 451-551 Advanced Food Processing4
 P, NFSH 351, Micr 311. Corequisite courses: NFSH 451A-551A.

NFSH 451A-551A Advanced Food Processing Lab0
 Corequisite courses: NFSH 451-551.

NFSH 490-590 Seminar in Food and Nutrition1-2
 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

NFSH 591 Special Problems1-3

NFSH 592 Current Topics1-3

NFSH 601 Orientation in Graduate Study1

NFSH 634 Techniques in Food and Nutrition Research3

NFSH 634A Techniques in Food and Nutrition Research Lab0

NFSH 660 Maternal and Child Nutrition3

NFSH 662 Sociocultural Aspects of Nutrition2

NFSH 700 Research Methods4

NFSH 700A Research Methods Studio0

NFSH 704 Phytochemicals2

NFSH 725 Nutrition and Human Performance3

NFSH 760 Vitamins and Minerals Human Nutrition3

NFSH 761 Nutrition of the Aged3

NFSH 788 Individual Research and Study1-7

NFSH 791 Special Problems1-3

NFSH 792 Current Topics1-3

NFSH 794 Graduate Internship1-7

NFSH 798 Thesis1-7

Nurs (Nursing)

Undergraduate Courses

Nurs 110 Orientation RN Upward Mobility Program0 FS
 Registered Nurse orientation. P, RN, consent.

Nurs 111 Orientation Basic Nursing Student0 FS
 Basic nursing student orientation.

Nurs 201 Medical Terminology1 FS
 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 222 Transition to B.S. in Nursing1 FSSu
 Introduces the RN student to the nature of baccalaureate nursing education. Students participate in self-assessment of strengths within the various professional nursing roles. Includes an overview of the curriculum concepts as applied to RN education and an introduction to nursing informatics as a tool for lifelong learning. Instructor's consent required. P, RN licensure.

Nurs 264 Professional Perspectives I1 FS
 Introduces the profession of nursing within the context of a changing health care system. The professional nursing roles of provider of care, designer/manager/coordinator of care, and member of a profession are introduced. The professional value of human dignity or respect for the inherent worth and uniqueness of individuals and populations is the value central to this course. The concept of culturally competent nursing care is explored. Corequisite courses: Nurs 280, Nurs 282, Nurs 265, Nurs 323.

Nurs 265 Health Assessment and Interventions4 FS
 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. Corequisite courses: Nurs 265A, Nurs 264, Nurs 280, Nurs 282, Nurs 323.

Nurs 265A Health Assessment and Interventions Lab0 FS
 Clinical Corequisite courses: Nurs 265.

Nurs 280 Professional Communication3 FS
 This fundamental course focuses on professional communication concepts. The professional communications concepts include the nursing process, critical thinking, evidence-based practice, nurse-client relationship, techniques of communications, and the mental health issues of crisis, conflict, anxiety, and loss and grief. P, Psyc 101. Corequisite courses: Nurs 264, Nurs 265, Nurs 282, Nurs 280A, Nurs 323.

Nurs 280A Professional Communication Lab0 FS
 Clinical Corequisite courses: Nurs 280.

Nurs 282 Health Promotion2 FS
 Focuses on learning about holistic health of self, individuals and groups. Wellness and teaching/ learning principles are used. P, admission to nursing major. Corequisite courses: Nurs 264, Nurs 265, Nurs 280, Nurs 280A, Nurs 323.

Nurs 293 Nursing Workshops1-3 FS
 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 304 Professional Perspectives II.....1 FS**
This course is a continuation of professional role development with emphasis on the role of member of a profession. The professional value of integrity or acting in accordance within an appropriate code of ethics and accepted standards of practice is the value central to the course. The concepts of role socialization and ethics are explored. P, Nurs 264, Nurs 265, Nurs 265A, Nurs 280, Nurs 280A, Nurs 282, Nurs 323. Corequisite courses: Nurs 320, Nurs 330, Pha 321.
- Nurs 320 Family as Client: Emerging and Developing (CI)6 FS**
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, Nurs 265, Nurs 265A, Nurs 280, Nurs 280A, Nurs 282, Nurs 323. Corequisite courses: Nurs 320A, Nurs 304, Nurs 330, Pha 321.
- Nurs 320A Family as Client: Emerging and Developing Clinical Lab (CI).....0 FS**
Clinical Corequisite courses: Nurs 320.
- Nurs 323 Introduction to Pathophysiology3 FS**
This course covers topics which will provide a current understanding of the major disease processes across the lifespan. The course will lay the foundation for the study of pharmacological mechanisms of action of drugs and their rational clinical use. Of interest will be the linkage of relevant modern biology to the different disease states, attention to gender differences, especially regarding epidemiology and pathological changes, and the integration of health promotion and disease prevention, by emphasizing risk factors, nutritional requirements, and other relevant therapeutic practices. P, 3rd year Pharmacy standing or Nursing major. Zool 325.
- Nurs 330 Family Health Environments Across the Lifespan3 FS**
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, Nurs 265, Nurs 265A, Nurs 280, Nurs 323. Corequisite courses: Nurs 330A, Nurs 304, Nurs 320, Pha 321.
- Nurs 330A Family Health Environments Across the Lifespan Clinical Lab.....0 FS**
Clinical Corequisite courses: Nurs 330.
- Nurs 350 Nursing in the Community1-6 FS**
Community aspects of planning for health needs. Designed for non-credit or variable assignment of credits. May include some practice.
- Nurs 364 Professional Perspectives III.....1 FS**
Application of the research process to issues in nursing and related areas with emphasis on the roles of researcher and provider. Presents an introduction to nursing information in the health care setting and the core value of autonomy. Explores career pathway development, patient self-determination and nursing liability. P, Nurs 304, Nurs 320, Nurs 320A, Nurs 330, Nurs 330A, HSc 443, Pha 321. Corequisite courses: Nurs 370, Nurs 375, Nurs 370A, Nurs 375A.
- Nurs 365 Childbearing Family Primary/Secondary Care.....3 FS**
Corequisite courses: Nurs 365A.
- Nurs 365A Childbearing Family Primary/Secondary Care-CI L Clinical.....0 FS**
Corequisite courses: Nurs 365.
- Nurs 370 Acute Health Care I (CI).....5 FS**
Focuses on the nursing process to provide care to clients experiencing a wide range of acute health problems with predictable outcomes. P, Nurs 304, Nurs 320, Nurs 320A, Nurs 330, Nurs 330A, HSc 443, Pha 321. Corequisite courses: Nurs 370A, Nurs 364, Nurs 375.
- Nurs 370A Acute Health Care I Clinical Lab (CI).....0 FS**
Clinical Corequisite courses: Nurs 370.
- Nurs 375 Chronic Health Care I (CI).....5 FS**
Focuses on the nursing process to provide care for clients experiencing a wide range of chronic health problems with predictable outcomes. P, Nurs 304, Nurs 320, Nurs 320A, Nurs 330, Nurs 330A, HSc 443, Pha 321. Corequisite courses: Nurs 375A, Nurs 364, Nurs 370.
- Nurs 375A Chronic Health Care I Clinical Lab (CI)0 FS**
Clinical Corequisite courses: Nurs 375.
- Nurs 381 Family and Communication.....3 FS**
This course focuses on communication as an intervention with family as client. The student will be exposed to major family and communication theories. Emphasis is on holistic family assessment and interventions. The professional value of "autonomy" or the patient's right to self-determination is the value-based behavior central to this course. Corequisite courses: Nurs 381A, Nurs 385, Nurs 385A, Nurs 222. P, RN License.
- Nurs 381A Family and Communication Clinical Lab0 FS**
Clinical Corequisite courses: Nurs 381.
- Nurs 385 Health Assessment, Clinical Decision-Making, and Nursing Interventions.....5 FS**
This course concentrates on the deliberative process utilized by the baccalaureate prepared nurse. The course will build upon the assessment intervention skills acquired in the student's previous education and will emphasize clinical decision-making and use of research based interventions. Includes a practicum component in which the nursing process is applied to families and clients across the age continuum in the home setting. The professional value of "Human Dignity" or respect for the inherent worth and uniqueness of individuals and populations is value-based behavior central to this course. P, Nurs 222, Nurs 381. RN License. Corequisite courses: Nurs 385A, Nurs 222.
- Nurs 385A Health Assessment, Clinical Decision-Making, and Nursing Interventions Lab.....0 FS**
Corequisite courses: Nurs 385.
- Nurs 404 Professional Perspectives IV1 FS**
This course is a continuation of professional role development with emphasis on the role of designer/manager/coordinator of care. The professional value of altruism or concern for the welfare and well being of others is the value central to this course. The concepts of case management, managed care, critical paths and variance analysis are emphasized. Quantitative nursing research methodology is further explored. P, Nurs 364, Nurs 370, Nurs 370A, Nurs 375, Nurs 375A. Corequisite courses: Nurs 410, Nurs 410A, Nurs 420, Nurs 420A.
- Nurs 410 Acute Health Care II.....5 FS**
Expands on previous nursing knowledge and skills to provide care to clients with acute complex health problems with unpredictable outcomes. P, Nurs 364, Nurs 370, Nurs 370A, Nurs 375, Nurs 375A. Corequisite courses: Nurs 410A, Nurs 404, Nurs 420, Nurs 420A.
- Nurs 410A Acute Health Care II Clinical Lab0 FS**
Corequisite courses: Nurs 410.
- Nurs 416 Community Health Nursing.....5 FS**
Introduces the RN to the concept of community as client by examining community health issues and the role of nursing in providing care to populations. Emphasis is on community assessment, health education, program planning and evaluation. Practice experiences will include rural and/or urban community settings. The professional value of "Altruism" or concern for the welfare and well being of others is the value-based behavior central to this course. P, Nurs 222, Nurs 381, Nurs 381A, Nurs 385, Nurs 385A, RN Licence. Corequisite courses: Nurs 416A, Nurs 474.
- Nurs 416A Community Health Nursing Clinical Lab0 FS**
Corequisite courses: Nurs 416.

Nurs 420 Chronic Health Care II4 FS
 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, Nurs 370, Nurs 370A, Nurs 375, Nurs 375A, HSc 443. Corequisite courses: Nurs 420A, Nurs 404, Nurs 410.

Nurs 420A Chronic Health Care II Clinical Lab0 FS
 Corequisite courses: Nurs 420.

Nurs 454 Leadership and Management3 FS
 This course focuses on three areas: management theory, leadership theory and political and economic issues within professional nursing practice. Resource management, change theory, organization and other group behavior will be discussed. Conflict resolution, negotiation, and group process skills are also addressed. The professional value of "Social Justice" or upholding moral, legal, and humanistic principles is the value-based behavior central to this course. P, Nurs 381, RN Licence.

Nurs 460 Preparation for RN Licensure1 FS
 This course is designed to assist nursing students with preparation for the National Council Licensure Examination for Registered Nurses (NCLEX-RN) Computer Adaptive Testing (CAT). Students will answer test questions and discuss rationale for the answers using a cooperative learning group approach to prepare for the NCLEX-RN licensure examination.

Nurs 464 Professional Perspectives V2 FS
 This course prepares the student for entry into professional nursing practice. Professional role development continues with emphasis on role synthesis. The professional value of social justice or upholding moral, legal and humanistic principles is the value central to this course. The concepts of leadership and delegation are emphasized. Qualitative nursing research is explored. Nursing research utilization is introduced. P, Nurs 404, Nurs 410, Nurs 410A, Nurs 420, Nurs 420A, Stat 281, or HSc 440. Corequisite courses: Nurs 475, Nurs 491.

Nurs 474 Nursing Research and Nursing Theories.....3 FS
 Prepares the baccalaureate nurse to analyze, critique, and apply nursing research in a practice environment and to utilize selected nursing theories. Various models of research utilization will also be presented and discussed. The professional value of "Integrity" or acting in accordance with an appropriate code of ethics and accepted standards of practice is the value-based behavior central to this course. P, Nurs 222, Nurs 381, Nurs 381A, Nurs 385, Nurs 385A. Corequisite courses: Nurs 416, Nurs 416A.

Nurs 475 Community as Client.....3 FS
 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, Nurs 410, Nurs 410A, Nurs 420, Nurs 420A, Stat 281, or HSc 440. Corequisite courses: Nurs 475A, Nurs 464, Nurs 491.

Nurs 475A Community as Client Clinical Lab.....0 FS
 Corequisite courses: Nurs 475.

Nurs 483 Computer Applications in Health Care3 FS
 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. Open to upper division undergraduate students.

Nurs 490 Seminar in Nursing.....1
 Discussion and evaluation of the impact of nursing action in care of patients. Students limited to 4 credits to apply toward degree.

Nurs 491 Special Problems in Nursing.....1-3 FS
 Open to upper division students by permission. Students limited to 4 credits to apply toward degree. P, instructor's consent required.

Nurs 492 Special Topics in Nursing.....1-4 FS
 Study of selected topics in nursing under direction of faculty. Offered on sufficient demand. Senior or consent of instructor.

Nurs 495 Directed Study in Nursing: Practicum6 FS
 Application and synthesis of reflective decision-making within the practice of nursing. Includes a preceptored experience in a selected practicum setting. P, Nurs 404, Nurs 410, Nurs 410A, Nurs 420, Nurs 420A, Stat 281, or HSc 440. Corequisite courses: Nurs 495A, Nurs 464, Nurs 475.

Nurs 495A Directed Study Nursing Clinical Lab.....0 FS
 Corequisite courses: Nurs 495.

Nurs 497 Cooperative Education in Nursing.....1-4 FS
 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. Instructor's consent required.

Graduate Courses

**Nurs 610 Advanced Nurse Practice:
 Introduction Roles and Issues.....3**

**Nurs 623 Pathophysiology Applied
 to Advanced Practice Nursing4**

Nurs 624 Neonatal Pathophysiology4

Nurs 625 Human Sexuality in Health Care3

Nurs 626 Research Methods for Advanced Practice Nursing.....3

Nurs 630 Advanced Assessment of the Neonate2

Nurs 630A Advanced Assessment of the Neonate Clinical Lab.....0

Nurs 631 Advanced Assessment – Lifespan3

Nurs 631A Advanced Assessment – Lifespan Clinical Lab.....0

Nurs 635 Dying, Death and Bereavement.....2-3

Nurs 640 Legal and Ethical Accountability in Health Care2

Nurs 645 Management of Acute and Chronic Pain3

Nurs 655 Health and the Older Adult2

Nurs 670 Health Policy, Legislation, Economics and Ethics.....3

Nurs 690 Seminar: Guided Study in Nursing1-4

Nurs 691 Special Problems.....1-3

Nurs 691A Special Problems Clinical.....0

Nurs 692 Special Topics.....1-3

Nurs 699 Computer-Aided Instruction3

Nurs 710 Curriculum Development in Nursing2

Nurs 725 Patient Care Management3

**Nurs 760 Health Promotion and Disease Prevention: Counseling
 Individual/Family4**

Nurs 760A Health Promotion and Disease Prevention Lab.....0

**Nurs 765 Interventions for Complex Problems in Advanced
 Practice Nursing.....3**

**Nurs 765A Interventions for Complex Problems in
 Advanced Practice Nursing Lab.....0**

Nurs 770 Clinical Nurse Specialist Practicum4-6

Nurs 770A Clinical Nurse Specialist Practicum Clinical Lab0

Nurs 771 Family Nurse Practitioner: Primary Care6

Nurs 772 Neonatal Nurse Practitioner: Practicum I6

**Nurs 772A Neonatal Nurse Practitioner: Practicum I
 Clinical Lab0**

Nurs 774 Nurse Administrator: Practicum	6
Nurs 774A Nurse Administrator: Practicum Clinical Lab	0
Nurs 776 Family Nurse Practitioner III: Small Group Instruction.	3
Nurs 777 Family Nurse Practitioner III: Internship	3-9
Nurs 778 Nurse Educator: Practicum	6
Nurs 778A Nurse Educator: Practicum Clinical Lab.....	0
Nurs 779 Neonatal Nurse Practitioner: Practicum II.....	12
Nurs 779A Neonatal Nurse Practitioner: Practicum II Clinical Lab	0
Nurs 785 Self Care: The Older Adult.....	3
Nurs 788 Problems in Nursing Research	1-2
Nurs 790 Seminar in Advanced Nursing	1-3
Nurs 798 Thesis	1-7

PE (Physical Education)

Undergraduate Courses

PE 101 Aerobics	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 102 Aerobics, Water	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 103 Archery	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 104 Badminton	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 105 Baseball	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 106 Basketball	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 107 Billiards	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 108 Bow Hunting, Beginning	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 109 Bowling	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 110 Camping Skills	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 111 Canoeing/Hiking	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 112 Cross-Country Skiing	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 113 Cross-Training	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	

PE 114 Cycling	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 115 Dance, Country	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 116 Dance, Jazz	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 117 Dance, Social	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 118 Dance Variety	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 119 Fishing Techniques	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 120 Fitness Thru Running	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 121 Fitness Thru Walking	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 122 Football, Flag	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 123 Frisbee, Ultimate	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 124 Golf	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 125 Racquetball	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 126 Recreational Activities	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 127 Restricted	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest. P, consent. Instructor's consent required.	
PE 128 Scuba Diving	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 129 Soccer	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 130 Softball	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 131 Springboard Diving	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 132 Swim Conditioning	0.50
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	
PE 133 Swim, Beginning (Level 3)	1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	

PE 134 Swim, Intermediate (Level 4).....1	PE 204 Skill Concept: Rhythm and Dance.....1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	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, instructor's consent required.
PE 135 Swim, Swimmers (Level 5-6).....1	PE 241 Curriculum in Physical Education.....2
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	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 136 Tae-Kwon-Do .....1	PE 320 Lifeguard Training.....2
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	The course focuses on skills and knowledge to properly assume responsibilities of lifeguards at swimming pools and non-surf beaches. Instructor's consent required. Corequisite courses: PE 320A.
PE 137 Tennis.....0.50	PE 320A Lifeguard Training Lab.....0
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	Corequisite courses: PE 320.
PE 138 Volleyball.....0.50	PE 321 Water Safety Instructor.....2
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	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, instructor's consent required. Corequisite courses: PE 321A.
PE 139 Volleyball, Sand .....0.50	PE 321A Water Safety Instructor Lab.....0
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	Instructor's consent required. Corequisite courses: PE 321.
PE 140 Weight Training.....1	PE 322 Lifeguard Instructor .....1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	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. Instructor's consent required.
PE 141 Weight Training, Advanced.....1	PE 334 Assisting Teaching I.....1
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	Application of movement analysis, prescription knowledge and skills to a team activity setting in a basic physical activity course. P, instructor's consent required.
PE 142 Wrestling – Greco Roman.....1	PE 350 Exercise Physiology (CI).....3
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	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. Corequisite courses: PE 350A.
PE 155 Community Water Safety.....1	PE 350A Exercise Physiology Lab (CI).....0
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	Corequisite courses: PE 350.
PE 170 Fundamental Movement.....1	PE 352 Adapted Physical Education .....2
Defining, analyzing and evaluating fundamental locomotor, non-locomotor (axial) and manipulative skills, progressions in skill development.	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 192 Special Topics .....0.5-1.50	PE 353 Biomechanics .....3
Activities stressing individual physical fitness and lifetime activities according to student needs and interest.	Mechanics and muscular actions related to movement of the human body. P, Zool 221 or 325, junior standing.
PE 200 Skill Concept: Fitness .....1	PE 354 Prevention and Care of Athletic Injuries.....2
Knowledge and skill necessary to enable students to lead, analyze and prescribe movement skills and activities which are part of lifetime fitness development. P, instructor's consent required.	General care and treatment of athletic injuries, conditioning and training, equipment of training room, taping for athletic injuries. P, junior standing. Corequisite courses: PE 354A.
PE 201 Skill Concept: Gymnastics .....1	PE 354A Prevention and Care of Athletic Injuries Lab.....0
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, instructor's consent required.	Corequisite courses: PE 354.
PE 202 Skill Concept: Individual and Dual Activity .....1	PE 360 K-8 Physical Education Methods .....2
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, instructor's consent required.	Needs, characteristics, capacities of elementary school children (grades K-8); curriculum planning; organizational problems; and methods and materials essential to program progression in movement exploration, games, rhythms, fitness and basic skills. P, sophomore standing. Corequisite courses: PE 360A.
PE 203 Skill Concept: Team Sport Activity.....1	PE 360A K-8 Physical Education Methods Lab.....0
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, instructor's consent required.	Corequisite courses: PE 360.

PE 367 Practicum: Fitness Management.....2	PE 471A Coaching and Officiating, Football Lab .....0
This course is designed to have health promotion majors continue their professional role development. In addition, students will participate in activities that focus on the physical, social and intellectual dimensions of wellness.	Corequisite courses: PE 471.
PE 400 Exercise Test and Prescription.....3	PE 472 Coaching Fastpitch, Softball, Baseball.....2
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 instructor's consent required. Corequisite courses: PE 400A.	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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 472A.
PE 400A Exercise Test and Prescription Lab.....0	PE 472A Coaching Fastpitch, Softball, Baseball Lab.....0
Corequisite courses: PE 400.	Corequisite courses: PE 472.
PE 450 Clinical Exercise Physiology (CI) .....3	PE 473 Coaching and Officiating, Track and Field .....2
This course is designed to provide the clinical exercise physiology student with assessment and prescription techniques appropriate to special populations. P, instructor's consent required. PE 350, Nurs 323.	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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 473A.
PE 455 ECG and Clinical Stress Testing.....3	PE 473A Coaching and Officiating, Track and Field Lab .....0
This course is designed to fill the needs of students who desire the ability to interpret the normal and abnormal, resting and exercise ECG, as well as provide opportunities to learn and practice the basic components of maximal stress testing during a variety of exercise conditions. Since clinical stress testing and ECG interpretation is a vital component of the laboratory skills needed by today's exercise physiologist, emphasis in this course will be focused on understanding and interpreting ECG tracings and related pathophysiology, preparation of the exercise 12-lead ECG, and interpretation of maximal stress test results regarding exercise tolerance for various clinical populations and comparing them to normal individuals. In addition, an overview of other diagnostic procedures that involve the use of exercise will be given. P, PE 350, PE 400.	Corequisite courses: PE 473.
PE 461 Methods of Teaching Physical Education (CI).....3	PE 474 Coaching and Officiating, Wrestling.....2
Methods of teaching physical education activities in public schools, with emphasis on curriculum planning, principles of motor learning, and special needs/diverse populations as they apply to structuring appropriate K-12 activities. A significant amount of time will be spent learning and applying skills related to technology and its use in the gymnasium, the use of teaching models, and development of assessment packages intended to meet requirements of state and national physical education content standards for K-12. Instructor's consent required. Corequisite courses: PE 461A.	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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 474A.
PE 461A Methods Teaching Physical Education Lab (CI) .....0	PE 474A Coaching and Officiating, Wrestling Lab .....0
Corequisite courses: PE 461.	Corequisite courses: PE 474.
PE 467 Coaching and Officiating, Swimming .....2	PE 475 Coaching and Officiating, Volleyball.....2
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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 467A.	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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 475A.
PE 467A Coaching and Officiating, Swimming Lab .....0	PE 475A Coaching and Officiating, Volleyball Lab.....0
Corequisite courses: PE 467.	Corequisite courses: PE 475.
PE 470 Coaching and Officiating, Basketball .....2	PE 476 Coaching and Officiating, Gymnastics .....2
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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 470A.	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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 476A.
PE 470A Coaching and Officiating, Basketball Lab.....0	PE 476A Coaching and Officiating, Gymnastics Lab.....0
Corequisite courses: PE 470.	Corequisite courses: PE 476.
PE 471 Coaching and Officiating, Football .....2	PE 483 Coaching Golf .....2
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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 471A.	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. ASEP Coaching Principles workshop required. P, junior standing. Corequisite courses: PE 483A.
	PE 483A Coaching Golf Lab .....0
	Corequisite courses: PE 483.
	Dual Numbered Courses
	PE 450-550 Clinical Exercise Physiology .....3
	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 700 Exercise in Health and Disease.....3
	PE 730 Physical Education Teacher Education.....3
	PE 732 Analysis and Strategies of Teaching and Supervising Physical Education and Sport.....3

PE 750 Advanced Exercise Physiology	3
PE 751 Lab Techniques in Exercise Physiology	2
PE 751A Lab Techniques in Exercise Physiology Lab	0
PE 755 Applied Exercise Physiology.....	3
PE 770 Advanced Administration of Interscholastic Athletics	2
PE 771 Current Trends in HPER and Athletics.....	3
PE 772 Seminar: Financial Aspects of Sports Management.....	2

Pha (Pharmacy)

Undergraduate Courses

Pha 201 Medication and the Consumer	2
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 310 Introduction to Pharmaceutical Care (CI)	3
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. Corequisite courses: Pha 310A.	
Pha 310A Introduction to Pharmaceutic Care Lab (CI)	0
Corequisite courses: Pha 310.	
Pha 311 Professional Communication Skills (CI)	3
Current theories and practice, oral and written, in interpersonal and professional communication. P, 3rd year standing. SpCm 101. Corequisite courses: Pha 311A.	
Pha 311A Professional Communication Skills Lab (CI)	0
Corequisite courses: Pha 311.	
Pha 313 Pharmaceutical Calculations	1
Systems of weights and measures and mathematical problems encountered in pharmaceutical practice. P, 3rd year standing.	
Pha 320 Introduction to Pathophysiology	3
Pathophysiology of significant and more common diseases will be discussed at a systems level with limited discussion at the cellular level. Appropriate patient information will also be integrated for each disease. P, 3rd year Pharmacy standing or Nursing major, and Zool 325.	
Pha 321 Pharmacology	3
Basics of pharmacology and therapeutics for nurses and others. P, Chem 108, Zool 325, Nurs 323.	
Pha 323 Pharmaceutical Biochemistry	4
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
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, Pha 323.	
Pha 331 Pharmaceutics I	3
Theory, preparation and application of pharmaceutical dosage forms and drug delivery systems. P, 3rd year standing.	
Pha 332 Pharmaceutics II	4
Theory, preparation and application of pharmaceutical dosage forms and drug delivery systems. P, Pha 331. Corequisite courses: Pha 332A.	
Pha 332A Pharmaceutics II Lab	0
Corequisite courses: Pha 332.	

Pha 340 Principles of Drug Action I	4
Principles of medicinal chemistry, pharmacology, toxicology and introduction to pharmacotherapy. P, 3rd year standing. Corequisite courses: Pha 340A.	
Pha 340A Principles of Drug Action I Lab	0
Corequisite courses: Pha 340.	
Pha 341 Principles of Drug Action II	4
Principles of medicinal chemistry, pharmacology, toxicology and introduction to pharmacotherapy. P, Pha 340. Corequisite courses: Pha 341A.	
Pha 341A Principles of Drug Action II Lab	0
Corequisite courses: Pha 341.	
Pha 415 Biopharmaceutics and Pharmacokinetics	5
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, 4th year standing.	
Pha 430 Pharmaceutical Jurisprudence	3
State and federal laws and regulations. P, 4th year standing, Pha 331, Pha 332.	
Pha 441 Chemotherapeutic Agents	2
Principles of medicinal chemistry, pharmacology, toxicology, and introduction to pharmacotherapy of chemotherapeutic agents. P, 4th year standing.	
Pha 442 Principles of Drug Action III	5
Principles of medicinal chemistry, pharmacology, toxicology and introduction to pharmacotherapy. P, 4th year standing. Corequisite courses: Pha 442A.	
Pha 442A Principles of Drug Action III Lab	0
Corequisite courses: Pha 442.	
Pha 443 Principles Drug Action IV	5
Principles of medicinal chemistry, pharmacology, toxicology and introduction to pharmacotherapy. P, Pha 442. Corequisite courses: Pha 443A.	
Pha 443A Principles of Drug Action IV Lab	0
Corequisite courses: Pha 443.	
Pha 445 Drug Literature and Research Design (CI)	4
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. Corequisite courses: Pha 445A.	
Pha 445A Drug Literature and Research Design Lab (CI)	0
Corequisite courses: Pha 445.	
Pha 450 Drug Distribution Systems	4
Principles of contemporary pharmacy services in institutional and community settings. P, 4th year standing. Corequisite courses: Pha 450A.	
Pha 450A Drug Distribution Systems Lab	0
Corequisite courses: Pha 450.	
Pha 460 Pharmaceutical Care Experience	1
Introductory clinical experience which focuses on screening for disease risk factors, preventative care strategies and obtaining medical and medication histories.	
Pha 465 Professional Resources Management	4
Professional, economic, and social considerations influencing the organization and management of the delivery of pharmaceutical services. P, 4th year standing. Corequisite courses: Pha 465A.	
Pha 465A Professional Resources Management Lab	0
Corequisite courses: Pha 465.	

- Pha 487 Research Problems**.....1-3
Students may elect research problems in one of the pharmaceutical sciences, biopharmaceutics, pharmaceuticals, pharmaceutical chemistry, or pharmacology; or in an appropriate area of pharmacy practice. P, instructor's consent required.
- Pha 491 Directed Studies**.....1-3
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, instructor's consent required.
- Pha 492 Special Topics**.....1-3
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. Instructor's consent required.

Graduate Courses

- Pha 645 Pharmacotherapeutics: Application to Advanced Practice**.....4
Current drug therapy principles with emphasis on drugs and pharmacotherapeutics used in Family Nurse Practitioner (FNP) practice. P, FNP program enrollment.
- Pha 646 Neonatal Pharmacotherapeutics**2
Principles of pharmacology in relation to unique neonatal physiologic and behavioral responses. Emphasis will be placed on drug administration, reasoned prescribing practices, and therapeutic drug monitoring. Drug categories and specific preparations which are commonly used in the neonate will be reviewed in tandem with disease specific content.
- Pha 700 Directed Studies Clerkship**4
- Pha 701 Home Health/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
Clerkship experience at an affiliated site. P, 6th year standing.
- Pha 716 Institutional Pharmacy**6
Clerkship experience at an affiliated site. P, 6th year standing.
- Pha 717 Community Pharmaceutical Care Clerkship**4
Clerkship experience in pharmaceutical care in a community pharmacy.
- Pha 718 Advanced Clinical Lab Monitoring**3
Study of clinical laboratory methods and tests with emphasis on drug monitoring and problem solving of drug therapy. Corequisite courses: Pha 718A.
- Pha 718A Advanced Clinical Lab Monitoring Lab**0
Corequisite courses: Pha 718.
- Pha 719 Physical Assessment Lab**1
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
Qualitative and quantitative aspects of the design of therapeutic agents. P, Pha 341 or consent.

- Pha 722 Therapeutics-Geriatric Patient**2
Physiological and psychological aspects of aging with special attention to altered drug requirements. P, 5th year standing.
- Pha 723 Ethics in Healthcare Practice**2
Overview of ethical principles and theory, with emphasis on the professional-client relationship. P, 5th year standing.
- Pha 724 Pharmacoeconomics**2
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
Selected areas covering more advanced concepts in medicinal chemistry, new research techniques. P, Pha 341 or consent.
- Pha 727 U.S. HealthCare Systems**2
An overview of the health care system in the United States and its impact on pharmacy practice will be addressed. Emphasis will be placed on managed care, non-pharmacist health care providers, pharmacoeconomics, drug utilization, and quality assurance and improvement. P, 5th year standing.
- Pha 728 Current Issues in Pharmaceutical Practice**3
Theory and development of pharmaceutical care concepts. Discusses role of a contemporary pharmacy practitioner within the framework of the United States health delivery system. Pharmacy ethics is discussed. P, 5th year standing.
- Pha 729 Pharmaceutical Marketing**2
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
Organ-based approach to the use of patient-specific factors for drug therapy in individualized patient situations. Integrates pathophysiology and drug therapy principles. Corequisite courses: Pha 730A.
- Pha 730A Advanced Pharmacotherapeutics I Lab**0
Corequisite courses: Pha 730.
- Pha 731 Advanced Pharmacotherapeutics II**6
Continuation of 730. P, Pha 730. Corequisite courses: Pha 731A.
- Pha 731A Advanced Pharmacotherapeutics II Lab**0
Corequisite courses: Pha 731.
- Pha 732 Therapeutics – Renal/Fluid and Electrolytes**.....3
Discussion of drug therapy principles for the development of patient specific drug regimens in the areas of renal and fluid and electrolytes. P, 5th year standing.
- Pha 733 Therapeutics – Gastrointestinal and Nutrition**.....3
Discussion of drug therapy principles for the development of patient specific drug regimens in the areas of gastrointestinal disease and nutrition. P, 5th year standing.
- Pha 734 Therapeutics – Endocrine/Reproduction**2
Discussion of drug therapy principles for the development of patient specific drug regimens in the area of endocrine and reproductive medicine. P, 5th year standing.
- Pha 735 Therapeutics – Infectious Disease**3
Discussion of drug therapy principles for the development of patient specific drug regimens in the area of infectious disease principles. P, 5th year standing.
- Pha 736 Therapeutics – Neurology/Psychiatry**.....3
Discussion of drug therapy principles for the development of patient specific drug regiment in the areas of neurology and psychiatric medicine. P, 5th year standing.
- Pha 737 Therapeutics – Cardiopulmonary**.....4
Discussion of drug therapy principles for the development of patient specific drug regimens in the area of cardiopulmonary disease. P, 5th year standing.

Pha 738 Therapeutics – Hematology/Oncology	2
Discussion of drug therapy principles for the development of patient specific drug regimen in the areas of hematology and oncology. P, 5th year standing.	
Pha 739 Therapeutics – Rheumatology/Skin/Skeletal	2
Discussion of drug therapy principles for the development of patient specific drug regimen in the areas of rheumatology, dermatology, and skeletal diseases. P, 5th year standing.	
Pha 740 Advanced Pharmacology	3
An advanced and comprehensive study of the therapeutic and toxicological effects of drugs including the mechanism of action. Emphasis will be placed on their rational application to the treatment of disease. P, Pha 443 or consent.	
Pha 743 Pharmacy Care in the Community	2
Development of the concept of pharmacy care, with emphasis on the pharmacist's role in patient care. Includes discussion of over-the-counter medications.	
Pha 745 Topics in Pharmacology	3
A study of current advanced theories in pharmacology. P, Pha 443 or consent.	
Pha 750 Critical Care Therapeutics	2
Principles of medication use in the critically ill patient. P, 5th year standing.	
Pha 751 Immunotherapeutics	2
Therapeutic use and pharmacology of newer immunologic agents, engineered drugs, and biotechnological products. P, 5th year standing.	
Pha 752 Drugs of Abuse and Addiction	2
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
Diseases and drug-related issues pertaining to women's and children's health. P, 5th year standing.	
Pha 754 Complimentary and Alternative Medicine	2
Discussion of alternative, natural, and homeopathic medicines, with emphasis on their appropriate evaluation and use.	
Pha 755 Research Design and Drug Information	4
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. Corequisite courses: Pha 755A.	
Pha 755A Research Design and Drug Information Lab	0
Corequisite courses: Pha 755.	
Pha 759 Advanced Pharmaceutics	3
Theory and application of compartmental models for the study of the time course of drugs in the body. P, Pha 415 or consent.	
Pha 760 Clinical Pharmacokinetics	3
Advanced pharmacokinetic principles, with emphasis on drug dosing on individual patient basis.	
Pha 765 Topics in Pharmaceutics	3
Selected areas covering more advanced concepts in pharmaceutics, new research techniques. P, Pha 415 or consent.	
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 Clerkship	4
Pha 775 Psychiatry Clerkship	4
Contemporary topics in the pharmaceutical sciences. Required of all graduate students in pharmaceutical sciences. Maximum of two credits.	

Pha 784 Seminar I	1
Discussion of current pharmacy and other health care issues and includes developing and delivering a short presentation. P, 5th year standing.	
Pha 785 Seminar II	1
Continuation of 784, with emphasis on discussion of clinical pharmacy concepts and professional presentations. P, Pha 784.	
Pha 790 Seminar	1
Pha 791 Directed Studies	1-3
In-depth study in a subject area compatible with the student's interests. Instructor's consent required.	
Pha 792 Special Topics in Pharmacy	1-3
Instructor's consent required.	
Pha 798 Thesis in Pharmaceutical Sciences	1-7

Phil (Philosophy)

Undergraduate Courses

Phil 100 Introduction to Philosophy	3
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
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
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
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	2-3
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). P, Phil 313.	
Phil 320 Professional Ethics	3
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
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	3
Crosslisted with Rel 332. Equivalent to Rel 332.	
Phil 370 Philosophy of Religion	3
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. Equivalent to Rel 370.	
Phil 383 Bioethics	4
Crosslisted with Bio 383. Equivalent to Bio 383.	
Phil 423 Political Philosophy (CI)	3
Crosslisted with PolS 461. Equivalent to PolS 461.	

Phil 424 Modern Political Philosophy (CI)	3
Crosslisted with PolS 462. Equivalent to PolS 462.	
Phil 491 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. P, Phil 491.	
Phil 492 Topics in Philosophy	1-5
Selected topics of current interest in the discipline.	
Phil 494 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

Phil 591 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. P, Phil 591.	

Phys (Physics)

Undergraduate Courses

Phys 101 Survey of Physics	4
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. (Credit will not be allowed for both Phys 101 and 111-113 or 211-213.) P, Math 102 or Math 115. Corequisite courses: Phys 102.	
Phys 102 Survey of Physics Lab	0
Corequisite courses: Phys 101.	
Phys 111 Introduction to Physics I	4
First semester of a year course, primarily for students in the biological, agricultural, and health sciences. Mechanics, heat, wave motion. (Credit will not be allowed in both Phys 111-113 and 211-213.) P, Math 102 or Math 115. Corequisite courses: Phys 112.	
Phys 112 Introduction to Physics I Lab	0
Corequisite courses: Phys 111.	
Phys 113 Introduction to Physics II	4
Continuation of Phys 111. Electricity, light, atomic and nuclear physics. P, Phys 111. Corequisite courses: Phys 114.	
Phys 114 Introduction to Physics II Lab	0
Corequisite courses: Phys 113.	
Phys 185 Introduction to Astronomy	3
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
For students in physical science and engineering, mechanics and thermodynamics. (Credit will not be allowed in both Phys 111-113 and 211-213.) Corequisite courses: Phys 212, Math 125.	
Phys 212 University Physics I Lab	0
Corequisite courses: Phys 211.	
Phys 213 University Physics II	4
Continuation of Phys 211. Electricity, waves, and optics. P, Phys 211. Corequisite courses: Phys 214.	
Phys 214 University Physics II Lab	0
Corequisite courses: Phys 213.	

Phys 312 Measurement Theory and Experiment Design (CI)	2
Selected experiments from various branches of physics. Emphasis on precision and analysis of experimental error. Corequisite courses: Phys 312A.	

Phys 312A Measurement Theory and Experiment Design Lab (CI)	0
Corequisite courses: Phys 312.	

Phys 314 Advanced Laboratory I (CI)	1
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
Atomic and nuclear structure with emphasis on impact of 20th century developments on science and engineering. P, 213 or 113 and consent.	

Phys 341 Elementary Thermodynamics (CI)	2
Thermodynamic systems from a macroscopic approach, emphasizing equilibrium thermodynamics and its consequences. P, Phys 213, Math 225.	

Phys 343 Introduction to Statistical Physics	2
Statistical approach to microscopic systems, first and second laws of thermodynamics, entropy. P, Phys 331 Phys 341 take 1 course take Math 321 Math 327 or Math 331.	

Phys 351 Classical Mechanics (CI)	4
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, Phys 113 or Phys 213. Corequisite courses: Math 321.	

Phys 361 Optics (CI)	3
Intermediate course in geometrical and physical optics with emphasis on physical optics. Analysis of refraction phenomena, thick lenses, wave nature of light, interference, diffraction, and polarization. P, Phys 213 or Phys 113 take Math 225.	

Phys 412 Advanced Lab II (CI)	1
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 (CI)	4
Principles of electricity and magnetism, with applications to dielectric and magnetic materials. Development of Maxwell's equations, and applications. P, Phys 213, Math 321.	

Phys 431 Introduction to Astrophysics	3
The study of stars, star clusters and galaxies. This will include the 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, Phys 331.	

Phys 433 Nuclear and Elementary Particle Physics	3
Radioactivity, nuclear spectra and structure, nuclear models, elementary particle theories and high energy physics. P, Phys 471.	

Phys 435 Introduction to Nuclear Engineering	3
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
Electronic processes with reference to electrical properties of metals, semiconductors and insulators. P, Phys 331, Math 321.	

Phys 441 Science of Solids	3
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.	
Phys 464 Senior Design I (CI)	1
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.	
Phys 465 Senior Design II (CI).....	2
Capstone senior design project. The student will construct, assemble, and test the project they designed in 464. P, Phys 464. Corequisite courses: Phys 465A.	
Phys 465A Senior Design II Research	0
Corequisite courses: Phys 465.	
Phys 471 Quantum Mechanics	4
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
P, Phys 471.	
Phys 481 Mathematical Physics	4
The formulation and solution of problems in the various fields of physics. Topics chosen from: series solutions, special functions, computational methods, complex variables, multi-variate methods and transform methods. P, 331, Math 331 or consent.	
Phys 490 Physics Colloquium (CI).....	1
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 491 Special Problems in Physics.....	1-3
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 492 Special Topics	1-3
Special problems. Six total credits may be taken with maximum of 3 credits at one time. P, consent. Phys 492.	
Phys 494 Internship	1-4
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.	
Phys 496 Field Experience	1-4
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.	
Phys 497 Cooperative Education	1-4
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
Radioactivity, nuclear spectra and structure, nuclear models, elementary particle theories and high energy physics. P, Phys 471.	
Phys 441-541 Science of Solids	3
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 590 Seminar	0-1
Phys 598 Photonics	3
Phys 691 Special Problems	1-3
Phys 692 Special Topics	1-3
Phys 698 Photonics	3
Phys 721 Electrodynamics I	3
Phys 723 Electrodynamics II.....	3
Phys 743 Statistical Mechanics	3
Phys 751 Theoretical Mechanics	3
Phys 771 Quantum Mechanics I	3
Phys 773 Quantum Mechanics II.....	3
Phys 775 Tensors and General Relativity	3
Phys 779 Group Theory Quantum Mechanics	3
Phys 780 Theoretical Physics	3-18
Phys 787 Research.....	1-9
Phys 788 Research Or Design Paper	1-2
Phys 791 Special Problems.....	1-3
Phys 792 Special Topics	1-3
Phys 798 Thesis.....	1-7
PhSt 692 Physics Topics for Educators	1-12

Plan (Planning)

Undergraduate Courses

Plan 471 Principles of State, Regional and Community Planning	3
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 Techniques of State, Regional and Community Planning	3
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, Plan 471.	

Dual Numbered Courses

Plan 471-571 Principles of State, Regional and Community Planning	3
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 Planning3
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, Plan 571.

PolS (Political Science)

Undergraduate Courses

PolS 100 American Government.....3
Origins, development and operation of American government at the national level. Concentration on political institutions. (Credit not allowed for both 100 and 101.) Equivalent to PolS 101.

PolS 101 American Government Honors3
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). Equivalent to PolS 100.

PolS 102 American Political Issues3
Current major issues in American politics, governmental policies and various alternatives being considered in Congress.

PolS 165 Political Ideologies3
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 and Local Government.....3
Legal status, forms and functions, interrelationships, current trends and suggested reforms.

PolS 253 Current World Problems3
An examination of several current world problems with a focus on creating world order. Course content varies to accommodate current issues.

PolS 301 Introduction to Law and Legal Studies.....3
An introduction to the law, its nature and processes, and a survey of selected laws and regulations that currently affect society. This course is ideal for students thinking of law school as the student will be exposed to different laws and teaching styles of law professors. Students will have an opportunity to practice legal skills through writing exercises. **NOTE:** This course is a junior level course and is **not** advised for students who are not at least of junior standing. Students who take this course as sophomores likely will not have adequate preparation for the rigors of this course and as such take the course at their own risk.

PolS 305 Women and Politics3
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. Crosslisted with WmSt 305. Equivalent to WmSt 305.

PolS 310 Tribal Government and Politics3
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. Crosslisted with AIS 310. Equivalent to AIS 310.

PolS 316 South Dakota Legislative Issues.....1
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 Administration3
United States public administration; basic elements of administration: personnel, budgeting, planning, organization and management; and importance of federal executives in shaping public policy.

PolS 330 Constitutional Law (CI).....3
Structure and jurisdiction of federal judiciary. Legal basis of American federalism. Constitutional powers of American Presidency, United States Congress and state governments as interpreted through United States Supreme Court decisions. Reasoning of the Court and evolutionary nature of American constitutional law.

PolS 331 Civil Rights and Liberties (CI).....3
Individual First Amendment guarantees, constitutional rights of the accused in the criminal process and equal protection of the law as interpreted through United States Supreme Court decisions. Crosslisted with CJus 331. Equivalent to CJus 331.

PolS 341 Europe Democratic Governments.....3
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 (CI)3
Study of government, politics, and some aspects of society in Russia and the region; emphasis on current politics.

PolS 345 Canada3
Political institutions and patterns; The Constitution and federalism; Quebec and Canada; U.S.-Canadian relations.

PolS 347 Latin American Politics.....3
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 Relations3
How nations/states behave and why they behave as they do in their relations with each other.

PolS 352 European Union.....3
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.

PolS 428 Personnel and Budgetary Administration.....3
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.

PolS 432 The American Presidency (CI).....3
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.

PolS 433 Administrative Law and Government.....3
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 Campaigns3
United States political parties; functions, organization, techniques and significance of parties; varieties of state and local systems; and behavior of the electorate and interest groups.

PolS 436 The Mass Media and Politics.....3
Perspectives on the relationship between the press and American politics, including the media as a political institution, press relations with Congress and the presidency, and media effects on public opinion. Both traditional media outlets (print and broadcast) and new media sources (e.g., cable TV and the web) will be examined.

PolS 438 The Legislative Process (CI).....3
Congress and state legislatures: functions, organization, leadership, procedures, and participants. Influence of chief executives, bureaucracies, interest groups, and political parties.

PolS 446 China and Asian Politics3
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 Organization.....3
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 (CI)3
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. Equivalent to Phil 423.

PolS 462 Modern Political Philosophy (CI)3
Same approach as 461. Major political theorists after Hobbes including Locke, Rousseau, Mill, Marx, Nietzsche, and others. Crosslisted with Phil 424. Equivalent to Phil 424.

PolS 490 Seminar in Political Science1-3
Selected Political Science fields. May be repeated until 6 credits are earned. P, PolS 490.

PolS 491 Special Problems1-3
Individual guided research. May be repeated until 6 credits are earned. Instructor's consent required. P, PolS 492.

PolS 492 Topics in Political Science.....1-5
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.

PolS 494 Internship in Political Science.....1-12
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. Instructor's consent required. P, PolS 495.

Dual Numbered Courses

PolS 492-592 Topics in Political Science1-5
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

PolS 591 Special Problems1-3
Instructor's consent required.

PR (Park Management)

Undergraduate Courses

PR 101 Parks and Society.....3
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
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. Corequisite courses: PR 202A.

PR 202A Outdoor Recreation Resource Management Lab0
Corequisite courses: PR 202.

PR 300 Park Operations and Facility Management (CI).....3
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. Corequisite courses: PR 300A.

PR 300A Park Operations and Facility Management Lab (CI).....0
Corequisite courses: PR 300.

PR 301 Park Interpretation (CI)3
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. Corequisite courses: PR 301A.

PR 301A Park Interpretation Lab (CI).....0
Corequisite courses: PR 301.

PR 302 Commercial Recreation Areas (CI).....3
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 (CI).....3
The basics of environmental factors which control the growth of trees and forests and how forests in North America are managed. Corequisite courses: PR 303A.

PR 303A Forest Ecology and Management Lab (CI).....0
Corequisite courses: PR 303.

PR 401 Advanced Park Management (CI)3
Current philosophies, advanced techniques, and synthesis of park management principles. P, 101, 202, 300 and 301 or by consent. Corequisite courses: PR 401A.

PR 401A Advanced Park Management Lab (CI).....0
Corequisite courses: PR 401.

PR 491 Special Problems.....1-2
Directed independent study into specific problems or topics related to park and recreation resource management. Maximum of 4 credits. P, written consent of instructor.

PR 492 Special Topics1-4
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 Internship**1-12
 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 written consent of instructor. 3-12 credits per semester.
- PR 496 Field Experience**1-12
 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 written consent of instructor. 3-12 credits per semester.
- PR 497 Cooperative Education**.....1-12
 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.

PS (Plant Science)

Undergraduate Courses

- PS 101 Opportunities in Plant Science**.....1
 An introduction to the diversity of disciplines within the Plant Science Department; and overview of career opportunities; resume development; and career goal setting for professions within the plant sciences.
- PS 103 Crop Production**2
 Practices and principles; crop distribution; growth processes; response to environment. Grain and forage crops, including their distribution, use, improvement, growth, harvesting, and marketing. Corequisite courses: PS 103A.
- PS 103A Crop Production Lab**1
 Corequisite courses: PS 103.
- PS 213 Soils**2
 Development and classification of soils; physical, biological, and chemical properties; management aspects, including water, fertility, and erosion; soils in the environment. P, 1 group (take Chem 106, Chem 106L or take Chem 112, Chem 112L). Corequisite courses: PS 213A.
- PS 213A Soils Lab**1
 Corequisite courses: PS 213.
- PS 223 Principles of Plant Pathology**2
 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, 1 group (take Bio 103, Bio 104 or take Bio 153, Bio 154 or take Bot 201, Bot 202). Corequisite courses: PS 223A.
- PS 223A Principles of Plant Pathology**1
 Corequisite courses: PS 223.
- PS 243 Geology**3
 The earth's crystalline and sedimentary materials, their characteristics and economic uses together with soil development and water flow through these materials are examined as a basis for conservative management of the earth's surface. The hazards of flooding, earthquakes, volcanism, mass movement, etc. are also studied from a minimization-of-risk perspective.
- PS 244 Geology Lab**1
 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, PS 243.
- PS 303 Seed Technology**.....1
 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, 1 group (take PS 103, PS 103A or take Ho 111, Ho 111A). Corequisite courses: PS 303A.
- PS 303A Seed Technology Lab**.....1
 Corequisite courses: PS 303.
- PS 305 Insect Biology**2
 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. Corequisite courses: PS 305A.
- PS 305A Insect Biology Lab**1
 Corequisite courses: PS 305.
- PS 307 Insect Pest Management**2
 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. Corequisite courses: PS 307A.
- PS 307A Insect Pest Management Lab**1
 Corequisite courses: PS 307.
- PS 308 Grain Grading**1
 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, PS 103, PS 103A. Corequisite courses: PS 308A.
- PS 308A Grain Grading Lab**.....1
 Corequisite courses: PS 308.
- PS 310 Soil Geography and Land Use Interpretation (CI)**.....2
 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. Crosslisted with Geog 310. Equivalent to Geog 310. P, 1 group (take PS 213, PS 213A or take Geog 132, Geog 132A). Corequisite courses: PS 310A.
- PS 310A Soil Geography and Land Use Interpretation Studio (CI)**1
 Equivalent to Geog 310A. Corequisite courses: PS 310.
- PS 312 Grain and Seed Production and Processing**2
 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, 1 group (take PS 103, PS 103A or take Ho 111, Ho 111A).
- PS 313 Forage Crop and Pasture Management**2
 Grasses and legumes; their establishment, management, and use for hay, pasture, and silage. P, PS 103, PS 103A. Corequisite courses: PS 313A.
- PS 313A Forage Crop and Pasture Management Lab**1
 Corequisite courses: PS 313.

- PS 320 Crop Judging**1-2
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, PS 103, PS 103A, PS 308, PS 308A.
- PS 321 Soil Judging**.....1
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, PS 213, PS 213A.
- PS 323 Soil Fertility and Fertilizers**.....3
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, PS 213, PS 213A.
- PS 333 Diseases of Field Crops (CI)**2
Extensive survey of diseases affecting major food, fiber, and oilseed crops of the world. Emphasis is on diagnosis and disease management strategies. P, PS 223, PS 223A. Corequisite courses: PS 333A.
- PS 333A Diseases of Field Crops Lab (CI)**1
Corequisite courses: PS 333.
- PS 334 Diseases of Horticultural Crops**2
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, PS 223, PS 223A. Corequisite courses: PS 334A.
- PS 334A Diseases of Horticultural Crops Lab**1
Corequisite courses: PS 334.
- PS 343 Weed Science (CI)**.....2
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, 1 group (take PS 103, PS 103A or take Ho 111, Ho 111A, Chem 108, Chem 108L or take Chem 120, Chem 120L or take Chem 326, Chem 327). Corequisite courses: PS 343A.
- PS 343A Weed Science Lab (CI)**.....1
Corequisite courses: PS 343.
- PS 362 Environmental Soil Management (CI)**2
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, PS 213, PS 213A. Corequisite courses: PS 362A.
- PS 362A Environmental Soil Management Lab (CI)**1
Corequisite courses: PS 362.
- PS 373 Rural Real Estate Appraisal**.....2
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. Crosslisted with AgEc 373. Equivalent to AgEc 373. P, PS 213, PS 213A, AgEc 271, AgEc 271A. Corequisite courses: PS 373A.
- PS 373A Rural Real Estate Appraisal Lab**1
Corequisite courses: PS 373.
- PS 383 Principles of Crop Improvement (CI)**2
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. Crosslisted with Ho 383. Equivalent to Ho 383. P, 1 group (take PS 103, PS 103A or take Ho 111, Ho 111A, Bio 103, Bio 104 or take Bio 153, Bio 154 or take Bot 201, Bot 202). Corequisite courses: PS 383A.
- PS 383A Principles of Crop Improvement Lab (CI)**1
Equivalent to Ho 383A. Corequisite courses: PS 383.
- PS 412 Environmental Soil Chemistry**3
Fundamentals of soil chemical properties and processes important for the sound management of soil resources. Topics include sorption/desorption of inorganic and organic compounds, bioavailability of nutrients and contaminants, oxidation/reduction; phase equilibria, soil organic matter, soil mineralogy, ion exchange, and saline/sodic soils. P, 1 group (take PS 213, PS 213A, Chem 108, Chem 108L or take Chem 120, Chem 120L).
- PS 415 Mycology**.....2
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. Equivalent to Bio 415. Corequisite courses: PS 415A.
- PS 415A Mycology Lab**.....1
Equivalent to Bio 415A. Corequisite courses: PS 415.
- PS 420 Biological Control of Arthropods**.....2
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, PS 305, PS 305A. Corequisite courses: PS 420A.
- PS 420A Biological Control of Arthropods Lab**.....1
Corequisite courses: PS 420.
- PS 421 Soil Microbiology**2
Microbial species of agricultural soils, environmental factors affecting their numbers and activity, and biochemical changes brought about by these organisms. Crosslisted with Micr 421. Equivalent to Micr 421. P, 1 group (take Bio 151, Bio 152, Bio 153, Bio 154 or take Bot 201, Bot 202). Corequisite courses: PS 421A.
- PS 421A Soil Microbiology Lab**1
Equivalent to Micr 421A. P, 1 group (take Bio 151, Bio 152, Bio 153, Bio 154 or take Bot 201, Bot 202). Corequisite courses: PS 421.
- PS 431 Applied Insect Ecology**2
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, PS 305, PS 305A. Corequisite courses: PS 431A.
- PS 431A Applied Insect Ecology Lab**1
Corequisite courses: PS 431.
- PS 440 Crop Management with Precision Farming**2
Principles of precision farming for crop production will be the focus. An integrated approach to crop management based on global positioning, geographic information systems, soil testing and fertility recommendations, spatial data storage, and data interpretation for farming and land use decisions will be covered. The use of spatial statistics to make site specific management recommendations will be discussed. P, 1 group (take PS 223, PS 223A, PS 305, PS 305A or take PS 307, PS 307A, PS 323, PS 343, PS 343A, Stat 281). Corequisite courses: PS 440A.

- PS 440A Crop Management with Precision Farming Lab**.....1
Corequisite courses: PS 440.
- PS 446 Agroecology (CI)**.....3
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, 1 group (take PS 213, PS 213A, Bio 101, Bio 102 or take Bio 151, Bio 152).
- PS 450 Field Study in Plant Disease and Diagnosis**.....1
Diagnosis of diseases in field and horticultural crops; observing and studying the relationships among hosts, pathogens, and their environments. Emphasis on field disease recognition and laboratory diagnostic techniques. Alternate years. P, instructor's consent required. Corequisite courses: PS 450A.
- PS 450A Field Study in Plant Disease and Diagnosis Lab**1
Corequisite courses: PS 450.
- PS 453 Advanced Genetics**.....3
Procedures in genetic studies as they relate to molecular and classical genetic applications. Crosslisted with Bio 453-553. Equivalent to Bio 453. P, Bio 371.
- PS 462 Molecular Biology I**.....2
Charge, partitioning migration of molecules; protein structure, enzymes; DNA structure and properties, prokaryotic 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. Crosslisted with Bio 462-562. Equivalent to Bio 462. P, Micr 436, Chem 361, Chem 361L.
- PS 464 Molecular Biology II**2
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. Crosslisted with Bio 464-564. Equivalent to Bio 464. P, 1 group (take PS 462 or take Bio 462).
- PS 465 Molecular Biology II Lab**2
Screening recombinant DNA libraries; DNA sequencing; analysis of proteins; detection of proteins; RNA transfer and hybridization analyses; use of nucleic acid and protein databases. Crosslisted with Bio 465-565. Equivalent to Bio 465. P, 1 group (take PS 462 or take PS 464, Bio 462 or take Bio 464).
- PS 475 Water Quality in Agriculture (CI)**3
Equivalent to Bio 475. P, 1 group (take Chem 106, Chem 106L or take Chem 112, Chem 112L or take Bio 101, Bio 102 or take Bio 151, Bio 152).
- PS 480 Environmental Stress Physiology**3
Physiology and cellular response of plants to environmental stresses. Crosslisted with Ho 480-580 and Bio 480-580. Equivalent to Bio 480, Ho 480. P, Bot 327, Bot 327A.
- PS 483 Irrigation – Crop and Soil Practices**.....3
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, 1 group (take PS 213, PS 213A, Math 102 or take Math 115 or take Math 123).
- PS 490 Undergraduate Seminar (CI)**1
Review of literature and original investigations in field crops, entomology, plant pathology, and soils with written and oral reports.
- PS 491 Special Problems**1-4
Assigned readings, research, and written reports. Limit of four hours for B.S. degree. P, instructor's consent required.
- PS 492 Special Topics in Plant Science**1-3
Concentrated study, work, or discussion of a particular field in the plant science disciplines. Subject areas vary from semester to semester. Based on interest of students and professionals needing additional study and investigation of topics for which there is a current need but which are not part of a regular class. Offered on sufficient demand. P, consent of instructor.
- PS 492A Special Topics in Plant Science Lab**.....0
- PS 497 Cooperative Education/Internship in Plant Science (CI)**.....1-2
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. Instructor's consent required.
- ### Dual Numbered Courses
- PS 412-512 Environmental Soil Chemistry**.....3
Fundamentals of soil chemical properties and processes important for the sound management of soil resources. Topics include sorption/desorption of inorganic and organic compounds, bioavailability of nutrients and contaminants, oxidation/reduction, phase equilibria, soil organic matter, soil mineralogy, ion exchange, and saline/sodic soils. P, 1 group (take PS 213, PS 213A, Chem 108, Chem 108L or take Chem 120, Chem 120L).
- PS 415-515 Mycology**2
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. Equivalent to Bio 515. Corequisite courses: PS 415A-515A.
- PS 415A-515A Mycology Lab**1
Equivalent to Bio 515A. Corequisite courses: PS 415-515.
- PS 420-520 Biological Control of Arthropods**2
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, PS 305, PS 305A. Corequisite courses: PS 420A-520A.
- PS 420A-520A Biological Control of Arthropods Lab**.....1
Corequisite courses: PS 420-520.
- PS 421-521 Soil Microbiology**2
Microbial species of agricultural soils, environmental factors affecting their numbers and activity, and biochemical changes brought about by these organisms. Crosslisted with Micr 521. Equivalent to Micr 521. P, 1 group (take Bio 151, Bio 152, Bio 153, Bio 154 or take Bot 201, Bot 202). Corequisite courses: PS 421A-521A.
- PS 421A-521A Soil Microbiology Lab**.....1
Equivalent to Micr 521A. P, 1 group (take Bio 151, Bio 152, Bio 153, Bio 154 or take Bot 201, Bot 202). Corequisite courses: PS 421-521.
- PS 431-531 Applied Insect Ecology**.....2
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, PS 305, PS 305A. Corequisite courses: PS 431A-531A.
- PS 431A-531A Applied Insect Ecology Lab**.....1
Corequisite courses: PS 431-531.

PS 446-546 Agroecology	3
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, 1 group (take PS 213, PS 213A, Bio 101, Bio 102 or take Bio 151, Bio 152).	
PS 450-550 Field Studies in Plant Disease Diagnosis	1
Diagnoses of diseases in field and horticultural crops; observing and studying the relationships among hosts, pathogens, and their environments. Emphasis on field disease recognition and laboratory diagnostic techniques. Alternate years. P, consent. Corequisite courses: PS 450A-550A.	
PS 450A-550A Field Studies in Plant Disease Diagnosis Lab	1
Corequisite courses: PS 450-550.	
PS 453-553 Advanced Genetics	3
Procedures in genetic studies as they relate to molecular and classical genetic applications. Crosslisted with Bio 453-553. Equivalent to Bio 453-553. P, Bio 371.	
PS 462-562 Molecular Biology I	2
Charge, partitioning migration of molecules; protein structure, enzymes; DNA structure and properties, prokaryotic 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. Crosslisted with Bio 462-562. Equivalent to Bio 462-562. P, Micr 436, Chem 361, Chem 361L.	
PS 464-564 Molecular Biology II	2
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. Crosslisted with Bio 464-564. Equivalent to Bio 464-564. P, Bio 462-562 or PS 462-562.	
PS 465-565 Molecular Biology II Lab	2
Screening recombinant DNA libraries; DNA sequencing; analysis of proteins; detection of proteins; RNA transfer and hybridization analyses; use of nucleic acid and protein databases. Crosslisted with Bio 465-565. Equivalent to Bio 465-565. P, PS 462-562 or Bio 462-562 take PS 564-564 or Bio 464-564.	
PS 480-580 Environmental Stress Physiology	3
Physiology and cellular response of plants to environmental stresses. Crosslisted with Ho 480-580 and Bio 480-580. Equivalent to Bio 480-580, Ho 480-580. P, Bot 327, Bot 327A.	
PS 492-592 Special Topics	1-6
Concentrated study, work, or discussion of a particular field in the plant science disciplines. Subject areas vary from semester to semester. Based on interest of students and professionals needing additional study and investigation of topics for which there is a current need but which are not part of a regular class. Offered on sufficient demand. P, consent of instructor.	
PS 492A-592A Special Topics Lab	1-6
Graduate Courses	
PS 704 Viral and Bacterial Disease Plants	2
PS 704A Viral and Bacterial Disease Plants Lab	2
PS 714 Genetics of Disease Resistance and Host-Plant Pathogen Interaction	3
PS 714A Genetics of Disease Resistance and Host-Plant Pathogen Interaction Lab	1
PS 720 Insect Anatomy and Physiology	2
PS 720A Insect Anatomy and Physiology Lab	1
PS 721 Integrated Crop Pest Management	3

PS 722 Behavioral Management of Insects	2
PS 722A Behavior Management of Insects Lab	1
PS 732 Field Studies in Pedology	2
PS 733 Advanced Soil Genesis	3
PS 741 Crop Breeding Techniques	1
PS 743 Physical Properties of Soil	3
PS 744 Soil N, P and K	3
PS 745 Soil/Plant Secondary Macronutrients and Micronutrients	2
PS 746 Plant Breeding	3
PS 754 Chemical Properties of Soil	3
PS 756 Quantitative Genetics	3
PS 761 Taxonomy of Insects	3
PS 761A Taxonomy of Insects Lab	1
PS 763 Environmental and Physiological Aspects of Crop Production	2
PS 773 Cytogenetics	2
PS 773A Cytogenetics Lab	1
PS 783 Crop-Water Relationships	2
PS 785 Soil and Plant Analysis	2
PS 785A Soil and Plant Analysis Lab	1
PS 786 Biometrical Genetics	3
PS 787 Advanced Plant Breeding	3
PS 791 Advanced Special/Research Problems	1-2
PS 790 Plant Science Graduate Seminar	1
PS 792 Special Topics	1-6
PS 798 Thesis	1-7
PS 898D Dissertation-Ph.D.	1-7

Psyc (Psychology)

Undergraduate Courses

Psyc 101 General Psychology	3
Concepts of development, learning, motivation, emotion, frustration, personality, and other basic behavioral processes. Prerequisite for all courses in psychology except 102. Note: credit will not be given for both Psyc 101 and 102. Equivalent to Psyc 102.	
Psyc 102 Introduction to Psychology	4
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. Equivalent to Psyc 101.	
Psyc 202 Advanced General Psychology	3
Contemporary research related to psychological concepts expounded in Psyc 101 and 102. P, Psyc 101 or Psyc 102.	
Psyc 290 Fundamentals of Professional Psychology	3
This course will guide students in preparing for a career in psychology by reviewing career options and providing intense training in skills necessary for a successful career in professional psychology (finding information, writing, preparing and delivering oral presentations). For majors only. P, Psyc 101 or Psyc 102.	

- Psyc 291 Critical Thinking in Psychology**.....3
This course involves an intensive look at the branches of and topics in psychology with particular emphasis on critical thinking applied to controversial issues. Critical thinking is clear, accurate, and defensible thinking; thus, this course is designed to help students develop the intellectual tools they need to learn from and analyze information independently. This course meets the Critical Thinking Requirement in Psychology. P, Psyc 101 or Psyc 102.
- Psyc 292 Pseudoscience and Psychology**3
Pseudoscience and Psychology will identify the characteristics of conventional sciences versus what is called pseudoscience, and critically examine disputed areas in psychology and human behavior. Special emphasis is placed on how to critically evaluate anecdotes and published reports of anomalous human behavior, beliefs, and experiences. This course meets the Critical Thinking Requirement in Psychology. P, Psyc 101 or Psyc 102.
- Psyc 301 Sensation and Perception**.....3
Examination of processes of sensation and perception including sensory mechanisms, cognitive analysis of sensory information, and attentional, motivational and conditioning effects on perception. P, Psyc 101 or Psyc 102.
- Psyc 302 Psychological Investigation (CI)**.....3
Methods of investigating human and animal behaviors. P, Stat 281 take Psyc 101 or Psyc 102. Corequisite courses: Psyc 308.
- Psyc 303 Experiments in Psychology (CI)**3
Review of representative past research in experimental psychology and execution of class laboratory projects. P, 302 or consent. Corequisite courses: Psyc 309.
- Psyc 305 Simple Learning and Conditioning**3
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, Psyc 101 or Psyc 102.
- Psyc 306 Human Learning and Cognitive Behavior**3
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, Psyc 101 or Psyc 102.
- Psyc 308 Psychological Investigations Lab**1
Corequisite courses: Psyc 302.
- Psyc 309 Experiments in Psychology Lab**.....1
Corequisite courses: Psyc 303.
- Psyc 315 Research Methods in Psychology (CI)**.....3
Overview of research methodology and literature for Psychology majors in the Applied or Psychological Services curricula. P, Stat 281, take Psyc 101 or Psyc 102.
- Psyc 324 Psychology of Aging**3
Focuses on the theories, research and practice concepts relevant to psychological factors in the aging process. Topics covered include cognition, personality, and death and dying. P, Psyc 101 or Psyc 102.
- Psyc 327 Child Psychology**3
Physical, social, emotional and intellectual aspects of child development. May be counted as an education elective. P, Psyc 101 or Psyc 102.
- Psyc 331 Business and Industrial Psychology**3
Application of psychological principles to such problems as employee selection, supervision, job satisfaction, work efficiency and human engineering. P, Psyc 101 or Psyc 102.
- Psyc 356 Psychological Assessment**.....3
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, Psyc 101 or Psyc 102.
- Psyc 357 Psychological Therapies**.....3
Traditional and contemporary methods of psychotherapy. Interviewing techniques and the professional assistant's role. P, Psyc 101 or Psyc 102.
- Psyc 358 Behavior Modification**.....3
Principles of learning applied to human behavior modification. P, Psyc 101 or Psyc 102.
- Psyc 362 Theories of Personality**.....3
Major personality theories, including psychoanalytic, stimulus-response and constitutional formulations. P, Psyc 101 or Psyc 102.
- Psyc 366 Psychological Gender Issues**.....3
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. Crosslisted with WmSt 366. Equivalent to WmSt 366. P, Psyc 101 or Psyc 102.
- Psyc 390 Psychology Seminar (CI)**1
Current employment trends and developments within the profession. Required of all majors. P, senior standing or consent.
- Psyc 409 History and Systems of Psychology**3
Origins and channels of psychological thought, from the British empiricists through major contemporary developments. P, Psyc 101 or Psyc 102.
- Psyc 411 Physiological Psychology**3
Role of physiological mechanisms in behavior. Nervous, biochemical and muscular systems that control or modify human and animal adjustment. P, Psyc 101 or Psyc 102.
- Psyc 414 Drugs and Behavior**.....3
Effects of psychoactive drugs on human behavior. History of social drug use. P, Psyc 101 or Psyc 102.
- Psyc 441 Social Psychology**.....3
Basic principles, concepts and methods utilized in analyzing individual and group interactions. P, Psyc 101 or Psyc 102.
- Psyc 442 Health Psychology**3
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, Psyc 101 or Psyc 102.
- Psyc 451 Abnormal Behavior**3
Causative factors, symptoms and treatment of major forms of abnormal behavior, including neurosis, psychosis and the psychophysiological disorders. P, Psyc 101 or Psyc 102.
- Psyc 491 Problems in Psychology**1-3
Independent investigations. May be repeated for a total of 6 credits. P, 101 or 102, consent of a supervising staff member. Instructor's consent required. Take Psyc 492.
- Psyc 492 Topics in Psychology**1-5
An intensive examination of significant psychological issues, themes, or problems. May be repeated as topic changes for a total of 8 credits. P, Psyc 101 or Psyc 102.
- Psyc 494 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. Will not count toward minimum credit requirements in the major. Instructor's consent required.
- Psyc 496 Field Experience**.....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. Will not count toward minimum credit requirements in the major. Instructor's consent required.

Dual Numbered Courses

Psyc 492-592 Topics in Psychology1-5
An intensive examination of significant psychological issues, themes, or problems. May be repeated as topic changes for a total of 8 credits. P, Psyc 101 or Psyc 102.

Graduate Courses

Psyc 591 Special Problems in Psychology1-4

PT (Physical Therapy)

Undergraduate Courses

PT 142 Introduction to Physical and Occupational Therapy1
Introduces students to the professions of physical and occupational therapy.

PT 491 Special Problems in Sports Medicine1-3
P, instructor's consent required.

PT 494 Internship1-12

PT 496 Field Experience1-12
See HPER 496. Instructor's consent required.

Rang (Range Science)

Undergraduate Courses

Rang 205 Introduction to Range Management3
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. Corequisite courses: Rang 205A.

Rang 205A Introduction to Range Management Lab0
Corequisite courses: Rang 205.

Rang 210 Range Plant Identification2
Instruction and practice in the recognition of important native and introduced range plants of North America. Corequisite courses: Rang 210A.

Rang 210A Range Plant Identification Lab0
Corequisite courses: Rang 210.

Rang 215 Introduction to Integrated Ranch Management3
This course introduces the basic principles of ranching and the food and fiber system. Students will be exposed to the complexities of modern agricultural production systems. Topics include: natural resources as the basis for successful ranching; the family as the major supplier of labor and capital; animal and agronomic production systems; economic and financial forces; risk and opportunity; agricultural policy and law; the decision-making process; and stress as the driving force of change. Students will incorporate outside readings into discussions and practice planning exercises held during lab sessions.

Rang 321 Wildland Ecosystems (CI)3
Structure, function and multiple-use management of the major wildland ecosystems of North America. Ecological concepts and renewable resource management strategies will be examined.

Rang 325 Measurement Topics (CI)3

This course will be offered yearly. The two sections will be offered in alternate summers, scheduled independent of regular summer sessions. May be repeated for a total of 6 credits, but only if both sections are taken.

Section 1: Natural Resource Measurements: Two week field course, with reports and assignments due within one month of formal course completion. Principles of sampling, field sampling methods, analysis of data and problem solving. Emphasis will be on measurement of important plant, animal, and climatic attributes, and on factors important in interpretation of that information. Course will provide substantial field experience, as well as experience using computers to analyze data and develop scientific reports. P, Stat 281, or consent of instructor.

Section 2: Rangeland Analysis and Monitoring: Two week field course, with reports and assignments due within one month of formal course completion. Emphasis will be on a variety of methods for evaluating rangeland "health," range condition, successional status, and trend, and for monitoring rangelands, including rationale, establishment of monitoring sites, monitoring methods, and analysis of data. Students will gain hands-on experience in field sampling, data collection, data analysis, and report writing. P, Stat 281, or consent of instructor. Corequisite courses: Rang 325A.

Rang 325A Measurement Topics Lab (CI)0
Corequisite courses: Rang 325.

Rang 400 Judging Teams1

Section 4-Range Plant ID1 S
Instruction and practice in identification of important range plants of North America. Section 5 – URME Instruction and practice in general range science knowledge and problem solving. Participation in the national Undergraduate Range Management Exam (URME) contest. P, 205 or 215 or consent of instructor.

Rang 415 Range Improvement and Plant-Herbivore

Interactions (CI)3
Management of rangelands with fire, herbicides, biocontrol agents, mechanical treatment, and livestock grazing. Plant herbivore interactions in relation to vegetation management for weed control, wildlife habitat improvement, soil protection and watershed improvement. Format includes lectures followed by field trips to examine rangelands managed using methods discussed. Scheduled during summer, independent of regular summer session.

Rang 421 Grassland Fire Ecology3
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 use 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; Crosslisted with WL 421-521. Equivalent to WL 421. Corequisite courses: Rang 421A.

Rang 421A Grassland Fire Ecology Lab0
Instructor's consent required. Equivalent to WL 421A. Corequisite courses: Rang 421.

Rang 485 Advanced Integrated Ranch Management (CI)3
A capstone course that requires students to integrate knowledge from previous coursework and experiences. Focus is on decision-making, analysis, and planning with respect to ranching enterprises. A key component of the course will be an extensive ranch planning exercise, which integrates the many factors influencing ranch sustainability and which incorporates the use of decision-support tools to evaluate management strategies. P, 215, senior standing or consent. Corequisite courses: Rang 485A.

Rang 485A Advanced Integrated Ranch Management

Lab (CI)0
P, Rang 215. Corequisite courses: Rang 485.

Rang 491 Research Problems in Range Science1-3
Investigation of problems in Range Science with results submitted as a technical paper.

Rang 492 Special Topics1-3
Advanced study of one or more selected topics in Range Science including Grassland Fire Ecology and Grazing Management.

Rang 494 Internship1-12
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.

Rang 497 Cooperative Education1-12
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.

Dual Numbered Courses

Rang 421-521 Grassland Fire Ecology3
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 use 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. Crosslisted with WL 421-521. Equivalent to WL 421-521. Corequisite courses: Rang 421A-521A.

Rang 421A-521A Grassland Fire Ecology Lab0
Equivalent to WL 421A-521A. Corequisite courses: Rang 421-521.

Rang 491-591 Research Problems in Range Science1-3
Investigation of problems in Range Science with results submitted as a technical paper.

Rang 492-592 Special Topics1-3
Advanced study of one or more selected topics in Range Science including Grassland Fire Ecology and Grazing Management.

Graduate Courses

Rang 621 Grassland Fire Ecology3

Rang 621A Grassland Fire Ecology Lab0

Recr (Recreation)

Undergraduate Courses

Recr 140 Introduction to Leisure and Recreation3 FS
To introduce the student to recreation and leisure literature, philosophies, theories, history, basic concepts and professional organizations. This course offers an introduction to leisure from the viewpoint of the individual as a consumer and of agencies as providers. You can expect to better understand and appreciate the importance of leisure to your own and society's well being. Also, because leisure is a major industry in the world, the course provides an overview of the management of valuable recreation, park, sport and tourism resources.

Recr 260 Recreation Leadership3
Philosophy and interpretations of leadership as it relates to recreational activities.

Recr 330 Therapeutic Recreation (CI)3
Theoretical and philosophical foundations of therapeutic recreation, behavioral, therapeutic use of activity; recreative interaction-intervention techniques; survey of major services and agencies.

Recr 342 Recreational Sports Programs and Administration2
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 Recreational Facilities and Areas Design3
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 Recreation1-3
Practicum in a supervised recreational experience with a strong emphasis on leadership and supervisory responsibilities. Required of Public Recreation majors before the internship. P, instructor's consent required.

Recr 414 Current Issues in Recreation (CI)3
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. Crosslisted with HPER 490. Equivalent to HPER 490. P, Recr 260.

Recr 440 Administration of Leisure Services3
Organization and administration of community recreation, program planning and recreational program areas. P, junior or senior standing.

Recr 491 Independent Study in Recreation1-9
Designed to help students learn about areas of recreation for which there are no courses. P, instructor's consent required.

Recr 494 Recreation Internship1-12
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, instructor's consent required and 2.4 GPA.

Recr 496 Field Experience1-12
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, instructor's consent required and 2.4 GPA.

Rel (Religion)

Undergraduate Courses

Rel 213 Introduction to Religion3
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 public and pluralistic setting.

Rel 224 Old Testament3
The history, writings and selected theological themes of the Old Testament.

Rel 225 New Testament3
The history, writings and selected theological themes of the New Testament.

Rel 237 Religion in American Culture3
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 Religions3
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. Crosslisted with AIS 238. Equivalent to AIS 238.

Rel 250 World Religion3
Hinduism, Buddhism, East Asian religions, Judaism, Christianity, Islam, tribal religions, and new religions.

- Rel 331 Feminism and Theology**3
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
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. Equivalent to Phil 332.
- Rel 360 Moral and Ethical Perspectives on Death and Dying**3
Attitudes and issues that focus on death and dying in society, the religious and moral dimensions of these attitudes and issues.
- Rel 370 Philosophy of Religion**3
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. Equivalent to Phil 370.
- Rel 401 History of Western Religious Thought I**3
This course surveys important issues in western religious thought from first century Christian origins through the “great medieval synthesis” of the thirteenth century. While both Jewish and Islamic developments are examined, emphasis is placed upon emergence and growth of Christian doctrine and ecclesiology. Crosslisted with Hist 401. Equivalent to Hist 401.
- Rel 402 History of Western Religious Thought II**.....3
This course surveys important issues in western religious thought from “great medieval synthesis” of the thirteenth century through the Reformation and Counterreformation of the sixteenth century. While both Jewish and Islamic developments are examined, emphasis is placed upon the development of Christian doctrine. Crosslisted with Hist 402. Equivalent to Hist 402.
- Rel 491 Special Problems in Religion**.....1-3
Individual guided research culminating informal research paper or series of essays. May be repeated until 6 credits are earned. Instructor’s consent required.
- Rel 492 Topics in Religion**1-5
Selected topics of current interest in the discipline.
- Rel 494 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.

Dual Numbered Courses

- Rel 491-591 Special Problems in Religion**1-3
Individual guided research culminating informal research paper or series of essays. May be repeated until 6 credits are earned. Instructor’s consent required.

RTVF (Radio, Television, and Film)

Undergraduate Courses

- RTVF 130 Introduction to Radio and TV**.....3
History, structure, regulation, and financial support; potentialities and limitations; public responsibilities, impact on society. Crosslisted with MCom 130. Equivalent to MCom 130.
- RTVF 144 Mass Communication Activities (CI)**.....1
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent. *Section I:* Radio. *Section II:* Television. *Section III:* Film. P, RTVF 144 or RTVF 445.

- RTVF 145 Mass Communication Activities**.....1
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent. *Section I:* Radio. *Section II:* Television. *Section III:* Film.
- RTVF 160 Introduction to Film**.....3
Film as art; themes and inventions; films and society; introduction to the camera.
- RTVF 244 Mass Communication Activities**.....1
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent. *Section I:* Radio. *Section II:* Television. *Section III:* Film.
- RTVF 245 Mass Communication Activities**.....1
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent. *Section I:* Radio. *Section II:* Television. *Section III:* Film.
- RTVF 330 Writing for Radio and TV (CI)**.....3
Preparation of continuities such as commercials, public service announcements, talks, interviews, drama, documentaries, and educational programs. Crosslisted with MCom 330. Equivalent to MCom 330. Corequisite courses: RTVF 330A.
- RTVF 330A Writing for Radio and TV Lab (CI)**.....0
Corequisite courses: RTVF 330.
- RTVF 331 Television Production (CI)**.....3
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. Equivalent to MCom 331. Corequisite courses: RTVF 331A.
- RTVF 331A Television Production Lab (CI)**.....0
Equivalent to MCom 331A. Corequisite courses: RTVF 331.
- RTVF 332 Radio News Reporting (CI)**.....3
Crosslisted with MCom 332. Equivalent to MCom 332. Corequisite courses: RTVF 332A.
- RTVF 332A Radio News Reporting Studio (CI)**.....0
Equivalent to MCom 332A. Corequisite courses: RTVF 332.
- RTVF 333 Television News Reporting (CI)**.....3
Crosslisted with MCom 333. Equivalent to MCom 333. Corequisite courses: RTVF 333A.
- RTVF 333A Television News Reporting Studio (CI)**.....0
Equivalent to MCom 333A. Corequisite courses: RTVF 333.
- RTVF 335 Broadcast Programming (CI)**.....3
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. Equivalent to MCom 335.
- RTVF 336 Radio News Lab (CI)**.....1-3
- RTVF 344 Mass Communication Activities (CI)**.....1
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent. *Section I:* Radio. *Section II:* Television. *Section III:* Film.
- RTVF 345 Mass Communication Activities (CI)**.....1
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent. *Section I:* Radio. *Section II:* Television. *Section III:* Film.
- RTVF 360 Film Narrative (CI)**.....3
Myths, values and beliefs as expressed in selected films; forms, styles, and directors.
- RTVF 431 Advanced Television Production (CI)**.....3
Integration of various aspects of broadcasting techniques and production. Corequisite courses: RTVF 431A.
- RTVF 431A Advanced Television Production Lab (CI)**.....0
Corequisite courses: RTVF 431.

RTVF 433 Advanced TV News Reporting (CI).....3
Corequisite courses: RTVF 433A.

RTVF 433A Advanced TV News Reporting Studio (CI).....0
Corequisite courses: RTVF 433.

RTVF 437 Educational and Corporate Television (CI).....3
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. Equivalent to MCom 437.

RTVF 444 Mass Communication Activities (CI).....1
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent. *Section I: Radio. Section II: Television. Section III: Film.*

RTVF 445 Mass Communication Activities (CI).....1
Credit earned by active participation in broadcasting and film activities. May be repeated until eight activity credits are earned. P, consent. *Section I: Radio. Section II: Television. Section III: Film.*

RTVF 464 Film Studies (CI)3
Film art forms, artists and critics. Viewing and making films. Emphasis on major film theories.

RTVF 491 Special Problems in Radio, TV, Film (CI)1-2
Directed research. May be repeated for a total of 6 undergraduate credits. P, consent.

RTVF 492 Topics in Radio, TV, Film (CI).....1-5
Selected topics of current interest in the discipline.

RTVF 492A Topics in Radio, TV, Film Lab (CI)0

Dual Numbered Courses

RTVF 437-537 Educational and Corporate Television.....3
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. Equivalent to MCom 537.

RTVF 464-564 Film Studies3
Film art forms, artists and critics. Viewing and making films. Emphasis on major film theories.

Graduate Courses

RTVF 787 Research Methods in Communication3

RTVF 791 Special Problems in Radio, TV, or Film.....1-2

RUSS (Russian)

Undergraduate Courses

Russ 101 Introductory Russian I.....4
Fundamentals of language, enabling the student to understand, speak, read and write simple Russian. Emphasis on practical usage.

Russ 102 Introductory Russian II.....4
Fundamentals of language, enabling the student to understand, speak, read and write simple Russian. Emphasis on practical usage.

Russ 201 Intermediate Russian I.....3
Aims of First Year Russian continued. More intensive drill of both grammar and conversation. Emphasis on conversation, grammar review, and the short story.

Russ 202 Intermediate Russian II.....3
Aims of First Year Russian continued. More intensive drill of both grammar and conversation. Emphasis on conversation, grammar review, and the short story.

Russ 393 Workshop in Russian.....1-4
Skills acquired in basic Russian will be drilled intensely. Designed for students preparing for study in Russia. P, 202 or consent.

SCST (Science Topics)

Graduate Courses

SCST 601 Science in Our World1-7

SCST 602 Modeling and Mathematic2
An introduction to mathematical models used to investigate scientific issues such as exponential growth and decay, ground-water contamination, air pollution, and hazardous material emergencies. Models will involve algebraic equations, systems of equations, calculus, probability, inferential statistics and computer simulations. The emphasis will be on fundamental principles and concepts of mathematical models and their incorporation into the secondary curriculum.

SeEd (Secondary Education)

Undergraduate Courses

SeEd 314 Supervised Clinical/Field Experience.....1
Supervised students will observe and practice various teaching strategies in lab setting, middle schools, and high schools: P, EdFn 338 or SeEd 287 take EdFn 475. Corequisite courses: EPsy 302, SeEd 450.

SeEd 371 Lab Organization and Management.....1-3

SeEd 400 Curriculum and Instruction in Middle and Secondary Schools (CI).....4
Planning units and semester plans for use in student teaching. Includes goal-setting and evaluation/measurement methods. Admission to Professional Semester III. Required for Certification. Instructor's consent required. P, EdFn 338 or SeEd 287, take EdFn 475, EPsy 302, SeEd 450, SeEd 314. Corequisite courses: SeEd 410, SeEd 420, SeEd 488.

SeEd 405 Audio Visual Methods and Materials1
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. Corequisite courses: SeEd 405A.

SeEd 405A Audio Visual Methods and Materials Lab0
Corequisite courses: SeEd 405.

SeEd 410 Social Foundations, Management and Law (CI)2
Focus on management strategies and models as vehicles for maintaining an effective learning environment. Law and foundations relevant to the classroom teacher. Admission to Professional Semester III. Required for Certification. Instructor's consent required. P, EdFn 338 or SeEd 287, take EdFn 475, EPsy 302, SeEd 450, SeEd 314. Corequisite courses: SeEd 400, SeEd 420, SeEd 488.

SeEd 413 7-12 Science Methods.....3
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 415 7-12 Social Science Methods.....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 418 7-12 Mathematics Methods	3
Techniques, materials and resources for teaching mathematics to junior high school and high school students. Required of majors and minors planning to teach. May not be used for upper division math elective for majors not in Secondary Teaching Option. Instructor's consent required. Equivalent to Math 355. P, Math 125, Math 261, SeEd 287. Corequisite courses: SeEd 418A.	
SeEd 418A 7-12 Mathematics Methods Lab	0
Equivalent to Math 355A. Corequisite courses: SeEd 418.	
SeEd 420 Teaching Special Needs Students (CI)	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. Instructor's consent required. P, EdFn 338 or SeEd 287, take EdFn 475, EPsy 302, SeEd 450, SeEd 314. Corequisite courses: SeEd 400, SeEd 410, SeEd 488.	
SeEd 424 7-12 Language Arts Methods	3
Techniques, materials, and resources for teaching English language and literature to middle and secondary school students. Required of students in the English Education Option. Equivalent to Engl 308.	
SeEd 450 7-12 Teaching Reading in the Content Area (CI)	2
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, junior standing, education student. Required for Certification. Instructor's consent required. P, EdFn 338 or SeEd 287, take EdFn 475. Corequisite courses: EPsy 302, SeEd 314.	
SeEd 488 7-12 Student Teaching	1-8
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 Professional Semester III. Application procedure required. P, EdFn 338 or SeEd 287, take EdFn 475, EPsy 302, SeEd 450, SeEd 314. Corequisite courses: SeEd 400, SeEd 410.	
SeEd 491 Directed Studies/Special Problems	1-9
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 Special Topics	1-5
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. 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 493 Workshop	1-3
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 494 Internship	3-12
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.	
SeEd 496 Field Experience	3-12
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.	
SeEd 497 Cooperative Education	3-12
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 492-592 Special Topics	1-5
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.	
SeEd 493-593 Workshop	1-3
Special areas in secondary education are comprehensively explored in an intensive time framework. Designed to increase specific skills and understanding in a current area.	

Graduate Courses

SeEd 672 Motivation and Discipline	3
SeEd 690 Seminar	1-3
SeEd 691 Problems	1-3
SeEd 740 Secondary School Curriculum	3
SeEd 748 Secondary Curriculum Practicum	1

Soc (Sociology)

Undergraduate Courses

Soc 100 Introduction to Sociology	3
Comprehensive study of society, with analysis of group life, and other forces shaping human behavior.	
Soc 150 Social Problems	3
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 An Introduction to Leadership	1
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 The Sociology of Rural America	3
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
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
History of social work methods, social services to children, family, aged, public welfare clients, mentally ill, and the criminal justice system.	

Soc 292 Service Learning	1-3	Opportunity to gain service learning and/or mentoring experience. Learning credit will not count toward credits for major or minor. (Limit of 4 credit hours.) P, major or minor, minimum GPA of 2.0 to enroll. Graded Pass/Fail. Instructor's consent required. Soc 100, Soc 292.
Soc 307 Research Methods I (CI)	3	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, Soc 100.
Soc 308 Research Methods II (CI)	3	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. P, Soc 307.
Soc 325 Domestic and Intimate Violence	3	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	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, Soc 100.
Soc 340 Urban Sociology (CI)	3	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 (CI)	3	Intergroup relations. Particular focus on ethnic and racial groups in the United States and Upper Midwest. Cross-cultural comparisons.
Soc 351 Criminology	3	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	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	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	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	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	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 Gender Roles	3	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. Crosslisted with WmSt 383. Equivalent to WmSt 383.
Soc 401 Sociological Theory (CI)	3	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, Soc 100 or consent.
Soc 402 Social Deviance	3	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, consent of instructor.
Soc 433 Leadership and Group Organization	3	Emergence of leadership patterns. Emphasis on group dynamics, small groups, and leadership in management. P, undergraduate or graduate, consent of instructor.
Soc 451 Juvenile Delinquency	3	Causes of delinquency; patterns of delinquent behavior; juvenile and alternative solutions currently in operation throughout the United States which attempt to reduce the incidence of juvenile delinquency.
Soc 452 Sociology of Corrections	3	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 pre-sentence investigation (PSI) is covered. Special attention is devoted to internship and career possibilities in the corrections arena.
Soc 453 Industrial Sociology (CI)	3	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 460 Advanced Criminology	3	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 471 Social Work Skills and Methods I	3	Basic concepts and methods common to all social service practice; focus on developing interactional skills. P, Soc 270, to be taken prior to internship.
Soc 480 Sociology of Law	3	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.
Soc 485 Applied Sociology	3	This course articulates the use of sociological concepts in practical settings. Applied and clinical approaches will be explored. A theoretical model for applied sociology will be developed and applied to businesses, organizations, medicine, aging, youth, law, communities, criminal justice, recreation, social services, educational facilities, and additional areas of student interest.

Soc 490 Seminar1-3
Focus will vary in areas of sociology, anthropology, teaching and research, and by option. Can be repeated. P, Soc 100.

Soc 491 Special Problems1-3
P, major or minor and junior or senior standing and prior consent of instructor. (Limit of 6 hours of Special Problems toward major.)

Soc 492 Topics in Sociology1-3
Selected topics of current interest in Sociology. Subject areas vary from semester to semester based on general interest appeal.

Soc 494 Internship.....1-12
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. Instructor's consent required. P, Soc 494 Soc 496 or Soc 497.

Soc 496 Field Experience.....1-12
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. Instructor's consent required. P, Soc 494, Soc 496, Soc 497.

Soc 497 Cooperative Education1-12
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. Instructor's consent required. P, Soc 494, Soc 496, or Soc 497.

Dual Numbered Courses

Soc 402-502 Social Deviance.....3
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, consent of instructor.

Soc 433-533 Leadership and Group Organization.....3
Emergence of leadership patterns. Emphasis on group dynamics, small groups, and leadership in management. P, undergraduate or graduate, consent of instructor.

Soc 451-551 Juvenile Delinquency3
Causes of delinquency; patterns of delinquent behavior; juvenile and alternative solutions currently in operation throughout the United States which attempt to reduce the incidence of juvenile delinquency.

Soc 452-552 Sociology of Corrections.....3
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 pre-sentence investigation (PSI) is covered. Special attention is devoted to internship and career possibilities in the corrections arena.

Soc 460-560 Advanced Criminology3
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 Law3
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.

Soc 485-585 Applied Sociology3
This course articulates the use of sociological concepts in practical settings. Applied and clinical approaches will be explored. A theoretical model for applied sociology will be developed and applied to businesses, organizations, medicine, aging, youth, law, communities, criminal justice, recreation, social services, educational facilities, and additional areas of student interest.

Graduate Courses

Soc 620 Social Organization3

Soc 621 Social Stratification3

Soc 630 Social Change3

Soc 640 Rural Community Planning3

Soc 709 Evaluation Research3

Soc 710 Research Methods3

Soc 711 Qualitative Research Methods3

Soc 712 Sociological Theory I.....3

Soc 713 Sociological Theory II.....3

Soc 714 Theory Construction3

Soc 716 Symbolic Interaction3

Soc 720 Profession of Sociology3

Soc 762 Applied Demography3

Soc 764 Modern Demographic Theory.....3

Soc 766 World Population Issues3

Soc 790 Seminar1-4

Soc 791 Special Problems in Sociology1-3

Soc 794 Internship.....1-6

Soc 798 Thesis.....1-7

Soc 898D Dissertation-Ph.D.1-12

Span (Spanish)

Undergraduate Courses

Span 101 Introductory Spanish I.....4
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 with required aural/oral practice outside of class.

Span 102 Introductory Spanish II4
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 with required aural/oral practice outside of class.

Span 201 Intermediate Spanish I.....3
Aims of First Year Spanish continued. Students work more intensively on the development of all skills while adding to their knowledge of the Hispanic world. Students planning to receive a Spanish major or minor are encouraged to take 211 concurrently. P 102 or equivalence.

Span 202 Intermediate Spanish II3
Continuation of 201 with more emphasis on using grammar structures in an interactive way. Further study of the Hispanic world. Students planning to major or minor in Spanish are encouraged to take 212 concurrently. P 201 or equivalence.

Span 211 Spanish Composition and Conversation2
Intensive practice in composition and conversation. Classwork may be supplemented by work in the language laboratory. P, Span 102.

Span 212 Spanish Composition and Conversation2
Intensive practice in composition and conversation. Classwork may be supplemented by work in the language laboratory. P, Span 102.

Span 283 Applied Spanish1-3
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 310 Practical Language Skills (CI)3
This course is required of all Spanish majors and minors. It focuses on many of the more difficult basic grammatical points (e. g., ser/estar, preterito/imperfecto and the uses of the subjunctive) as well as more advanced structures. P, Span 202.

Span 330 Introduction to Hispanic Culture (CI)3
An introduction to major issues in the Hispanic world. Provides a foundation for more advanced courses. P, Span 310 or concurrent.

Span 350 Introduction to Hispanic Literature (CI)3
An introduction to major literary genres in Spanish and Spanish American literature as well as an introduction to techniques of literary criticism. Provides a basis for more advanced coursework. P, Span 310 or concurrent.

Span 353 Spanish Literature (CI)3
Introduction to Spanish literature through reading and discussion. P, 202 or consent. P 202 or consent.

Span 354 Spanish Literature (CI)3
Continuation of readings in Spanish literature with discussion in Spanish. P, 202 or consent.

Span 355 Spanish American Literature (CI)3
Introduction to Spanish American Literature through readings with discussion in Spanish. P, 202 or consent

Span 356 Spanish American Literature (CI)3
Continuation of readings in Spanish American literature with discussion in Spanish. P, 202 or consent.

Span 383 Business Spanish (CI)2-3
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, Span 202 or consent.

Span 411 Advanced Composition and Conversation (CI)2
In-depth development of all language skills, focusing on greater acquisition of the language and improving pronunciation. P, 211 or consent.

Span 412 Advanced Composition and Conversation (CI)2
Further development of language skills which lead to greater control of speaking and writing in Spanish. P, 212 or consent.

Span 433 Spanish Culture and Civilization (CI)1-3
Study of the daily life (past and present) including significant accomplishments of past and current peoples. P, 212 or consent.

Span 434 Spanish Culture and Civilization (CI)1-3
Further study of the cultures that contributed to the Spanish culture and civilization. P, 212 or consent.

Span 435 Spanish American Culture and Civilization (CI)1-3
Study of the indigenous cultures and civilizations along with how the Spaniards changed or influenced the lives of the peoples of Spanish America. P, 212 or consent.

Span 436 Spanish American Culture and Civilization (CI)1-3
Further study of the peoples of Spanish/Indigenous America and how their cultures were affected by the Conquest of the New World. P, 212 or consent.

Span 443 Advanced Spanish Grammar (CI)3
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, Span 212.

Span 476 19th and 20th Century Spanish Literature (CI)3
Major movements and works. Reading, writing and discussions in Spanish. Topics vary. P, Span 211, Span 212. or consent.

Span 484 20th Century Spanish American Literature (CI)3
Major movements and works. Reading, writing and discussions in Spanish. Topics vary. P, Span 211, Span 212. or consent.

Span 491 Special Problems (CI)1-3
Readings and discussions in Spanish as directed by the instructor. May be repeated for credit. P, 212 and consent of the instructor.

Span 492 Topics in Spanish (CI)1-3
Special courses designed to complement the existing curriculum. Will be offered only when student demand and staff availability warrant. P, Span 211, Span 212.

Graduate Courses

Span 591 Special Problems1-3
Instructor's consent required.

SpCm (Speech Communication)

Undergraduate Courses

SpCm 101 Fundamentals of Speech3
Required of all students unless granted advanced placement. Emphasis on skill development in research, organization, style, delivery, and listening necessary for effective oral communication. Corequisite courses: SpCm 101A.

SpCm 101A Fundamentals of Speech Lab0
Corequisite courses: SpCm 101.

SpCm 201 Interpersonal Communication3
Current theories and practice in interpersonal communication; stress verbal and non-verbal activity.

SpCm 215 Public Speaking3
Theory and practice of public speaking, including speaking for special occasions. P, SpCm 101.

SpCm 222 Argumentation and Debate3
Focuses on theories of argumentation and debate practice.

SpCm 281 Forensic Activities1
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 281.

SpCm 334 Discussion (CI)3
Nature, values, and limitations of discussion. Theory and practice.

SpCm 340 Oral Interpretation (CI)3
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 (CI)	3
Problems of the speech teacher. Curriculum, instructional materials, and methods.	
SpCm 416 Rhetorical Criticism (CI)	3
Critical evaluation of American speakers from Colonial to contemporary. P, consent.	
SpCm 442 Group Performance of Literature (CI)	3
Various styles of Reader's Theatre are studied. Includes solo and group performance of multiple literary selections. P, 340 or consent.	
SpCm 452 General Semantics (CI)	3
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. Equivalent to Ling 452.	
SpCm 491 Special Problems (CI)	1-2
Directed research. May be repeated for a total of 6 undergraduate credits. P, consent. P, SpCm 491.	
SpCm 492 Special Topics in Speech Education (CI)	1-5
Selected topics of current interest in the discipline.	

Dual Numbered Courses

SpCm 416-516 Rhetorical Criticism (CI)	3
Critical evaluation of American speakers from Colonial to contemporary. P, consent.	
SpCm 452-52 General Semantics (CI)	3
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. Equivalent to Ling 452-552.	
SpCm 492-592 Special Topics in Speech Education (CI)	1-5
Selected topics of current interest in the discipline.	

Graduate Courses

SpCm 700 Instructional Methods in Communication	3
SpCm 707 Speech/English/Drama for Teachers	1-3
SpCm 766 Rhetorical Theory	3
SpCm 791 Special Problems in Oral Interpretation	1-2
SpCm 798 Thesis	1-7

Stat (Statistics)

Undergraduate Courses

Stat 210 Introduction to SAS Programming	1
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.	
Stat 281 Introduction to Statistics	3
Concepts in probability, data description, distributions, sampling, statistical inferences (parametric and non-parametric). P, 1 course; from Subject MATH; except courses Math 021, Math 101, Math 100T, Math 104.	
Stat 381 Introduction to Problems and Statistics	3
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 125 or consent. Crosslisted with Math 381.	

Stat 410 Programming using SAS	3
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).	
Stat 441 Statistical Methods II	3
P, Stat 281 Math 381 or Stat 381 take Stat 210 or Stat 410.	
Stat 442 Analysis of Variance and Regression	3
Data interpretation, hypothesis testing and modeling with analysis of variance and regression. P, Stat 281, Stat 381, or Math 381.	
Stat 445 Nonparametric Statistics	3
P, Stat 281, Math 381, or Stat 381.	
Stat 485 Theory of Statistics I	3
P, Math 381 or Stat 381.	
Stat 491 Directed Studies	1-3

Dual Numbered Courses

Stat 441-541 Statistical Methods II	3
P, Stat 281 Math 381 or Stat 381 take Stat 210 or Stat 410.	
Stat 445-545 Nonparametric Statistics	3
P, Stat 281 Math 381 or Stat 381.	
Stat 485-585 Theory of Statistics I	3
P, Math 381.	
Stat 491-591 Directed Studies	1-3

Graduate Courses

Stat 662 Quality Control	3
Stat 751 Interpretation of Statistical Software Output	2
Stat 761 Experimental Design	3
Stat 780 Advanced Statistical Methods	1-18
Stat 792 Special Topics in Statistics	1-3

Thea (Theatre)

Undergraduate Courses

Thea 100 Introduction to Theatre	3
Background of theatrical arts: production, plays, history, and theory. Credit will not be allowed for Thea 100 in addition to credit in Thea 101. Equivalent to Thea 101.	
Thea 101 Introduction to Theatre	3
Background of theatrical arts: production, plays, history, and theory. Credit will not be allowed for Thea 101 in addition to credit in Thea 100. Equivalent to Thea 100.	
Thea 131 Acting	3
Basic of acting.	
Thea 135 Theatre Activities – Acting	1
Credit earned by active participation in acting roles. May be repeated for a total of 8 credits. P, consent, Thea 135.	
Thea 145 Theatre Activities – Technical	1
Credit earned by backstage and crew work. May be repeated for a total of 8 credits. P, consent, Thea 145.	
Thea 195 Theatre Activities – Special Project	1
Credit earned by completing selected theatre projects. May be repeated for a total of 8 credits. P, consent, Thea 195.	
Thea 240 Stage Costuming	3
Historic, aesthetic, and functional elements of costume design.	

Thea 241 Stagecraft	3
Theory and practical experience in theatre production. Lab work on two major theatre productions. Corequisite courses: Thea 241A.	
Thea 241A Stagecraft Lab	0
Corequisite courses: Thea 241.	
Thea 243 Make-Up for the Stage	3
Principles and application of stage make-up.	
Thea 351 Directing (CI)	3
Play directing. Theory and practice.	
Thea 355 Children's Theatre (CI)	3
Children's theatre as an art form. Students become proficient in organization, design, and presentation of a children's theatre program. P, Thea 131, Thea 100.	
Thea 397 Theatre Arts Management (CI)	3
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.	
Thea 410 Dramatic Literature (CI)	3
Analysis of important drama through present day.	
Thea 435 History of the American Musical (CI)	3
History and development of American Musical Theatre from 1866 to the present. P, consent.	
Thea 441 Scene Design (CI)	3
History of set design, planning and designing for stage.	
Thea 445 Lighting for Stage and TV (CI)	3
Theatre and TV lighting. Lab and production participation. Corequisite courses: Thea 445A.	
Thea 445A Lighting for Stage and TV Lab (CI)	0
Corequisite courses: Thea 445.	
Thea 455 Advanced Acting (CI)	3
Textual analysis, movement and acting styles for the theatre. P, consent.	
Thea 460 History of Theatre (CI)	3
Periods, theatres, and representative dramatic literature from the classical to the present day.	
Thea 485 Summer Theatre (CI)	5
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 485.	
Thea 491 Special Problems (CI)	1-2
Directed research. May be repeated for a total of 6 undergraduate credits. P, consent, Thea 491.	
Thea 492 Topics in Theatre (CI)	1-5
Selected topics of current interest in the discipline.	

Dual Numbered Courses

Thea 410-510 Dramatic Literature	3
Analysis of important drama through present day.	
Thea 460-560 History of Theatre	3
Periods, theatres, and representative dramatic literature from the classical to the present day.	

Graduate Courses

Thea 791 Special Problems	1-2
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Vet (Veterinary Science)

Undergraduate Courses

Vet 101 Animal Care and Welfare	1
Training course in the care and handling of animals. Instructor's consent required.	
Vet 103 Introduction to Veterinary Medicine	1
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 and Physiology of Livestock	4
General principles of anatomy and physiology are applied to all animals, as well as humans. Important facets are discussed in relation to application to other disciplines. P, Chem 120 or Chem 326. Corequisite courses: Vet 223A.	
Vet 223A Anatomy and Physiology of Livestock Lab	0
Corequisite courses: Vet 223.	
Vet 403 Animal Disease and Their Control	3
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. Emphasis will be placed on understanding disease control concepts and assessment of disease impact.	
Vet 424 Medical and Veterinary Virology	4
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. Equivalent to Micr 424. Corequisite courses: Vet 424A.	
Vet 424A Medical and Veterinary Virology Lab	0
Equivalent to Micr 424A. Corequisite courses: Vet 424.	
Vet 491 Problems in Veterinary Science	1-3
Consent of department head required. Instructor's consent required.	
Vet 494 Internship	1-12
Consent of department head required. Instructor's consent required.	
Vet 496 Field Experience	1-12
Consent of department head required. Instructor's consent required.	
Vet 497 Cooperative Education	1-12
Consent of department head required. Instructor's consent required.	

Dual Numbered Courses

Vet 424-524 Medical and Veterinary Virology	4
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. Corequisite courses: Vet 424A-524A.	
Vet 424A-524A Medical and Veterinary Virology Lab	0
Equivalent to Micr 424A-524A. Corequisite courses: Vet 424-524.	
Vet 491-591 Problems in Veterinary Science	1-3
Consent of department head required. Instructor's consent required.	

Graduate Courses

Vet 503 Animal Diseases and Their Control	3
Vet 723 Systemic Physiology	4
Vet 723A Systemic Physiology Lab	0
Vet 791 Special Problems	1-4
Vet 792 Special Topics	1-3

Wel (Wellness)

Undergraduate Courses

- Wel 100 Skills for Healthy Living**2
This course is designed to introduce students to the 6 dimensions of wellness. The course will provide the necessary knowledge and skills to make informed decisions, which will lead to the development of a healthy lifestyle. Various issues related to the dimensions of wellness will be discussed through lectures and laboratory activities. Students will have the opportunity to assess their current health status and identify potential risk factors.
- Wel 101 Aerobics**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 102 Racquet Activities**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 103 Road Work**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 104 Dance**.....1
Students must register for Wel 100 when registering for wellness lab.
- Wel 105 Running/Walking**.....1
Students must register for Wel 100 when registering for wellness lab.
- Wel 106 Cross Training**.....1
Students must register for Wel 100 when registering for wellness lab.
- Wel 107 Court Activities**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 108 Field Activities**.....1
Students must register for Wel 100 when registering for wellness lab.
- Wel 109 Water Conditioning**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 110 Strength Training**.....1
Students must register for Wel 100 when registering for wellness lab.
- Wel 111 Circuit Weight Training**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 112 Cardiovascular Training**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 113 Outdoor Activities**.....1
Students must register for Wel 100 when registering for wellness lab.
- Wel 114 Walking/Hiking**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 115 Individual Activities**.....1
Students must register for Wel 100 when registering for wellness lab.
- Wel 116 Challenge Activities**1
Students must register for Wel 100 when registering for wellness lab.
- Wel 117 Mind-Body**.....1
Students must register for Wel 100 when registering for wellness lab.
- Wel 118 Restricted**.....1
Students must register for Wel 100 when registering for wellness lab. Instructor's consent required.
- Wel 192 Special Topics**1
Students must register for Wel 100 when registering for wellness lab.

WL (Wildlife and Fisheries Sciences)

Undergraduate Courses

- WL 110 Environmental Conservation**.....2
Ecological approach to conservation; human'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**.....3
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
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, WL 220.
- WL 291 Research Problems**.....1-3
Individualized instruction on specific research problems. P, consent.
- WL 363 Ornithology (CI)**4
Identification of bird species; life histories, ecology, habits, and special structural and physiological adaptations of various groups. Corequisite courses: WL 363A.
- WL 363A Ornithology Lab (CI)**0
Corequisite courses: WL 363.
- WL 367 Ichthyology (CI)**.....3
Characteristics and relationships of fishes; adaptations, modifications, and ecological relationships; identification of common fishes; economic and recreational importance of various groups. Corequisite courses: WL 367A.
- WL 367A Ichthyology Lab (CI)**0
Corequisite courses: WL 367.
- WL 370 Limnology (CI)**.....3
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. Corequisite courses: WL 370A.
- WL 370A Limnology Lab (CI)**.....0
Corequisite courses: WL 370.
- WL 411 Principles of Wildlife Management (CI)**4
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 of instructor. Corequisite courses: WL 411A.
- WL 411A Principles of Wildlife Management Lab (CI)**0
Corequisite courses: WL 411.
- WL 412 Principles of Fisheries Management (CI)**3
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 of instructor. Corequisite courses: WL 412A.
- WL 412A Principles of Fisheries Management Lab (CI)**.....0
Corequisite courses: WL 412.
- WL 413 Advanced Fisheries Management**3
Principles and techniques of selected practices for reservoir, lake, pond, and lotic fisheries management. P, 367, 412, and/or consent of instructor. Corequisite courses: WL 413A.
- WL 413A Advanced Fisheries Management Lab**0
Instructor's consent required. Corequisite courses: WL 413.
- WL 415 Upland Game Ecology and Management**3
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 and/or consent of instructor. Corequisite courses: WL 415A.
- WL 415A Upland Game Ecology and Management Lab**.....0
Instructor's consent required. Corequisite courses: WL 415.

WL 417 Large Mammal Ecology and Management.....	3
Large mammal life histories and distributions. Relationships of nutrition, reproduction, interspecific competition, and predation to management of large mammal habitat and harvest. Techniques for research and management of large mammals. P, 411 and/or consent of instructor. Corequisite courses: WL 417A.	
WL 417A Large Mammal Ecology and Management Lab.....	0
Instructor's consent required. Corequisite courses: WL 417.	
WL 419 Waterfowl Ecology and Management.....	3
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 and/or consent of instructor. Corequisite courses: WL 419A.	
WL 419A Waterfowl Ecology and Management Lab.....	0
Instructor's consent required. Corequisite courses: WL 419.	
WL 421 Grassland Fire Ecology.....	3
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 of instructor required. Equivalent to Rang 421. Corequisite courses: WL 421A.	
WL 421A Grassland Fire Ecology Lab.....	0
Instructor's consent required. Equivalent to Rang 421A. Corequisite courses: WL 421.	
WL 423 Fish Culture.....	3
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 required. Corequisite courses: WL 423A.	
WL 423A Fish Culture Lab.....	0
Instructor's consent required. Corequisite courses: WL 423.	
WL 430 Human Dimensions in Wildlife and Fisheries (CI).....	4
Interactions among 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; public relations; the philosophy and ethics of resource use and management; and wildlife and fisheries law and its enforcement are included. Corequisite courses: WL 430A.	
WL 430A Human Dimensions in Wildlife and Fisheries Lab (CI).....	0
Corequisite courses: WL 430.	
WL 440 Fisheries and Wildlife Biometrics (CI).....	2
Analysis and interpretation of fish and wildlife data that relate to management activities. Computer software application will be stressed. P, Stat 281, CSc 105, or consent of instructor. Corequisite courses: WL 440A.	
WL 440A Fisheries and Wildlife Biometrics Lab (CI).....	0
P, Stat 281 CSc 105. Corequisite courses: WL 440.	
WL 490 Undergraduate Seminar.....	1
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 491 Research Problems.....	1-3
Individualized instruction on specific research problems. P, consent of instructor.	
WL 492 Special Topics in Wildlife and Fisheries.....	1-3
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 of instructor.	
WL 492A Special Topics in Wildlife and Fisheries Lab.....	0
Corequisite courses: WL 492.	
WL 494 Internship.....	1-12
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.	
WL 496 Field Experience.....	1-12
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 operation.	
WL 497 Cooperative Education.....	1-12
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 413-513 Advanced Fisheries Management.....	3
Principles and techniques of selected practices for reservoir, lake, pond, and lotic fisheries management. P, 367, 412, and/or consent of instructor. Corequisite courses: WL 413A-513A.	
WL 413A-513A Advanced Fisheries Management Lab.....	0
Corequisite courses: WL 413-513.	
WL 415-515 Upland Game Ecology and Management.....	3
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 and/or consent of instructor. Corequisite courses: WL 415A-515A.	
WL 415A-515A Upland Game Ecology and Management Lab.....	0
Corequisite courses: WL 415-515.	
WL 417-517 Large Mammal Ecology and Management.....	3
Large mammal life histories and distributions. Relationships of nutrition, reproduction, interspecific competition, and predation to management of large mammal habitat and harvest. Techniques for research and management of large mammals. P, 411 and/or consent of instructor. Corequisite courses: WL 417A-517A.	
WL 417A-517A Large Mammal Ecology and Management Lab.....	0
Corequisite courses: WL 417-517.	
WL 419-519 Waterfowl Ecology and Management.....	3
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 and/or consent of instructor. Corequisite courses: WL 419A-519A.	
WL 419A-519A Waterfowl Ecology and Management Lab.....	0
Corequisite courses: WL 419-519.	
WL 421-521 Grassland Fire Ecology.....	3
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 of instructor. Equivalent to Rang 421-521. Corequisite courses: WL 421A-521A.	
WL 421A-521A Grassland Fire Ecology Lab.....	0
Equivalent to Rang 421A-521A. Corequisite courses: WL 421-521.	

WL 423-523 Fish Culture	3
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. Corequisite courses: WL 423A-523A.	
WL 423A-523A Fish Culture Lab	0
Corequisite courses: WL 423-523.	
WL 492-592 Special Topics in Wildlife and Fisheries	1-3
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 of instructor. Corequisite courses: WL 492A-592A.	
WL 492A-592A Special Topics in Wildlife and Fisheries Lab	0
Corequisite courses: WL 492-592.	

Graduate Courses

WL 712 Wetlands Ecology and Management	3
WL 712A Wetlands Ecology and Management Lab	0
WL 713 Animal Population Dynamics	3
WL 713A Animal Population Dynamics Lab	0
WL 714 Fish Structure and Function	3
WL 714A Fish Structure and Function Lab	0
WL 715 Wildlife Research Design	3
WL 715A Wildlife Research Design Lab	0
WL 717 Advanced Limnology	3
WL 717A Advanced Limnology Lab	0
WL 718 Ecology of Aquatic Invertebrates	3
WL 718A Ecology of Aquatic Invertebrates Lab	0
WL 719 Stream Ecology and Management	3
WL 719A Stream Ecology and Management Lab	0
WL 790 Graduate Seminar	1
WL 791 Research Problems	1-3
WL 798 Thesis	1-7

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 248 Women in Literature	3
Study of literature by and about women. Course materials may range from early times to the present and may also include non-American literature. Crosslisted with Engl 248. Equivalent to Engl 248.	
WmSt 305 Women and Politics	3
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. Crosslisted with PolS 305. Equivalent to PolS 305.	
WmSt 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. Selected women and their careers will be highlighted. The course will focus on either European or American women at the discretion of the instructor. Crosslisted with Hist 349. Equivalent to Hist 349.	

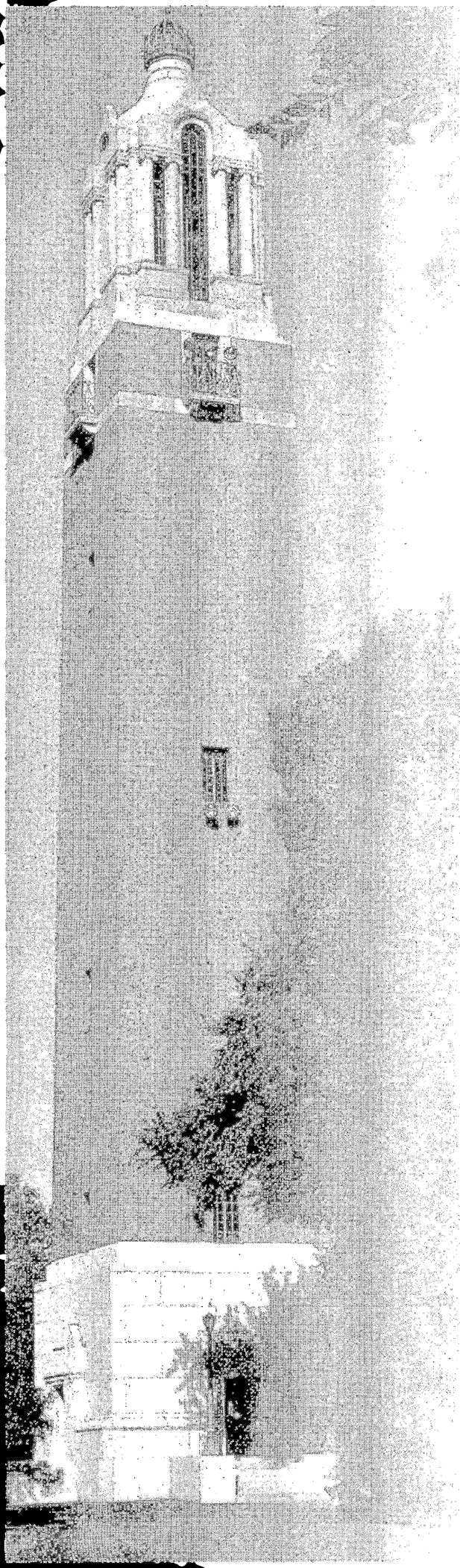
WmSt 366 Psychological Gender Issues	3
This course surveys the current theoretical and research issues in the development of gender and explores the impact of gender on the lives of women and men. Topics include societal and biological influences on psychological development, achievement motivation, sex roles, stereotyping, socialization, sexuality, and personality. Crosslisted with Psyc 366. Equivalent to Psyc 366. P, Psyc 101 or Psyc 102.	
WmSt 383 Sociology of Gender Roles	3
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. Crosslisted with Soc 383. Equivalent to Soc 383.	
WmSt 392 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 Arts, and the Natural Sciences. (May be repeated for credit when the topic is different.)	
WmSt 418 Women in Media	3
This course examines contributions of women to the mass media from colonial era to present. It also studies the portrayal of women by the news media and by advertising, and it studies the roles currently played by women in the media and in supporting areas of advertising and public relations. Crosslisted with MCom 418. Equivalent to MCom 418.	
WmSt 491 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, WmSt 101 and consent of supervising faculty.	
WmSt 492 Current Topics in Women's Studies	3
Selected topics of current interest in this discipline. Instructor's consent required.	

Zool (Zoology)

Undergraduate Courses

Zool 221 Anatomy	3
Structure of various systems in the human body are presented as a structural basis for mammalian physiology. Models, charts, skeletons, and prosected cadavers are used as reference materials.	
Zool 222 Anatomy Lab	1
Corequisite courses: Zool 221.	
Zool 301 Animal Behavior	3
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 305 Insect Biology	2
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. Corequisite courses: Zool 305A.	
Zool 305A Insect Biology Lab	1
Corequisite courses: Zool 305.	

Zool 325 Mammalian Physiology.....4	Zool 441A Vertebrate Histology Lab.....0
Basic cell physiology, neural, hormonal and neuroendocrine control systems. Coordinated body functions. P, 8 credit hours of Chemistry and Zool 221 or consent. Corequisite courses: Zool 325A.	Corequisite courses: Zool 441.
Zool 325A Mammalian Physiology Lab.....0	Zool 467 General Parasitology (CI).....3
Corequisite courses: Zool 325.	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 Bio 151. Corequisite courses: Zool 467A.
Zool 355 Mammalogy.....3	Zool 467A General Parasitology Lab .....0
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 Bio 151. Corequisite courses: Zool 355A.	Corequisite courses: Zool 467.
Zool 355A Mammalogy Lab.....0	Zool 491 Special Problems .....1-4
Corequisite courses: Zool 355.	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 365 Vertebrate Zoology .....4	Zool 492 Special Topics in Zoology .....1-5
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 Bio 151. Corequisite courses: Zool 365A.	(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.
Zool 365A Vertebrate Zoology Lab .....0	
Corequisite courses: Zool 365.	
Zool 383 Developmental Biology.....4	Graduate Courses
Analysis of the processes of animal development beginning with the formation of female and male gametes (ova and sperm) and ending with organ differentiation. Evolutionary concepts of animal development, developmental genetics, and molecular biological approaches to the analysis of development. P, Bio 101 or 151, Bio 371 desirable antecedent. Corequisite courses: Zool 383A.	Zool 723 Systemic Physiology .....4
Zool 383A Developmental Biology Lab.....0	Zool 723A Systemic Physiology Lab.....0
Corequisite courses: Zool 383.	Zool 761 Taxonomy of Insects.....3
Zool 441 Vertebrate Histology.....4	Zool 761A Taxonomy of Insects Lab .....0
Microscopic study of cells and fundamental tissues. Structures of organs and systems are stressed to integrate structure and function. P, Bio 101 or Bio 151. Corequisite courses: Zool 441A.	Zool 791 Special Problems1-4
	Zool 792 Special Topics1-5



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Agricultural Experiment Station

The Agricultural Experiment Station is one of three activities at SDSU that define the land-grant university. The AES provides a base of new knowledge and service to South Dakotans.

This new knowledge is effectively used by farmers, ranchers, homemakers, industry, classroom instructors, and Extension educators 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.

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 watersheds and with cooperating businesses and institutions results in scientific investigation 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 forages, fisheries, plant diseases, wildlife, sociology, and stress in plants, animals, and humans. Much of the research is integrated through the Biostress mission.

Research is financed by State and Federal appropriations, industry grants, and Federal and State grants. Research results are published in Agricultural Experiment Station or Extension bulletins, journals of scientific societies, and a quarterly publication, *Farm and Home Research*. Many of these publications are available from County Extension Offices or the Experiment Station Bulletin Room on campus.

For information contact the Director, Agricultural Experiment Station, SDSU, Box 2207, Brookings, SD 57007-0291, phone 605-688-4149 or e-mail: sandra_rusten@sdstate.edu

Alumni Association

The purpose of the SDSU Alumni Association, a separate entity from the University, shall be to foster a spirit of loyalty and fellowship among graduates, faculty, students, former students, and friends of the University, and to direct and/or participate in an organized cooperative

effort for the advancement, development, achievement, and honor of both South Dakota State University and its alumni.

The Executive Director, V.J. Smith, can be reached at 605-697-5198, e-mail: vj_smith@sdstate.edu or Box 515, Brookings, SD 57007-0299.

Animal Disease Research and Diagnostic Laboratory (ADRDL)

The South Dakota Animal Disease Research and Diagnostic Laboratory is a public service laboratory that is totally integrated with the Veterinary Science department. Career service personnel and professional diagnosticians and faculty operate the lab. The faculty are actively involved with the traditional roles of service (professional outreach), research and teaching/advising. State general funds and user fees pay for the laboratory's operation. The lab is a reference lab and only receives cases by referral from veterinarians or state officials. The ADRDL mission is to provide high quality veterinary diagnostic

services and research as a means to promptly and accurately establish causes of animal health problems. Such diagnoses will aid attending veterinarians and health officials in the treatment, control, prevention, and surveillance of animal diseases to the benefit of the SD livestock industry, other animal owners, and society at large. The ADRDL is one of 36 labs in the United States that is accredited by the American Association of Veterinary Laboratory Diagnosticians.

The director, David H. Zeman, can be contacted at 605-688-5172 or by e-mail: david_zeman@sdstate.edu

Career and Academic Planning Center

I. Introduction

Planning for a career after graduation should begin with the first advising session at SDSU. The Career and Academic Planning (CAP) Center, located in Medary Commons, supports the following services to assist students with that planning.

II. College of General Studies and Outreach Programs

The College of General Studies 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 Studies are assigned to advisers who are specially trained to help them make decisions 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

The CAP Center assists students in selecting a major, planning for a career or finding a job. Through this office students 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 careers, major employers in the United States, various academic majors at SDSU, and the employment status of SDSU graduates. The College of General Studies offers Academic and Career Exploration (GS 101), a one credit class for students who desire help in exploring the world of work.

IV. Employment Services

<http://www3.sdstate.edu/academics/thecareercenter/>

The CAP Center is the place to go for help in searching 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 prepare a resume, develop interview skills, improve 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 on the CAP Center web page. 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 students learn a variety of techniques for effective job searching.

V. 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" (GS 143) and is offered each semester. In addition, students who need individual assistance in developing good study habits or overcoming test anxiety may make individual appointments with professional staff in the office.

Computing Services

Computing Services coordinates planning and implementation of access into state and national computer networks, including Internet 2 high-speed access to support research and instructional initiatives. Other research support is provided through systems management of UNIX based mid-range and mainframe computers.

To assist faculty members, Computing Services manages the Academic Computer Technology Service (ACTS) program, which provides computers for university instructors.

Analysis and computer programming for management information, plus other student information support services, including registration, schedule and grade access, is another priority service area of Computing Services.

Cooperative Extension Service

The SD Cooperative Extension Service (CES) provides the off-campus informal educational function of SDSU and encompasses the following broad areas of educational programming: Agriculture, Family and Youth Development/4-H. The mission of the CES 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 brings the SDSU campus to every community across the state. Through the Extension educators and specialists, CES disseminates the findings of research and encourages the application of knowledge for solutions of problems and for opportunities encountered in everyday living. Much of the economic progress of farmers and ranchers can be traced to this unique type of non-formal, out-of-classroom learning opportunity provided to them for more than 85 years by SDSU in cooperation with the U.S. Department of Agriculture and county governments.

Approximately 50% of the funds supporting Cooperative Extension educational programs is appropriated to SDSU by the SD Legislature with 41% from Federal appropriations. Additionally, over \$2.5 million is provided by SD counties in the form of in-kind support. Extension program emphasis is constantly changing to meet the needs and opportunities (circumstances) of people who help determine instructional needs.

Cooperative Extension Service staff and South Dakota stakeholders identified the following core values which describe the Cooperative Extension Service as we embark on the 21st century:

Responsive – Extension will exceed client expectations in the timeliness and quality of programs and information presented.

Excellence – The motivating factor for Extension's continued growth and improvement will be continued commitment to excellence.

Accountable – Relevant and useful data will be gathered and applied to decision-making about organizational changes, allocation of resources, program priorities, staffing patterns, and professional development for Extension personnel.

Credibility – Extension will address problems and issues with unbiased analysis and research-based answers.

Respectful – Rather than make decisions for the citizens of South Dakota, Extension will present alternatives and provide assistance in the decision-making process.

Catalytic – Through cooperative and collaborative partnerships, Extension will help cause changes across South Dakota.

The CES staff is dedicated to assisting individuals and groups meet the challenges of change in farming, ranching, marketing, the home, state and nation. The press, radio, TV, satellite, interactive audio-visual, the Internet, educational publications, group methods and individual contacts are used to inform and teach. Students are encouraged to become acquainted with the CES staff on campus and take advantage of the information available in Extension publications to enrich their course of study. Extension also offers rewarding career opportunities for graduates in agriculture, family and consumer sciences, natural resources, and other social sciences.

For information contact Larry Tidemann, Associate Dean, College of Agriculture and Biological Sciences and Director of SD Cooperative Extension Service, SDSU, Box 2207D, Brookings, SD 57007 or phone 605-688-4792 or e-mail: larry_tidemann@sdstate.edu or check out the web site at: <http://sdces.sdstate.edu>.

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 information programs is distributed to all staff and students by accessing the web at

www3.sdstate.edu; click on "Student Life" and then "Safety and Security." The crime report is also available upon request from the office of the Dean of Student Affairs.

Diversity Enhancement, Office of

The purpose of the Office of Diversity Enhancement is to promote diversity and work to eliminate discrimination at SDSU. SDSU is committed to maintaining an environment which respects 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 Director of Diversity

Enhancement with questions and concerns relating to diversity issues on campus, discrimination/ harassment prevention information, reporting discrimination, and complaint procedures.

The Office of Diversity Enhancement can be reached at 605-688-6361 or in ADM 217.

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 now supports in perpetuity an endowed chair entitled the *Ethel Austin Martin-Edward Moss Martin Chair of Human Nutrition*.

The Chair of Human Nutrition was established at SDSU to ensure scholarly instruction in the broad aspects of the science of nutrition. This is 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 is 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 Alfred Chair in Cheese Chemistry and Technology in Dairy Science has been established in recognition and in memory of the late Alfred Gonzenbach and 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.

Electrical Engineering

The Hohbach Endowed Chair in Electrical Engineering was established through funds provided by Harold C. Hohbach, a Plankinton, SD, native and 1943 graduate of Electrical Engineering from SDSU. Mr. Hohbach is currently a patent attorney with offices in San Francisco and Palo Alto, California.

The purpose of the Hohbach Endowed Chair is to improve quality of education, research, and entrepreneurship. The primary focus is to develop applied research that will spur economic growth in the region, while supporting undergraduate and graduate teaching and promoting entrepreneurship among students.

The Hohbach Chair is a faculty rank position on campus within the Department of Electrical Engineering and is occupied by an individual with an established reputation in electrical engineering or a closely related field.

Engineering Resource Center (ERC)

The ERC, established in 1986, exists to serve the University, citizens, and industry in South Dakota. Five complementary outreach and/or technology transfer programs make up the ERC. Thus, the knowledge gained from one program often supports or strengthens another program. The five programs are: Engineering Extension; Office of Remote Sensing; South Dakota Space Grant Consortium; Local Transportation Assistance Program; and the University/Industry Technology Service.

The ERC 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 ERC 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. The primary activities of the program are:

1. Occupational safety and health surveys of the workplace for South Dakota employers.
2. Training and workshops and seminars to update skills regarding technical needs and to certify individuals who are required to work under specific government regulations.
3. Technical assistance that provides "hands-on" expertise that will solve safety and health technical problems for small industries, government agencies and others through industrial/mechanical engineering technologies.

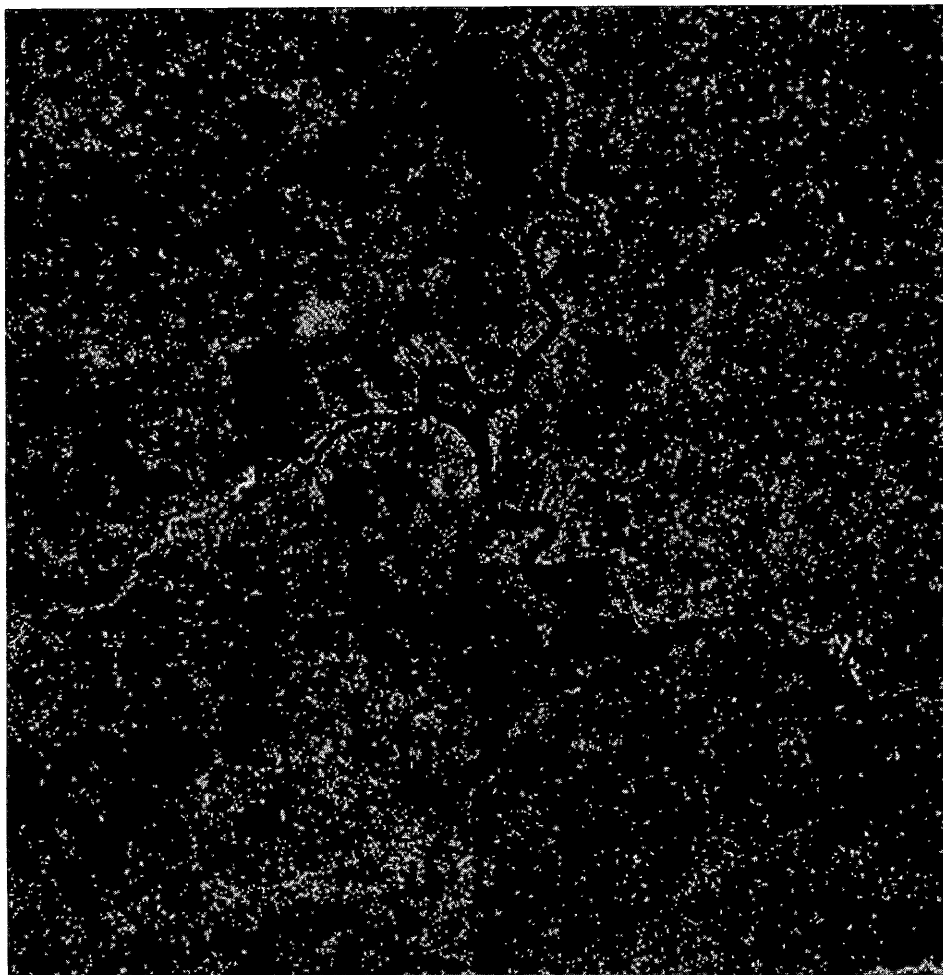
The **Office of Remote Sensing (ORS)** uses multispectral remotely sensed imagery and geographic information system (GIS) for natural resource studies and mapping project in South Dakota and elsewhere.

The **South Dakota Space Grant Consortium** is a program funded in part by the National Aeronautics and Space Administration. Consortium members are SDSU, SDSM&T, Augustana College and the EROS Data Center. Goals of the Consortium are to create an enthusiasm for aerospace sciences among students and faculty and to encourage them to pursue careers in related fields.

The **South Dakota Local Transportation Assistance Program (LTAP)** 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.

For information, contact Kevin Dalsted, Director, Engineering Resource Center, SDSU, Box 2220, Brookings, SD 57007-0199; phone 605-688-4184; e-mail: kevin_dalsted@sdstate.edu



Shown in this photograph is the topography of Pierre, SD. The photo was taken by satellite for the EROS Data Center near Garretson, SD.

Fees

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 \$123.60 per semester for Junior Field Experience, \$247.20 per semester for Senior Student Teaching, and \$123.60 one-time fee for Master's Level Internships.

Special Expenses for Engineering Courses

A fee of \$15.30 per credit hour is charged for courses in the College of Engineering. This fee applies to Mathematics and Computer Science courses as well.

Engineering/Science Lab Fee

\$21.65 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 \$322.75 for the Undergraduate program, \$148.50 for the RN Upward Mobility program, and \$148.50 for the Graduate program. Students enrolled in the Family Nurse Practitioner program are assessed a fee of \$527.43 per semester.

Special Expenses for Pharmacy students

Students in the Pharm.D. program are assessed a major fee of \$869.60 per semester 3 through 10. For semester 11 and 12, there is a \$54.35 per hour per credit hour Pharm.D. clerkship (10 credit hours required)

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.

Tuition, Living, and Other Expenses

Using Academic Year September 2001-May 2002

For current information see the web site: www3.sdstate.edu/Admissions/FinancialAid/CostEstimate

All charges and procedures listed are subject to change pending Board of Regents action.

TUITION AND FEES	Resident*	Non-Resident
Tuition		
undergraduate on-campus per semester credit	\$62.40	\$198.50
graduate on-campus per semester credit	94.75	279.30
University Support Fee – per credit	43.66	43.66
Activity Fee – per credit	12.99	12.99
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

Students have a choice of 5 Meal Plans ranging from \$652.94 to \$1,210.50 per semester. For more detailed information, contact the Food Service Office or Residential Life.

Residence Hall Rent – per semester

Single occupancy	\$982.00	\$982.00
Double room	739.00	739.00

TYPICAL EDUCATION EXPENSES FOR FULL TIME UNDERGRADUATE FOR ONE SEMESTER

Tuition – 16 credits	\$ 998.00	\$3,176.00
University Support & Activity Fees –		
Health Service, Union, Students' Association	906.00	906.00
Books and supplies (estimate)	315.00	315.00
Meal Plan	892.00	892.00
Residence hall rent	739.00	739.00
	\$3,850.00 **	\$6,028.00 **

** Expenses will be higher if a student takes course work requiring lab fees or special discipline fees. See accompanying text.

PAYMENT PROCESS

On or before registration day each student makes a full payment of charges based on the number of credits early registered for, residency status, and campus housing. A Final payment will be made approximately four weeks later for any additional changes to the student's bill that occur after the registration day billing process.

CAMPUS CARD DEBIT SYSTEM-HOBO DOUGH

The student identification card is used as a debit card to access prepaid accounts. In addition to its extensive use in the food service system, the ID card accesses prepaid accounts, called HOBDOUGH, for bookstore, campus vending, laundry, photo copying and printing, and selected off-campus businesses. Upon graduation or leaving the University, these funds will be returned in full upon request. No service charges are assessed for active accounts. However, accounts inactive for six months or more are assessed a monthly service charge. If the service charge exceeds the account balance, the account is automatically closed.

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. Students with a room contract or food service contract will receive a refund based on the unused portion of the fee at the time of withdrawal up to the 60% point of the period. The balance of flex plan dollars will be refunded at 100%.

Federal Financial Aid Recipients. The U.S. Department of Education requires institutions to use the **Return of Title IV Funds** policy for students withdrawing from school and who are receiving Federal Title IV student financial aid. Title IV funds refers to the federal financial aid programs authorized under the Higher Education Act of 1965 (as amended) and includes the following programs: Federal Stafford Loan, Unsubsidized Stafford Loans, Parent Loans for Undergraduate Students (PLUS), Federal Perkins Loans, Federal Pell Grants, and Federal Supplemental Grants. Also, the Federal Nursing Loans and Federal Health Professions Loans use the Return to Title IV Funds calculation.

A *student's withdrawal date* is 1) When the student began the withdrawal process or officially notified SDSU of intent to withdraw by contacting the SDSU Registrar's Office, or 2) The midpoint of the period for a student who leaves without notifying SDSU; or at SDSU's option, the student's last documented date of academically-related activity.

Return of Title IV Funds is based on "earned" and "unearned" financial aid as related to the period of time the student is enrolled. Institutional charges comprise the amounts that had been assessed (paid or unpaid) and are **not** used in determining the Return of Title IV funds for a withdrawing student. During the first 60% of the period (academic term) a student "earns" Title IV funds and other applicable aid on a per diem prorated manner based on a percentage of the enrolled period by dividing the number of days a student attended by the number of days in the period. Calendar dates are used, except breaks of at least 5 days are excluded from the calculation. A student who remains enrolled beyond the 60% point earns all aid (100%) for the period.

The "**unearned**" Title IV funds must be returned to the aid programs. Unearned aid is the amount of disbursed Title IV aid that exceeds the amount of Title IV aid earned based on attendance in the enrollment period. Uncoverable charges are derived from the unearned percentage calculation for the period multiplied by the institutional charges.

Return of Title IV Funds Example

Example A: Student withdraws on the 27th of a 108-day period for a 25% earned financial aid disbursement. The institutional charges were \$1,600. The total Title IV aid disbursed was \$2,400, with \$1,600 going to institutional charges and \$800 going to the student.

Earned aid: $\$2,400$ (aid disbursed) \times .25% = \$600

Unearned aid to be returned: $\$2,400 - \$600 = \$1,800$

Unearned percentage: 100-25% (earned) = 75% unearned

Uncoverable charges: 75% (unearned) \times \$1,600 (charges) = \$1,200

Withdrawal Refunds Information

Students who withdraw, drop out, or are expelled from the University within the add period receive a 100% refund of tuition and course related fees. Students who withdraw, drop out, or are expelled from the University after the add period for the enrollment period for which they are assessed, may be entitled to a refund to tuition and fees and institutional charges calculated through sixty percent of the enrollment period. The refund shall be determined by computing the percentage of an enrollment period remaining after the date of withdrawal times the tuition and fees originally assessed the student.

Repayment of unearned aid is first paid by any unearned (refunded) institutional charges. The student owes the difference between the total unearned amount and the refunded institutional charges.

Return of Title IV funds, by programs disbursed, are allocated in the following order: Unsubsidized Federal Stafford Loan, Federal Stafford Loan, Federal Perkins Loan, PLUS Loans, Federal Pell Grant, Federal Supplemental Grant, other Title IV assistance, other federal sources of aid, other state, institutional, and private aid, and last to the student.

Responsibilities of SDSU include providing information on the Return of Title IV Funds policy and procedure to students. This information is available at www.sdstate.edu and from the SDSU Financial Aid Office. SDSU is also responsible to complete calculations of the Return of Title IV Funds for federal financial aid recipients who are withdrawing from SDSU and to return any Title IV funds to the respective Title IV funds account. The student is responsible to repay any Title IV funds that the student was determined to be ineligible for via the Return to Title IV funds calculation.

The institutional share is the lesser of \$1,800 (unearned aid to be returned) and \$1,200 (uncoverable charges).

The student's share is \$1,800 (unearned aid) - \$1,200 (uncoverable charges) = \$600

Thus, the total \$1,800 Return of Title IV Funds has the institutional share of \$1,200 (75% of \$1,600 used for payment) and the student share of \$600 (75% of \$800 paid to student).

Example B: Same as A, except the student withdraws on the 65th day of a 108-day period (60.2%). No Return of Title IV Funds calculation is needed since the withdrawal date is after the 60% point of the enrollment period.

Financial Assistance

General Information

Approximately 85% 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 (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. Average 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 7. 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. Selective Service laws require male students born after December 31, 1959, to be registered with Selective Service.
- F. 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 on the SDSU web page at <http://www.sdstate.edu>. 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.
- B. Loans provide an opportunity to borrow money for educational expenses. Loans must be repaid. First time loan recipients are required to complete Entrance Loan Counseling.
 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.
 6. 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 2,400 scholarships to undergraduate students. There are approximately 750 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 new student academic scholarships.

- A. Selected new freshmen scholarships.
 1. Renewable scholarships, upon meeting academic standards, include: Bocklund; Stephen F. Briggs; Clarin; Ferguson; May; Nichols; Noyes; and many named Foundation scholarships.
 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.

- C. Talent and participation scholarship awards are available by contacting the specific areas:
 4-H: 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, ADM 106, Brookings, SD 57007. Phone 605-688-4695, or e-mail: sdsu_finaid@sdstate.edu for specific applications, forms, and information. Additional information can be accessed on the SDSU Home Page: www3.sdstate.edu

Foundation, SDSU

The SDSU Foundation is a private, non-profit corporation working to find private funding sources to expand and enhance educational opportunities at South Dakota State University.

The SDSU Foundation manages total net assets valued at more than \$80 million, including an endowment of more than \$59 million. The work of the SDSU Foundation provides support that translates to more than \$100,000 each week to assist the land-grant university in its missions of education, research and outreach.

Donations to the SDSU Foundation come in many forms including cash, marketable securities, real estate, equipment, personal property, and estate gifts.

A volunteer board governs the activities of the SDSU Foundation. David F. Marquardt is the Foundation's executive director.

For information on making a gift to SDSU, contact the SDSU Foundation at (toll-free) 1-888-747-SDSU (7378), send an e-mail to: david_marquardt@sdstate.edu; or check out the web site at: www3.sdstate.edu/AlumniFoundation/SDSUFoundation.

Instructional Technologies and Telecommunications

The **Instructional Technologies Center (ITC)** at SDSU provides faculty, staff, and students access to state-of-the-art technologies.

The ITC is located in Pugsley Center Room 101. Service areas include Instructional Technologies, Media Development, and Telecommunications. In addition to the Pugsley facilities the ITC 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. ITC personnel support users and operate a service center in the Rotunda.

Media Development includes Presentation Graphics, Video Production, and Multimedia Production. 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 Digital Dakota Network (DDN) allowing SDSU to extend educational opportunities across South Dakota. The center also provides satellite uplink and downlink services and facilities, ISDN based connections, an on-campus fiber network, and a faculty Multi-Media lab in PC105.

For additional information on any of the above services, please contact the Instructional Technologies Center, PC 101, 605-688-6312, or on the web at www.sdstate.edu/witc/http/itc.htm.



Intercollegiate Athletics

South Dakota State University is a charter member of the North Central Intercollegiate Athletic Conference and offers competition in ten sports for women and ten sports for men. Competition for both women and men is governed by the National Collegiate Athletic Association (NCAA). Women compete in cross country, indoor and outdoor track and field, volleyball, basketball, swimming, golf, tennis, softball, and soccer. Men compete in cross country, indoor and outdoor track and field, football, basketball, swimming, golf, tennis, wrestling, and baseball.

South Dakota State athletic teams have experienced broad based success. They are recognized regionally and nationally each year for the

athletic accomplishments and academic achievements for their student-athletes and coaches.

South Dakota State University teams compete in some of the finest indoor and outdoor athletic facilities in the state. Each year, several of the region's largest athletic events (i.e. NCAA Championships, NCC Championships, special events, etc.) are held at Coughlin-Alumni Stadium and Frost Arena.

For general athletic department information call 605-688-5625, for athletic ticket information call 605-688-5422 or 1-800-JACKS-TX (SD only) or e-mail: tamara_loban@sdstate.edu

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.

Registration for all intramural activities can be done online at <http://www3.sdstate.edu/athletics/intramurals>. One can also access schedules, scores standings, rules, and a list of activities and their start dates.

For further information, contact the Intramural Office at 605-688-4724 or e-mail: roxanne_cook@sdstate.edu

Library, Hilton M. Briggs

Library services and collections are housed in the spacious three-level Briggs Library, which is named for President Hilton M. Briggs, who served the University from 1958 to 1978. Library collections consist of more than 590,000 bound volumes, 303,000 government documents, 78,000 maps, and additional holdings of microtext, newspapers and pamphlet materials.

More than 3,000 journal titles are received currently, with another 9,000 titles available electronically in full text format. 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,

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, 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 52 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 3.7 million titles which are available through interlibrary loan to students at any member institution.

McCrary Gardens

McCrary Gardens is nationally recognized as one of the top small ornamental display gardens in the United States. It is operated by the Department of Horticulture, Forestry, Landscape and Parks. McCrary Gardens has grown to its present stature primarily through donations by Friends of McCrary 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.

The Gardens are open daily from dawn until dusk, no entry fee is charged but donations are encouraged. Trees, shrub, ground covers annuals, and perennials are featured throughout the entire gardens. For more specific information, call 605-688-5136 or e-mail: peter_schaefer@sdstate.edu

Museums/Collections

The **South Dakota Art Museum's** collection of over 6000 objects consists of paintings, photographs, textiles, sculptures and Native American artifacts and art. The objects are a cultural reflection of the work of local, national, and international artists. The emphasis however, is on the work of artists from South Dakota and the surrounding region. Permanent collections include South Dakota's preeminent artist Harvey Dunn, nationally recognized Native American painter Oscar Howe, noted children's book author and illustrator Paul Goble. The Marghab Linen Collection was developed by South Dakota native Vera Way Marghab and her husband, Emile. The Native American Collection consists of over 800 objects representing 20th Century Plains Indian Art. The South Dakota Collection is comprised of nearly 600 historic and contemporary works by native South Dakotans.

Pieces from the Museum's permanent collections are displayed in the facility's six galleries on a rotating basis. Exhibits from private collections and outside institutions are regularly incorporated into the exhibition schedule. For more information or to schedule a group tour,

call 605-688-5423, e-mail sdsu_sdam@sdstate.edu or visit our website at <http://www3.sdstate.edu/Administration/SouthDakotaArtMuseum/>.

The University's **Agricultural Heritage Museum** preserves and interprets South Dakota agricultural history and rural heritage. The museum is concerned with human experiences that were shaped by the state's diverse environment.

The museum is located on the northwest corner of Medary Avenue and 11th Street in the old Stock Judging Pavilion. The museum is open FREE to the public Monday through Saturday from 10:00 AM to 5:00 PM and Sundays from 1:00 to 5:00 PM. The museum is closed on state holidays.

The museum gift shop is a terrific source of South Dakota history books and unique gifts.

For further information or to schedule a group tour, call 605-688-6226, e-mail SDSU_agmuseum@sdstate.edu or visit our website at <http://www3.sdstate.edu/administration/SouthDakotaStateAgriculturalHeritageMuseum/>

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.

Print Lab

The Print Lab is an on-campus-printing department located in Yeager Hall, YEH 102. There is a charge for all Print Lab work, and the Print Lab only prints university-related materials.

Work done at the Print Lab must first be routed through University Relations (605-688-6161). With the advent of desktop publishing programs, writing and designing publications such as newsletters, brochures, posters, flyers, etc., has become much easier. Although nearly every office on campus has this capability, generally a publication designed "in house" does not necessarily mean it is "print ready."

To ensure projects are ready for printing, electronic pre-press procedures require University Relations to prepare the computer files for

the Print Lab. These procedures apply to the simplest business form or letterhead to the most complicated full-color brochure. Additionally, the Office of University Relations is charged with the responsibility of overseeing the consistent quality of publications, for both internal and external audiences.

Print Lab also has three copy centers on campus:

Ag Hall Copy Center (AGH 125), 605-688-4921

Biostress Copy Center (NPB 105), 605-688-4417

Print Lab Copy Center (YEH 102), 605-688-5111

For more information about the Print Lab's services, call 605-688-5111, or e-mail brenda_quam@sdstate.edu

Official University Symbols (Logos, Seals, Caricatures, Wordmarks)

University Relations approves the use of the name or logo of South Dakota State University (in any form) for printed publication or for any type of merchandise, i.e., hats, t-shirts, mugs, etc., to be distributed. The merchandise items must also carry a corresponding club or event name.

All SDSU logos, seals, caricatures or word marks are licensed and cannot be used without permission.

For information on usage, please contact:

Office of University Relations
Box 2230
South Dakota State University
Brookings, SD 57007-1498

Telephone: (605) 688-6161
Fax: (605) 688-6357

Official Name:

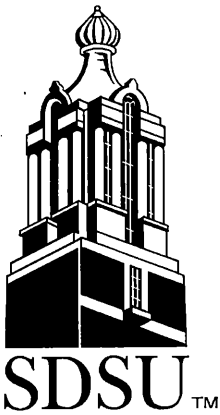
South Dakota State University or SDSU (no periods)

Official School Colors:

Blue (PMS 287) and Yellow (PMS 109)

Athletic Teams Nickname:

Jackrabbits or Jacks



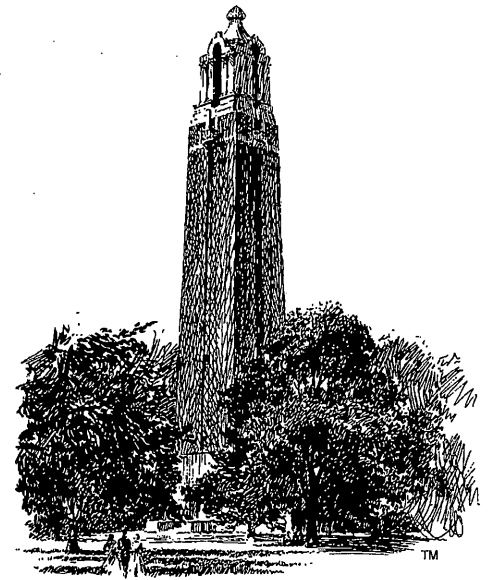
Official SDSU Logo
(as of May 1994)



Official SDSU Seal



SDSU Alumni Association Logo



The Coughlin Campanile occupies a central focus on campus.

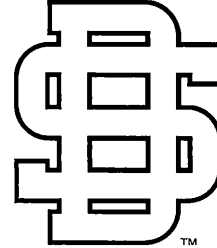
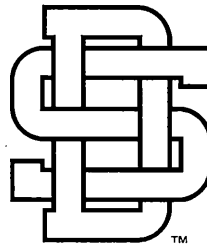
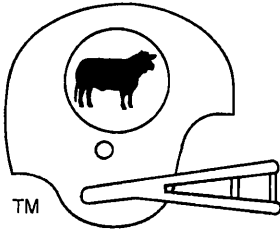


SDSU Athletic teams are nicknamed the "Jackrabbits"



"Dirty Lil" and "Weary Willie" represent the spirit of Hobo Days (SDSU's Homecoming).

BEEF BOWL



Various intertwined SDSU logos are used by the Athletic Department.



Official Cereal Bowl Logo



"Jacks Number One" is the official logo of SDSU Athletics



Official Oak Lake Field Station Logo



Official Midwest Market Analysis Logo (Television Production)



Official Today's Ag Logo (Television Production)



Official Garden Line Logo (Television Production)

These names (or wordmarks) are registered:

South Dakota State University™

Hobo Day™

Dirty Lil™

Weary Willie™

Jackrabbits™

Jacks™

Midwest Market Analysis™

Garden Line™

Today's Ag™

Oak Lake Field Station™

Beef Bowl™

Cereal Bowl™

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 Handbook and Family Student Housing Information booklets. The Residential Life Office is located in Wecota 115. The phone 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. Generally unmarried, traditional-aged 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 28 for Fall Semester and November 29 for new Spring Semester contracts to avoid a monetary penalty. Currently, University residence hall facilities rent for \$1,529-\$2,278 per academic year. Usually, two students are assigned to each room. However, some rooms are available for rent as single rooms. 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 phone number is 605-688-5916.

Residence Hall Confirmation Fee – 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 Confirmation Fee must accompany all applications/ contracts for residence hall space. The \$50 Confirmation

Fee will be credited toward a student's Hobo Dough account. Any person, whose written request for release from the residency requirement is postmarked on or before June 28 for Fall Semester or November 29 for new Spring Semester contracts, who is released from the residency requirement, will have the \$50 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 \$215.00-\$285.00 per month. Rent for the two-bedroom apartments is \$339.50 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.

University Apartments – 4-bedroom apartments for single students are available in Berg and Bailey Apartments. These newer buildings opened in 1994. Rent, including all utilities, dishwasher, stove, refrigerator, and air conditioning, is \$242/person per month unfurnished and \$252/person per month with furnished bedrooms, and \$257/person per month for fully furnished. Nine-month contracts are available and a security deposit of \$100 is required when a contract is signed. Contact Residential Life Office personnel for more information.

Food Service – SDSU Dining Services is committed to providing a food service program that is both economical and of the highest quality. SDSU's Dining Service utilizes a Student I.D. "One Card System", that allows access to all food venues and meal plans. Larson Commons is an

"all-you-can-eat-facility," while students can also choose to eat at the newly renovated Jack's Place at the Student Union and Medary Commons, along with convenience stores and a pizza delivery operation. There are several meal plans from which to choose, offering the student considerable variety to pick a plan that best meets their particular eating needs. All SDSU students living in residence halls are required to purchase a meal plan. Complete information about the Dining Service's meal plans, costs, hours of operations and programs is included with the Residence Hall information and a brochure is distributed to all students. Other food programs are available for off-campus "commuter" students, faculty and staff. The Dining Services office is located in the University Student Union 157. The phone number is 605-697-2550.



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 Aid, Food Service, Health and Counseling Services, International Student Affairs, Native American Advising, Registration and Records, Residential Life, Student Union and Activities, TRIO Student Support Services, and Veterans Affairs. If you have questions or need information about any of these areas, contact the Dean of Student Affairs office in ADM 318, phone 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, ADM 200, South Dakota State University, Box 2201, Brookings, SD 57007-0649, phone 605-688-4121.

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 605-688-6146, West Hall 112, for further information.

Office of Disability 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 Coordinator of Disability Services is located in West Hall 110, phone 605-688-4504.

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. Alcohol and drug abuse assessment is available on an individual basis. Counseling and medical services are available to students and referrals to other agencies are available to everyone on campus. Call 605-688-6146 or 605-688-4157 for information.

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 ADM 106, phone 605-688-4695.

Health Education and Prevention Services – The Health Education and Prevention Services are sponsored by Student Health and Counseling. 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. The Health and Counseling Department supports 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 and residence hall student staff

training. The counseling staff 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 and Counseling Department at 605-688-6146 for assistance or 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 605-688-5588 for further information, a medical appointment, or medical record assistance.

International Student Affairs – This office 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 United States. For further information, contact the office at ADM 312, SDSU, Brookings, SD 57007, phone 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, ADM 318, for further information.

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; processes enrollment verifications; administers the withdrawal process; oversees transfer credits; 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 ADM 208, phone 605-688-6195.

TRIO Student Support Services – This program is designed to help students achieve academic success. The ultimate goal of TRIO Student Support Services is to increase the number of students who are retained and graduated from SDSU. To be eligible for services, a participant must fit one of the following criteria: 1) a first generation student - neither parents finished a 4-year college degree, 2) an individual with a documented disability that impacts ability to be successful in an academic program, and/or 3) an individual from an economically disadvantaged family who needs financial assistance to attend and be successful in college. To assist student's success at SDSU the following support services are available through the TRIO Student Support Services Program: 1) scholarship opportunities to help with college costs (minimum \$300); 2) individualized support in managing academic pursuits; 3) personalized financial, career, and social support services to ease transitions through college; 4) tutorial services in a variety of course areas (including math, English, and basic sciences); 5) referral assistance to other campus support services; and 6) priority registration at the beginning of each academic semester. Since services to students are individualized, participation in the program may substantially increase participants' chances for success at SDSU. For more information on the SDSU TRIO Student Support Services, visit their office in the ADM 102. Phone 605-688-6653.

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, ADM 108, South Dakota State University, Box 2201, Brookings, SD 57007, phone 605-688-4700, for application forms and information concerning their benefits.

South Dakota resident veterans who served on active duty during a declared war or who participated in an U.S. Department of Defense declared conflict or hostility 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, ADM 106, or phone 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, ADM 208, 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.

Student Union and Activities

The Student Union and Activities Department strives to maintain a safe and welcoming atmosphere, quality services and programs that are responsive to the needs of the community, and a focus on supporting the development and education of our students.

The Student Union and Activities Department is comprised of three management areas as follows:

The Student Activities office manages the area, which provides advisement and support for the University Program Council (a student organization sponsoring activities under the following committees: Arts, Community Service, Concerts, Hobo Day, Lectures/ Forums, Publicity/ Graphics, Recreation/Travel, Showcase, Social Awareness, and Special Events.) Student Activities also provides support and advisement to the Greek Fraternity system (Greek life including the following chapters: Alpha Xi Delta, Alpha Gamma Rho, Ceres, Chi Omega, Delta Chi, FarmHouse, Lambda Chi Alpha, Sigma Alpha Epsilon, Sigma Phi Delta, Sigma Phi Epsilon) and all student organizations. This office houses the Office of Multicultural Affairs which supports our cultural student organizations including the Black Student Alliance, Native American Club and International Relations Club. Finally, the Student Activities office coordinates the National Student Exchange program, Leadership Development, and coordinates the Jacks' Student Organization Resource Center (J-SORC.)

The Student Union and Activities Department orchestrates the New Student Orientation (NSO) program in its entirety. NSO is the first step to achieving your goals as a new, re-admit, or transfer student at SDSU. The New Student Orientation program introduces students to our campus and community, easing the transition to South Dakota State University and building lasting connections with other students, faculty and staff. The New Student Orientation office coordinates three major orientation programs: summer, fall, and spring orientation. Each program is designed with the student in mind.

The Student Union and Activities Department manages the overall operation of the University Student Union. The USU provides the following services: Union

Manager/Setup Crew, Outback Jacks (billiards, video arcade, banner/sign making, outdoor recreational equipment rental and off-campus housing), State Tech (lighting, staging and sound reinforcement for university events), Information Exchange (check cashing, fax and copy service, posting approval, ticket sales and notary service), and Central Reservations (reservation of campus facilities).

The *Collegian/Jackrabbit* publications, Students' Association, KSDJ 90.7, Student Legal Services, Dining Services: the Market and Jacks', the Bookstore, Card Services/Hobo Dough, and ten meeting rooms including the Volstorff Ballroom add to the already extensive list of student organizations and services housed in the University Student Union.

More information regarding the Student Union and Activities Department may be solicited by calling 605-688-4960 or by fax at 605-688-4973.



University Relations

University Relations (UR) is located in the Communications Center between the Administration Building and the Rotunda. This office offers a number of services in two broad categories to the campus.

Media

- Announcements of university activities and events of special interest to the general public via newspapers, radio, television, and the SDSU website.
- Promotion of student, faculty, departmental, and college accomplishments through news releases to area media.

For media needs, contact Cindy Rickeman at 605-688-4541 or e-mail: cindy_rickeman@sdstate.edu.

Publications

University Relations works closely with the campus Print Lab, the on-campus-printing department located in Yeager Hall, YEH 102. Work done at the Print Lab must first be routed through University Relations (688-6161). With the advent of desktop publishing programs, writing and designing publications such as newsletters, brochures, posters, flyers, etc., has become much easier. Although nearly every office on campus has this capability, generally a publication designed "in house" does not necessarily mean it is "print ready."

To ensure projects are ready for printing, electronic pre-press procedures require University Relations to prepare the computer files for the Print Lab. These procedures apply to the simplest business form or letterhead to the most complicated 4-color brochure. Additionally, the Office of University Relations is charged with the responsibility of overseeing the consistent quality of publications, for both internal and external audiences.

University Relations offers writing and design services for brochures, flyers, post cards, posters, newsletters and magazines for departments and colleges. Also ordered through UR are business cards, letterhead, forms, envelopes, mailing labels, etc.

UR produces the *Update*, a weekly listing of campus special events, activities, general announcements, and position announcements for distribution to staff, faculty, and administrators; and *Today at State*, a twice weekly listing of campus special events, activities, general announcements, and interview announcements for distribution to students.

University Relations approves the use of the name or logo of South Dakota State University in any form. All SDSU logos, seals, caricatures or word marks are licensed and cannot be used without permission.

For publication and printing needs, contact Nan Steinley at 605-688-4537 or e-mail: nancy_steinley@sdstate.edu

Water Resources Institute (WRI)

The mission of the Water Resources Institute (WRI) is to coordinate 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 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. Analysis of constituents that exist in minute concentrations is an important capability of the Water Quality Laboratory. Both the Institute and the Laboratory are housed on the second floor of the Agricultural Engineering Building.

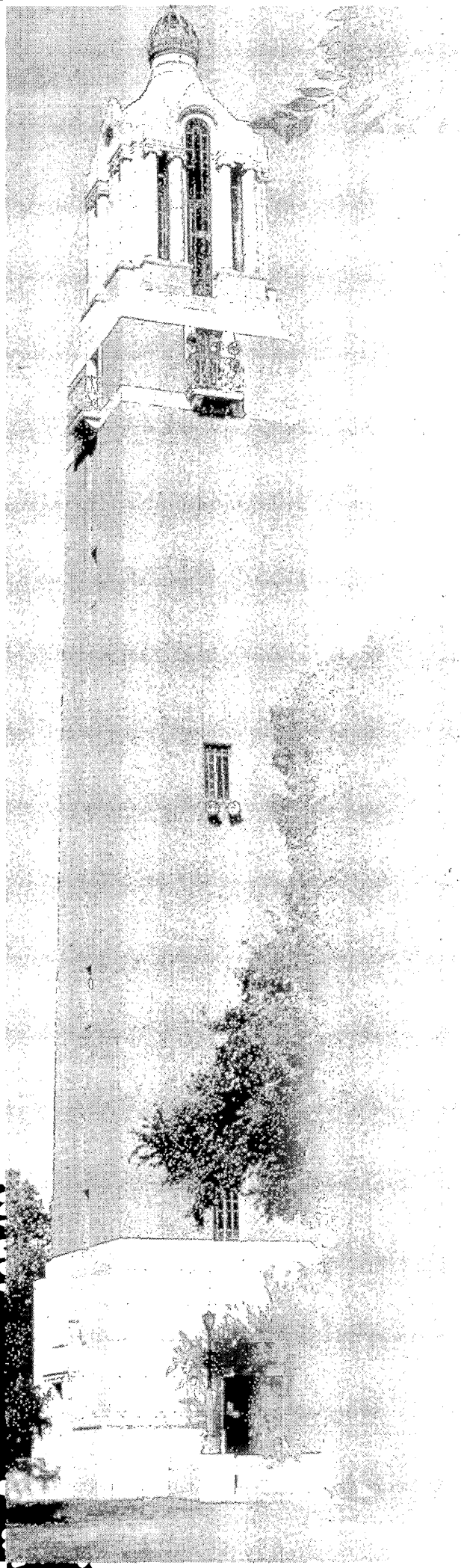
Phone 605-688-4910 or e-mail: nancy_stuefen@sdstate.edu for information.

Wellness Center

The Wellness Center is an on-campus health and fitness facility located in the Stanley J. Marshall HPER building. Our mission is to enhance the six dimensions of wellness. The center offers kick-box, land, and water aerobics, indoor cycling called SPINNING, free weights, a 1/8 mile indoor run/walk track, weight machines, racquetball, a 25-yard indoor swimming pool with three diving boards, cardiovascular exercise deck, and basketball courts. Specialized programs are available such as nutrition, weight control, and stress

management. Personal Fitness Evaluations or Personal Programming sessions are available at no cost to students. Students become members upon payment of their student activity fee. Specialized programs may require an extra charge. Employment opportunities for students include aerobic instructors, SPINNING instructors, service desk attendants, weight room supervisors, and lifeguards.

Phone 605-688-6415.



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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 Harvey Jewett, IV
(Term expires March 31, 2005)
Aberdeen

Honorable Randy Morris
(Term expires March 31, 2004)
Spearfish

Honorable Pat Lebrun
(Term expires March 31, 1999 – continues
continues to serve)
Rapid City

Honorable Curt Jones
(Term expires March 31, 2003)
Britton

Honorable David Gienapp
(Term expires March 31, 2003)
Madison

Honorable Rudolph Nef
(Term expires March 31, 2004)
Milbank

Honorable Jack Rentschler
(Term expires March 31, 2003)
Sioux Falls

Honorable James Hansen
(Term expires March 31, 2007)
Pierre

Honorable Shane C. Penfield
Student Regent (Expires July 1, 2002)
Vermillion

Honorable Robert T. (Tad) Perry
Executive Director
Pierre

General Administration

President
Peggy Gordon Miller, Ed.D.
Provost and Vice President for
Academic Affairs
Carol J. Peterson, Ph.D.

Executive Vice President for Administration
Michael P. Reger, Ph.D.
Associate Vice President for Academic Affairs
and Chief Information Technology Officer
Edward P. Hogan, Ph.D.

Registrar
Richard H. Davis, Ed.D.
Assistant Vice President for Finance and
Business
Wesley G. Tschetter, M.B.A.

Deans/Associate and Assistant Deans

College of Agriculture and Biological Sciences
Fred A. Cholick, Ph.D., Dean
Charles R. McMullen, Ph.D., Interim
Associate Dean and Director of
Academic Programs
Larry J. Tidemann, M.S., Associate
Dean and Director of Cooperative
Extension Service
Kevin D. Kephart, Ph.D., Associate Dean
and Director of Agricultural Experiment
Station

College of Arts and Science
Jerry D. Jorgensen Ph.D., Dean
Michael R. Schliessmann Ph.D.,
Assistant Dean
College of Education and Counseling
Francis A. Martin, Ph.D., Acting Dean
College of Engineering
Lewis F. Brown, Ph.D., Dean
Richard A. Reid, Ph.D.,
Assistant Dean
College of General Studies and Outreach
Programs
Gail Dobbs Tidemann, Ph.D., 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
David Hilderbrand, Ph.D., Dean
John J. Ruffolo, Ph.D., Associate Dean
Library
Steve R. Marquardt, Ph.D., Dean
Student Affairs
Marysz Palczewski-Rames, Ed.D., Dean

Directors

Academic Evaluation & Assessment

Marge Hegge, Ed.D.

Academic Programs (College of AgBio)

Charles R. McMullen, Ph.D.

Admissions

Tracy Welsh, B.A.

AgBio Communications Unit

Barbara Suhr Hartinger, M.A.

Agricultural Experiment Station

Kevin D. Kephart, Ph.D.

Agricultural Heritage Museum

John Awald, M.S.

Agricultural Information Technologies

Michael F. Adelaine, Ph.D.

Alumni Association

V. J. Smith, B.S.

Animal Disease Research and Diagnostic

Laboratory (ADRDL)

David H. Zeman, D.V.M.

Athletics

Fred Oien, Ed.D.

Biostress Center of Excellence

Charles R. McMullen, Ph.D.

Bookstore, University

Gary G. Burdick, B.A.

Career and Academic Planning (CAP Center)

Susan Fredrikson, M.Ed.

Chief Business Officer

Jerome C. Fiedler, M.Ed.

Computing Services

Delmar R. Johnson, M.Ed.

Cooperative Extension Service

Larry J. Tidemann, M.S.

Counseling Center

James E. Schmaedeke, M.A., Interim

Dining Services

John Sterbis, B.S.

Disability Services

Nancy Schade, B.S.

Diversity Enhancement

Allen R. Branum, Ph.D., Acting

Engineering Resource Center (ERC)

Kevin Dalsted, M.S.

Environmental Health & Safety

Gary Yarrow, Ph.D.

Financial Aid

Jay A. Larsen, M.Ed.

4-H Foundation

Nancy Swanson, M.A.

Honors College

Robert V. Burns, Ph.D.

Information Technologies Services

Allan Jones, Ed.D.

Instructional Technologies Center

Lisa Star, M.A.

International Programs

Harriet P. Swedlund, M.S.

Northern Great Plains Water Resources

Research Center

Vernon Schaefer, Ph.D.

Oak Lake Field Station

Nels Troelstrup, Ph.D.

Personnel

Karyn Converse-Weber, M.A.

Physical Plant

Dean Kattelman, M.S.

Polytechnic Center of Excellence

Reza A. Maleki, Ph.D.

Records

Richard H. Davis, Ed.D.

Residential Life

Doug Wermedal, Ed.D.

Sioux Falls Programs

Sharon Sopko, Ed.D.

South Dakota Art Museum

Lynn Verschoor, M.S.

SDSU Foundation/Development

David Marquardt, M.A.,

Executive Director

Edd Storey, M.A.,

Senior Director of Major Gifts

Student Activities

Kathy Lusk, M.S.

Student Health

James E. Schmaedeke, M.A., Interim

Transportation, Technology Transfer Service

Ali Selim, Ph.D.

University Relations

Jennifer Crickard, M.A.

Water Resources Institute

Van C. Kelley, Ph.D.

West River Ag Center

Martin K. Beutler, Ph.D.

Department Heads (by college)

Agriculture and Biological Sciences

Agricultural and Biosystems Engineering

Van C. Kelley, Ph.D.

Animal and Range Sciences

Donald L. Boggs, Ph.D.

Biology and Microbiology

Thomas M. Cheesbrough, Ph.D.

Dairy Science

David J. Schingoethe, Ph.D., Acting

Economics

Richard C. Shane, Ph.D.

Horticulture, Forestry, Landscape and Parks

Peter R. Schaefer, Ph.D.

Plant Science

Dale J. Gallenberg, Ph.D.

Rural Sociology

Donna J. Hess, Ph.D.

Veterinary Science

David H. Zeman, D.V.M.

Wildlife and Fisheries Sciences

Charles G. Scalet, Ph.D.

Arts and Science

Aerospace Studies

LTC Richard Runchey, M.S.

Chemistry and Biochemistry

James A. Rice, Ph.D.

Communication Studies and Theatre

Laurie Haleta, Ph.D.

English

Kathleen Donovan, Ph.D.

Modern Languages

Philip Baker, Ph.D.

Geography

Roger K. Sandness, Ph.D.

Health, Physical Education and

Recreation

Fred M. Oien, Ed.D.

History

Jerry Sweeney, Ph.D.

Journalism and Mass Communication

Richard W. Lee, Ph.D.

Military Science

LTC Keith Corbett, Ed.D.

Music

Corliss L. Johnson, D.M.A.

Philosophy and Religion

Robert Burns, Ph.D.

Political Science

Robert Burns, Ph.D.

Psychology

Virginia Norris, Ph.D.

Visual Arts

Norman Gambill, Ph.D.

Education and Counseling

Counseling and Human Resource

Development

Ruth Harper, Ph.D., Acting

Educational Leadership

R. L. Erion, Ph.D., Acting

Teacher Education

R. L. Erion, Ph.D., Acting

Engineering

Civil and Environmental Engineering

Vernon R. Schaefer, Ph.D.

Computer Science

Alireza Salehnia, Ph.D., Acting

Electrical Engineering

Dennis Helder, Ph.D., Acting

Engineering Technology and Management

Reza Maleki, Ph.D.

Mathematics and Statistics

Kenneth L. Yocom, Ph.D.

Mechanical Engineering

Donell P. Froehlich, Ph.D.

Physics

Oren Quist, Ph.D.

Family and Consumer Sciences

Apparel Merchandising and Interior

Design

Jane E. Hegland, Ph.D.

Human Development, Consumer and

Family Sciences

Mary Kay Helling, Ph.D.

Nutrition, Food Science and Hospitality

Chunyang Wang, Ph.D., Acting

Nursing

Graduate Nursing

Penny Powers, Ph.D.

Nursing Student Services

Gloria Craig, Ed.D.

Undergraduate Nursing

Roberta K. Olson, Ph.D., Acting

West River Nursing

Kay Foland, Ph.D.

Pharmacy

Clinical Pharmacy

Brian L. Kaatz, Pharm.D.

Pharmaceutical Sciences

Bruce L. Currie, 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 (1307 New York Avenue, Suite 400, Washington, D.C. 20005-4701; Phone 202-478-4701) promotes the aims expressed in the Morrill Act of 1862, and in the subsequent acts of Congress relating to Land-Grant Colleges; and the American Association of State Colleges and Universities (1307 New York Avenue, NW, 5th Floor, Washington, D.C. 20005-4701; Phone 202-293-7070).

Accredited by The Higher Learning Commission and a member of the North Central Association of Colleges and Schools (30 North LaSalle Street, Suite 2400, Chicago, IL, 60602-2504; Phone 312-263-0456). Its purpose is to maintain high standards of instructional work and educational programs. The University is accredited through the doctoral level. Its next comprehensive evaluation is 2010.

The Athletic Training Program is accredited by the Commission on Accreditation of Allied Health Education Programs (35 E. Wacker Drive, Suite 1970, Chicago, IL 60601; Phone: 312-553-9355).

The bachelor's and master's degree programs in the College of Nursing are accredited by the Commission on Collegiate Nursing Education (One Dupont Circle, NW, Suite 530, Washington, D.C. 20036-1120; Phone: 202-887-6791).

The Chemistry Department is accredited by the American Chemical Society (1155 Sixteenth St., N.W., Washington, DC 20036; Phone 202-872-4589).

The Dietetic Program is accredited by the American Dietetic Association (216 W. Jackson Blvd, Chicago, IL 50505-6995; Phone 800-877-1600).

The curriculum in Family and Consumer Sciences is accredited by the American Association of Family and Consumer Sciences (1555 King Street, Alexandria, VA 22314; Phone 703-706-4600).

The curriculum in Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communication (School of Journalism and Mass Communications, University of Kansas, Lawrence, KS 66045; Phone 913-864-3986).

The Music Department has full membership in the National Association of Schools of Music (11250 Roger Bacon Drive, Suite 21, Reston, VA 22090; Phone 703-437-0700).

Preparation of teachers at both the undergraduate and graduate levels is accredited by the National Council for Accreditation of Teacher Education (2010 Massachusetts Ave., NW, Suite 500, Washington, D.C. 20036-1023; Phone 202-466-7496).

The programs of Agricultural and Biosystems, Civil, Electrical, and Mechanical Engineering are accredited by the Accreditation Board for Engineering and Technology (111 Market Place, Suite 1050, Baltimore, MD 21202; Phone 410-347-7700).

The M.S. in Counseling and Human Resource Development program is accredited by the Council for Accreditation of Counseling and Related Educational Programs (5999 Stevenson Ave., Alexandria, VA 22304; Phone 703-823-9800, ext. 301).

The curriculum in Pharmacy is accredited by the American Council on Pharmaceutical Education (20 North Clark Street, Suite 2500, Chicago, IL 60602-5109; Phone 312-664-3575).

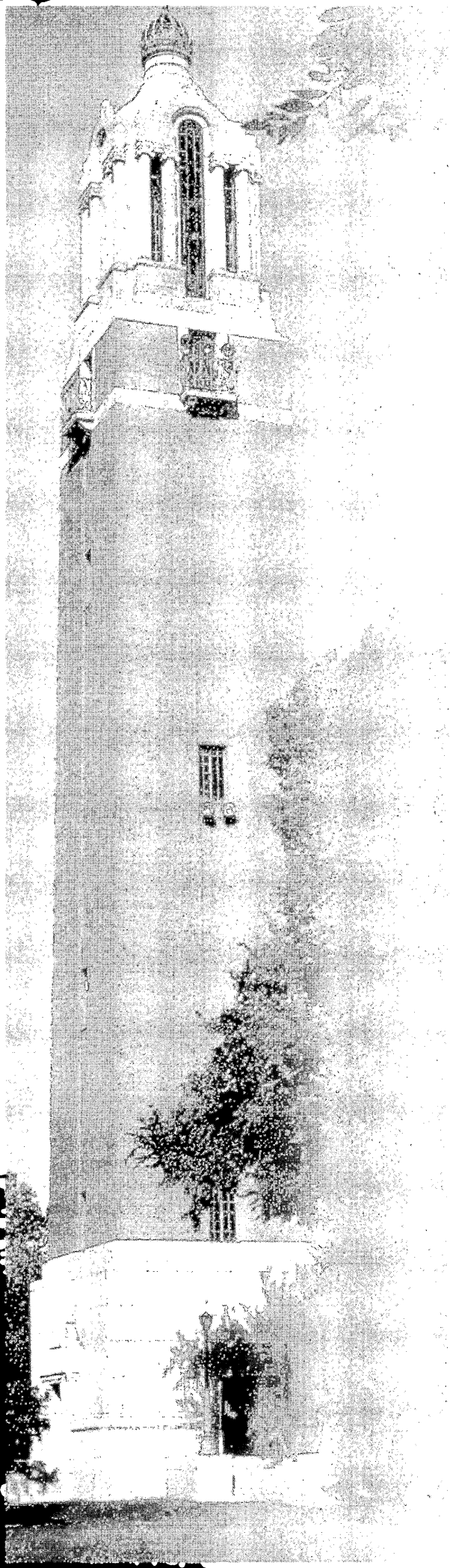
The Agricultural Systems Technology Program is accredited by the American Society of Agricultural Engineering (2950 Niles Road, St. Joseph, MI 49085-9659; Phone: 616-429-0300).

The Early Childhood Education program is accredited by the National Association for Education of Young Children (1506 16th St., NW, Washington, D.C. 20036-1426; Phone 800-424-2460).

The Animal Disease Research and Diagnostic Laboratory is accredited by the American Association of Veterinary Laboratory Diagnosticians (PO Box 1522, Turlock, CA 95381; Phone 209-634-5837).

The University also holds membership in the American Council on Education, 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 American Association of Colleges of Nursing, the American Library Association, Associated Western Universities, Inc., Council of Graduate Schools in the United States, National Association for Foreign Student Affairs, American Association for Higher Education, CUIDES (Consejo Universitario Interamericano para el Desarrollo Economico y Social) (American translation – Interamerican University Council for Economic and Social Development), 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 (1575 Eye St., NW, Suite 400, Washington, D.C. 20005; Phone 202-289-1818), and it is now one of only two accredited museums in the state.



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UNIVERSITY STAFF

As of April 2002

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

Miller, Peggy Gordon, President, Professor of Education, Graduate Faculty, 1998; B.A., Transylvania University, 1959; M.S., Northwestern University, 1964; Ed.D., Indiana University, 1975; Ed.D., Indiana University, 1975, L.L.D., Transylvania University (Honorary Degree), 1993.

Peterson, Carol J., Provost and Vice President for Academic Affairs, Professor of Nursing, Graduate Faculty, 1977, 2000; Diploma in Nursing, Methodist Kahler School of Nursing, 1960; B.S., University of Minnesota, 1963; M.Ed., 1964; Ph.D., 1969.

Reger, Michael P., Executive Vice President for Administration, Assistant Professor of Education, Graduate Faculty, 1979, 2000; B.A., Western Illinois University, 1970; M.S., 1972; Ph.D., Ohio State University, 1983.

Hogan, Edward P., Associate Vice President for Academic Affairs and Chief Information Technology Officer, Professor of Geography, Graduate Faculty, 1967, 1999; B.S., Saint Louis University, 1961; M.A., 1962; Ph.D., 1969.

Rames, Marysz Palczewski, Dean of Student Affairs, 1987, 2000; B.S., University of Northern Colorado, 1982; M.A., 1986; Ed.D., University of South Dakota, 1997.

Welsh, Tracy, Director of High School Relations and Admissions, 1984, 1997; B.A., Fontbonne College, 1980.

Davis, Richard H., Registrar, 2001; B.A., University of Vermont, 1979; M.A., Michigan State University, 1981; Ed.D., University of South Dakota, 1997.

Marquardt, Steve R., Dean of Libraries, Professor of Library Science, Graduate Faculty, 1996; B.A., Macalester College, 1966; M.A., University of Minnesota, 1970, 1974; Ph.D., 1978.

Tschetter, Wesley G., Assistant Vice President for Budget and Finance, 1982, 2000; B.S., SDSU, 1969; M.B.A., University of South Dakota, 1971.

Kattleman, Dean E., Director of Physical Plant, 2002; B.S., Southwest Missouri State University, 1976; M.S., University of Missouri, 1989.

Lattin, Danny L., 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.

Martin, Francis A., Acting Dean of the College of Education and Counseling, Professor of Counseling and Human Resource Development, Graduate Faculty, 1999, 2001; B.A., Oklahoma Baptist University, 1963; M.Div., Southern Baptist Theological Seminar, 1969; Ph.D., 1973.

Nichols, Laurie Stenberg, 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 State University, 1988.

Olson, Roberta K., Dean of the College of Nursing, Professor of Nursing, Graduate Faculty, 1994; B.S., SDSU, 1964; M.S.N., Washington University, 1968; Ph.D., Saint Louis University, 1984.

Tidemann, Gail Dobbs, Dean of the College of General Studies and Outreach Programs, Professor of Human Development, Consumer and Family Sciences, Graduate Faculty, 1986, 1997; B.S., Jacksonville State University, 1977; M.A., University of Alabama, 1978; Ph.D., 1986.

REGENTAL DISTINGUISHED PROFESSORS

Bailey, Harold S., Vice President for Academic Affairs Emeritus, Distinguished Professor of Higher Education, 1951, 1985; B.S., Massachusetts College of Pharmacy, 1944; M.S., 1948; Ph.D., Purdue University, 1951.

Wagner, Robert T., President Emeritus, Professor Emeritus of Rural Sociology, Distinguished Regental Professor of Higher Education, 1970, 1997; 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; D.P.S., SDSU, 1997; D.D., 2000.

DISTINGUISHED PROFESSORS

Burns, Robert V., Distinguished Professor, Head of Political Science and Philosophy and Religion, Director of Honors College, Graduate Faculty, 1970, 1994; B.S., SDSU, 1964; M.A., University of Missouri, 1966; Ph.D., 1973.

Costello, William J., Distinguished Professor Emeritus of Animal and Range Sciences, 1965, 1991; B.S., North Dakota State University, 1954; M.S., Oklahoma State University, 1960; Ph.D., 1963.

Dwivedi, Chandradhar, Distinguished Professor of Pharmaceutical Sciences, Graduate Faculty, 1987, 2000; B.S., Gorakhpur University, 1964; M.S., 1966; Ph.D., Lucknow University, 1972.

Evenson, Donald P., Distinguished Professor of Chemistry, Graduate Faculty, 1981, 1996; B.A., Augustana College, 1964; Ph.D., University of Colorado, 1968.

ACADEMIC DEANS

Brown, Lewis F., Dean of the College of Engineering, Professor of Electrical Engineering, Graduate Faculty, 1992, 2001; B.S., SDSU, 1984; M.S., Iowa State University, 1986; Ph.D., 1988.

Cholick, Fred A., Dean of the College of Agriculture and Biological Sciences, Professor of Plant Science, Graduate Faculty, 1981, 1998; B.S., Oregon State University, 1972; M.S., Colorado State University, 1975; Ph.D., 1977.

Hilderbrand, David, Dean of the Graduate School, Professor of Chemistry, Graduate Faculty, 1974, 1998; B.A., Southwest Baptist College, 1967; M.A., University of Missouri, 1969; Ph.D., 1971.

Jorgensen, Jerry D., Dean of the College of Arts and Science, Professor of Communication Studies and Theatre, Graduate Faculty, 1979, 2000; B.S., SDSU, 1978; M.S., 1984; Ph.D., University of Nebraska, 1990.

- Flake, Lester D.**, Distinguished Professor of Wildlife and Fisheries Sciences, Graduate Faculty, 1972, 1999; B.S., Brigham Young University, 1965; M.S., 1966; Ph.D., Washington State University, 1971.
- Gritzner, Charles F.**, Distinguished Professor of Geography, Graduate Faculty, 1980, 1995; B.A., Arizona State University, 1958; M.A., Louisiana State University, 1960; Ph.D., 1969.
- Hegge, Margaret J.**, Distinguished Professor of Nursing, Director of Academic Evaluation and Assessment, Title III Coordinator, CIC Director, Bush Project Director, Graduate Faculty, 1969, 1999; B.A., Gustavus Adolphus College, 1969; M.Ed., SDSU, 1972; Ed.D., University of South Dakota, 1983; M.S., University of Minnesota, 1984.
- Hess, Donna J.**, Distinguished Professor and Head of Rural Sociology, Graduate Faculty, 1974, 1998; B.A., Marquette University, 1965; M.A., State University of New York, 1971; Ph.D., Michigan State University, 1974.
- Johnson, James L.**, Distinguished Professor of Communication Studies and Theatre, Director of Theatre, Graduate Faculty, 1973, 2001; B.S., Kansas State University, 1960; M.A., University of South Dakota, 1961; Ph.D., University of Kansas, 1973.
- Malo, Douglas D.**, Distinguished Professor of Plant Science, Graduate Faculty, 1975, 1999; B.S., Iowa State University, 1971; M.S., North Dakota State University, 1974; Ph.D., 1975.
- Redhead, Ruth W.**, Distinguished Professor Emerita of Foreign Languages, 1962, 1989; B.Ed., University of Vermont, 1945; M.A., University of Minnesota, 1954; Ph.D., 1971.
- Wahlstrom, Richard C.**, 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.
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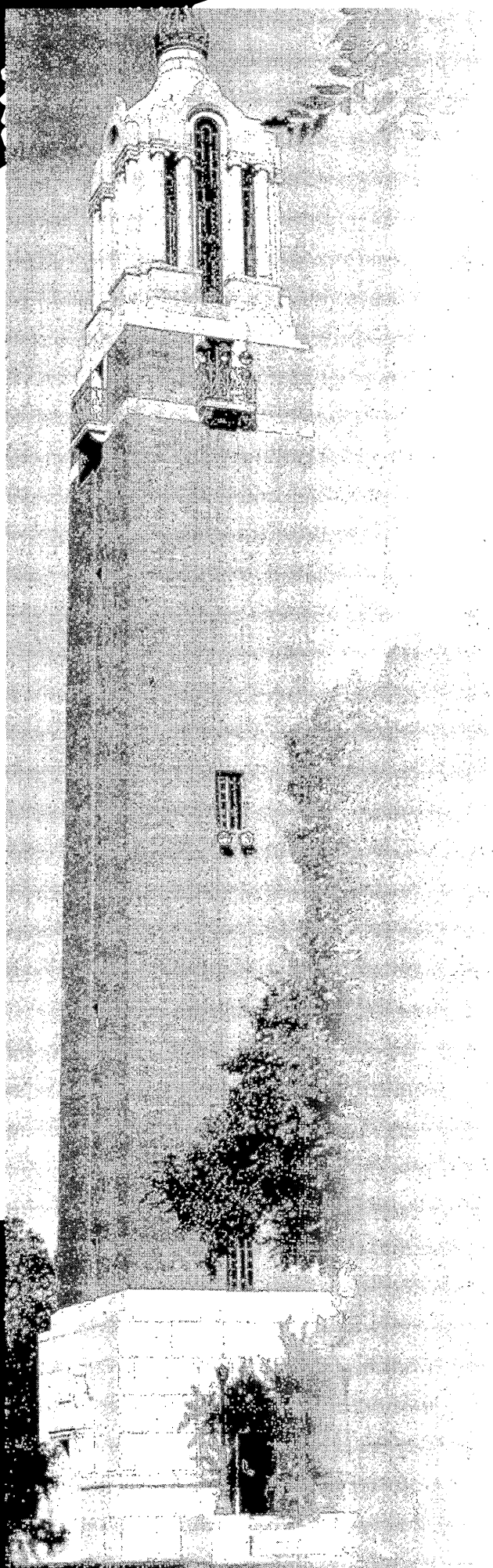
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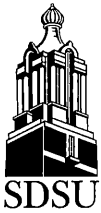
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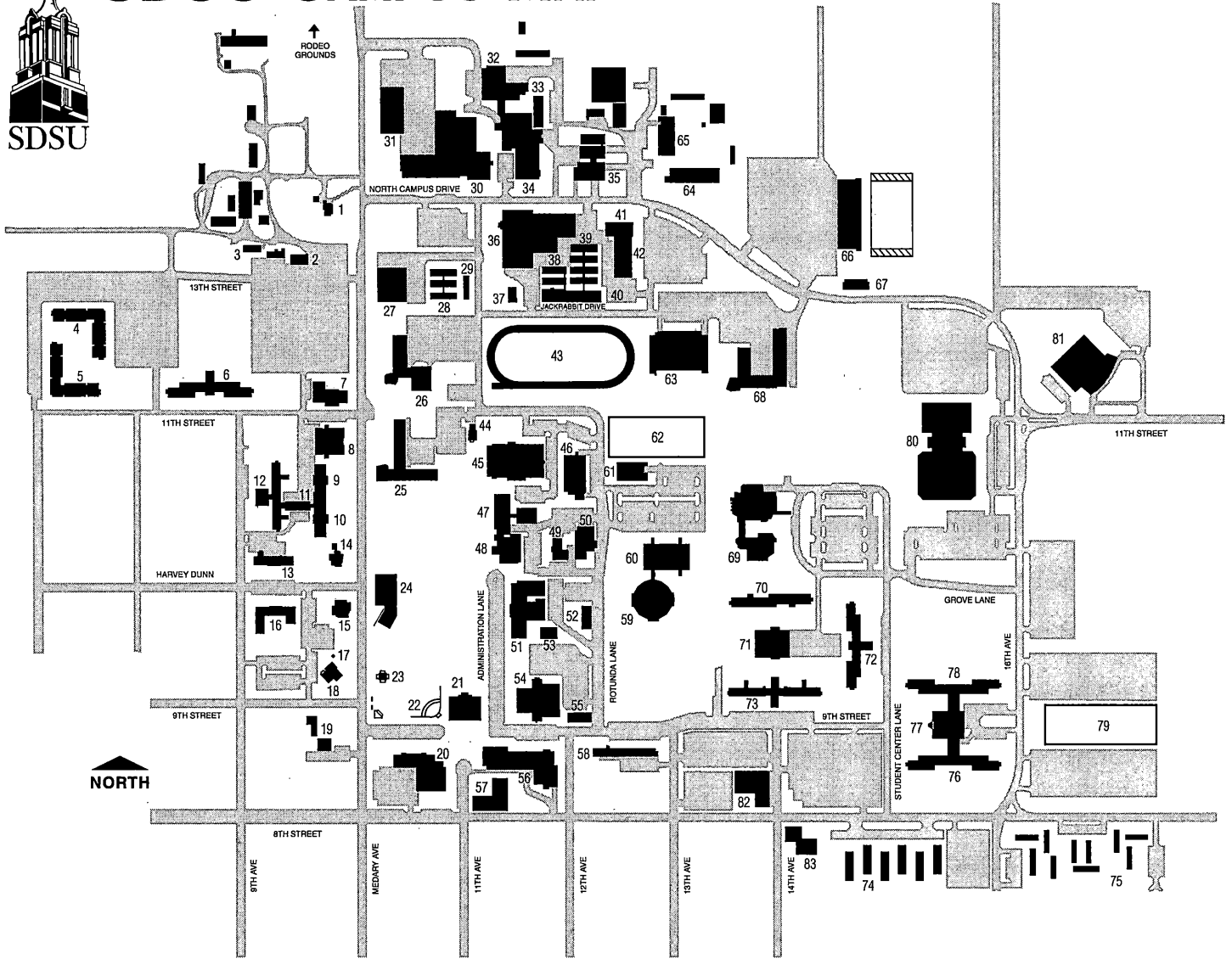
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SDSU CAMPUS MAP



Administration Building (Doner Auditorium)	51	Frost Arena (Stanley J. Marshall HPER Center)	80	Scobey Hall	16
Ag Vehicle Storage (Surplus Property Storage)	3	Grove Hall	71	Sexauer Field	43
Agricultural Communications Center (Ag Comm)	53	Guilford C. Gross Pharmacy Building	48	Shepard Hall	47
Agricultural Engineering	68	Hansen Hall	6	Solberg Hall	54
Agricultural Hall	25	Harding Hall	58	South Dakota Art Museum	24
Agricultural Heritage Museum	7	Heat / Power Laboratory	49	South Dakota State University Foundation	19
Alvilda M. Sorenson Family Resource & Management Center (FRMC)	15	Hilton M. Briggs Library	63	Stanley J. Marshall HPER Center (Frost Arena)	80
Animal Disease Research & Diagnostic Laboratory	34	Horticulture & Forestry	41	State Court	74
Animal Resource Wing	32	Horticulture Greenhouse	42	State Village	75
Animal Science Arena	31	Industrial Arts Building	55	Student Health (West Hall)	13
Animal Science Complex	30	Intramural Building	45	Sylvan Theatre	22
Bailey Hall	4	Larson Commons (Food Service)	77	Tompkins Alumni Center (SDSU Alumni Association)	18
Berg Hall	5	Library (Hilton M. Briggs Library)	63	Tompkins Alumni Center Clock Tower	17
Binnewies Hall	76	Lincoln Music Center (Peterson Recital Hall)	21	United Campus Ministeries	57
Briggs Library	63	Mathews Hall	70	United Lutheran Center	83
Brown Hall	73	Medary Commons (CAP Center, Food Service)	8	University Police Department (FRMC)	15
Catholic Campus Parish	82	Memorial Park	62	University Relations (CMC)	52
Central Heating Plant	50	Motor Pool Complex	2	University Stores & Services	65
Communications Center (University Relations)	52	Northern Plains Biostress Laboratory	36	University Student Union (Volstorff Ballroom, Food Service, Dept. of Student Activities, & Bookstore)	69
Coolidge Sylvan Theatre	22	Nursing, Family & Consumer Sciences, & Arts & Science Building (NFA)	60	Veterinary Isolation Building	33
Coughlin-Alumni Stadium	66	Performing Arts Center	81	Waneta Hall	12
Coughlin-Alumni Stadium Locker Room	67	Peterson Recital Hall (Lincoln Music Center)	21	Wecota Annex	11
Coughlin Campanile	23	Physical Plant Shops	64	Wecota Hall	10
Crothers Engineering Hall	56	Physiology Laboratory	37	Wenona Hall	9
Dairy Microbiology	26	Pierson Hall	72	West Hall (Student Health)	13
Dean of Agriculture Residence (Former)	1	Plant Science Building	40	West Headhouse & West Greenhouses	28
DePuy Military Hall	61	Plant Science Seedhouse	27	Wheat Commission Greenhouse	29
East Headhouse	39	Plant Science West Greenhouses	38	Woodbine Cottage (President's Residence)	14
East Tennis Courts	79	Print Lab	46	Yeager Hall (US Post Office, Central Mail, Print Lab)	46
Ethel Austin Martin Building (Biology Annex)	44	Pugsley Continuing Education Center (RDTN Studios/Classrooms, Christie Ballroom)	20	Young Hall	78
Foundation (SDSU)	19	Rotunda for Arts & Science	59		
Foundation Seed Conditioning Plant	35				

UNIVERSITY CALENDARS

2002 Fall Term

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

September 2, MondayLabor Day Holiday
September 3, TuesdayRegistration and Orientation
September 4, WednesdayInstruction begins
September 13, FridayLast day to drop or add
and adjust final fees
September 20, FridayLast day to submit a
graduation application for Fall 2002
October 5, SaturdayHobo Day
October 14, MondayNative American Day Holiday
October 16, Wednesday“W” grade begins
October 22, TuesdayFirst half Fall Term ends
October 25, FridayDeficiency reports due in
Registrar’s Office, ADM 208, by 5:00 p.m.
November 11, MondayVeterans Day Holiday
November 12, TuesdayLast day to drop a course
November 28, 29, Thursday-FridayThanksgiving Recess
December 13, FridayLast day of classes, Fall 2002
December 14, SaturdayGraduation, 10:00 a.m.
December 16-20, Monday - FridayFinal examinations
December 26, ThursdayGrades due in Registrar’s Office
not later than 5:00 p.m.

2003 Spring Term

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

January 8, WednesdayRegistration and Orientation
January 9, ThursdayInstruction begins
January 17, FridayLast day to drop or add
and adjust final fees
January 20, MondayMartin Luther King, Jr. Day Holiday
February 4, TuesdayLast day to submit a
graduation application for Spring 2003
February 17, MondayPresidents’ Day Holiday
February 24, Monday“W” grade begins
March 3-7, Monday-FridaySpring Break
March 10, MondayFirst half Spring Semester ends
March 13, ThursdayDeficiency reports due in
Registrar’s Office, ADM 208, by 5:00 p.m.
March 31, MondayLast day to drop a course
April 18-21, Friday-MondayEaster Recess
May 2, FridayLast day of classes, Spring 2003
May 3, Saturday117th Annual Commencement, 10:00 a.m.
May 5-9, Monday-FridayFinal examinations
May 14, WednesdayGrades due in Registrar’s Office
not later than 5:00 p.m.

2003 Summer Term

May 12, (Monday) - June 6 (Friday)Session 1
May 26, MondayMemorial Day Holiday
June 9, (Monday) - July 3 (Thursday)Session 2
July 4, FridayIndependence Day Holiday
July 7, (Monday) - August 1 (Friday)Session 3
August 4, (Monday) - August 29 (Friday)Session 4
May 12 (Monday) - August 29 (Friday)Summer Term

2003 Fall Term

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

September 1, MondayLabor Day Holiday
September 2, TuesdayRegistration and Orientation
September 3, WednesdayInstruction begins
September 12, FridayLast day to drop or add
and adjust final fees
September 19, FridayLast day to submit a
graduation application for Fall 2003
October 13, MondayNative American Day Holiday
(Not determined at this date)Hobo Day
October 15, Wednesday“W” grade begins
October 21, TuesdayFirst half Fall Term ends
October 24, FridayDeficiency reports due in
Registrar’s Office, ADM 208, by 5:00 p.m.
November 10, MondayLast day to drop a course
November 11, TuesdayVeterans Day Holiday
November 27, 28, Thursday-FridayThanksgiving Recess
December 12, FridayLast day of classes, Fall 2003
December 13, SaturdayGraduation, 10:00 a.m.
December 15-19, Monday-FridayFinal examinations
December 24, WednesdayGrades due in Registrar’s Office
not later than 5:00 p.m.

2004 Spring Term

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

January 7, WednesdayRegistration and Orientation
January 8, ThursdayInstruction begins
January 16, FridayLast day to drop or add
and adjust final fees
January 19, MondayMartin Luther King, Jr. Day Holiday
February 3, TuesdayLast day to submit a
graduation application for Spring 2004
February 16, MondayPresidents’ Day Holiday
February 23, Monday“W” grade begins
March 1, MondayFirst half Spring Term ends
March 4, ThursdayDeficiency reports due in
Registrar’s Office, ADM 208, by 5:00 p.m.
March 8-12, Monday-FridaySpring Break
March 29, MondayLast day to drop a course
April 9-12, Friday-MondayEaster Recess
April 30, FridayLast day of classes, Spring 2004
May 1, Saturday118th Annual Commencement, 10:00 a.m.
May 3-7, Monday-FridayFinal examinations
May 12, WednesdayGrades due in Registrar’s Office
not later than 5:00 p.m.

2004 Summer Term

May 10, (Monday) - June 4 (Friday)Session 1
May 31, MondayMemorial Day Holiday
June 7, (Monday) - July 2 (Friday)Session 2
July 5, MondayIndependence Day Holiday
July 6, (Tuesday) - July 30 (Friday)Session 3
August 2, (Monday) - August 27 (Friday)Session 4
May 10 (Monday) - August 27 (Friday)Summer Term



South Dakota State University

Admissions Office

Box 2201

Brookings, SD 57007