

South Dakota State University

2011-2012
Undergraduate Programs



The information contained in this catalog is the most accurate available at the time of publication, but changes may become effective before the next catalog is printed. It is ultimately the student's responsibility to stay abreast of current regulations, curricula, and the status of specific programs being offered. Furthermore, the University reserves the right, as approved by the Board of Regents, to modify requirements, curricula offerings and charges through appropriate procedures. The University reserves the right to change graduation or other academic requirements where changes are necessary to comply with Board of Regents policy directives, to meet external demands relating to accountability or accreditation standards, to reflect curriculum changes or substitutions or to implement evolving discipline requirements in major fields. While reasonable efforts will be made to publicize such changes, a student is encouraged to seek current information from appropriate offices.

University Calendar

2011 Fall Term

August 29, MondayOrientation/Start Date
August 29, Monday, 4:00 PMInstruction begins
August 29- August 31, Monday- WednesdayTuition and
Fee Payment Days
September 5, MondayLabor Day Holiday
September 6, Thursday“W” grade begins
September 7, WednesdayLast day to drop or add and adjust final fees
September 16, FridayLast day to submit a graduation
application for Fall 2011
October 10, MondayNative American Day Holiday
October 20, ThursdayFirst half Fall Term ends
October 25, TuesdayDeficiency reports due on
WebAdvisor by midnight
November 5, SaturdayHobo Day
November 10, ThursdayLast day to drop a course
November 11, FridayVeterans’ Day Holiday
November 23-25, Wednesday-FridayThanksgiving Recess
December 12-16*, Monday-FridayFinal exams
December 21, WednesdayGrades due on WebAdvisor by midnight

** December 16- official graduation date noted on transcript
Note: There will be no Fall 2011 Commencement Ceremony.*

2012 Spring Term

January 11, WednesdayOrientation/Start Date
January 11, Wednesday, 4:00 PMInstruction begins
January 11-13, Wednesday- FridayTuition and Fee Payment Days
January 16, MondayMartin Luther King Day Holiday
January 20, FridayLast day to drop or add and adjust final fees
January 21, Saturday“W” grade begins
February 3, FridayLast day to submit a graduation
application for Spring 2012
February 20, MondayPresidents’ Day Holiday
March 5-9, Monday-FridaySpring Break
March 12, MondayFirst half Spring Term ends
March 15, ThursdayDeficiency reports due on
WebAdvisor by midnight
April 2, MondayLast day to drop a course
April 6-9, Friday-MondayEaster Recess
April 30-May 4*, Monday-FridayFinal exams
May 5, Saturday126th Annual Commencement Ceremony
May 9, WednesdayGrades due on WebAdvisor by midnight

** May 4 - official graduation date noted on transcript*

2012 Summer Term

May 7 (Monday) - May 25 (Friday)May Interim
May 28, MondayMemorial Day Holiday
May 29 (Tuesday) - August 3 (Friday)10-week
Academic Summer Session
July 4, WednesdayIndependence Day Holiday
August 6 (Monday) - August 24 (Friday)August Interim
May 7 (Monday) - August 24 (Friday)Summer Administrative Term



**South Dakota
State University**

General Catalog

**2011
• • • •
2012**

www.sdstate.edu

Frequently Called Numbers

General Numbers

Admissions	605-688-4121 or 1-800-952-3541
Administrative and Research Computing	605-688-6134
Agricultural 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
Capital University Center- Pierre	605-773-2160
Cooperative Extension Service	605-688-4792
Disability Services	605-688-4504
Diversity Office	605-688-6361
Environmental Health & Safety	605-688-4264
Facilities & Services	605-688-4136
Financial Aid Office	605-688-4695
Graduate School	605-688-4181
Health Services	605-688-4157
Human Resources	605-688-4128
Information Exchange	605-688-6127
International Affairs	605-688-4913
Jackrabbit Ticket Office	605-688-5422 or 1-866-GO-JACKS
Library	605-688-5107
Multicultural Affairs Office	605-688-6129
Placement Office/ Career and Academic Planning	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 Vice President	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
University Center-Sioux Falls	605-367-5640

Administrative Numbers

President's Office	605-688-4111
Provost and Vice President for Academic Affairs	605-688-4173
Vice President for Research	605-688-4181
Vice President for Student Affairs	605-688-4493
Vice President for Information Technology Office	605-688-4988
College of Agriculture and Biological Sciences	605-688-4148
College of Arts and Sciences	605-688-4723
College of Education and Human Sciences	605-688-6181
College of Engineering	605-688-4161
College of General Studies	605-688-4153
College of Nursing	605-688-5178
College of Pharmacy	605-688-6197
Continuing and Extended Education	605-688-4154
Graduate School	605-688-4181
Honors College	605-688-5268

South Dakota State University Nondiscrimination 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, gender, marital status, pregnancy, sexual orientation, age, disability, veteran's status or any other protected class in the offering of all benefits, services, and educational and employment opportunities.

As part of this policy, SDSU has designated a Title IX Coordinator to assist individuals with any concerns about sexual discrimination in education programs or activities. This includes discrimination on the basis of gender in admission to or employment in SDSU's education programs or activities. The grievance process to address these complaints as well as any complaints of discrimination will follow the Board of Regents Human Rights Complaints Procedures.

Discrimination complaints including complaints of harassment or sexual discrimination in educational programs should be directed to: Equal Opportunity Officer/Title IX Coordinator, Human Resources, Administration Building Room 318, South Dakota State University, Brookings SD 57007, 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 in 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 Agriculture College in lieu of a grant that had been made to new states in 1841.

State Agriculture Experiment Stations were formed in 1887 under the Hatch Act of Congress, which provided for establishment of agricultural experiment stations in connection with land-grant universities and colleges. The stations were established to conduct research to address relevant agricultural and rural issues for their home states and regions.

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.

Historically, the land-grant institutions have had the responsibility of training individuals to be U.S. military officers in the event of war or military emergency, thus, alleviating the need to have a large standing army. During WWII, SDSU as a land-grant university served a central role in preparation of students and graduates for military service through ROTC. SDSU continues to have an exemplary ROTC program. Following the war, SDSU and other Land-Grant institutions accepted an international responsibility contributing to economic and agricultural revitalization in war devastated countries. International responsibility has continued to evolve as a part of the land-grant mission.

Developments. In 1923 SDSU'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 were undecided as to major, were preprofessional, or who wanted a one, two, or four year general studies program. On July 1, 2006, the Office of Continuing and Extended Education was created, thus separating outreach and distance education from the College of General Studies due to the growing college enrollment and an expected increase in the presence of outreach and distance education programs.

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. In 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-to-date image. The proposal to transform the Honors Program into a new and more vital Honors College was approved in May 1999 and the Honors College was formally inaugurated in the fall of 1999. In 2009, the College of Education and Human Sciences was established. This new college resulted from the combination of the former College of Family and Consumer Sciences and the former College of Education and Counseling. The Health, Physical Education and Recreation department also joined the new college.

In 1994, land-grant status was expanded to include tribal colleges and universities. SDSU has developed working relationships with tribal colleges within and beyond South Dakota.

Mission. The Legislature established South Dakota State University as the comprehensive land-grant university to meet the needs of the state and region by providing undergraduate and graduate programs of instruction in the liberal arts and sciences and professional education in agriculture, aviation education, engineering, human sciences, nursing, pharmacy, and other courses or programs as the Board of Regents may determine. (SDCL 13-58-1)

The Board implemented SDCL 13-58-1 by authorizing South Dakota State University to serve students and clients through teaching, research, and Extension activities. The University's primary goal is to provide undergraduate and graduate programs at the freshman through the doctoral levels. The University complements this goal by conducting nationally competitive strategic research and scholarly and creative activities. Furthermore, South Dakota State University facilitates the transference of knowledge through the Cooperative Extension Service with a presence in every county and through other entities, especially to serve the citizens of South Dakota.

South Dakota State University is unique within the South Dakota System of Higher Education because of its comprehensive land-grant mission. The mission is implemented through integrated programs of instruction, the Cooperative Extension Service, the Agricultural Experiment Station, and numerous auxiliary and laboratory services.

Degrees are authorized at the Associate, Baccalaureate, Master, Professional Doctorate, and Doctoral levels.

The following curriculum is approved for South Dakota State University:

- A. Undergraduate Programs
 - Associate degree programs in General Studies and General Agriculture.
 - Baccalaureate programs in the agricultural sciences, aviation education, engineering and technology, human sciences, humanities and liberal arts, nursing, performing and visual arts, pharmaceutical sciences, physical and biological sciences, and social sciences.
- B. Graduate Programs
 - Masters degrees in arts and sciences, agricultural and biological sciences, human sciences, education and counseling, engineering and technology, and nursing.
 - Doctorate of Philosophy degrees in agriculture and engineering, and the physical, biological, and social sciences.
 - Professional programs - the Doctor of Pharmacy (Pharm.D.), Nursing (DNP).

(Mission statement is quoted from Board of Regents Policy 1:10:2, dated December 2003.)

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; education and human sciences; liberal arts; pharmacy; nursing; 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; education and human sciences; liberal arts; nursing; pharmacy; 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, 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. 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 objective 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 changeable, 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 and 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, Scholarship and Creative Activities

The University is committed to excellence in basic and applied research, scholarship, and creative activities associated with the University's mission. The generation of new knowledge, ideas, processes, and developments is basic to the mission of a land-grant university and contributes to the State's economic development and quality of life. Research and scholarly activities are integral, essential, and traditional parts of university life involving faculty, graduate, and undergraduate students.

The University encourages and supports research, scholarship, and creative activity programs in all disciplines. To support these activities, the University and its faculty actively pursue external funds through competitive grant and contract proposals and through cooperative agreements with other institutions of higher education, state, and federal agencies. In addition to department-based research efforts, South Dakota State University pursues scholarly activity through the Agricultural

Experiment Station, the 2010 Research Centers funded by the State Legislature, E. A. Martin Program in Human Nutrition, the South Dakota National Science Foundation's Experimental Program to Stimulate Competitive Research (EPSCoR), the Geographic Information Science Center of Excellence, and the North Central Regional Sun Grant Center.

Primarily as a result of its doctoral education and research programs, South Dakota State University is classified by the Carnegie Foundation for the Advancement of Teaching as South Dakota's only RU/H Research University (high research activity) and as a national university by most rating organizations.

For information, contact Kevin Kephart, Vice President for Research, South Dakota State University, Box 2201, Brookings, South Dakota 57007-1998, phone: 605-688-4181, e-mail: kevin.kephart@sdstate.edu.





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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 as a degree-seeking student within one year prior to the term of application or have been called to active duty with the military, you are not required to pay the application fee to SDSU.
- **Official High School Transcript**
- **Official Report of ACT Scores**

In addition, all transfer applicants must provide:

- **Official College Transcript(s)**

You must request official transcripts from all non-regental schools you have previously attended. You do not need to have transcripts sent from other SD Regental universities. 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 given 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
www.sdstate.edu

Undergraduate Admission Requirements

SDSU offers all educational programs, material, and service to all people without discrimination based on race, color, creed, religion, national origin, ancestry, citizenship, gender, marital status, pregnancy, sexual orientation, age, disability, or veteran status.

Freshman Admission

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

A. Graduate in the top 60 percent 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

1 year of Fine Arts for students graduating from South Dakota high schools

- or AP Fine Arts score of 3 or above

For students graduating from high schools in states that do not require completion of courses in fine arts for graduation, high school level noncredit fine arts activity will be accepted.

At the time of admission, students are expected to have these computer technology literacy skills and competencies: basic keyboarding skills and experience in using computer word processing, spreadsheet, presentation graphics, and the Internet. These expectations may be met by high school coursework. Effective fall 2006, entering students who have not taken such high school coursework must complete a specified computer course addressing these skills and competencies within the first 42 credit hours attempted.

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 percent 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 transferring from a degree-seeking program at one Regental university to a degree-seeking program at another Regental university will be required to apply for admission.

Students who have been admitted to a degree-seeking or special program at one Regental university may register for courses at any Regental university without submitting another application.

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 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 24 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 24 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 cumulative 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 official transcripts from **all** colleges attended since leaving SDSU. In addition, former students must submit another admission application if he or she has interrupted attendance by one or more semesters. Approval of admission is required by the dean of the appropriate college and the director of admissions.

Non-High School Graduates, including Home Schooled Students

Applicants 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. Students must be at least 18 years of age, or the high school class of which the student was a member must have graduated from high school.

OR

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

Nontraditional Students

Applicants who are at least 24 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 with scores as indicated above.

Special Students

Students who are over 24 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 be admitted to SDSU as a concurrent high school student once you submit a concurrent admissions application complete with documentation of high school and parent approval.

U.S. Army Concurrent Admission Program (ConAP)

SDSU is a participant in the U.S. Army Concurrent Admissions Program (ConAP). This program allows qualified applicants 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.

Regental Policy for Transfer of Credit

1. 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.
2. United States Regional Accrediting Associations
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.
3. Undergraduate transfer academic courses received from United States colleges and universities accredited by United States regional accrediting associations.
 - A. All undergraduate transfer courses and all transfer grades (whether the grades are passing or not passing) must be recorded and an equivalency specified by the Regental university, calculated into grade point averages according to the Regental grade scheme, and recorded on the student's academic transcript.
 - B. Remedial courses (as identified on the sending institution's transcript) received in transfer are recorded, transcribed, and assigned an equivalency at the receiving university but do not calculate into grade point averages.
 - C. Transfer grades not existing in the Regental grading scheme will be equated to the Regental grading system. (Refer to BOR 2:10, Use of Grade Point Averages).
 - D. In any subsequent evaluation, equivalencies for system common courses and system general education courses will not be changed. Equivalencies for unique courses may be changed. In subsequent evaluations, grades previously recorded cannot be changed.

- E. The university-specific degree requirements determine if the courses transferred are applicable to the student's degree program at that university and if they meet the minimum grade criteria.
 - F. Orientation, Life Experience, General Educational Development Tests, and high school level courses are not recorded in Colleague as transfer credit nor are they granted equivalent credit.
 - 1) High school courses for which students received college credit will not be entered as transfer credit, or given equivalent credit, unless validated by an Advanced Placement or CLEP score that meets Board of Regents guidelines for acceptance of credit or the college credit is granted by an institution accredited by the National Alliance of Concurrent Enrollment Partnerships (NACEP).
4. Undergraduate transfer technical courses received from United States colleges and universities accredited by United States regional accrediting associations.
 - A. University discretion is permitted in acceptance of courses. Courses considered for transfer are subject to all BOR policies and any conditions for validation that may be prescribed by the accepting institution.
 - B. When the courses are accepted for transfer, equivalent courses are recorded on the transcript but the grade earned at the technical institute is not recorded or calculated into the grade point averages.
 - C. In any subsequent evaluation, equivalencies for system common courses and system general education courses will not be changed. Equivalencies for unique courses may be changed, reevaluated, or inactivated. Additional equivalencies may be added and evaluated.
 - D. The university-specific degree requirements determine if the courses transferred are applicable to the student's degree program at that university and if they meet the minimum grade criteria
 5. Graduate transfer courses received from United States colleges and universities accredited by a United States regional accrediting association
 - A. All graduate transfer courses and transfer grades judged to be acceptable by the evaluating university, are recorded and evaluated by the Regental university, calculated into grade point averages according to the Regental grade scheme, and recorded on the student's academic transcript.
 - B. If transfer credits are judged acceptable; these courses will be recorded, and equivalencies granted, using the following guidelines:
 - 1) If there are specific equivalent graduate courses at the university evaluating the credit, these specific courses should be used when granting equivalencies.
 - 2) If there are no equivalent graduate courses at the university evaluating the credit, these courses will be recorded, and equivalencies granted, using the following guidelines:
 - a. If the academic discipline is available at the university evaluating the credit, but there is no discipline equivalent course, use the discipline prefix and the appropriate course level (700 for masters programs and 800 for doctoral programs).
 - b. If the academic discipline is not available at the university evaluating the credit, use the GEN prefix and the appropriate course level (700 for masters programs and 800 for doctoral programs).
 - C. Transfer grades not existing in the Regental grading scheme will be equated to the Regental grading system.
 - D. In subsequent evaluation, all equivalencies may be re-evaluated, inactivated, or changed. Additional equivalencies may be added and evaluated. In subsequent evaluations, grades previously recorded cannot be changed.
- E. The university-specific plan of study requirements determine if the courses transferred are applicable to the student's degree program at that university and if they meet the minimum grade criteria.
6. Transfer Courses Received from Accredited Postsecondary Technical Institutes
 - A. An academic course is defined as a course that is equivalent to a Regental general education requirement at the 100 or 200 level.
 - B. A technical course is defined as a non-academic course that meets the technical program requirements for a diploma, certificate, or Associate of Applied Science degree.
 - C. South Dakota Technical Institutes
 - 1) Transfer of academic courses from South Dakota postsecondary technical institutes is governed by BOR policies 2:25, 2:26, 2:27, 2:28, and 2:31.
 - a. Transfer grades not existing in the Regental grading scheme will be equated to the Regental grading system.
 - b. In any subsequent evaluation, equivalencies for system common courses and system general education courses will not be changed. Equivalencies for unique courses may be changed.
 - 2). Academic courses taken under articulation agreements in effect between July 1, 1999 and June 30, 2005 will be transferred according to those agreements.
 - 3) Effective Fall 2005, transfer of technical course credit hours from South Dakota postsecondary technical institutes only occurs as part of a program to program articulation agreement approved by the Board of Regents and South Dakota Board of Education.
 - a. The transfer of technical course credit hours occurs as a block of credit hours upon completion of requirements for the university articulated program.
 - b. The CR grade is used for the block of technical course credit hours
 - D. Other Technical Institutes
 - 1) University discretion is permitted in acceptance of academic courses. Academic courses considered for transfer are subject to all BOR policies and any conditions for validation that may be prescribed by the accepting institution.
 - a. When the academic courses are accepted for transfer, equivalent courses are recorded on the transcript.
 - b. In any subsequent evaluation, equivalencies for system common courses and system general education courses will not be changed. Equivalencies for unique courses may be changed, re-evaluated, or inactivated. Additional equivalencies may be added and evaluated.
 - c. The university-specific degree requirements determine if the academic courses transferred are applicable to the student's degree program at that university and if they meet the minimum grade criteria.
 - 2) Transfer of technical course credit hours from non South Dakota postsecondary technical institutes only occurs as part of a program to program articulation agreement approved by the Board of Regents.
 - a. The transfer of technical course credit hours occurs as a block of credit hours upon completion of requirements for the university articulated program.
 - b. The CR grade is used for the block of technical course credit hours.

7. Undergraduate and graduate credits received from United States colleges or universities which are not accredited by a United States regional accrediting association, and undergraduate and graduate credits received from United States colleges or universities which are not accredited by a United States regional accrediting association but are accredited by a national specialized accrediting agency recognized by the US Department of Education.
 - A. University discretion is permitted in acceptance of courses. Courses considered for transfer are subject to all BOR policies and any conditions for validation that may be prescribed by the accepting institution.
 - B. When the courses are accepted for transfer, equivalent courses are recorded on the transcript but the grade earned at the non-accredited institution is not recorded or calculated into the grade point averages using the following guidelines:
 - 1) If there are specific equivalent graduate courses at the university evaluating the credit, these specific courses should be used when granting equivalencies.
 - 2) If there are no equivalent graduate courses at the university evaluating the credit, these courses will be recorded, and equivalencies granted, using the following guidelines:
 - a. If the academic discipline is available at the university evaluating the credit, but there is no discipline equivalent course, use the discipline prefix and the appropriate course level (700 for masters' programs and 800 for doctoral programs).
 - b. If the academic discipline is not available at the university evaluating the credit, use the GEN prefix and the appropriate course level (700 for masters' programs and 800 for doctoral programs).
 - C. In any subsequent evaluation, equivalencies for system common courses and system general education courses will not be changed. Equivalencies for unique courses may be changed, re-evaluated, or inactivated. Additional equivalencies may be added and evaluated.
 - D. The university-specific degree requirements determine if the courses transferred are applicable to the student's degree program at that university and if they meet the minimum grade criteria.
8. Courses submitted in transfer from postsecondary technical institutes that are not accredited by a United States regional accrediting agency will not be accepted.
9. Undergraduate and Graduate Courses from Postsecondary Institutions outside the United States.
 - A. Courses considered for transfer are subject to all BOR policies and any conditions for validation that may be prescribed by the accepting institution.
 - B. When the courses are accepted for transfer, equivalent courses are recorded on the transcript but the grade earned at the sending institution is not recorded or calculated into the grade point averages using the following guidelines:
 - 1) If there are specific equivalent graduate courses at the university evaluating the credit, these specific courses should be used when granting equivalencies.
 - 2) If there are no equivalent graduate courses at the university evaluating the credit, these courses will be recorded, and equivalencies granted, using the following guidelines:
 - a. If the academic discipline is available at the university evaluating the credit, but there is no discipline equivalent course, use the discipline prefix and the appropriate course level (700 for masters' programs and 800 for doctoral programs).
 - b. If the academic discipline is not available at the university evaluating the credit, use the GEN prefix and the appropriate course level (700 for masters' programs and 800 for doctoral programs).
10. Credit Received Through Validation Methods
 - A. Credit earned through validation methods other than nationally recognized examinations is limited to a maximum of 32 hours of credit for baccalaureate degrees and 16 hours of credit for associate degrees.
 - 1) Validation of Military credit is limited to an additional 32 hours of credit for baccalaureate degrees and an additional 16 hours of credit for associate degrees.
 - B. Credit for college level courses granted through nationally recognized examinations such as CLEP, AP, DANTES, etc., will be evaluated and accepted for transfer if equivalent to Regental courses and the scores are consistent with Regental policies.
 - 1) If credit received through validation is applied as elective credit, it may only be applied at the 100 or 200 level.
 - 2) Credit received through validation may apply to System General Education Requirements and Institutional Graduation Requirements.
 - 3) Credit received through validation may not apply to writing intensive requirements.
 - C. When validation credits are accepted, equivalent courses are recorded on the transcript but are not calculated into the grade point averages.
 - D. In any subsequent evaluation, equivalencies for system common courses and system general education courses will not be changed. Equivalencies for unique courses may be changed, reevaluated, or inactivated. Additional equivalencies may be added and evaluated.
 - E. The university-specific degree requirements determine if the validation credits accepted also are applicable to the student's degree program at that university.
11. When a course has been repeated for credit, all attempts will be entered on the transcript but the last grade earned will be used in the calculation of the grade point averages.
12. Total transfer credit for work at a junior, community college (2 year), and/or two-year technical college may not exceed one-half of the hours required for completion of the baccalaureate degree at the accepting institution. Students who have completed more than the acceptable semester hours of junior, community or technical college work may apply completed, transferable courses to specific course requirements and thereby may 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.
13. System general education requirements successfully completed at the sending South Dakota Regental institution will be accepted towards meeting these requirements at the accepting South Dakota Regental institution. In any subsequent evaluation of any transfer or non-course work, equivalencies for system common courses and system general education courses will not be changed.

14. Evaluations of courses will be made by the appropriate institutional officials at the time of admission by comparing descriptions, content, and level of courses completed with those at the accepting institution.
15. Each institution will develop and maintain a procedure for the appeal of transfer credit decisions.
16. A Regental internal transfer process occurs when an undergraduate course is used on a converted credit basis to meet graduate plan of study requirements at Regental universities or when graduate credit is used on a converted or actual credit basis to meet undergraduate degree requirements for a Regental accelerated program. Refer to BOR policy 2:8.3.A and 2:8.3.B.

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 and the STUDENT Project. 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 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 a number of 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, 201, 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 more than 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.

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 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, SAD 101, SDSU, Brookings, SD 57007. Phone: 605-688-4122; e-mail sdsu.intlstud@sdstate.edu or fax 605-688-6540.

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 an 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.

The only exception to the above-stated policy will be if the student earns credit through participation in programs sponsored by universities and

member organizations with which SDSU has a South Dakota Board of Regents-approved agreement. Students earning such credit through an approved program will have the option of electing either the satisfactory/unsatisfactory (S/U) or letter grade option, provided the transcript, or its equivalent, as supplied by the partner university or membership organization, has letter grades recorded on it. The student and the student's advisor, or department head or the International Affairs Director, depending upon the course/courses in question, will determine before the exchange takes place whether the S/U or letter grade option will be used. Such an agreement must be made in writing, with a copy sent to the SDSU Office of International Affairs for the student's file.

Non-Native Speakers of English

The Michigan Test of English Proficiency will be administered to undergraduate 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, SAD 101, 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.







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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. The goal of academic amnesty is to respond to the academic needs of matured individuals as they develop newly identified potential. Through the application of academic amnesty, the student's prior academic record can be excluded from current work under certain conditions.

Eligibility

The student must:

1. Be an undergraduate, full-time or part-time, degree-seeking student at one of the universities in the South Dakota Regental system.
2. Not have been enrolled in any Regental university for a minimum of three calendar years (9 consecutive terms including Fall, Spring, and Summer) prior to the most recent admission to the home institution. Exceptions may be granted in rare cases only by the Board of Regents Senior Administrator upon recommendation of the Vice President for Academic Affairs.
3. Have completed a minimum of 24 graded credit hours taken at any Regental university with a minimum grade point average of 2.0 for the 24 credit hours after the most recent admission to the home institution.
4. Not have earned a baccalaureate degree from any university.
5. Not have been granted any prior academic amnesty at any Regental university.
6. Submit a formal Academic Amnesty Petition to his/her home university following the procedures established by that university.

Conditions/Procedure

1. Academic amnesty does not apply to individual courses. Academic amnesty may be requested for either (a) all previous postsecondary education courses, or (b) all previous postsecondary education courses at a specific postsecondary institution, or (c) a specified time period not to exceed one academic year (Fall/Spring) completed at any postsecondary institution(s).
2. Academic amnesty, if granted, shall not be rescinded.
3. Courses for which academic amnesty is granted will:
 - a. remain on the student's permanent record.
 - b. be recorded on the student's undergraduate transcript with the original grade followed by an asterisk(*).
 - c. not be included in the calculation of the student's grade point average because no credit is given.
 - d. not be used to satisfy any of the graduation requirements of the current degree program.
4. Academic amnesty decisions will be made by the student's home institution, will be honored by all programs within the home institution, and will be honored by all other institutions within the South Dakota Regental system.
5. Universities outside of the South Dakota Regental system are not bound by the academic amnesty decisions made by the South Dakota Regental system.
6. Regental graduate programs and graduate professional schools may consider all previous undergraduate course work when making admission decisions.

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. For further information contact the director of Academic Evaluation and Assessment at 605-688-4217.

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. The CAAP assesses knowledge, skills, and abilities in four areas: writing, mathematics, reading, and science reasoning. The proficiency examination will be offered each spring and fall. All degree-seeking students are required to take the proficiency examination during the first semester in which they become eligible. 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 this requirement if the following conditions are met: 1) the institution awarding the degree is accredited by a United States Department of Education recognized

accrediting organization; and 2) the degree required the completion of a minimum of 18 credit hours of general education requirements including the requirements specified in Board Policy 2:7.3 (Lower Division Credit Hour and Course Requirements/Student Proficiencies). 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 in one or more areas will be required to develop a remedial plan in conjunction with their advisers and when enrolled, will be allowed two opportunities to retest the failed part(s) during the spring and fall testing periods. For further information contact the Director of Academic Evaluation and Assessment at 605- 688-4217

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.

Typically, two to four hours of laboratory work is assigned one credit hour, depending on the amount of outside work.

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 evaluation programs.

Credits obtained through validation methods other than nationally recognized examinations are limited to 32 hours of credit for baccalaureate degrees and 16 hours of credit for associate degrees. There is no limit on the number of credits earned through nationally recognized examinations.

If credit by examination is accepted, the permanent record will show the course name and a grade of EX for the specified number of credits. If credit is accepted by another form of validation, the grade will be CR for the specified number of credits. 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.

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

Nationally Recognized Examinations

Credit may be received in certain subjects through the College Level Examination Program (CLEP), the Excelsior College Examinations, the International Baccalaureate (IB) program, Defense Activity for Non-Traditional Education Support (DANTES), DANTES Standardized Subject Tests (DSST), and the Advanced Placement Program (AP). Participants may be 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 CLEP examination may not be taken if a student has completed the course for collegiate credit. Not all courses (credits) earned through CLEP and Advanced Placement (AP) exams may meet the System General Education Requirement and Institutional Graduation Requirements. CLEP and AP exams do not meet the writing intensive requirements.

Local Challenge Exams

If a nationally recognized examination 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 at the Academic Evaluation and Assessment Office 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, 688-4217.

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 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.

Challenge By Portfolio

A "portfolio" may be used to document competencies learned through non-transferable courses at Technical Institutes or other institutions if a grade of C or better was earned. A portfolio may also be used to verify skills

learned through prior work experiences. A portfolio is a detailed, written document prepared by a student to demonstrate knowledge and skills. A portfolio may contain both prior coursework and employment experiences relevant to the course being challenged. A Challenge by Portfolio application can be obtained through the Academic Evaluation and Assessment Office (605-688-4217). Students will need to receive departmental approval and pay a fee prior to portfolio review.

For information about credit through any of these programs contact the Academic Evaluation and Assessment Office (605-688-4217). 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.

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.

Dean's List and Honors Designation

Dean's List Designation

Undergraduate, full-time students may be designated for the Dean's List at the end of the fall and spring terms. The Dean's List designation is determined by the home university and is based on a student's total course registrations for academic credit for the term from any Regental university. The Dean's List designation does not appear on the transcript. To be awarded Dean's List designation, students must meet the following guidelines.

- a. Students must have earned a minimum of 12 credit hours in courses numbered 100-699 during the term.
- b. Students must achieve a System Term GPA of at least 3.5.
- c. Students with F, I, U, RI, or RU grades are not eligible regardless of System Term GPA attained.

Honors Designation at Graduation

Baccalaureate Degree. The institution granting the degree determines the Honors Designation for its graduates. To earn an Honors Designation at graduation, the undergraduate student must meet both the following cumulative and institutional grade point averages:

- Summa Cum Laude (equal to or greater than 3.9)
- Magna Cum Laude (equal to or greater than 3.7 and less than 3.9)
- Cum Laude (equal to or greater than 3.5 and less than 3.7)

The undergraduate student must have completed a minimum of 64 credit hours at the institution granting the degree. Courses that are part of a formal collaborative agreement among Regental universities are considered to be earned from the institution granting the degree. (Also refer to Board of Regents policy 2:29.)

Associate Degree. The institution granting the degree determines the Honors Designation for its associate-level graduates. To earn an Honors Designation at graduation, an associate-level graduate must meet both the following cumulative and institutional grade point averages: With highest honor equal to or greater than 3.9; With high honor equal to or greater than 3.7 and less than 3.9; With honor equal to or greater than 3.5 and less than 3.7 An associate-level graduate must have completed a minimum of 32 credit hours at the institution granting the degree. Courses that are part of a formal collaborative agreement among Regental universities are considered to be earned from the institution granting the degree. (Also refer to BOR Policy 2:29.)

Academic Recognition for Undergraduate, Part-Time Students

Undergraduate, part-time students taking fewer than 12 credits per term may be designated for Academic Recognition for Part-Time Students at the end of the fall and spring terms. The Academic Recognition for Part-Time Students designation is determined by the home university. The Academic Recognition for Part-Time Students designation does not appear on the transcript.

To be awarded the Academic Recognition for Part-Time Students designation, students must meet the following guidelines:

- a. Students must have completed at least 12 credit hours prior to the current semester at one or more Regental institutions.
- b. The student must have earned at least 3 and up to 11 credit hours of 100-699 level courses during the term.
- c. Students must achieve a System Term GPA of at least 3.5.
- d. Students with F, I, U, RI, or RU grades are not eligible regardless of System Term GPA attained.

Modern Language Credit

Students with prior knowledge of a modern language shall take courses commensurate with their abilities. To determine this, the Department of Modern Languages administers a free placement test in French, German and Spanish. Upon completion of any modern language course except Spanish 211 and 212, students with a grade of "C" or higher may receive credit for lower level courses up to 202. Only 14

credits (16 credits in French) may be received in this fashion. Students must apply for this credit at the Academic Evaluation and Assessment Office. A recording fee is charged for each lower level credit hour. Students who have studied a modern language other than those offered by the Department of Modern Languages may petition to have that study satisfy the modern language requirement for the B. A. degree.

Students who plan to study abroad with the intent of transferring the credits earned to SDSU must receive written permission to do so from the Department of Modern Languages and/or the Office of International Affairs before undertaking such study. Language courses transferred from foreign institutions will be accepted as credits without a grade, unless it is otherwise agreed with the student prior to departure. The University does not accept credit from all foreign institutes. Students who take courses abroad **without prior permission** from the Department of Modern Languages and/or the Office of International Programs may not receive SDSU credit for these courses.

Credits for modern language for international and non-international native speakers of languages other than English.

Enrollment/Credits not allowed:

1. for native language courses at the 100 and 200 levels (at SDSU or from other institution as transfer credits)
2. for Challenge by Exam* in the native language
3. for CLEP in the native language

Enrollment/Credits allowed:

1. Enrollment/credit may be allowed at the 300 level and above.

Determination of native language skills is typically based on the language of instruction in the secondary school from which a student graduated. (In other words, was the high school education in English or another language?) The Department of Modern Languages will determine the appropriate faculty member/s who will have the sole discretion to determine whether or not a student is considered to be a native speaker based on the student's background, experience and level of linguistic competency. Ultimately, the Department has the responsibility to place the student at the appropriate level.

Arts and Sciences Majors — International students whose native language is not English may substitute 14 credits of “American Culture” courses for the modern language requirement. The courses in the social science (SGE goal 3) and humanities (SGE goal 4) are in addition to the standard B.A. requirements. Students must visit with the Assistant Dean of the College of Arts and Sciences for permission to pursue this option.

***Challenge by Exam in a language not offered by SDSU** — If a student wants to Challenge by Exam in a language not offered by SDSU, the challenge cannot be in the student's native language.

Advanced Placement (AP) Credit — An official College Board AP score at the approved South Dakota Board of Regents level is accepted as verification of advanced education in the native language.

Please contact the Department of Modern Languages (SNF 121, 605-688-5101) for additional information.

Grading

The grading system is based on achievement of expectations in a class.

A grade report is available for each registered student on WebAdvisor at <https://wa-sdsu.prod.sdbor.edu/webadvisor> or by requesting an unofficial transcript from the Registrar's Office.

Types of Grades

Undergraduate Grades will be assigned to the undergraduate academic level and to all courses and sections with course numbers ranging from 001 to 499. Plus and minus grades are not used.

A	Exceptional	4.00 grade points per semester hour
B	Above Average	3.00 grade points per semester hour
C	Average	2.00 grade points per semester hour
D	Lowest Passing Grade	1.00 grade points per semester hour
F	Failure	0.00 grade points per semester hour
S	Satisfactory	Does not calculate into any GPA
U	Unsatisfactory	Does not calculate into any GPA
RI	Incomplete (Remedial)	Does not calculate into any GPA
RS	Satisfactory (Remedial)	Does not calculate into any GPA
RU	Unsatisfactory (Remedial)	Does not calculate into any GPA
W	Withdrawal	Does not calculate into any GPA, no credit granted
AU	Audit	Does not calculate into any GPA, no credit granted
I	Incomplete	Does not calculate into any GPA
IP	In Progress	Does not calculate into any GPA
EX	Credit by Exam	Does not calculate into any GPA
CR	Credit	Does not calculate into any GPA
TR	Note for NSE/MEDT	Does not calculate into any GPA, no credit granted
LR	Lab grade linked to Recitation Grade	0 credit course
NG	No Grade	0 credit tracking course
NR	Grade not Reported by Instructor	Does not calculate into any GPA
Grade*	Academic Amnesty	Does not calculate in any GPA, no credit given

An **Incomplete (I) grade** may be granted at the **undergraduate level** only when all of the following conditions apply:

- a. A student has encountered extenuating circumstances that do not permit him/her to complete the course.
- b. The student must be earning a passing grade at the time the Incomplete is necessitated. Anticipated course failure is not a justification for an Incomplete.
- c. The student does not have to repeat the course to meet the requirements.
- d. The instructor must agree to grant an Incomplete grade.
- e. The instructor and student must agree on a plan to complete the coursework.
- f. The coursework must be completed within one semester; extensions may be granted by the Vice President for Academic Affairs.
- g. If the student completes the course within the specified time, the grades that may be assigned are A, B, C, D, F, S, RS, RU, or U.
- h. If the student does not complete the course within the specified time, the grade assigned will be F (Failure) or U (Unsatisfactory) or RU (Remedial Unsatisfactory) if the student had requested S/U within the time specified in BOR policy 2:6.9.

An **In Progress (IP) grade** may be granted only when all of the following conditions apply:

- a. The requirements for the course (for every student enrolled in the course) extend beyond the current term.
- b. The extension beyond the current term must be defined before the class begins.
- c. The instructor must request permission to award IP grades for a course from his/her department head and dean, and then approval must be obtained from the vice president for Academic Affairs.
- d. A definite date for completion of the course must be established in the course syllabus.

Graduate Grades will be assigned to the Graduate Academic Level and to all courses and sections with course numbers of 500 or greater. Plus and minus grades are not used.

A	Exceptional	4.00 grade points per semester hour
B	Good	3.00 grade points per semester hour
C	Average	2.00 grade points per semester hour
D	Unsatisfactory	1.00 grade points per semester hour
F	Failure	0.00 grade points per semester hour
S	Satisfactory	Does not calculate into any GPA
U	Unsatisfactory	Does not calculate into any GPA
W	Withdrawal	Does not calculate into any GPA, no credit granted
AU	Audit	Does not calculate into any GPA, no credit granted
I	Incomplete	Does not calculate into any GPA
IP	In Progress	Does not calculate into any GPA
NG	No Grade	0 credit tracking course
NP	Normal Progress	Does not calculate into any GPA
NR	Grade not Reported by Instructor	Does not calculate into any GPA
EX	Credit by Exam	Does not calculate into any GPA
CR	Credit	Does not calculate into any GPA
TR	Note for NSE/MEDT	Does not calculate into any GPA, no credit granted
LR	Lab grade linked to Recitation Grade	0 credit course

An **Incomplete (I) grade** may be granted at the **graduate level** only when all of the following conditions apply:

- A student has encountered extenuating circumstances that do not permit him/her to complete the course.
- The student must be earning a passing grade at the time the Incomplete is necessitated. Anticipated course failure is not a justification for an Incomplete.
- The student does not have to repeat the course to meet the requirements.
- The instructor must agree to grant an Incomplete grade.
- The instructor and student must agree on a plan to complete the coursework.
- The coursework must be completed within one calendar year; extensions may be granted by the Graduate Dean.
- If the student completes the course within the specified time, the grades that may be assigned are A, B, C, D, F, S, or U.
- If the student does not complete the course within the specified time, the Incomplete grade remains on the transcript.

An **In Progress (IP) grade** may be granted only when all of the following conditions apply:

- The requirements for the course (for every student enrolled in the course) extend beyond the current term.
- The extension beyond the current term must be defined before the class begins.
- The instructor must request permission to award IP grades for a course from his/her Department Head and Dean, and then approval must be obtained from the Vice President for Academic Affairs.
- A definite date for completion of the course must be established in the course syllabus.

A **Normal Progress (NP) grade** may be granted by an instructor when the instructor determines that a graduate student is making normal progress in a graduate Thesis/Dissertation course. If a graduate student does not enroll for a period of one calendar year, the NP grade may change to I (Incomplete) upon approval by the Graduate Dean. The NP grade calculates into attempted credits but does not calculate into completed credits or grade point averages.

With the exception of an "I" that has not been completed within the *22 Academic Evaluation*

specified time, any grade reported to the Registrar may be changed by recommendation of the instructor and college dean with approval of the Vice President for Academic Affairs.

Any graduating senior or 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. He or she will be required to apply for graduation for a subsequent semester. Emergency situations require the filing of a petition by the student to his/her Academic 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 this example:

Course	Credits	Grade	Grade Points
MIL 101	1	A(4)	4
MATH 115	5	B(3)	15
CHEM 112	4	C(2)	8
FREN 101	4	C(2)	8
ENGL 101	3	D(1)	3
Total	17		38

GPA — 38 divided by 17 = 2.23

The cumulative grade point average (CGPA) is obtained by dividing grade points by the number of all hours attempted. **In computing grade point averages all hours attempted (graded A, B, C, D, F) are included.**

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.

You should notify the Registrar's Office, SAD 100, when a course, whether failed or passed, is repeated.

Satisfactory-Unsatisfactory System. The primary objective of the Satisfactory/Unsatisfactory 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 requirements, unless program exceptions exist.
3. Colleges may further restrict the Satisfactory/Unsatisfactory credit option.
4. A "D" letter grade or better is considered to be a passing grade in a satisfactory/unsatisfactory elective.
5. Registration for satisfactory/unsatisfactory electives will be accomplished only after registration day by Audit/Satisfactory/Unsatisfactory Form to the Registrar's Office. The satisfactory/unsatisfactory option should be known only to the academic adviser, instructor, the student and the registrar.
6. You may change from satisfactory/unsatisfactory elective to graded credit or vice versa only during the two week add period.
7. The grade (S or U) will be recorded on your permanent record. A grade of S or U 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.

NOTE: Some courses are taught only on a Satisfactory/Unsatisfactory basis. Consult the department if you have a question.



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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 – 2.00; Sophomore – 2.00; 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 or above. (See Resident Requirements under General Degree Requirements).

The following grade point averages are calculated each academic term (Fall, Spring, Summer):

- **Institutional GPA** — based on credits earned at a specific Regental university. Utilized to determine if degree requirements have been met and to determine Honors Designation at Graduation.
- **System Term GPA** — based on credits earned at any of the six Regental universities within a given academic term (fall, spring, summer). Utilized to determine minimum progression status.
- **Transfer GPA** — based on credits earned and officially transferred from an accredited college or university outside the Regental system. When a letter grade that normally calculates into the grade point average exists for a non-academic course (e.g., credit earned via examination), it will be included in the transfer GPA.
- **Cumulative GPA** — based on all credits earned by the student (transfer credit plus system credit). Utilized to determine minimum progression status and to determine if degree requirements have been met.

Minimum Progression Standards

Class	Credit Hour Range	GPA Standard
Freshman	0-31.99	2.0
Sophomore	32-63.99	2.0
Junior	64-95.99	2.0
Senior	96+	2.0

Minimum progression standards and related actions are based on the student's cumulative grade point average and system term grade point average.

1. A student with a cumulative grade point average of 2.0 or better is considered to be in **good academic standing**.
2. If a student's cumulative grade point average falls below 2.0 in any academic term (i.e. fall, spring, summer), the student is placed on **academic probation** the following term.
3. While on academic probation, the student must earn a system term grade point average of 2.0 or better.
4. When a student on academic probation achieves a cumulative grade point average of 2.0 or better, the student is **returned to good academic standing**.
5. A student on academic probation who fails to maintain a system term grade point average of 2.0 or better is placed on **academic suspension** for a minimum period of two academic terms.
6. Students on academic suspension will not be allowed to register for any coursework at any Regental university except when an appeal has been approved by the Regental university from which the student is pursuing a degree. An approved appeal granted by one Regental university will be honored by all Regental universities. (Also refer to policy 2:3.3.G Probation/Suspension of Students.)
7. Only Academic Suspension will be entered on the student's transcript. Academic probation will be noted in the internal academic record only.

Progression and graduation are contingent upon satisfactory performance on the Proficiency Examination.

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 (01:10:25:01 - 1:10:25:04) 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 Office of Academic Affairs, SAD 230, 605-688-4173.

SDSU is obligated to encourage its primary constituents, the students, to meet their responsibilities to themselves, their families, classmates, instructors and the taxpayers and donors who support higher education in South Dakota. For these reasons, the following policy as related to attendance is outlined.

Policy: Teaching and learning is a reciprocal process involving faculty and students. Faculty members have an obligation of holding classes on a regular basis and students have an expectation to attend and participate in classes on a regular basis. Faculty members determine the specific attendance policy for courses under their direct supervision and instruction. Attendance procedures must be stated in written form and distributed or posted electronically to students at the beginning of each course. If attendance is required and will impact grading, this expectation shall be included in the syllabus.

Absence due to personal reasons

Any exceptions to the faculty member's written attendance policy due to verified medical reasons, death of a family member or significant other, or verified extenuating circumstances judged acceptable by the instructor or the Office of Academic Affairs, will be honored. If a student has an accident, falls ill, or suffers some other emergency over which he/she has no control, the student needs to gather whatever documentation is available (e.g., copies of repair or towing bills, accident reports or statements from health care provider) to show the instructor. Such exceptions must be communicated and negotiated between the student and faculty member prior to the absence whenever possible. Absences for vacations or breaks, personal interviews do not constitute a valid reason for absence.

Absence due to approved university-sponsored trips

Faculty and administration will honor officially approved absences where individuals are absent in the interest of officially representing the University. Appropriate sanctioned activities include:

- Collegiate club sports and competitions;
- Conferences and workshops recognized by the University not related to academics;
- Commitments on behalf of the University (Students' Association, Band, Choir, etc.);
- Intercollegiate athletics; and
- Professional activities recognized by the University related to academics (professional conference attendance, etc.)

Requests for excused absences must be submitted one week prior to the trip or event. Students must present the completed approved trip absence card to the faculty member prior to the trip or event to have an official excused absence. Faculty members are not required to honor incomplete or late cards.

Students with official "excused absences"

Students with excused absences will be given appropriate make up work or instructor-determined equivalent opportunities for obtaining grades as students who were in attendance. Students with official excused absences are not to be penalized in course progress or evaluation. However, should excused absences be excessive, the faculty member may recommend withdrawal from the course(s) or a grade of incomplete to the student.

Online Course attendance policy

Attendance policies do apply in the online classroom. Faculty members determine the specific attendance policy for courses under their direct supervision and instruction. Attendance procedures must be stated in written form and made available to students on the first day of the course. Common strategies for demonstrating "attendance" in an online course include login requirements per week, an identified number of discussion postings per week, consistent contact with peers and instructor, and/or other assignments as determined by the instructor. Also, students are expected to login to their class on the first day of the semester.

Mediation on absence

Arrangements should be negotiated with faculty members. If this is not possible, the students should go first to the department head, and if necessary, next to the dean. The student may contact the Office of Academic Affairs if conflict can not be resolved at these levels.

Student-Athlete Class Attendance Policy

Policy:

1. No student-athlete may be absent from more than 10 class sessions (including required laboratory sessions) of a given course in a semester.
2. No away athletic events are allowed during final examination periods.

Exceptions:

1. Required conference or NCAA events are exempt from the above policies.
2. In the interest of safety for student-athletes and staff, missed class-time resulting from travel delays associated with inclement weather will be exempt from the above policies.

Waivers:

1. Waivers to the above policies require the approval of the intercollegiate Athletics Board or its designee at the time of scheduling or as soon thereafter as is reasonably possible. If exceptional circumstances dictate the need for finalizing a contract or schedule prior to getting intercollegiate Athletics Board approval.

Class Definition

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

Electives

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

The dean of the college (or designee) in which the degree is sought must approve registration in an elective if the course is to be counted toward the degree.

Rate of Progress

Each student is advised by a member of the faculty or staff. 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 master's-level must carry a minimum of 9 semester credits for fall/spring semester and 4 or 6 semester credits for summer term; all students classified as doctoral level must carry a minimum of 7 credits for fall/spring semesters and 4 or 6 semester credits for summer term.** Undergraduates will not be

permitted to register in 19 or more semester credits the first term. Registration in 19 or more semester credits in subsequent terms is permitted only when the previous semester's work shows high achievement.

All overloads of 19 or more credit hours must be approved by the dean or designee of the student's college. Factors to consider when requesting a credit overload include: grade point average, total credits attempted and completed, specific courses, and time to graduation.





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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/Satisfactory/Unsatisfactory form to the Registrar's Office, SAD 100.**

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 19 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. The drop/add period is the time period during which students may adjust their academic schedule for the term without financial or academic consequences. The last day of the drop/add period for a course is designated as the census date for that course and is the official date for enrollment reporting. The end of the drop and add period for standard and nonstandard courses offered in a semester shall be the date the first 10 percent of the term ends or the day following the first class meeting, whichever is later. When calculating 10 percent of the term, breaks of five or more days are not included when counting the total number of days but Saturdays, Sundays, and holidays are. Student registrations can only be added to courses after the end of the drop and add period by approval of the chief academic officer (or designee) of the University.
3. **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

Undergraduate and graduate students who drop a course, or withdraw from the System, shall receive a grade of "W" if that action occurs anytime between the day after the census day for that course and the day that corresponds with the completion of 70 percent of the class days for that course. Likewise, a student who withdraws from the system during

that time period also shall receive grades of "W" for all the courses in which he/she is registered. (Exception: a student who completely withdraws from the Regental system from the first day of a class(es) until the census date of the class(es) will also have a pseudo course of WD 101 (Undergraduate) or WD 801 (graduate) with a "W" grade entered on their Transcript.) (Refer to Board of Regents policy 5:7.2) For standard classes, the last day to receive a grade of "W" is determined by calculating 70 percent of the class meeting days in the term, counting from the first day of classes in the term and rounding up if the calculation produces a fractional value greater than or equal to 0.5.

For any non-standard course, the last day to receive a grade of "W" is based on the number of class meeting days for the course, using the method described above.

A notation of the date of withdrawal will be included on the student's transcript if he/she withdraws from the system. (Refer to Board of Regents policy 5:7.2)

Students may not drop a course or withdraw from the System after the time period specified above. (Refer to Board of Regents policy 5:7.2) 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.

If extenuating circumstances (i.e., illness) have prevented class participation, a petition for an individual drop may be filed.

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 to both undergraduate and graduate coursework. Relative to number of repeats allowed:

1. A student may enroll in an undergraduate course (for which credit is granted only once) no more than three times without permission of the Vice President for Academic Affairs.
2. A student may enroll in a graduate course (for which credit is granted only once) no more than two times without permission of the Dean of the Graduate School.

3. A student will be allowed unlimited enrollments in an undergraduate or graduate course for which credit toward graduation may be received more than once. An institution may limit the number of credit hours for courses that may be taken more than once that apply toward the requirements for a major. (BOR Policy 2:8:3D)

You should notify the Registrar's Office, SAD 100, when a course, whether failed or passed, is repeated.

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, SAD 310 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 70% 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 Office of Academic Affairs.

A student is considered withdrawn during a term if classes have begun and:

1. The student has registered for at least one course and the student has initiated withdrawal from all state-support and self-support courses at all Regental universities in which the student was actively enrolled at the time of withdrawal, including courses in progress as well as those that have not yet begun, or;

2. The Regental home university has completed withdrawal procedures for administrative reasons including, without limitation, non-payment of tuition and fees or disciplinary sanctions.
3. Students enrolled in two or more Regental universities pursuant to financial aid consortia will be eligible for refunds as set forth herein only if they withdraw, drop out or are expelled from all classes at all Regental universities for which they have enrolled.

Students who withdraw or are expelled from the Regental system within the drop/add period receive a 100 percent refund of tuition and per credit hour fees. Students who withdraw or are expelled from the Regental system after the date the first 10 percent of the term ends for the period of enrollment for which they are assessed may be entitled to a prorated refund.







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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 and staff. Academic advising is included in faculty workload assignments.

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 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/Title IX

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, creed, ancestry, religion, gender, marital status, pregnancy, sexual orientation, national origin, disability or veteran's status through a continuing policy of Affirmative Action and non-discrimination. 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 regarding discrimination/harassment prevention information, reporting discrimination, discrimination in education programs or activities, or complaint procedures can be directed to the Equal Opportunity Officer/Title IX Coordinator in Human Resources (SAD 318; 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 nondiscrimination 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 nondiscrimination requirements of the **Americans with Disabilities Act (ADA) of 1990**. In that capacity, the coordinator is committed to ensuring that SDSU provides an inclusive learning environment.

The coordinator will also be responsible for the effective integration of ADA procedures and Section 504 of the Rehabilitation Act of 1973. The coordinator serves as the personal contact for students seeking information concerning the provisions of the ADA and their respective duties and rights provided therein.

The phone number for the Office of Disability Services is 605-688-4394; TTD 605-688-4394; e-mail: sdsu.disability@sdstate.edu.

E-mail Policy Statement

E-mail messages sent by SDSU to students through University-assigned, jacks e-mail addresses will constitute an official means of communication. It is the student’s responsibility and obligation to access official University e-mail messages in a timely manner. As other e-mail

accounts may be blocked by the SDSU firewall, SDSU is only able to monitor student e-mails coming from University-assigned e-mail accounts.

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 and the Records and Registration Web site.

Graduation Policies and Procedures

A. Graduation Application – Date Due in Dean's Office.

Check the University Calendar in the Catalog or the Fall, Spring, and Summer Course Schedules for dates.

B. Incomplete grades in courses required for graduation.

Graduating Seniors and Graduating Graduate Students

1. Any graduating senior or graduating graduate student
 - a. who receives an incomplete or IP grade in the final semester in a course required for graduation **will not be permitted to graduate that semester but will be required to apply for graduation for a subsequent semester**, 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 outreach courses in several areas of interest. Some of these may be given for academic credit; others may be offered for Continuing Education Units. Consult the department head involved or the Office of

Continuing and Extended Education, SWC 223 SDSU, Box 506, Brookings, SD 57007; 605-688-4154; e-mail: gail.tidemann@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 disciplinary 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, SAD 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.

Policy on Institutional Record of Student Complaints

North Central Association (NCA) Policy

To comply with federal regulations, the Higher Learning Commission of NCA expects an affiliated institution to maintain records of formal, written student complaints filed with the offices of the chief executive officer, chief academic officer, or chief student affairs officer. The records should include information about the disposition of the complaints, including those referred to external agencies for final resolution. These records will be available to the next NCA comprehensive evaluation team for review.

Purpose of These Guidelines

To comply with NCA policy IV. B.4 Institutional Records of Student Complaints adopted by the NCA, February 1998. The NCA has established this policy to comply with federal regulations for the maintenance of records of formal, written student complaints. SDSU, in turn, needs to be in compliance with the NCA policy.

Definition of a Complaint

This policy applies to complaints that are made formally, in writing, signed by the student, and addressed to and submitted to an institutional officer with the responsibility to handle the complaint. Formal written complaints shall mean a hand-delivered; mailed; or faxed, written complaint. At SDSU, e-mail complaints do not meet the definition of a formally submitted written complaint. (This process will not duplicate efforts of Human Resources on human rights complaints, Student Affairs on judiciary issues, or Academic Affairs or academic appeals.)

Responsible Institutional Officers or Their Representatives

For the purposes of this policy, these are the president or his/her administrative assistant, vice president for Academic Affairs or associate vice president for Academic Affairs, vice president for Student Affairs or assistant vice president of Student Affairs. Also key in recording these complaints are the program assistant in the Office of Academic Affairs and the senior secretary in the Office of Student Affairs.

Record of Student Complaints

The format established is a spreadsheet maintained in each of the three major offices to which a complaint can be submitted. It includes: the date the complaint was first formally submitted to an appropriate officer, the nature of the complaint (e.g., dispute about a grade, complaint about unfair class schedule, etc.), the steps taken by the institution to resolve the complaint, the institution's final decision regarding the complaint including referrals to outside agencies, any other external actions initiated by the student to resolve the complaint if known to the institution (e.g., lawsuit, EEOC investigation, etc.).

Dates

The policy is effective beginning with September 1, 1998. Data will be merged from the three offices on an annual basis. The institution will provide evidence of tracking for a two-year period, at which time, the records will be kept, but will be placed in dormant status. (Office of Student Affairs will merge data annually and file it.)

Method of Notification to Students

This policy will be included in the student policy manual, which is a responsibility of the vice president for Student Affairs. It will be addressed in the University catalog, which is a responsibility of the vice president for Academic Affairs. It shall be regularly posted in residence halls, (responsibility of Office of Student Affairs). It will be distributed to the Students' Association, (responsibility of Office of Student Affairs). It will be published in the *Collegian*, (responsibility of Office of Student Affairs).

Developed by Vice President Carol J. Peterson, Dean Robert Tomlinson, Ms. Linda Schumacher 10/98, Finalized 12/98. Updated 9/01 by Provost Carol J. Peterson and Vice President Marysz Rames.

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, and on the SDSU Web site by clicking on Campus Life, and then Student Code.

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. The authorized request form is available via the Academics site on Inside State. The Authorization Request form must be signed by the faculty sponsor and approved by the department head 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 one week prior to the trip.
- B. Students on university-approved trips (excluding a ski trip, a rodeo club trip, or interscholastic athletics) may be covered by a secondary accident-medical insurance policy if the situation meets all of the requirements as outlined in that policy document.
- C. State-owned vehicles may be utilized if criteria established in the policy regulating use of state owned vehicles are met.
- D. 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.
- E. 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 department head, dean, or Provost and Vice President for Academic Affairs, in that order.
- F. Each student participating in an approved trip will work with their faculty sponsor and complete a Release and Waiver of Liability; Assumption of Risk Agreement; Indemnity Agreement; and Consent to Medical Treatment and Emergency Contact Form. This is a single page form that will be maintained with the trip sponsor.
- G. A Trip Absence Card for each student involved in the trip will be issued by the Office of Academic Affairs and given to the faculty sponsor. The faculty sponsor will provide these to each student. Other faculty members are not required to honor incomplete cards. 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.
- H. 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 office at the end of each academic term. This information will be utilized for a number of purposes.

University-Sponsored Student Athletic Trip Regulations

- A. A written notification of all athletes participating in any off-campus event must be submitted to the Athletics (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 Athletics 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 general education requirements.**

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. Remedial course credits are not counted as meeting degree requirements.
- B. A Cumulative Grade Point Average (CGPA) and Institutional Grade Point Average (IGPA) of 2.00. The CGPA is based on all courses attempted within the Regental system, 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. Institutional requirement. An institutional credit 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 institutional. The minimum number of credit hours that must be earned from the institution granting the degree 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 from the institution granting the degree 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 specified in the major or minor requirements that must be completed from the institution granting the degree 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 general education requirements as described below.
- E. Completion of all college and major field requirements.
- F. Demonstration of satisfactory performance in writing, mathematics, reading, and science reasoning as evidenced by receiving a passing score on all sections of the Collegiate Assessment of Academic Proficiency (CAAP) exam or alternative assessment. This requirement must be met by both associate and baccalaureate degree-seeking students.
- G. Demonstration of proficiency in Information Literacy (IL) by receiving a satisfactory on the system IL examination.
- H. Degree seeking students may complete requirements for a minor at any Regental university that has been approved to grant that minor. This minor will be recorded on the transcript in conjunction with a degree/major at that university or a degree/ major at any other Regental university. A minor will only be recorded on the transcript in conjunction with a degree and major.

General Education

The required General Education Curriculum for all undergraduate students is explained on pages 40-47 of this Catalog. The 30-credit System General Education Requirements (SGRs) are designed to achieve these seven goals.

System Goal #1: *Written Communication*

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

System Goal #2: *Oral Communication*

Students will communicate effectively and responsibly through listening and speaking.

System Goal #3: *Social Sciences/Diversity*

Students will understand the organization, potential, and diversity of the human community through study of the social sciences.

System Goal #4: *Humanities and Arts/Diversity*

Students will understand the diversity and complexity of the human experience through study of the arts and humanities.

System Goal #5: *Mathematics*

Students will understand and apply fundamental mathematical processes and reasoning.

System Goal #6: *Natural Sciences*

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

System Goal #7: *Information Literacy*

Students will recognize when information is needed and have the ability to locate, organize, critically evaluate, and effectively use information from a variety of sources with intellectual integrity.

In addition to the System General Education Requirements, SDSU has Institutional Graduation Requirements (IGRs) of 8-9 credits designed to achieve three major goals.

IGR Goal #1: *Land and Natural Resources*

Students will learn to be responsible for the land and other natural resources.

IGR Goal #2: *Personal Wellness*

Students will demonstrate a holistic approach to personal wellness.

IGR Goal #3: *Social Responsibility/Cultural and Aesthetic Awareness*

Students will demonstrate social responsibility or cultural and aesthetic awareness to foster individual responsibility and creativity.

The specific learning outcomes related to these three IGR goals and the specific courses designed to meet these learning objectives are described in detail on pages 43-45 of this Catalog.

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.

Globalization: Globalization is defined as a process of interaction and integration among people, organizations, governments, and cultures. This process affects:

- environmental resources
- culture(s), including people's well-being
- political systems, national sovereignty
- national security
- agriculture
- public health/health care
- economic systems/international trade
- transportation
- information technology/communication
- education
- global governance

Students will understand globalization and how it affects the human community.

Advanced Writing: Advanced writing courses are discipline based and require students to build upon concepts learned in courses addressing System General Education Goal #1. Students will refine their writing skills appropriate to the discipline. These courses will have a scholarly focus.

Students will build upon concepts learned in courses covering System General Education Goal #1 and refine their skills through research and writing in a discipline specific context.

General Education Requirements for Baccalaureate Degree

(Effective for new degree-seeking students Fall 2005 and later)

I. System General Education Requirements: 30 credits (*see pages 40-42*)

- Goal #1: Written Communication (6 credits)
- Goal #2: Oral Communication (3 credits)
- Goal #3: Social Sciences/Diversity (6 credits)
- Goal #4: Humanities and Arts/Diversity (6 credits)
- Goal #5: Mathematics (3 credits)
- Goal #6: Natural Sciences (6 credits)
- Goal #7: Information Literacy (0 credits)

II. Institutional Graduation Requirements: 8-9 credits (*see pages 43-45*)

- Goal #1: Land and Natural Resources (3 credits)
- Goal #2: Personal Wellness (2-3 credits)
- Goal #3: Social Responsibility/Cultural and Aesthetic Awareness (3 credits)

III. Globalization Requirement (*see page 46*)

Each program area/major specifies how to meet the globalization goal and student learning outcomes.

IV. Advanced Writing Requirement (*see page 47*)

Each program area/major specifies how to meet the additional writing requirement goal and student learning outcomes.

V. Computer Technology Literacy

At the time of admission, students are expected to have these computer technology literacy skills and competencies: basic keyboarding and experience using computer word processing, spreadsheet, presentation graphics, and the Internet. These expectations may be met by high school coursework or demonstrated by some other means. Incoming students assessed and found deficient in this area will be required to complete specific computer skills courses.

VI. Information Literacy

Students fulfill this requirement by demonstrating competency through an assessment designated by the University. The IL goal and student learning outcomes are addressed in ENGL 101, 201, and SPCM 101. These courses provide the basic foundational knowledge and skills. In addition, the opportunity to learn IL concepts and skills is provided through other required coursework in the major.

I. System General Education Requirements (SGRs) 30 credits

(These Requirements are common across the entire South Dakota Regental System.)

System Goal #1:

Written Communication

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

Student Learning Outcomes: As a result of taking courses meeting this goal, students will:

1. Write using standard American English, including correct punctuation, grammar, and sentence structure;
2. Write logically;
3. Write persuasively, with a variety of rhetorical strategies (e.g., expository, argumentative, descriptive);
4. Incorporate formal research and documentation into their writing, including research obtained through modern, technology-based research tools.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2, #3, and #4

Credit Hours: 6

Courses	Credits
ENGL 101 Composition I.....	3
ENGL 201 Composition II.....	3
ENGL 277 Technical Writing in Engineering.....	3
ENGL 283 Creative Writing I.....	3

System Goal #2:

Oral Communication

Students will communicate effectively and responsibly through listening and speaking.

Student Learning Outcomes: As a result of taking courses meeting this goal, students will:

1. Prepare and deliver speeches for a variety of audiences and settings;
2. Demonstrate speaking competencies including choice and use of topic, supporting materials, organizational pattern, language usage, presentational aids, and delivery;
3. Demonstrate listening competencies by summarizing, analyzing, and paraphrasing ideas, perspectives, and emotional content.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2, and #3

Credit Hours: 3

Courses	Credits
SPCM 101 Fundamentals of Speech.....	3
SPCM 215 Public Speaking.....	3
SPCM 222 Argumentation and Debate.....	3

System Goal #3:

Social Sciences/Diversity

Students will understand the organization, potential, and diversity of the human community through study of the social sciences.

Student Learning Outcomes: As a result of taking courses meeting this goal, students will:

1. Identify and explain basic concepts, terminology, and theories of the selected social science disciplines from different spatial, temporal, cultural, and/or institutional contexts;
2. Apply selected social science concepts and theories to contemporary issues;
3. Identify and explain the social or aesthetic values of different cultures.

In addition, as a result of taking courses meeting this goal, students will be able to demonstrate a basic understanding of at least one of the following:

4. The origin and evolution of human institutions;
5. The allocation of human or natural resources within societies;
6. The impact of diverse philosophical, ethical or religious views.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2 and #3

At least one of the following: #4, #5, or #6

Credit Hours: 6 (in 2 disciplines)

Courses	Credits
ANTH 210 Cultural Anthropology	3
ANTH 220 Physical Anthropology	3
CJUS 201 Introduction to Criminal Justice	3
ECON 101 The Global Economy.....	3
ECON 201 Principles of Microeconomics.....	3
ECON 202 Principles of Macroeconomics.....	3
GEOG 101 Introduction to Geography	3
GEOG 200 Introduction to Human Geography	3
GEOG 210 World Regional Geography.....	3
GEOG 212 Geography of North America.....	3
GEOG 219 Geography of South Dakota.....	3
GLST 201 Global Studies I.....	3
HDFS 141 Individual and the Family	3
HDFS 210 Lifespan Development	3
HIST 151 US History I.....	3
HIST 152 US History II.....	3
POLS 100 American Government.....	3
POLS 102 American Political Issues	3
POLS 165 Political Ideologies	3
POLS 210 State and Local Government.....	3
POLS 253 Current World Problems.....	3
PSYC 101 General Psychology.....	3
REL 237 Religion in American Culture.....	3
SOC 100 Introduction to Sociology	3
SOC 150 Social Problems	3
SOC 240 The Sociology of Rural America.....	3
SOC 250 Courtship and Marriage	3
WMST 101 Introduction to Women's Studies	3

System Goal #4:

Humanities and Arts/Diversity

Students will understand the diversity and complexity of the human experience through study of the arts and humanities.

Student Learning Outcomes: As a result of taking courses meeting this goal, students will:

1. Demonstrate knowledge of the diversity of values, beliefs, and ideas embodied in the human experience;
2. Identify and explain basic concepts of the selected disciplines within the arts and humanities. In addition, as a result of taking courses meeting this goal, students will be able to do at least one of the following:
3. Identify and explain the contributions of other cultures from the perspective of the selected disciplines within the arts and humanities;
4. Demonstrate creative and aesthetic understanding;
5. Explain and interpret formal and stylistic elements of the literary or fine arts;
6. Demonstrate foundational competency in reading, writing, and speaking a non-English language.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2

At least one of the following: #3, #4, #5, or #6

Credit Hours: 6 hours (in 2 disciplines or a sequence of foreign language courses)

Courses

Credits

AIS 101 Introductory Lakota I	4
AIS 102 Introductory Lakota II	4
ARAB 101 Introductory Arabic I	4
ARAB 102 Introductory Arabic II	4
ART 111 Drawing I	3
ART 112 Drawing II	3
ART 121 Design I 2D	3
ART 123 Three Dimensional Design	3
ARTH 100 Art Appreciation	3
ARTH 211 History of World Art I	3
ARTH 212 History of World Art II	3
ENGL 210 Introduction to Literature	3
ENGL 211 World Literature I	3
ENGL 212 World Literature II	3
ENGL 221 British Literature I	3
ENGL 222 British Literature II	3

ENGL 240 Juvenile Literature	3
ENGL 241 American Literature I	3
ENGL 242 American Literature II	3
ENGL 248 Women in Literature	3
ENGL 249 Literature of Diverse Cultures	3
ENGL 250 Science Fiction	3
ENGL 256 Literature of the American West	3
ENGL 268 Literature	3
FREN 101 Introductory French I	4
FREN 102 Introductory French II	4
FREN 201 Intermediate French I	4
FREN 202 Intermediate French II	4
GER 101 Introductory German I	4
GER 102 Introductory German II	4
GER 201 Intermediate German I	3
GER 202 Intermediate German II	3
HIST 111 World Civilizations I	3
HIST 112 World Civilizations II	3
HIST 121 Western Civilization I	3
HIST 122 Western Civilization II	3
LAKL 101 Introductory Lakota I	4
LAKL 102 Introductory Lakota II	4
MCOM 151 Introduction to Mass Communication	3
MCOM 160 Introduction to Film Credits	3
MFL 101 Introduction to Foreign Language and Culture I	4
MFL 102 Introduction to Foreign Language and Culture II	4
MUS 100 Music Appreciation	3
MUS 130 Music Literature and History I	2
MUS 131 Music Literature and History II	3
MUS 201 History of Country Music	3
MUS 203 Blues, Jazz, and Rock	3
PHIL 100 Introduction to Philosophy	3
PHIL 200 Introduction to Logic	3
PHIL 215 Introduction to Social-Political Philosophy	3
PHIL 220 Introduction to Ethics	3
REL 213 Introduction to Religion	3
REL 224 Old Testament	3
REL 225 New Testament	3
REL 238 Native American Religions	3
REL 250 World Religions	3
REL 270 Middle East Survey	3
RUSS 101 Introductory Russian I	4
RUSS 102 Introductory Russian II	4
SPAN 101 Introductory Spanish I	4
SPAN 102 Introductory Spanish II	4
SPAN 201 Intermediate Spanish I	3
SPAN 202 Intermediate Spanish II	3
THEA 100 Introduction to Theatre	3
THEA 131 Introduction to Acting	3

System Goal #5:

Mathematics

Students will understand and apply fundamental mathematical processes and reasoning.

Student Learning Outcomes: As a result of taking courses meeting this goal, students will:

1. Use mathematical symbols and mathematical structure to model and solve real-world problems;
2. Demonstrate appropriate communication skills related to mathematical terms and concepts;
3. Demonstrate the correct use of quantifiable measurements of real-world situations.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2 and #3

Credit Hours: 3

Courses	Credits
MATH 102 College Algebra	3
MATH 103-103L Quantitative Literacy and Lab.....	4
MATH 104 Finite Mathematics.....	4
MATH 115 Precalculus	5
MATH 120 Trigonometry *	3
MATH 121-121L Survey of Calculus and Lab.....	5
MATH 123 Calculus I	4
MATH 125 Calculus II.....	4
MATH 225 Calculus III	4
STAT 281 Introduction to Statistics	3

NOTE: Student enrollment in the initial Mathematics course is determined by the Board of Regents placement policy (2:7.6).

System Goal #7:

Information Literacy

Students will recognize when information is needed and have the ability to locate, organize, critically evaluate, and effectively use information from a variety of sources with intellectual integrity.

Student Learning Outcomes: Students will:

1. Determine the extent of information needed;
2. Access the needed information effectively and efficiently;
3. Evaluate information and its sources critically;
4. Use information effectively to accomplish a specific purpose;
5. Use information in an ethical and legal manner.

Assessment: Students fulfill this requirement by demonstrating competency through an assessment designated by the Regental universities.

System Goal #6:

Natural Sciences

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

Student Learning Outcomes: As a result of taking courses meeting this goal, students will:

1. Demonstrate the scientific method in a laboratory experience;
2. Gather and critically evaluate data using the scientific method;
3. Identify and explain the basic concepts, terminology and theories of the selected natural sciences;
4. Apply selected natural science concepts and theories to contemporary issues.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2, #3 and #4

Credit Hours: 6

Courses	Credits
BIOL 101-101L Biology Survey I and Lab.....	3
BIOL 103-103L Biology Survey II and Lab.....	3
BIOL 151-151L General Biology I and Lab.....	4
BIOL 153-153L General Biology II and Lab	4
BIOL 200-200L Animal Diversity and Lab	4
BOT 201-201L General Botany and Lab	3
CHEM 106-106L Chemistry Survey and Lab.....	(3,1)
CHEM 108-108L Organic and Biochemistry and Lab	(4, 1)
CHEM 112-112L General Chemistry I and Lab.....	(3, 1)
CHEM 114-114L General Chemistry II and Lab	(3, 1)
CHEM 120-120L Elementary Organic Chemistry and Lab	(3, 1)
GEOG 131-131L Physical Geography: Weather and Climate and Lab	4
GEOG 132-132L Physical Geography: Natural Landscapes and Lab	4
PHYS 101-101L Survey of Physics	4
PHYS 111-111L Introduction to Physics I and Lab	4
PHYS 113-113L Introduction to Physics II and Lab.....	4
PHYS 185-185L Introduction to Astronomy I and Lab.....	3
PHYS 187-187L Introduction to Astronomy II and Lab	3
PHYS 211-211L University Physics I and Lab	4
PHYS 213-213L University Physics II and Lab	4
PS 213-213L Soils and Lab	2
PS 243 Principles of Geology	3
PS 244 Geological Resources of South Dakota Lab.....	1

II. SDSU's Institutional Graduation Requirements (IGRs)

(These Requirements are unique to SDSU.)

IGR Goal #1:

Land and Natural Resources

Students will learn to be responsible for the land and other natural resources.

Student Learning Outcomes

As a result of taking courses meeting this goal, students will:

1. Learn the fundamental importance of land and other natural resources.
2. Understand scientific principles as they pertain to responsible use of land and other natural resources.
3. Develop an ethic for responsible use of land and other natural resources.
4. Gather and critically evaluate data to address basic and applied principles related to land and other natural resources.
5. Develop knowledge or skills related to the sustainable use of land and other natural resources.
6. Obtain knowledge and skills to scientifically analyze the influence of individuals and groups of people on land and other natural resources.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2, #3

At least one of the following: #4, #5, #6

Credit Hours: 3

Courses

Credits

AST 353-353L Physical Climatology and Meteorology and Lab ..3	
ABS 203 Global Food Systems	3
ABS 482-582 International Experience	(2-4)
AGEC 421-521 Farming and Food Systems Economics	3
AST 333-333L Soil and Water Mechanics and Lab	3
AST 463/563 Agricultural Waste Management	3
BIOL 101-101L Biology Survey I and Lab	3
BIOL 311 Principles of Ecology	3
BIOL 383 Bioethics	4
ECON 472-572 Resource and Environmental Economics	3
ENGL 256 Literature of the American West.....	3
ENVM 275 Introduction to Environmental Science	3
GEOG 310-310L Soil Geography and Land Use Interpretation and Lab	3
HIST 368 History and Culture of the American Indian.....	3
NFS 111 Food, People and the Environment	3
PHIL 383 Bioethics	4
PHIL 454-554 Environmental Ethics	3
PS 213-213L Soils and Lab*	2
PS 243 Principles of Geology*	3
PS 310-310L Soil Geography and Land Use Interpretation and Lab	3
PS 362-362L Environmental Soil Management and Lab	3
PSYC 244 Environmental Psychology.....	3
RANG 105-105L Introduction to Range Management and Lab.....	3
RANG 215 Introduction to Integrated Ranch Management.....	3
REL 332 Environmental Ethics.....	3
SOC 240 The Sociology of Rural America*	3
WL 110 Environmental Conservation.....	3

* Indicates courses that also meet the System General Education Requirements (SGR). If students use a course to meet the SGR, students must select a different course to meet IGR.

IGR Goal #2:

Personal Wellness

Students will demonstrate a holistic approach to personal wellness.

Student Learning Outcomes:

As a result of taking courses meeting this goal, students will:

1. Identify areas of self-responsibility and wellness principles.
2. Demonstrate concepts fostering wellness of the mind, body, and spirit.
3. Present a personal wellness plan as a guide for maintaining lifelong wellness.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2, #3

Credit Hours: 2-3

Courses

Credits

BIOL 105 Human Biology	3
GS 143 Mastering Lifetime Learning Skills	2
HSC 212 Contemporary Health Problems	2
PHA 201 Medications and Wellness	2
PSYC 267 Psychology of Personal Adjustment	3
WEL 100 Wellness for Life.....	1
WEL 100L Wellness Lab	1

IGR Goal #3:

Social Responsibility / Cultural and Aesthetic Awareness

Students will demonstrate social responsibility or cultural and aesthetic awareness to foster individual responsibility and creativity.

Credit Hours: 3 total from Option 1 and/or Option 2

Student Learning Outcomes:

Option 1: Social Responsibility

As a result of taking courses meeting this goal, students will:

1. Demonstrate an appreciation of the different ways in which people express their understanding of the human condition.
2. Understand their responsibilities and choices as related to behavioral, cultural, and/or institutional contexts.
3. Demonstrate their knowledge of the structures and possibilities of the human community.
4. Foster individual responsibility by use of service learning, leadership, or experiential learning activities.

Each course meeting this goal includes the following student learning outcomes:

Required: #1

At least one of the following: #2, #3, #4

NOTE: If a student selects a 1- or 2-credit course, the student will need to combine course credit hours to meet the 3-credit requirement.

Courses

Credits

ABS 482-582 International Experience	(2-4)
AIR 101-101L The Foundations of the US Air Force and Lab	1
AIR 102-102L The Foundations of the US Air Force and Lab	1
AIR 201-201L The Evolution of USAF Air and Space Power and Lab	1
AIR 202-202L The Evolution of USAF Air and Space Power and Lab	1
AIS 100 Introduction to American Indian Studies.....	3
AIS 101 Introductory Lakota I *	4
AIS 102 Introductory Lakota II *	4
AIS 421 Indians of North America	3
AM 381 Professional Behavior at Work	3
ANTH 210 Cultural Anthropology *	3
ANTH 220 Physical Anthropology *	3
ANTH 421-521 Indians of North America	3
ARAB 101 Introductory Arabic I *	4
ARAB 102 Introductory Arabic II *	4
CJUS 201 Introduction to Criminal Justice *	3
ECON 460-560 Economic Development	3
ENGL 249 Literature of Diverse Cultures	3
ENGL 268 Literature	3
FREN 101 Introductory French I *	4
FREN 102 Introductory French II *	4
GEOG 200 Introduction to Human Geography	3
GEOG 210 World Regional Geography *	3
GEOG 219 Geography of South Dakota *	3
GER 101 Introductory German I *	4
GER 102 Introductory German II *	4
GERO 201 Introduction to Gerontology	3
GLST 201 Global Studies I *	3
HIST 121 Western Civilization I	3
HIST 122 Western Civilization II	3
HIST 151 United States History I	3

HIST 152 United States History II	3
HIST 368 History and Culture of the American Indian.....	3
HLTH 443 Public Health Science	3
HSC 443 Public Health Science.....	3
INED 411/511 South Dakota Indian Studies	3
LAKL 101 Introductory Lakota I *	4
LAKL 102 Introductory Lakota II *	4
LAS 301 Latin American Cultures	2-3
LAS 302 Latin American Societies.....	3
LEAD 310 Leadership in Context.....	3
MATH 450 History of Mathematics	3
MCOM 145 Media Literacy and Ethics.....	3
MFL 101 Introduction to Foreign Language and Culture I *	4
MFL 102 Introduction to Foreign Language and Culture II *	4
MSL 101 Leadership and Personal Development.....	1
MSL 102 Introduction to Tactical Leadership	1
MSL 201 Innovative Team Leadership	2
MSL 202 Foundation of Tactical Leadership	2
PHIL 100 Introduction to Philosophy *	3
PHIL 215 Introduction to Social-Political Philosophy *	3
PHIL 220 Introduction to Ethics *	3
PHIL 313 Great Philosophers	(2-3)
PHIL 331 Philosophy of Science	3
PHIL 470-570 Philosophy of Religion	3
POLS 100 American Government *	3
POLS 102 American Political Issues *	3
POLS 165 Political Ideologies *	3
POLS 210 State and Local Government *	3
POLS 253 Current World Problems *	3
PSYC 101 General Psychology *	3
PSYC 324 Psychology of Aging	3
PSYC 327 Child Psychology	3
PSYC 367 Psychological Gender Issues.....	3
PSYC 406 Cognitive Psychology.....	3
PSYC 441 Social Psychology	3
PSYC 451 Psychology of Abnormal Behavior	3
PSYC 461 Theories of Personality.....	3
REL 213 Introduction to Religion *	3
REL 224 Old Testament *	3
REL 225 New Testament *	3
REL 237 Religion in American Culture *	3
REL 238 Native American Religions *	3
REL 250 World Religions *	3
REL 270 Middle East Survey *	3
REL 370 Philosophy of Religion *	3
REL 401-501 History of Western Religious Thought I *	3
REL 402-502 History of Western Religious Thought II *	3
SOC 150 Social Problems *	3
SOC 240 The Sociology of Rural America*	3
SOC 250 Courtship and Marriage *	3
SOC 350 Race and Ethnic Relations	3
SOC 440 Urban Sociology.....	3
SPAN 101 Introductory Spanish I *	4
SPAN 102 Introductory Spanish II *	4
WL 430-430L Human Dimensions in Wildlife and Fisheries and Lab	4
WMST 101 Introduction to Women's Studies	3
WMST 367 Psychological Gender Issues.....	3

*Indicates courses that also meet the System General Education Requirements (SGR). If students use a course to meet the SGR, students must select a different course to meet the IGR.

Option 2: Cultural and Aesthetic Awareness

As a result of taking courses meeting this goal, students will:

1. Demonstrate an appreciation of the different ways in which people express their understanding of the human condition.
2. Understand their responsibilities and choices as related to spatial and temporal contexts.
3. Foster individual creativity.

Each course meeting this goal includes the following student learning outcomes:

Required: #1

At least one of the following: #2, #3

NOTE: If a student selects a 1- or 2-credit course, the student will need to combine course credit hours to meet the 3-credit requirement.

Courses Credits

MUAP 100, 200, 300, 400 Applied Music Lessons (for each level of the course)	1
MUEN 100, 200, 300 Music Ensembles (for each level of the course)	1
ANTH 210 Cultural Anthropology *	3
ART 111 Drawing I *	3
ART 112 Drawing II *	3
ART 121 Design I 2D *	3
ART 123 Three Dimensional Design *	3
ART 211 Drawing III-Figurative	3
ART 231 Painting I	3
ART 241 Sculpture I	3
ART 251 Ceramics I	3
ART 281 Printmaking I	3
ARTH 100 Art Appreciation *	3
ARTH 211 History of World Art I *	3
ARTH 212 History of World Art II *	3
DANC 130 Dance Fundamentals	1
DANC 240 Multicultural Dance Activities	1
ENGL 210 Introduction to Literature *	3
ENGL 211 World Literature I *	3
ENGL 212 World Literature II *	3
ENGL 221 British Literature I *	3
ENGL 222 British Literature II *	3
ENGL 240 Juvenile Literature *	3
ENGL 241 American Literature I *	3
ENGL 242 American Literature II *	3
ENGL 248 Women in Literature *	3
ENGL 249 Literature of Diverse Cultures *	3
ENGL 250 Science Fiction *	3
ENGL 256 Literature of the American West *	3
ENGL 268 Literature *	3
ENGL 283 Creative Writing I	3
MUS 100 Music Appreciation *	3
MUS 130 Music Literature and History I *	2
MUS 131 Music Literature and History II *	3
MUS 201 History of Country Music *	3
MUS 203 Blues, Jazz, and Rock *	3
PHIL 100 Introduction to Philosophy *	3

*Indicates courses that also meet the System General Education Requirements (SGR). If students use a course to meet the SGR, students must select a different course to meet the IGR.

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 student learning outcomes 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.



III. Globalization Requirement

Globalization is defined as a process of interaction and integration among people, organizations, governments and cultures. This process affects:

- environmental resources
- culture(s), including people’s well-being
- political systems, national sovereignty
- national security
- agriculture
- public health/health care
- economic systems/international trade
- transportation
- information technology/communication
- education
- global governance

Students will understand globalization and how it affects the human community.

Student Learning Outcomes:

Students will:

1. Demonstrate a basic understanding of globalization.
2. Identify the benefits and cost implications of globalization.
3. Identify and analyze global issues including how multiple perspectives impact such issues.
4. Interpret global issues and data utilizing discipline specific analytical and/or philosophical tools.

Each course meeting this goal includes the following student learning outcomes:

Required: #1, #2, #3, #4

Credit Hours:

Students can select a course to meet the globalization requirement which also meets one of the SGR/IGR requirements or meets a major requirement with the following exceptions: ABS 482, International Experience (2-4 cr.), FREN 385, Travel & Study Abroad Francophone (1-4 cr.), and MFL 396-496, Field Experience (1-4 cr.). If a student selects one of these three courses, required credits would increase from 1-4 credits. **Otherwise, selected courses do not add to the total number of credits required for the major.** In no instance are the 128 credits required for graduation increased.

Courses listed below have been approved to meet this goal. Each program area/major determines how to best address the globalization goal and student learning outcomes; therefore, **you should consult your department regarding how this goal and its expectations are accomplished within your specific program of study.**

Courses	Credits
ABS 203 Global Food Systems *	3
ABS 482-582 International Experience *†	(2-4)
AGEC 479 Agricultural Policy*	3
ARAB 101 Introductory Arabic I *	4
ARAB 102 Introductory Arabic II *	4
ARTH 100 Art Appreciation *	3
ARTH 211 History of World Art I *	3
ARTH 212 History of World Art II *	3
BIOL 383 Bioethics *	4
BOT 419 Plant Ecology**	4
BOT 419L Plant Ecology Lab**	0
CSC 303 Ethical and Security Issues in Computing**	3
ECON 101 Global Economy *	3

ECON 202 Principles of Macroeconomics *	3
ECON 460-560 Economic Development*	3
ENGL 211 World Literature I *	3
ENGL 212 World Literature II *	3
ENGL 221 British Literature I *	3
ENGL 222 British Literature II *	3
ENVM 275 Introduction to Environmental Science **	3
FREN 101 Introductory French I *	4
FREN 102 Introductory French II *	4
FREN 385 Travel Study Abroad Francophone†	(1-6)
GEOG 200 Introduction to Human Geography *	3
GEOG 210 World Regional Geography *	3
GEOG 219 Geography of South Dakota *	3
GEOG 310 Soil Geography and Land Use Interpretation *	2
GEOG 310L Soil Geography and Land Use Interpretation Studio *	1
GER 101 Introductory German I *	4
GER 102 Introductory German II *	4
GLST 201 Global Studies I *	3
GLST 401 Global Studies II**	3
HIST 112 World Civilizations II *	3
HIST 122 Western Civilization II *	3
HLTH 443 Public Health Science*	3
HSC 443 Public Health Science*	3
MCOM 416-516 Mass Media in Society**	3
MCOM 417-517 History of Journalism**	3
MFL 101 Introduction to Foreign Language and Culture I *	4
MFL 102 Introduction to Foreign Language and Culture II *	4
MFL 396 Field Experience†	(1-12)
MFL 496-596 Field Experience†	(1-12)
NURS 480 Advanced Population based Nursing Practice	4
PHIL 383 Bioethics*	4
POLS 253 Current World Problems *	3
PS 310 Soil Geography and Land Use Interpretation *	2
PS 310L Soil Geography and Land Use Interpretation Studio*	1
PS 446-546 Agroecology**	3
PSYC 409 History and Systems of Psychology**	3
PSYC 482-582 Travel Studies**	(1-4)
REL 250 World Religions *	3
SE 330 Human Factors and User Interface**	3
SOC 100 Introduction to Sociology **	3
SOC 150 Social Problems *	3
SOC 240 The Sociology of Rural America*	3
SOC 350 Race and Ethnic Relations *	3
SOC 440 Urban Sociology *	3
SOC 483 Sociology of Gender Roles**	3
SPAN 101 Introductory Spanish I *	4
SPAN 102 Introductory Spanish II *	4
SPCM 470 Intercultural Communication**	3
WL 110 Environmental Conservation *	3
WL 430 Human Dimensions in Wildlife and Fisheries **	4
WL 430L Human Dimensions in Wildlife and Fisheries Lab **	0

* Indicates courses that also meet the System General Education Requirements (SGR) and/or Institutional Graduation Requirements (IGR).

** Indicates course required for the major.

† Required credits increase from 1-4 credits.

NOTE: Every section of MFL 396/496 will meet the globalization goal and student learning outcomes.

IV. Advanced Writing Requirement

Advanced writing courses are discipline based and require students to build upon concepts learned in courses addressing System General Education Goal #1. Students will refine their writing skills appropriate to the discipline. These courses will have a scholarly focus.

Students will build upon concepts learned in courses covering System General Education Goal #1 and refine their skills through research and writing in a discipline specific context.

Student Learning Outcomes:

Students will:

1. Read extensively and respond critically in the written discourse of a discipline; formulate research questions, refine topics, develop a plan for research and organize what is known about the topic; articulate a position through a thesis statement and advance it using evidence from primary and secondary sources, examples, and counterarguments that are relevant to the audience or issues at hand.
2. Use a style manual and other writing conventions specific to a discipline; avoid plagiarism by adhering to the rules for paraphrasing, summarizing, and the use of quotations, as well as the conventions for incorporating information from Internet-based resources.
3. Evaluate sources critically, both print and electronic, discern the strength of evidence and arguments, determine credibility, and identify potential bias and overall quality.
4. Present the results of research or project, either collaboratively or individually, to the class, department, faculty, community members, or at a student research or professional conference.

Each course meeting this goal includes the following student learning outcomes.

Required: #1, #2, #3, #4

Credit Hours:

Integrated in the major or may select a specific advanced course (i.e., ENGL 379, Technical Communication) which addresses the advanced writing goal and student learning outcomes. **Selected course(s) do not add to the total number of credits required for the major.**

Each program area/major determines how to best address the advanced writing goal and student learning outcomes; therefore, **you should consult your department regarding how this goal and its expectations are accomplished within your specific program of study.** Courses used across the various programs at SDSU include the following:

Courses	Credits
ABE 422 Design Project IV	2
ABE 490 Seminar	1
ABS 475-475L Integrated Natural Resource Management and Lab ..	3
AGEC 479 Agricultural Policy	3
AGED 404 Program Plan in Agricultural Education	4
AM 482 Trends Analysis	3
ARTH 310 History of United States Art and Architecture.....	3
ARTH 320 Modern Art and Architecture Survey.....	3
ARTH 490 Seminar	(1-3)
AS 489 Current Issues in Animal and Range Sciences.....	2
AST 463/563 Agricultural Waste Management.....	3
AT 474-574 Rehabilitation of Athletic Injuries	2
BIOL 490 Seminar	1
CA 340 Work Family Interface.....	3
CEE 465 Civil Engineering Capstone Design II	2
CHEM 383 Techniques in Clinical Laboratory Technology II.....	3
CHEM 494 Internship.....	(1-4)
CHEM 498 Undergraduate Research/Scholarship	(3-6)
CM 473 Construction Law and Accounting	3
CSC 485 Software Engineering II	3
CTE 440/540 Curriculum Design in Career and Technical	

Education	3
DS 490 Seminar	1
ECE 361-361L Methods and Materials/Early Childhood	
Education and Lab.....	4
ECON 433 Public Finance.....	3
EE 465-465L Senior Design II and Lab	2
EET 470-470L Project Management and Lab	2
EET 471-471L Capstone Experience and Lab	1
ENGL 379 Technical Communication.....	3
ENGL 410 Mythology and Literature	3
ENGL 424 7-12 Language Arts Methods.....	3
ENGL 479 Capstone Course and Writing in the Discipline	3
FCSE 411 Philosophy and Methods Family and Consumer	
Sciences	4
FREN 433 French Culture and Civilization	3
GEOG 382 Geographic Research Methods.....	3
GER 433 German Civilization I	3
GER 434 German Civilization II.....	3
GS 479 Interdisciplinary Studies Capstone.....	2
HIST 480 Historical Methods and Historiography.....	3
HO 464 Senior Project I	1
HO 465 Senior Project II	2
HSC 490 Seminar	(1-4)
ID 322 Interior Design Studio III	4
MATH 401 Senior Capstone and Advanced Writing	1
MCOM 371 Advertising Copy and Layout and Studio	3
MCOM 433-433L Advanced TV News Reporting and Lab	3
MCOM 438-438L Public Affairs Reporting and Studio	3
ME 479-479L Mechanical Systems Design II and Lab	2
MICR 490 Seminar	1
MLS 461 Introduction to Management and Education	2
MNET 470-470L Project Management and Lab.....	2
MNET 471-471L Capstone Experience and Lab	1
MNET 494 Internship.....	(1-3)
MUS 433 Music Literature and History III.....	3
NFS 490/590 Seminar.....	2
NURS 416 Community Health Nursing	5
NURS 495 Practicum.....	6
PE 490 Seminar	(1-3)
PHA 467-467L Pharmacy Practice III and Lab	3
PHA 468-468L Pharmacy Practice IV and Lab	3
PHIL 424 Modern Political Philosophy.....	3
PHYS 316-316L Measurement Theory and Experiment Design	
and Lab.....	2
POLS 461 Early Political Philosophy	3
POLS 462 Modern Political Philosophy.....	3
PS 383-383L Principles of Crop Improvement and Lab	3
PS 390 Seminar.....	1
PSYC 409 History and Systems of Psychology	3
RECR 410 Current Issues in Recreation	3
SE 320 Software Requirements and Formal Specifications.....	3
SPAN 433 Spanish Civilization and Culture	3
SPAN 435 Latin American Civilization and Culture.....	3
SPCM 305 Communication Research	3
THEA 410-510 Dramatic Literature.....	3

General Education Requirements for Associate Degree

(Effective for new degree-seeking students Fall 2005 and later)

System General Education Requirements 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 18 credit hours as specified in Board of Regents policy 2:7(3).

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

Written Communication (Goal #1), 3 credits
Oral Communication (Goal #2), 3 credits
Social Sciences/Diversity (Goal #3), 3 credits
Humanities and Arts/Diversity (Goal #4), 3 credits
Mathematics (Goal #5), 3 credits
Natural Sciences (Goal #6), 3 credits (6 recommended)

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.



Policies Applicable to System General Education Requirements (SGRs)

Guidelines for Baccalaureate and Associate Degrees

1. The System General Education Requirements will be effective for students entering in Fall 2005.
 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. 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.
 5. Under common course practices, a course that counts toward a General Education System Requirement at one of the Regental campuses will count toward the same General Education requirement at another campus regardless of whether or not the campus offered the course.
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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:

Course Requirements	Credit Hours
Written Communication (Goal #1)	3
Social Sciences/Diversity (Goal #3)	3
Humanities and Arts/Diversity (Goal #4)	3
Mathematics (Goal #5)	3
Natural Sciences (Goal #6)	3
Total	15

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:

Agricultural and Biosystems Engineering
 Biology – Preprofessional Health Related Specialization
 Civil Engineering
 Computer Science
 Electrical Engineering
 Engineering Physics – Mechanical Engineering Emphasis and
 Electrical Engineering Emphasis
 Interior Design
 Mathematics Education
 Mechanical Engineering

Music
 Music Education
 Nursing
 Software Engineering

4. Students placed in pre-general education (i.e., remedial) courses must enroll in and successfully complete the courses within the first 30 credit hours. If a student does not successfully complete the pregeneral education course(s) within the first 30 credit hours attempted, a registration hold is placed on the student's record. In any subsequent registration during the next 12 credit hours attempted, the student must enroll in and successfully complete the pre-general education course(s). If the pre-general education course(s) is not successfully completed within the first 42 credit hours attempted, the only course(s) in which a student may enroll is the pre-general education course(s); and the student's status is changed from degree seeking to non-degree seeking. Transfer students entering with 42 or more credit hours, who are still in need of pre-general education coursework, are required to enroll in the necessary pre-general education coursework during their first enrolled term in the regental system. Student who are placed into MATH 021 are expected to successfully complete both MATH 021 and MATH 101 before enrolling in MATH 102. However, a student who performs exceptionally well in MATH 021 may petition the Vice President for Academic Affairs to bypass MATH 101 and enroll in MATH 102 as their next mathematics course. These students must sit for the COMPASS Math placement exam and earn scores that meet or exceeds the placement score necessary for enrolling in MATH 102.
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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
Written Communication (Goal #1)	3
Social Sciences/Diversity (Goal #3)	3
Humanities and Arts/Diversity (Goal #4)	3
Mathematics (Goal #5)	3
Natural Sciences (Goal #6)	3
Total	15

Transfer Students

Fraction of Credits

Transfer credits applied to a general education goal meet the credit requirement if .33 credits (or fewer) remain for that goal.

(Example: student transferred in 5.67 credits towards SGR#3 Social Science 6 credit requirement, the goal is met.)

If .34 credits (or greater) remain to meet the minimum required credits for the goal, the student must take additional credits from the approved list of courses in the University Catalog.

Personal Wellness Requirement

The Personal Wellness requirement (IGR #2) needs to be satisfied by transfer students with documented equivalent courses to BIOL 105, GS 143, HSC 212, PHA 201, PSYC 267, WEL 100-100L, 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 Personal Wellness.

Military students with approved documentation (DD214, CCAF, AARTS, or SMART transcripts) will be granted WEL100 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

1. The catalog of graduation begins with the summer term and ends with the subsequent spring term.
2. Every student is required to have a catalog of graduation. New and transfer students are assigned the catalog in effect at the time of their initial enrollment at the university from which they are seeking a degree. Students may elect a catalog of graduation that is later than their initial catalog but may not elect a catalog of graduation that is earlier than their initial catalog.
3. In order to receive a degree, a student must meet the program requirements listed in his/her catalog of graduation.
4. Students who discontinue enrollment at any Regental university for more than two consecutive semesters are assigned the catalog in effect at the time of their reenrollment as their catalog of graduation.
5. Students are considered to be in continuous enrollment for purposes of the catalog of graduation so long as any break in enrollment at any Regental university is for two or fewer consecutive semesters (excluding summer) and students maintain their degree-seeking status at the same Regental university.
6. Student who change their degree-seeking status from one Regental university to another Regental university are assigned the catalog of graduation that corresponds to the term they are admitted to their new degree-granting university.





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Degree Definitions

Associate Degree

An Associate of Arts (AA) degree is typically a two-year transfer degree, which indicates the completion of a student's lower division general education requirements and forms the foundation for baccalaureate degree programs. Up to 16 credit hours at the 300 and 400 level may be required. More than 16 credit hours at the 300 and 400 level may be required if specified by an accrediting agency.

An Associate of Science (AS) degree is a terminal degree. However, it is transferable when a specific degree articulation agreement exists between a given AS degree and a specific baccalaureate degree. (BOR Policy 2:25:4B.) Up to 16 credit hours at the 300 and 400 level may be required. More than 16 credit hours at the 300 and 400 level may be required if specified by an accrediting agency.

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

Bachelor's Degree

The bachelor's degree is awarded to a student by a university for satisfactory completion of a prescribed course of study (South Dakota Regental System minimum of 128 semester credits). It is verified by a diploma and transcript signifying a measure of achievement. 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 a 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 General Studies (B.G.S.)**
- **Bachelor of Science (B.S.)**
- **Bachelor of Science in Education (B.S.E.D.)**
- **Bachelor of Music Education (B.M.E.)**

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. Normally, degree titles indicate one of two major categories. The Master of Arts and Master of Science are academic degrees designed to provide an introduction to scholarship activities and research. These degrees often serve the needs of individuals teaching in public schools or community colleges and/or preparation for further graduate study. The second category leads to professional master's degrees, such as the M.Ed. or MBA. While similar to the M.A. and M.S., these programs tend to emphasize professional practice.

SDSU offers M.Arch., M.Ed., M.A., and M.S. degrees.

Doctoral Degree

The Doctor of Philosophy program (Ph.D.) is designed to prepare a student 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 and problems at the frontiers of knowledge. The graduate will also have an appropriate awareness of and commitment to the ethical practices appropriate to the field.

The professional doctoral degree is earned by two or more years of professional study past the baccalaureate degree. This degree prepares an individual for entry into the practice of a recognized profession. Examples of professional doctorates are the M.D., Pharm.D., JD, DVM, and Ed.D. degrees.

SDSU offers the Ph.D. degree in these areas: Animal Science; Biological Sciences; Chemistry; Computational Science and Statistics; Electrical Engineering; Geospatial Science and Engineering; Nursing; Nutritional Sciences; Pharmaceutical Sciences; Plant Science, Sociology; and Wildlife and Fisheries Sciences. SDSU offers a professional doctorate in Pharmacy that is the Pharm.D. degree; and in Nursing the Doctor of Nursing Practice

Major

An academic major or primary area of study within a degree program enables students to make an in-depth inquiry into a discipline or a professional field of study. It is 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. A major introduces students to a discipline or field of study and related area through a foundation of theory and method. A major that focuses on a specific discipline draws its courses predominantly from one department. A major that encompasses a professional field of study or is interdisciplinary usually obtains its courses from more than one department.

The number of credit hours required for a major and its organizational structure will vary, depending on whether it aims at disciplinary or professional preparation. Variations are due to the demands of accrediting agencies, certification requirements, professional competence and expectations. Undergraduate majors require both discipline specific and support courses. In the Regental system majors typically consist of 47-89 semester credit hours with the mean at 68.5 hours. Credits required for the major are supported by the general education core and electives and together meet the total degree requirement.

Minor

An academic minor within a degree program enables a student to make an inquiry into a discipline or field of study beyond the major or to investigate a particular content theme. It too should be organized around a specific set of objectives that are achieved through a series of courses. Minors are intended to provide limited competency in the subject. Course offerings in a minor may be centered in a specific department or drawn from several departments as in the case of a topical or thematic focus. Some specific requirements are included. Regental undergraduate minors typically consist of 18-24 semester credit hours. Flexibility typically is achieved by offering the student a choice from among a group of courses to complete the credits.

Specialization

A specialization is a designated plan of study, within an existing degree program. It provides a student an alternative to the primary format of the major or it may be one of several tracks within a broad major. It contains courses within the discipline(s) of the existing program. It is specified in the institutional catalog and is designated on the transcript.

Emphasis

An emphasis is a concentration within a major and is accomplished by individual student choices within a plan of study. For example, within a major on adult health the student may focus on the older adult. An emphasis is not regarded as a separate program. It may be described in the catalog, but not detailed as a specific plan of study. It is not specified on a transcript.

Degrees and Associated Majors

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

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Master of Arts *

Master of Education *

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*Microbiology		
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*Plant Molecular Biology		
*Plant Science		
*Veterinary Microbiology		
*Veterinary Pathobiology		

Key to Units Administering Individual Curriculums

A&S	College of Arts and Sciences	GS	College of General Studies
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
EHS	College of Education and Human Sciences	Grad	Graduate School
ENGR	College of Engineering	VPAA	Vice President for Academic Affairs
		*	Specialization (area within a major)
		(E)	Education curriculum available with these majors

All Authorized Majors, Minors, Certificates and Specializations

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Key to Units Administering Individual Curriculums

A&S	College of Arts and Sciences	GS	College of General Studies
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EHS	College of Education and Human Sciences	Grad	Graduate School
ENGR	College of Engineering	VPAA	Vice President for Academic Affairs
		*	Specialization (area within a major)
		(E)	Education curriculum available with these majors

All Authorized Majors, Minors, Certificates and Specializations

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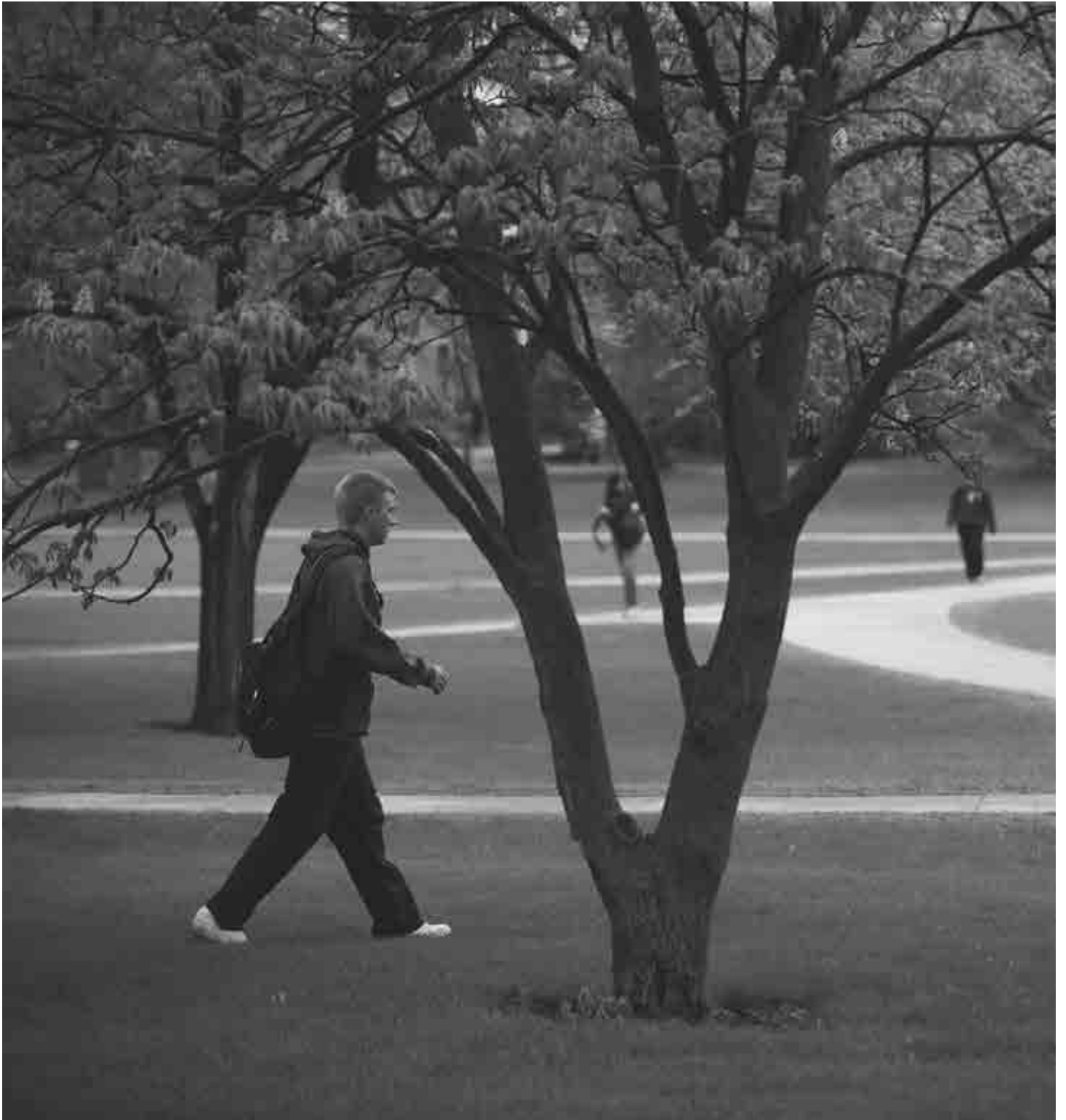
Key to Units Administering Individual Curriculums

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ENGR	College of Engineering	VPAA	Vice President for Academic Affairs
		*	Specialization (area within a major)
		(E)	Education curriculum available with these majors

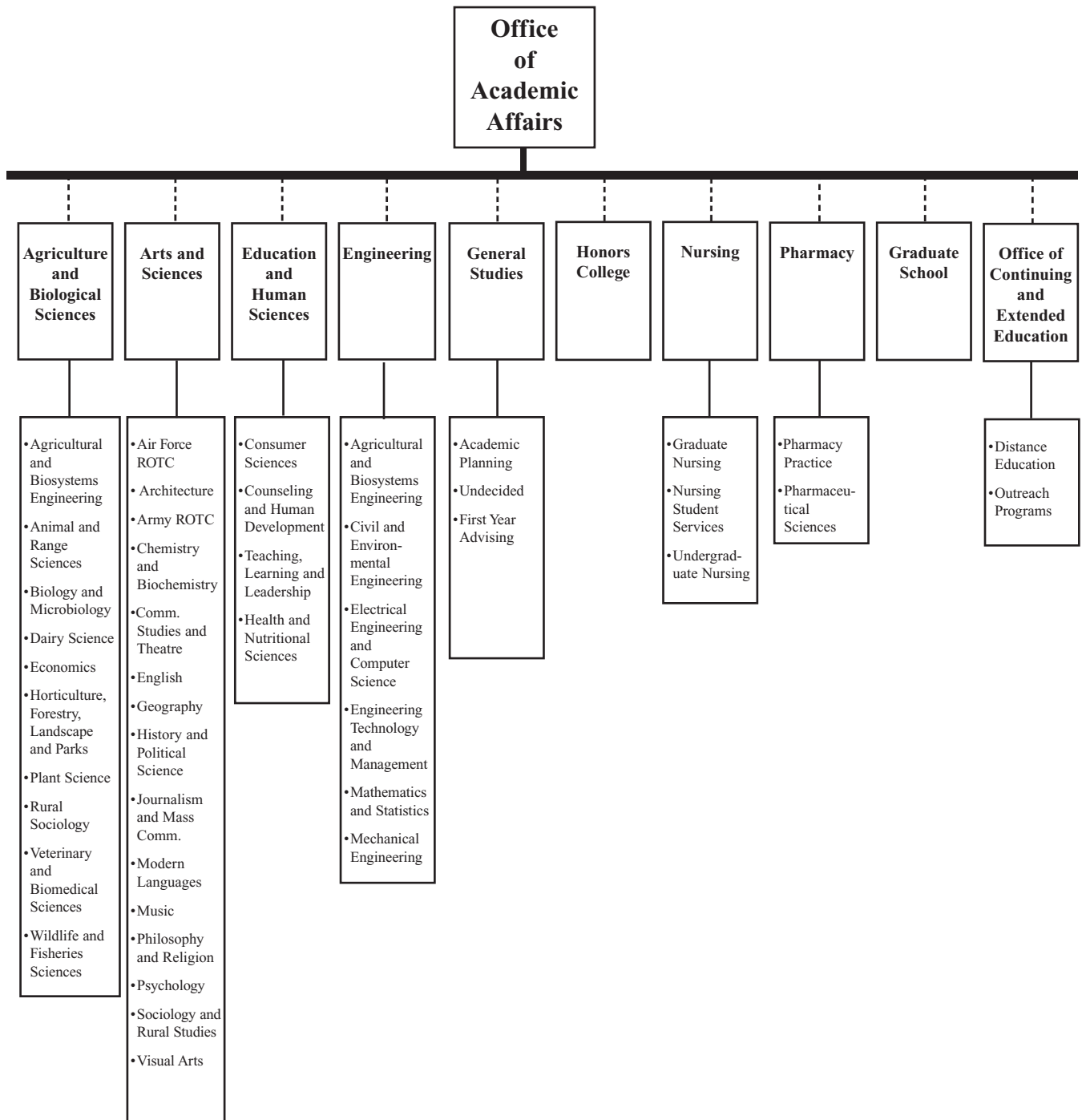
All Authorized Majors, Minors, Certificates and Specializations

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Agriculture and Biological Sciences

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Introduction

Undergraduate academic programs in the College of Agriculture and Biological Sciences lead to a Bachelor of Science Degree in Agriculture or Biological Science with a variety of majors and minors. An Associate of Science Degree in Agriculture is also available. Graduate degrees are offered in several disciplines. Students in agriculture enter into a wide array of technical, professional, and business careers, many of which deal with producing, processing, and marketing agricultural products. Biological sciences students also enter into a variety of career areas, such as wildlife biology, medical lab technologist, criminal investigation technologist, food safety, and environmental management. Many graduates in agriculture and biological sciences are recruited by public agencies for employment in such services as forestry, parks, fish and

wildlife, public health, conservation of natural resources, research laboratories, and many others. Many graduates pursue advanced degrees in graduate schools or professional schools such as medicine, dentistry, optometry, veterinary medicine, or law. In addition to academic programs, the College has extensive involvement in research and outreach/extension. Research for the benefit of South Dakota, the region, and the world is done in such areas as agricultural production, biostress, natural resources, biotechnology, and biomass-based energy and products. The results of research often form the basis for classroom instruction and extension work. The Cooperative Extension Service provides educational services statewide to promote the beneficial use and development of human, economic, and natural resources.

Departments/Units

Agricultural and Biosystems Engineering
(Ag Systems Technology)
Animal and Range Sciences
Biology and Microbiology
Dairy Science

Economics
Horticulture, Forestry, Landscape and Parks
Plant Science
Veterinary and Biomedical Sciences
Wildlife and Fisheries Sciences

Ag-Bio Communications Unit
Agricultural Experiment Station
Animal Disease Research & Diagnostic Lab
Cooperative Extension Service
Water Resources Institute

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 Catalog.

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 multiple departments, numerous majors and 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 in Agriculture 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 and Resource Economics	Agriculture	Economics
Agricultural Education, Communications and Leadership	Agriculture	Office of Academic Programs
Agricultural Systems Technology	Agriculture	Agricultural and Biosystems Engineering
Agronomy	Agriculture	Plant Science
Animal Science	Agriculture	Animal and Range Sciences
Biology	Biological Sciences	Biology and Microbiology
Biotechnology	Biological Sciences	Interdepartmental
Dairy Manufacturing	Agriculture	Dairy Science
Dairy Production	Agriculture	Dairy Science
Environmental Management	Biological Science	Biology and Microbiology
General Agriculture	Agriculture	Office of Academic Programs
Horticulture	Agriculture	Horticulture, Forestry, Landscape and Parks
Landscape Architecture	Agriculture	Horticulture, Forestry, Landscape and Parks
Microbiology	Biological Science	Biology and Microbiology
Park and Recreation Management	Agriculture	Horticulture, Forestry, Landscape and Parks
Pre-Veterinary Medicine	Pre-Veterinary	Veterinary and Biomedical Sciences
Range Science	Agriculture	Animal and Range Sciences
Wildlife and Fisheries Sciences	Biological Sciences	Wildlife and Fisheries Sciences

Agriculture and Biological Sciences Curricula

Degree Requirements

Students seeking the Bachelor of Science degree must complete the System General Education Requirements (pages 40-42) and SDSU Institutional Graduation Requirements (pages 43-45). In some majors, the student must select a “specialization.” Additional requirements for both Bachelor of Science degrees follow.

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 specific courses from the list, whereas 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 482, International Experience.....	2-4
ABS 475-475L, Integrated Natural Resource Management and Lab.....	3
AGEC 271-271L, Farm and Ranch Management and Lab.....	4
AGEC 354, Agricultural Marketing and Prices.....	3
AS 101-101L, Introduction to Animal Science and Lab.....	3
AS 233-233L, Applied Animal Nutrition and Lab.....	4
AS 241-241L, Meat: Product to Consumption and Lab	3
AST 202-202L, Construction Technology and Materials and Lab.....	2
AST 213-213L, Agricultural, Industrial and Outdoor Power and Lab.....	3
AST 262, Environmental Safety and Society.....	2
AST 333-333L, Soil and Water Mechanics and Lab.....	3
AST 342-342L, Applied Electricity and Lab	3
DS 130-130L, Introduction to Dairy Science and Lab	3
DS 231, Dairy Foods	3
HO 111-111L, Biology of Horticulture and Lab.....	3
LA 201, Introduction to Landscape Design	3
MICR 311-311L, Food Microbiology and Lab.....	4
PRM 101, Parks and Society	3
PS 103-103L, Crop Production and Lab	3
PS 213-213L, Soils and Lab.....	3
PS 223-223L, Principles of Plant Pathology and Lab.....	3
PS 307-307L, Insect Pest Management and Lab or	3
PS 305-305L, Insect Biology and Lab	3
RANG 105-105L, Introduction to Range Management and Lab	3
WL 110, Environmental Conservation.....	3

Bachelor of Science in Biological Sciences

A minimum of 33 credits from the natural sciences is required for the degree. 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 Human Sciences 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), with the exception that MATH 125 and 225, Calculus II and III, may be counted as five credits toward the total.

Activities

Most departments in the College of Agriculture and Biological Sciences have one or more student organizations. Most of these organizations sponsor educational, social, and service activities, and provide students opportunities to develop leadership skills and other important abilities.

Nationally known agricultural fraternities for men (Alpha Gamma Rho and Farmhouse) and women (Ceres) are organized and provide living accommodations near campus. 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.

Arts and Sciences

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Introduction

The College of Arts and Sciences serves two significant functions within the University. It provides instruction in the University's 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 nineteen departments and programs in the College of Arts and Sciences offer major and/or minor programs leading to one of four undergraduate degrees. In addition, four departments in other colleges offer majors and/or minors in programs administered through the College of Arts and Sciences.

Departments and Programs

Aerospace Studies
Architecture
Chemistry and Biochemistry
Communication Studies and Theatre
Economics
English

General Studies
Geography
History/Political Science
Interdisciplinary Studies
Journalism and Mass Communication
Military Science

Modern Languages
Music
Philosophy and Religion
Psychology
Sociology and Rural Studies
Visual Arts

Degrees Offered

AA in General Studies
Bachelor of General Studies
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 Catalog.



Programs

Degree Requirements

The Bachelor of Science, Bachelor of Arts, and Bachelor of Music Education degrees are offered by the Arts and Sciences College. Students enrolled in the College of Arts and Sciences must complete the System General Education Requirements (SGRs), the SDSU Institutional Graduation Requirements (IGRs), and the College of Arts and Sciences requirements. 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
(SGR Goal 3 and IGR Goal 3 - Social Science courses only)	
Humanities	8*
(SGR Goal 4 and IGR Goal 3 - Humanities courses only)	

* Bachelor of Science students in the Arts and Sciences College must complete 6 credits from the System General Education (SGR) Natural Science list and an additional 8 credits (from the list below) to meet the College of Arts and Sciences requirements for the Bachelor of Science degree. In order to meet the College B.S. requirements, students must complete a minimum of 8 Physical Science credits and a minimum of 6 Biological Science credits for the required total of 14 credits.

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

ANTH 220	3
BIOL 101-101L	3
BIOL 103-103L	3
BIOL 105	3
BIOL 151-151L	4
BIOL 153-153L	4
BIOL 200-200L	4
BIOL 221-221L	4
BIOL 325-325L	4
BOT 201-201L	3
MICR 231-231L	4
NFS 221	3
PE 252-252L	2
PS 103-103L	3
WL 110	3
WL 220	3

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 131-131L	4
GEOG 132-132L	4
PHYS 101-101L	4
PHYS 111-111L	4
PHYS 113-113L	4
PHYS 185	3
PHYS 211-211L	4
PHYS 213-213L	4
PS 213-213L	2-3
PS 243-244	3-4
STAT 281	3

Students may count 5 credits of Math courses (Math prefix, that are in addition to the System General Education (SGR Goal 5) requirement of 3 credits toward the Physical Science requirement.

Bachelor of Arts

Modern Language* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course)	3-14
Humanities (SGR Goal 4 and IGR Goal 3 - Humanities courses only) from discipline other than a modern language	6
Social Sciences (SGR Goal 3 and IGR Goal 3 - Social Science courses only)	8

* 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 Sciences 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 100, Introduction to Sociology or PSYC 101, General Psychology	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 Human Sciences 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 Sciences. In addition, the following special requirements and rules have been established for all graduates of the College of Arts and Sciences:

1. The requirements of one of the College of Arts and Sciences 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 Sciences.

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 Brookings and Brandon.

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, and Opera Workshop.

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.

Education and Human Sciences

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Jane Hegland, Assistant Dean
CY Wang, Assistant Dean
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Introduction

The College of Education and Human Sciences (EHS) develops human potential by enhancing individual, family, school, and community well-being. Graduates from the College work in diverse work settings which span business, education, government and non-profit or community agencies. Examples of careers in EHS include an educator who provides leadership and instruction in our schools, a dietitian who counsels others to establish a healthy or specialized diet, an interior designer who designs residential or commercial spaces, a wellness professional who works with adults to promote good health practices for people of all ages, a pilot serving our country or a professional counselor supporting the development of others.

The College of Education and Human Sciences works to advance teaching, learning, and scholarship through:

- Exemplary student-centered undergraduate and graduate education that prepares tomorrow's professionals.
- Basic, applied, and translational scholarship that addresses vital issues of health, development, learning, leadership, sustainability, and quality of life across the lifespan.
- Engagement with individuals, families, schools, organization and communities which transform knowledge and discovery into practice and provides meaningful impacts.
- To be a recognized leader in teacher education and the human sciences and innovative in advancing new science, pedagogy and design.

Departments

Counseling and Human Development
Consumer Sciences

Health and Nutritional Sciences
Teaching, Learning and Leadership

Degrees Offered

Bachelor of Science
Master of Education*

Master of Science*
Doctor of Philosophy*

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

Accreditations

American Association of Family and Consumer Sciences (AAFCS)
American Dietetics Association (ADA-CADE)
Commission on Accreditation of Athletic Training Education (CAATE)
Council for Accreditation of Counseling and Related Educational Programs (CACREP)
Council for Interior Design Accreditation (CIDA)
Council on Rehabilitation Education (CORE)
National Association for Education of Young Children (NAEYC)
National Association for Sport and Physical Education (NASPE)
National Council for the Accreditation of Teacher Education Programs (NCATE)
National Institute of Food and Agriculture (NIFA) recognition
South Dakota Department of Education (DOE)

Programs

Majors	Department
Agricultural Education, Communication, and Leadership – Agricultural Education specialization	Teaching, Learning and Leadership
Apparel Merchandising	Consumer Sciences
Athletic Training	Health and Nutritional Sciences
Aviation	Consumer Sciences
Career and Technical Education	Teaching, Learning and Leadership
Consumer Affairs	Consumer Sciences
Early Childhood Education	Teaching, Learning and Leadership
Family and Consumer Sciences Education	Teaching, Learning and Leadership
Health Promotion	Health and Nutritional Sciences
Health, Physical Education and Recreation	Health and Nutritional Sciences
Hospitality Management	Consumer Sciences
Human Development and Family Studies	Counseling and Human Development
Interior Design	Consumer Sciences
Nutrition and Food Science	Health and Nutritional Sciences
Park & Recreation Management – Recreation Administration specialization	Health and Nutritional Sciences
Minors	
Aviation	Consumer Sciences
Food Safety	Health and Nutritional Sciences
Gerontology	Counseling and Human Development
Health Education	Health and Nutritional Sciences
Human Development and Family Studies	Counseling and Human Development
Interior Design	Consumer Sciences
Leadership	Consumer Sciences
Leadership and Management of Nonprofit Organizations	Counseling and Human Development
Nutrition	Health and Nutritional Sciences
Physical Education	Health and Nutritional Sciences
Public Recreation	Health and Nutritional Sciences
Rehabilitation Services	Counseling and Human Development

Curriculum

Students enrolled in the College of Education and Human Sciences must meet the University General Education Requirements. In addition, each major has specific required courses pertinent to the field and profession. For a complete listing of graduation requirements, refer to the description of specific majors elsewhere in this catalog.

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 catalog. The College offers many courses that may be considered exploratory courses for those potentially interested in specific majors. Students should visit with their advisors for information about appropriate courses.

Teaching Certificates and Endorsements

Teaching certificates are issued by state Departments of Education. The secondary certificate qualifies the holder to teach particular subjects in secondary and middle school/junior high grades. The K-12 certificate qualifies the holder to teach in kindergarten through high school. The certificate states the subjects or subject groups in which the individual may teach. Endorsements are available in English as a Second Language, coaching, reading and 22 discipline areas.

Experiential Education

Many majors in the College of Education and Human 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 Programs in Education and Human Sciences

Those pursuing an M.S., M.Ed. and Ph.D. degree in Education and Human Sciences disciplines 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 Catalog obtained from the Dean of the Graduate School, South Dakota State University, Box 2201, Brookings, South Dakota, 57007-1998. Web address: <http://catalog.sdstate.edu/index.php?catoid=14>.



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 seven 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 mission of the College of 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 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.

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 General Education Requirement proficiencies, outlined in the General Education Requirements 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 goals of the System General Education Requirements, and the goals of the Institutional General Education Requirements, 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 his/her chosen field and also adds to his/her 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 principal 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
Electrical Engineering and Computer Science (Software Engineering)
Engineering Technology and Management
(Electronics Engineering Technology, Construction Management,
Manufacturing Engineering Technology, Industrial Management)
Mathematics and Statistics
Mechanical Engineering
Physics (Engineering Physics)

Office of Engineering Research
Mountain Plains Consortium
Product Development Center
Water and Environmental Engineering 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 Catalog.

Accreditations

The programs in Agricultural and Biosystems Engineering, Civil Engineering, Electrical Engineering, Software 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 assured 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.

The programs in Electronics Engineering Technology and Manufacturing Engineering Technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET). The Computer Science program is accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology (CAC/ABET).

The Construction Management program is accredited by the American Council for Construction Education (ACCE).

Programs

The College of Engineering offers the following degrees; Bachelor of Science in: Agricultural and Biosystems Engineering, Civil Engineering, Computer Science, Construction Management, Electrical Engineering, Electronics Engineering Technology, Engineering Physics, Industrial Management, Manufacturing Engineering Technology, Mathematics, Mechanical Engineering, Physics, and Software Engineering; Master of

Science in: Agricultural and Biosystems Engineering, Civil Engineering, Electrical Engineering, Engineering, Mechanical Engineering, Physics, Statistics and Industrial Management; the Doctor of Philosophy in Electrical Engineering; the Doctor of Philosophy in Geospatial Science and Engineering, and Doctor of Philosophy in Computational Science and Statistics.

General Studies

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Introduction

Many students enrolling in the College of General Studies have elected to explore their abilities, interests and educational alternatives before declaring a major. Most first-year students are advised by a group of Professional First-Year Advisors to help them determine areas of interest. 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 one of the degree granting colleges at SDSU before they reach sophomore status. The College also provides advising and general support to students enrolled in distance education.

Departments/Units

The College of General Studies is organized through the following programmatic delivery structure: Academic Programs, Career Planning, and Academic Support.

Degrees Offered

The College of General Studies serves students in the following categories: undeclared pre-majors, special non-degree seeking students,

first-year students, and students admitted in the academic success program.

Accreditations

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

Programs

Undeclared Majors

General Studies allows students without declared majors to begin college work through its program for undeclared students. Undeclared students are assisted in planning their college program and encouraged to explore various fields of study. Undeclared student enrollment is normally for the freshman year as they are encouraged to choose a major within two semesters. Students are expected to be in good Academic Standing as they explore academic options and declare majors.

Academic advisers assist first-year students in the process of identifying their interests, aptitudes and abilities. Students work with advisors to plan out a program that will meet their interests and needs. The College of General Studies offers a one-credit course entitled "GS 101 Academic and Career Exploration" which assists with career decision making strategies. First-year students at SDSU also enroll in a one-credit, first-year experience course titled "GS 100 University Experience," which helps them acclimate to college life and learn about SDSU resources. A suggested freshman year schedule follows.

Suggested Undeclared Major Program

Freshman Year	F	S
GS 100, University Experience	1	
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	or 3

Graduate School

Mary Kay Helling, Interim Dean
Diane Rickerl, Associate Dean
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Web site: www.sdstate.edu/graduate/index.cfm

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, Provost and Vice President for Academic Affairs, Vice President for Administration, Vice President for Student Affairs, Vice President for Research, 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.

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.

Departments

The Graduate School operates as a single unit that serves the academic colleges.

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 Animal Science; Biological Sciences (joint with the University of South Dakota); Chemistry; Computational Science and

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 without special permission.

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, call the Graduate School Office 605-688-4181 or visit our Web site:

www3.sdstate.edu/Academics/GraduateSchool

Programs

See the separate Graduate Catalog.

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

Statistics; Electrical Engineering; Geospatial Science and Engineering; Nursing; Nutritional Sciences; Pharmaceutical Sciences; Plant Science; Sociology; and Wildlife and Fisheries Sciences. Two professional doctorates are also offered in Nursing and Pharmacy.

Honors College

Timothy Nichols, Dean
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Web site: www.sdstate.edu/honors/

Committee

Timothy Nichols, Dean. Honors College Committee Members: Larry Janssen (ABS), April Brooks (A&S), Kathryn Penrod (E&C), Donna Flint (ENG), Joyce Fjelland (NUR), Chandradhar Dwivedi (PHA).

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 suited students who seek a high level of rigor and a personalized focus in a program featuring a carefully designed, yet flexible, curriculum and attention to growth experiences outside the classroom. Qualified students in any major are encouraged to enroll in Honors designated sections of general education courses the first semester of their university experience.

Enrollment Requirements for Honors Courses

Qualified students in any major may enroll in general education sections designated as Honors or Honors Colloquia without making formal application to the Honors College. To be eligible for enrollment in an Honors section, a student must have a university 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 Dean

Graduation with Honors College Distinction

To graduate with Honors College Distinction, a student must have a cumulative GPA of 3.5 or higher at 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 Independent 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. Successful graduates are presented with the Honors College medallion. Honors College distinction is noted on their transcripts and inscribed on their diplomas.

Honors Courses

1. Departmental Honors Courses. Departmental Honors courses are general education courses or special sections of departmental courses that have received approval for the Honors course designation.
2. Honors Orientation (HON 100). Recommended for first semester Honors students, provides practical and philosophical foundation for students' Honors experience.
3. Honors Colloquium (HON 303). Honors Colloquia are engaging semester-long interdisciplinary seminars, focused on important issues of our time. Students are encouraged to enroll in colloquia when the theme is of particular interest to them. Students must be Honors College eligible to enroll, but there are no additional course prerequisites.
4. Honors Independent Study (HON 491). In the junior year, Honors College students should propose their independent study projects. The Honors College office will supply a set of instructions. The proposed study must be approved by the University Honors College Committee. Final papers are filed with the Honors College Dean and results presented on campus and/or at an appropriate off-campus scholarly venue.

Nursing

Roberta K. Olson, Dean
Nancy Fahrenwald, Associate Dean
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Introduction

The Mission of the College of Nursing at South Dakota State University is to advance the nursing profession and improve human health through excellence in education, research, practice and service to society. Faculty, students and graduates of the College value scholarly activities which will expand nursing science, nursing knowledge and nursing practice while providing leadership in the delivery of nursing and health care for individuals across the life span, communities and populations. The College engages in strategic and inter-professional partnerships to improve human health and foster diversity in the people and perspectives shaping the discipline.

The mission serves to:

- Recruit and retain students who reflect a qualified, diverse student body.
- Prepare graduates who are internationally competitive, globally informed, ethically grounded and socially responsible.
- Provide an environment rich in research to improve nursing practice and health care outcomes.
- Provide expertise to consumers, health care professionals and health systems.

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*

Doctor of Nursing Practice
Doctor of Philosophy*

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

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, a Master of Science, a Doctor of Nursing Practice, or a Doctor of Philosophy 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.

The undergraduate nursing program at SDSU is approved by the South Dakota Board of Nursing. Both the undergraduate and graduate programs are accredited by 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 and accelerated 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 baccalaureate 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 option 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, Doctor of Nursing Practice, and Ph.D. Degrees in Nursing

The graduate programs in nursing consist 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, psychiatric, and neonatal nurse practitioner; nurse educator; clinical nurse leader; and nurse administrator. The Doctor of Nursing Practice degree offers the following specializations: family, psychiatric, and neonatal nurse practitioner. Future plans include a pediatric nurse practitioner and a pediatric clinical nurse specialist option. The Ph.D. in Nursing prepares nurse scientists. See separate Graduate Catalog. 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: www.sdstate.edu/graduate/index.cfm

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

Dennis D. Hedge, Dean

SAV 133, 605-688-6197

Jane Mort, Associate Dean for Academic Programs

SAV 133, 605-688-4237

Dan Hansen, Assistant Dean for Student Services

SAV 133, 605-688-6909

Box 2202C, Brookings, SD 57007-0099

E-mail: college.pharmacy@sdstate.edu

www.sdstate.edu/pha

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 pharmacy 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 the Pharm.D. 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

Pharmacy Practice

Degrees Offered

Bachelor of Science Degree in Pharmaceutical Sciences

Doctor of Pharmacy (Pharm.D.)

Doctor of Philosophy (Ph.D.)

Accreditations

Accreditation Council for Pharmacy Education (ACPE)

Programs

Doctor of Pharmacy (Pharm.D.)

The College of Pharmacy offers a six-year course of study leading to the Doctor of Pharmacy degree. The Pharm.D. 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 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 pharmacy care principles to pharmacy practice situations in a series of advanced pharmacy practice experiences 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 web site. 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 advanced pharmacy practice experience sites make it necessary to limit the class size in the professional program. Each student admitted into the professional program is required to authorize and pay for a criminal background check. The background check report is automatically sent to the student and to the College and must be approved by the Admissions Committee.

Selection is competitive and based upon several factors including pre-pharmacy coursework, ACT or PCAT scores, written and oral communication skills, knowledge of the profession, 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 will be made by the end of 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. Pharmacy GPA Calculation – Pharmacy GPA is calculated using all pharmacy PHA prefix courses, excluding 201 & 321.
 - a. For pharmacy courses repeated at SDSU, only the repeated grade will be used to calculate the pharmacy GPA.
 - b. 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).
2. Probation - A student will be placed on "pharmacy probation" when the student's pharmacy GPA for a semester falls below 2.0. Each subsequent semester while on "pharmacy probation" the student must earn a pharmacy GPA of 2.0 or better 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, excluding 201, & 321) and will remain on "pharmacy probation" until the student's cumulative Pharmacy GPA is 2.0 or greater.
3. Graduation - A student must earn a minimum 2.0 grade point average for all pharmacy courses (excluding Pha201, & 321) to qualify for graduation with a B.S. in Pharmaceutical Sciences or to progress to the P3 year.
4. Progression
 - a. To progress to the P3 year a student cannot have more than 9 credits of "D" and/or "F" grades in PHA prefix courses.
 - b. The Exit Exam is a capstone activity that each student must take for completion of the P2 year and progression into the P3 year; it is administered during the spring semester of the P2 year. The exam is intended to determine competency in the general and professional curricular outcomes that are pertinent through the P2 year (see Outcome Statements for Pharmacy Curriculum in this Student Handbook). If a student does not

pass the P2 exam (passing determined by Assessment Committee based on College and National results), the student will carry out remediation according to instructions provided to the student. The student will also be required to take the exam in the spring of the P3 year, pay for the exam, and achieve a passing score. If a passing score is not achieved in the P3 year, the student will be required to take the exam in the spring of the P4 year, pay for the exam, and achieve a passing score (see Outcome Statements for Pharmacy Curriculum in this Student Handbook).

- c. Standing - Some pharmacy courses have prerequisites such as "P1 Year Standing", etc. These are defined as follows (note: "completion" means a passing grade in each pharmacy course and maintaining semester and cumulative PHA GPA requirements):
 - P1YearStanding - The student must have been admitted into the professional program.
 - P2YearStanding - Completion of all PHA 300 level required courses and PHA 101.
 - P3YearStanding - Completion of all PHA 400 level required courses and PHA 610, a bachelor's degree, and all capstone activities are required to begin the fall semester. Completion of all required PHA 700, non-advanced practice experience courses are required to progress to the subsequent semester.
 - P4YearStanding - completion of all PHA600-700 level required, non-advanced practice courses.
- d. Students must have a C or better (or "S" where applicable) for completion of each 700 level course taken in the Doctor of Pharmacy program.
- e. If completion of an Advanced Pharmacy Practice Experience (APPE) is not achieved by a student, the student may repeat that APPE the following summer according to availability after the next class has selected their APPEs. If completion of an elective APPE is not achieved, the student may select another elective APPE rather than repeating the same elective APPE. If a student fails completion of more than one APPE, the student will not be allowed to progress to another semester of the program.

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 that include: community pharmacy; hospital pharmacy; clinical pharmacy; independent pharmacy ownership; home health care; pharmaceutical sales; military pharmacy; clinical and laboratory research; pharmacy college teaching; 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 Student Pharmacists is open to all students in the College, including pre-pharmacy students. Kappa Psi and Kappa Epsilon are pharmacy fraternities for men and women. Rho Chi and Phi Lambda Sigma are scholastic and leadership organizations. The American Association of Pharmaceutical Scientists is an organization representing scientists working in the discovery, development, and manufacture of pharmaceutical products and therapies. 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.

Doctor of Philosophy (Ph.D.)

The College of Pharmacy offers the Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences with research opportunities in medicinal chemistry, pharmaceutics, and pharmacology. The core courses, along with the concentration in a major area of research, provide a valuable

broad background of preparation for an industrial and academic career. Students in the Pharm.D. program who also have research interests have the opportunity to coordinate their curriculum leading to both Pharm.D. and Ph.D. degrees.







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Summer Term

Gail Dobbs Tidemann, Dean
Office of Continuing and Extended Education
Box 506, Brookings, SD 57007-2098
e-mail: gail.tidemann@sdstate.edu

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.

The schedule of offerings is located on the Records and Registration Web site, <http://courseinfo.sdstate.edu/schedule/>. For further information contact the Academic Affairs Office, SAD 230, 605-688-4173.

University Center—Sioux Falls

(South Dakota Public Universities and Research Center)

Gail Dobbs Tidemann, Dean
Office of Continuing and Extended Education
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South Dakota State University, through University Center in Sioux Falls, provides college coursework and degree programs in Sioux Falls. University Center is designed to serve the needs of non-traditional students in the Sioux Falls area. Most courses taught through University Center 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 start and end of term for summer at University Center is different from

the dates of summer term on campus.

The majors offered in Sioux Falls include Consumer Affairs, Early Childhood Education, General Studies (A.A.), General Studies (B.G.S.), Human Development and Family Studies, Graphic Design, Interdisciplinary Studies, Journalism, Nursing, Psychology, and Sociology at the undergraduate level. Pre-engineering courses are also available in Sioux Falls. Master's degrees are offered in Counseling and Nursing.

Students in all majors may complete their general education core in Sioux Falls at University Center.



Capital University Center

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The 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. In 2003, CUC was fully merged into the SD Board of Regents System. SDSU offers at CUC the Associate of Arts degree in General Studies, the Bachelor of Science degree with a major in Interdisciplinary Studies, and the Master of Science degree in Industrial Management, as well as a variety of general education courses and noncredit programs.

University Center–Rapid City

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e-mail: gail.tidemann@sdstate.edu

University Center–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. SDSU coordinates its West River activities with other Regental universities serving the area.

Distance Education

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South Dakota State University offers undergraduate and graduate courses using various distance education technologies. Utilizing the DDN (Digital Dakota Network), two-way audio and video classes allow students to actively participate in classroom activities while attending at a location more convenient to the student. South Dakota State University also offers Internet-based courses for students wishing a more flexible schedule. The Internet courses are similar to on campus courses, and students receive the same credit for completing an Internet course as they would for an on campus course. The Electronic University Consortium (EUC) of South Dakota is a single point of contact for information and access to distance education and training available from the six South Dakota public universities. Based upon more than 80 years

of effective off-campus education, South Dakota State University is committed to serving:

- Working adults
- Part-time students
- Time- and place-bound individuals
- K-12 students, teachers and administrators
- Employees seeking career development skills
- Government and military personnel
- Persons with disabilities

For more information concerning distance education call the toll free at 866-827-3198, or go to the Distance Education Web site at <http://distance.sdstate.edu/>.

Outreach Programs

Gail Dobbs Tidemann, Dean
Office of Continuing and Extended Education
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e-mail: gail.tidemann@sdstate.edu

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 University Center 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 Office of Continuing and Extended Education provides coordination and support for off-campus educational programs and 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 and many courses are available by distance education. Additional locations are added as need and enrollment indicates.

The **Nursing RN Upward Mobility Program** deepens, enhances, and enriches the knowledge and capabilities of already licensed registered nurses across the state and region. 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 via Internet and is available anywhere in the state. Clinical Practicum is performed in the student's community. The Master of Science in Nursing is also offered to various off-campus sites and on-line as needed and as programming allows. Please contact the Dean of Nursing at 888-216-9806 for information on nursing programs, or visit our Web site at <http://www3.sdstate.edu/Academics/CollegeOfNursing/>.





DEPARTMENT AND
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AND REQUIREMENTS89

Accelerated Nursing

(See Nursing)

Accounting (ACCT) Minor

(See Economics)

Aerospace Studies (AIR) Department

(Air Force ROTC)

Lieutenant Colonel Carleton H. Hirschel, Head
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DePuy Military Hall 003
605-688-6106
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Faculty

Lieutenant Colonel Hirschel, Professor of Aerospace Studies, Head;
Assistant Professors 1Lt Den Hoed.

Programs

The Air Force Reserve Officer 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 freshman 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 freshman students pursuing undergraduate degrees that normally require five years to complete and to accommodate undergraduate students who have three years remaining to complete their degrees. The laboratory includes a mandatory physical fitness program in which all students must have a physical exam certified by competent medical authority. These physicals are available through SDSU Student Health for a nominal fee. 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, 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 are available for qualified undergraduate and graduate students in all academic degrees. These scholarships pay full tuition and fees at SDSU, \$900 per year for textbooks, and a monthly stipend of \$300 per month for freshmen rising to \$500 per month for seniors. All non-scholarship students in the Professional Officer Course who are on contract with Air Force ROTC qualify for the monthly stipend of \$450 to \$500.

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. Students must maintain a 2.0 GPA in AFROTC courses to earn this minor.

Requirements for Aerospace Studies Minor: 16 cr

A minor in Aerospace Studies requires 16 semester hours, including all Air Force ROTC courses. Students must maintain a 2.0 GPA in AFROTC courses to earn this minor.

AIR 101-101L, The Foundations of the US Air Force and Lab Credits.....	1
AIR 102-102L, The Foundations of the US Air Force and Lab Credits.....	1
AIR 201-201L, The Evolution of USAF Air and Space Power and Lab Credits	1
AIR 202-202L, The Evolution of USAF Air and Space Power and Lab Credits.....	1
AIR 301-301L, Air Force Leadership Studies and Lab.....	3
AIR 302-302L, Air Force Leadership Studies and Lab.....	3
AIR 401-401L, National Security Affairs/Preparation for Active Duty and Lab Credits.....	3
AIR 402-402L, National Security Affairs/Preparation for Active Duty and Lab Credits	3

Agricultural and Biosystems Engineering (ABE) Department

Van Kelley, Head
Department of Agricultural and Biosystems Engineering
Agricultural Engineering 107
605-688-5141
e-mail: van.kelley@sdstate.edu
http://abe.sdstate.edu

Faculty

Associate Professor Kelley, Head; Professors Anderson, Hellickson, Humburg, Julson, Muthukumarappan, Pohl, Trooien; Professors Emeriti Chu, DeBoer; Werner; Associate Professor Todey; Assistant Professors Cortus, Gu, Hay; Assistant Professors Emeriti Pahl, Schipull.

Programs

Agricultural and Biosystems Engineering is the science of engineering applied to the products and processes of agriculture and related industries. Foundation courses are mathematics, physics, chemistry, and biology with engineering emphasis in a wide variety of technical areas: natural resource management, irrigation and drainage, water resources development, machine dynamics and design, precision agriculture, agricultural power, properties and processing of biological materials, environmental control for livestock, indoor air quality, structures, control and disposal of agricultural wastes, 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 are 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, formulate solutions, and to evaluate and implement problem solutions.
3. To produce engineers that are 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 and processes. 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 pass all courses and have an average grade of “C” or better in courses taken and required in the Agricultural and Biosystems Engineering curriculum and take the Fundamentals of Engineering examination prior to graduation.

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. programs, see the Graduate Catalog. Graduate level courses will be taught as listed and on demand.

Agricultural and Biosystems Engineering (ABE) Major

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)

System General Education Requirements*: 33

Goal #1 Written Communication: ENGL 101, and ENGL 277 1.....6	
Goal #2 Oral Communication: SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: MATH 123.....	4
Goal #6 Natural Sciences: PHYS 211-211L, and PHYS 213-213L...	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship: BIOL 101-101L	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

Major Requirements: 84-85

MATH 125, Calculus II * (COM)	4
MATH 225, Calculus III * (COM)	4
MATH 321, Differential Equations (COM).....	3
CHEM 112-112L, General Chemistry I and Lab* (COM).....(3, 1)	
CSC 130, Visual Basic Programming (COM).....	3
MICR 231-231L, General Microbiology and Lab (COM).....	4
GE 101, Introduction to Engineering and Technology	1
GE 121, Engineering Design Graphics I	1
GE 122, Engineering Design Graphics II	1
GE 123, Computer Aided Drawing.....	1
EM 214, Statics (COM)	3
EM 215, Dynamics (COM).....	3
EM 321, Mechanics of Materials (COM).....	3
ME 314, Thermodynamics.....	3
EM 331, Fluid Mechanics (COM).....	3
EE 300-300L, Basic Electrical Engineering I and Lab	3
ABE 122, Introduction to Agricultural and Biological Engineering	1
ABE 132, Engineering Tools for Agricultural and Biological Engineers	1
ABE 222, Project Development for Agricultural and Biological Engineers.....	1
ABE 314-314L, Ag Power and Machines and Lab.....	4
ABE 324-324L, Ag Structures and Indoor Environment and Lab	4
ABE 343-343L, Engineering Properties of Biological Materials and Lab	3
ABE 434-434L, Natural Resources Engineering and Lab.....	4

ABE 444-444L/544-544L, Unit Operations of Biological Materials Processing and Lab.....	4
ABE 463-463L, Instrumentation for Agricultural and Biological Systems and Lab.....	3
ABE 464-464L, Monitoring and Controlling Agriculture and Biological Systems and Lab.....	2
ABE 411, Design Project III.....	2
ABE 422, Design Project IV (AW).....	2

Choose 1 from the following:

MATH 331, Advanced Engineering Mathematics.....	3
MATH 373, Introduction to Numerical Analysis (COM).....	3
STAT 281, Introduction to Statistics (COM).....	3

Choose 1 from the following:

CHEM 108-108L, Organic and Biochemistry and Lab* (COM).....(4, 1)	
CHEM 326-326L, Organic Chemistry I and Lab(COM).....(3, 1)	

Choose 2 from the following:

ABE 330, Entrepreneurship Opportunities in Agricultural and Biosystems Engineering.....	1
ABE 494, Internship.....(1-6)	
ABE 496, Field Experience.....(1-6)	
ABE 498, Undergraduate Research/Scholarship.....(1-3)	

Electives: 10-11

Technical Elective ††.....	10
Electives in all emphases:	
AST 353-353L, Physical Climatology and Meteorology ** and Lab.....	3
ABE 491, Independent Study.....(1-3)	
ABE 492/592, Topics.....(1-4)	
ABE 494, Internship.....(1-6)	
ABE 496, Field Experience.....(1-6)	
ABE 497, Cooperative Education.....(1-6)	
CSC 314, Assembly Language (COM).....	3
CSC 317, Computer Organization and Architecture (COM).....	3
EE 422, Engineering Economics and Management.....	2
GEOG 472, Introduction to GIS.....	3
MATH 331, Advanced Engineering Mathematics.....	3
MNET 320-320L, Computer Aided Design/Drawing and Lab.....	3
STAT 281, Introduction to Statistics (COM).....	3

† Technical elective credit not given for both CEE 482 and EE 422.

Structures and Environment Emphasis:

CEE 346-346L, Geotechnical Engineering (COM) and Lab.....	4
CEE 353, Structural Theory (COM).....	3
CEE 455-455L, Steel Design and Lab.....	3
CEE 456, Concrete Theory and Design (COM).....	3
CEE 482, Engineering Administration††.....	3
ME 410, Principles of HVAC Engineering.....	3
ME 415, Heat Transfer.....	3
ME 439-439L, HVAC System Design and Lab.....	3
ME 451, Automatic Controls.....	3
MNET 320-320L, Computer Aided Design/Drawing and Lab.....	3

† Technical elective credit not given for both CEE 482 and EE 422.

Power and Machinery Emphasis:

ABE 350-350L, Hydraulic and Pneumatic Systems and Lab.....	3
ME 321, Fundamentals of Machine Design.....	3
ME 323, Vibrations.....	3
ME 341-341L, 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 438-438L, Machine Design-Case Studies and Lab.....	3

PS 362-362L, Environmental Soil Management and Lab**.....	3
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Water and Natural Resources Engineering Emphasis:

ABE 225, Principles of Environmental Science and Engineering **.....	3
ABE 390, Seminar.....	1
AST 463/563, Agricultural Waste Management ** (AW).....	3
CEE 106-106L, Elementary Surveying and Lab.....	4
CEE 323-323L, Water Supply and Wastewater Engineering and Lab.....	3
CEE 333, Hydrology.....	3
CEE 346-346L, Geotechnical Engineering (COM) and Lab.....	4
CEE 423/523, Municipal Water Distribution and Collection System Design.....	3
CEE 432, Hydraulic Engineering.....	3
PS 213-213L, Soils and Lab * **.....	2
PS 362-362L, Environmental Soil Management and Lab**.....	3
PS 483, Irrigation – Crop and Soil Practices.....	3

Food and Biological Materials Engineering Emphasis

Food and Biological Materials Engineering is a unique emphasis in Agricultural and Biosystems Engineering that provides students with an exceptional opportunity to serve the bio-energy, food, fiber, and feed 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 processing technologies that are used in the bio-fuel, food, fiber, and feed industry. Students take 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 is excellent preparation for people seeking careers in bio-energy, corn, soybean, and wheat processing; grain milling and baking; processed food; beverage production; oil processing; meat processing; and pharmaceutical production. Food and Biological Materials Engineering emphasis offers an outstanding career opportunity to the student who has an interest in the biological and physical sciences.

Total Required Credits: 136

† You must receive a “C” or better in ENGL 277.

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

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

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.

Agricultural Systems Technology (AST)

Faculty

Associate Professor Kelley, Head; Professors Anderson, Hellickson, Humburg, Julson, Muthukumarappan, Pohl, Trooien; Professors Emeriti Chu, DeBoer, Werner; Associate Professor Todey; Assistant Professors Cortus, Gu, Hay; Assistant Professors Emeriti Pahl, Schipull.

Programs

Agricultural Systems Technology graduates serve an increasingly complex agricultural industry in a wide variety of ways. These individuals have a sound fundamental knowledge of agricultural and

biological sciences related to the technical, mechanical and energy aspects. This background combined with a solid understanding of the interactions between agriculture and society provides AST graduates many career opportunities.

Agricultural Systems Technology graduates from South Dakota State University are using their technological knowledge, coupled with managerial and leadership skills, to increase America's food and energy supply. Recent past graduates are pursuing careers in renewable energy such as ethanol and bio-diesel, farm machinery and equipment, natural resources, livestock facilities and systems, and production agriculture.

Agricultural Systems Technology (AST) Major

Requirements for Agricultural Systems Technology Major, Bachelor of Science in Agriculture

System General Education Requirements*: 34-35

Goal #1 Written Communication: ENGL 101, and ENGL 201†	6
Goal #2 Oral Communication: SPCM 101*	3
Goal #3 Social Sciences/Diversity: ECON 202	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: MATH 102, and MATH 120 or MATH 115	5 or 6
Goal #6 Natural Sciences: PHYS 111-111L, and CHEM 106-106L or CHEM 112-112L	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship: AST 333-333L	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 10

Group I Elective ††	3
PS 213-213L, Soils and Lab * **	2
AST 202-202L, Construction Technology and Materials and Lab	2
AST 342-342L, Applied Electricity and Lab	3

Major Requirements: 49-50

Science Elective, selected from CHEM, PHYS, BIOL, MICR, or BOT	10
Biological Science Elective: Courses must be chosen from BOT, BIOL, MICR, ZOOL	3
AST 353-353L, Physical Climatology and Meteorology ** and Lab	3
ABE 490, Seminar (AW)	1
ACCT 210, Principles of Accounting I (COM)	3
AST 423-423L, Rural Structures and Lab	3
AST 443-443L, Food Processing and Engineering Fundamentals and Lab	3
AST 463/563, Agricultural Waste Management ** (AW)	3
BADM 310, Business Finance (COM)	3
BADM 350, Legal Environment of Business (COM)	3
MNET 231-231L, Manufacturing Processes I and Lab	3

Choose one from the following:

AST 213-213L, Ag, Industrial and Outdoor Power and Lab	3
AST 313-313L, Farm Machinery Systems Management and Lab	3

Choose one from the following:

AST 273-273L, Microcomputer Applications in Agriculture and Lab	3
CSC 105, Introduction to Computers (COM)	3

Choose one from the following:

AST 303-303L, Design Management Experience and Lab	3
AST 494, Internship	(1-12)
AST 496, Field Experience	(1-12)
AST 497, Cooperative Education	(1-12)

Choose from the following:

GE 121, Engineering Design Graphics I	1
and GE 123, Computer Aided Drawing	1
or GE 120-120L, Engineering Drawing/CAD and Lab	3

Electives: 24-27

Technical Electives†††:

Any 300 or higher level course in Animal and Range Sciences, Plant Science, Agricultural Business, Agricultural and Resource Economics, and Economics	3
ABE 464-464L, Monitoring and Controlling Agriculture and Biological Systems and Lab	2
AST 213-213L, Ag, Industrial and Outdoor Power and Lab	3
AST 313-313L, Farm Machinery Systems Management and Lab	3
AST 492, Topics	(1-4)
BADM 260, Principles of Production and Operations Management	3
BADM 280, Personal Finance (COM)	3
MNET 131-131L, Machining Technology and Lab	3
MNET 251-251L, Electricity and Electronics I and Lab	3
MNET 252-252L, Electricity and Electronics II and Lab	3
MNET 260, Principles of Production and Operations Management	3
MNET 350-350L, Fluid Power Technology and Lab	3

Choose one from the following:

AST 494, Internship	(1-12)
AST 496, Field Experience	(1-12)
AST 497, Cooperative Education	(1-12)

Total Required Credits: 128

†: "C" grade required in ENGL 201.

††: AST majors are required to take 11 credits of Group I classes (see College of Agriculture and Biological Sciences). Students may use a maximum of 6 credits of AST classes to satisfy the Group I requirement.

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

Curriculum Notes:

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits.

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs).

(G) Globalization Requirement.

(AW) Advanced Writing Requirement.

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 and Resource Economics

(See Economics)

Agricultural Business

(See Economics)

Agricultural Education, Communication and Leadership Major

Lonell Moeller

College of Education and Human Sciences

Wenona 107

605-688-4378

e-mail: lonell.moeller@sdstate.edu

Students in the Agricultural Education, Communication, and Leadership major must choose one of three specializations: Education, Communication, or Leadership. Students in the Education Specialization will complete a professional education curriculum, as well as supportive instruction in technical agriculture, basic science, and other competencies. Graduates of the Education Specialization will qualify for a secondary teaching certificate, and will also be prepared for a variety of careers in the agricultural industry. Graduates of the Communication Specialization will be well prepared for employment in journalism, promotion and marketing, sales, and other career opportunities. The Leadership Specialization requires courses in leadership skills development, basic science, and agriculture, and allows considerable flexibility for students to choose supporting elective courses. Graduates of the Leadership Specialization will pursue careers of service to such entities as agricultural commodity organization, breed associations, community development organizations, government, and businesses.

Requirements for Agricultural Education, Communication and Leadership Major - Education Specialization

Bachelor of Science in Agriculture

System General Education Requirements*: 31

Goal #1 Written Communication:

ENGL 101, Composition I * **and**

ENGL 201, Composition II *6

Goal #2 Oral Communication:

SPCM 101*, Fundamentals of Speech (COM)3

Goal #3 Social Sciences/Diversity:

SOC 100, Introduction to Sociology * (COM) (G), **and**

ECON 201, Principles of Microeconomics * (COM) **or**

ECON 202, Principles of Macroeconomics * (COM) (G).....6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematic3

Goal #6 Natural Sciences:

BIOL 101-101L, Biology Survey I and Lab ** (COM), **and**

CHEM 106-106L, Chemistry Survey and Lab* (COM).....7

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship:

PS 213-213L, Soils and Lab * **3

Goal #2 Personal Wellness.....2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

Major Requirements: 87-99

AGED 199 Orientation to Agricultural Education.....1

AGED 271-271L, Farm and Ranch Management and Lab.....4

AGED 404, Program Plan in Agricultural Education (AW).....4

AGED 434, Special Methods in Agricultural Education 3

AGED 454-454L, Teaching Ag Systems Technology Labs and Lab2

AGED 475, Supervised Teaching Internship8

AGED 494, Internship.....(1-12)

ANTH 421-521, Indians of North America **3

AS 101-101L, Introduction to Animal Science and Lab3

AS 241-241L, Introduction to Meat Science and Lab.....3

AS 285-285L, Livestock Evaluation and Marketing and Lab4

AST 202-202L, Construction Technology and Materials and Lab.....2

AST 342-342L, Applied Electricity and Lab.....3

CTE 295, Practicum1

CTE 405, Philosophy of Career and Technical Education.....2

EDFN 365, Computer-Based Technology and Learning (COM).....(2)

EDFN 427-527, Middle School: Philosophy and Application2

EDFN 475, Human Relations (COM)3

EPSY 302, Educational Psychology (COM)3

GEOG 131-131L, Physical Geography: Weather and Climate and

Lab4

BIOL 103-103L, Biology Survey II and Lab* (COM).....3

or GEOG 132-132L, Physical Geography: Natural Landscapes and

Lab4

HO 111-111L, Biology of Horticulture and Lab3

MNET 231-231L, Manufacturing Processes I and Lab.....3

PHYS 101-101L, Survey of Physics * (COM) and La.....4

PS 103-103L, Crop Production and Lab.....3

SEED 314, Supervised Clinical/Field Experience1

SEED 420, 5-12 Teaching Methods2

SEED 420L, 5-12 Teaching Methods Lab0

SEED 450, 7-12 Reading and Content Literacy (COM).....2

SPED 405, Educating Secondary Students with Disabilities2

WL 110, Environmental Conservation ** (G).....3

or WL 220, Introduction to Wildlife and Fisheries Management ..3

DS 130-130L, Introduction to Dairy Science and Lab.....3

or DS 231, Dairy Foods.....3

Electives: 0-8

Approved Agricultural Electives **or**5

Approved Agricultural Electives **and**2

Agricultural Systems Technology (AST) Elective.....3

AST Elective3

Total Required Credits: 128

Requirements for Agricultural Education, Communication and Leadership Major - Communication Specialization

Bachelor of Science in Agriculture

System General Education Requirements*: 31

Goal #1 Written Communication:

ENGL 101, Composition I * **and**

ENGL 201, Composition II *6

Goal #2 Oral Communication:

SPCM 101*, Fundamentals of Speech (COM)3

Goal #3 Social Sciences/Diversity:

ECON 201, Principles of Microeconomics * (COM)

or ECON 202, Principles of Macroeconomics * (COM) (G)

and 3 credit elective.6

Goal #4 Humanities and Arts/Diversity6

Goal #5 Mathematics: MATH 102, College Algebra * (COM)3

Goal #6 Natural Sciences: BIOL 101-101L, Biology Survey I and

Lab ** (COM), **and** CHEM 106-106L, Chemistry Survey and

Lab* (COM).....7

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship3

Goal #2 Personal Wellness.....2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

Major Requirements: 44-45

ABS 100, Exploring Ag and the Food System1

ABS 310, Leadership for Families and the Food System **3

AS 101-101L, Introduction to Animal Science and Lab3

MCOM 155, Information Gathering.....2

MCOM 220-220L, Introduction to Digital Media and Lab.....2

MCOM 265-265L, Basic Photography and Studio (COM).....(2-3)

MCOM 311-311L, News Editing and Editing Lab(COM).....3

MCOM 370, Advertising Principles (COM)3

MCOM 430-530, Media Law (COM).....	3
MCOM 490, Seminar (COM).....	1
MCOM 494, Internship (COM).....	(1-12)
PHYS 101-101L, Survey of Physics * (COM) and Lab.....	4
PS 103-103L, Crop Production and Lab.....	3
SPCM 215, Public Speaking (COM) *.....	3
or SPCM 410-510, Organizational Communication (COM) (AW).....	2-3

Choose one of the following:

MCOM 316, Magazine Writing and Editing.....	3
MCOM 332-332L, Broadcast Writing and Reporting and Lab.....	3
MCOM 410, Advanced Reporting (COM).....	3
MCOM 438-438L, Public Affairs Reporting and Studio (COM) (AW).....	3

Capstone Requirement (3-4 credits). Choose one of the following:

ABS 475-475L, Integrated Natural Resource Management and Lab (AW).....	3
AGEC 421-521, Farming and Food Systems Economics **.....	3
AGEC 478-478L, Agricultural Finance and Lab.....	3
AS 474-474L, Cow/Calf Management and Lab.....	3
AS 475, Feedlot Operations and Management.....	3
AS 477-477L, Sheep and Wool Production and Lab.....	3
AS 478-478L, Swine Production and Lab.....	3
AST 303-303L, Design Management Experience and Lab.....	3
AST 463/563, Agricultural Waste Management ** (AW).....	3
DS 412-412L, Dairy Farm Management and Lab.....	4
PS 440-440L, Crop Management with Precision Farming and Lab....	3
RANG 485-485L, Advanced Integrated Ranch Management and Lab.....	3

Note: Must have at least 25 credits in 300+ level courses, excluding internships, cooperative education, or field experience courses.

Electives: 43-45

General Electives.....	19-21
Agricultural Electives.....	9
Group I Agricultural Electives (see College of ABS listing).....	5
MCOM Electives.....	10

Total Required Credits: 128

Requirements for Agricultural Education, Communication and Leadership Major- Leadership Specialization

Bachelor of Science in Agriculture

System General Education Requirements*: 31

Goal #1 Written Communication:	
ENGL 101, Composition I *, and	
ENGL 201, Composition II *.....	6
Goal #2 Oral Communication:	
SPCM 101*, Fundamentals of Speech (COM).....	3
Goal #3 Social Sciences/Diversity:	
ECON 201, Principles of Microeconomics * (COM) or	
ECON 202, Principles of Macroeconomics * (COM) (G), and	
SOC 240, The Sociology of Rural America* ** (COM) (G).....	6
Goal #4 Arts and Humanities/Diversity:	
PHIL 220, Introduction to Ethics * ** (COM) and	
3 credit elective.....	6
Goal #5 Mathematics.....	3
Goal #6 Natural Sciences: BIOL 101-101L, Biology Survey I and Lab ** (COM), and	
CHEM 106-106L, Chemistry Survey and Lab* (COM).....	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship.....	3
Goal #2 Personal Wellness.....	2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3
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Major Requirements: 33-36

ABS 100, Exploring Ag and the Food System.....	1
ABS 203, Global Food Systems ** (G).....	3
ABS 310, Leadership for Families and the Food System **.....	3
or EHS 310 or LEAD 310.	
ABS 482-582, International Experience **(G).....	(2-4)
or XXX 494- Internship, or XXX 498- Undergraduate Research...2-4	
AGEC 479, Agricultural Policy (AW) (G).....	3
AS 101-101L, Introduction to Animal Science and Lab.....	3
LEAD 210, Foundations of Leadership.....	3
LEAD 410, Leadership: Senior Seminar.....	1
LEAD 433, Leadership and Organizations.....	3
LEAD 496, Field Experience: Leadership in Action.....	2
PS 103-103L, Crop Production and Lab.....	3
SPCM 215, Public Speaking (COM) *.....	3
or SPCM 410-510, Organizational Communication (COM) (AW).....	2-3

Capstone Requirement 3-4 Choose one of the following:

ABS 475-475L, Integrated Natural Resource Management and Lab (AW).....	3
AGEC 421-521, Farming and Food Systems Economics **.....	3
AGEC 478-478L, Agricultural Finance and Lab.....	3
AS 474-474L, Cow/Calf Management and Lab.....	3
AS 475, Feedlot Operations and Management.....	3
AS 477-477L, Sheep and Wool Production and Lab.....	3
AS 478-478L, Swine Production and Lab.....	3
AST 303-303L, Design Management Experience and Lab.....	3
AST 463/563, Agricultural Waste Management ** (AW).....	3
DS 412-412L, Dairy Farm Management and Lab.....	4
PS 440-440L, Crop Management with Precision Farming and Lab....	3
RANG 485-485L, Advanced Integrated Ranch Management and Lab.....	3

Electives: 52-60

Group I Agricultural Electives.....	2
MCOM Elective.....	2
General Electives.....	48-56

Total Required Credits: 128

* The 30 credit Board of Regents System **General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits.

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**.

(G) **Globalization Requirement.**

(AW) **Advanced Writing Requirement.**

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

(See Economics)

Agricultural Systems Technology

(AST)

(See Agricultural and Biosystems Engineering)

Agronomy

(See Plant Science)

Air Force ROTC

(See Aerospace Studies)

American Indian Studies Program (AIS)

Timothy Nichols, Acting Coordinator
American Indian Studies
126 Briggs Library
e-mail: timothy.nichols@sdstate.edu

This is 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.

American Indian Studies Minor

Requirements for American Indian Studies Minor: 20 cr

ENGL 445, American Indian Literature†	3
LAKL 101, Introductory Lakota I * **† (COM)	4

Choose one from the following:

ANTH 421-521, Indians of North America **†	3
HIST 368, History and Culture of the American Indian **† (COM)	3

10 credits chosen from the following elective courses:

HIST 362, History of the American West	3
AIS 100, Introduction to American Indian Studies	3
ANTH 210, Cultural Anthropology * ** (COM)	3
ANTH 421-521, Indians of North America **†	3
ENGL 256, Literature of the American West * **†	3
ENGL 447, American Indian Literature of the Present†	3
GEOG 467, Geography of the American Indian†	3
HIST 368, History and Culture of the American Indian **† (COM)	3
LAKL 102, Introductory Lakota II * **† (COM)	4
LAKL 201, Intermediate Lakota I †(COM)	3
LAKL 202, Intermediate Lakota II †(COM)	3
POLS 417, American Indian Government and Politics†	3
REL 238, Native American Religions * **†	3
SOC 350, Race and Ethnic Relations ** †(COM) (G)	3

† Courses crosslisted as AIS.

Other courses will be added as they are approved by the American Indian Studies Committee.

Animal and Range Sciences Department

Clint Rusk, Head
Department of Animal and Range Sciences
Animal Science Complex 103A
605-688-5166
e-mail: clint.rusk@sdstate.edu

Faculty

Professor Rusk Head; Distinguished Professor McFarland, Pritchard; Distinguished Professors Emeriti Costello, Wahlstrom; Professors Bruns, Clapper, Held, P. Johnson, Marshall, Smart, Wright; Professors Emeriti Bailey, Dearborn, Gartner, Gee, J. Johnson, Kohler, Libal, Plumart, Slyter; Associate Professors Clapper, Gates, Olson, Perry, Smart, Walker, Wertz-Lutz, Wright; Associate Professors Emeriti Bonzer; Assistant Professors Bott, Gonda, Holland, Hostetler, Mousel, Scramlin, Underwood, Weaver; Lecturer Eide; Adjunct Professors Britzman, Casas, Cushman, Larson, Loe, Reeves, Rogen, 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. A minor in Equine Studies is also available through this department.

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 specialization.

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.

Equine Studies Minor

The equine minor offers students instruction in equine management and care. Classes and hands on instruction are offered in management, nutrition, health, and reproduction. There is one-on-one interaction in training and management classes. Special topic courses including farrier science are also available. This academic minor requires an internship and 18-21 credit hours and gives students an opportunity to increase their understanding of equine management while pursuing their primary area of study.

Animal Science (AS) Major

Requirements for Animal Science Major, Bachelor of Science in Agriculture:

System General Education Requirements*: 32-35

Goal #1 Written Communication:

ENGL 101 **and**

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity and ECON 2026

Goal #4 Arts and Humanities/Diversity (from two disciplines)6

Goal #5 Mathematics: MATH 102 **or**

MATH 115 (**and** MATH 121-121L for Science specialization).....3-5

Goal #6 Natural Sciences:

(Business and Production specialization: BIOL 103-103L)

(Science specialization: BIOL 151-151L **and** BIOL 153-153L).....6-9

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

College Requirements: 1-4

Group I Course in Agriculture1-4

Major Requirements: 34-36

Animal Science Courses Required: 23

AS 100, Opportunities in Animal and Range Sciences1

AS 101-101L, Introduction to Animal Science and Lab3

AS 233-233L, Applied Animal Nutrition and Lab4

AS 241-241L, Introduction to Meat Science and Lab.....3

AS 323, Advanced Animal Nutrition3

AS 332, Livestock Breeding and Genetics4

AS 433-433L, Livestock Reproduction and Lab3

AS 489, Current Issues in Animal and Range Sciences (AW).....2

Science Requirements: 9-11

BIOL 101-101L, Biology Survey I and Lab ** (COM).....3

and BIOL 103-103L, Biology Survey II and Lab* (COM).....3

or BIOL 151-151L, General Biology I and Lab* (COM)4

and BIOL 153-153L, General Biology II and Lab*4

Communications Elective (Choose 1): 2-3

ENGL 379, Technical Communication (AW)3

MCOM 313, Publicity Methods.....2

MCOM 331-331L, Video Production and Lab (COM)3

SPCM 201, Interpersonal Communication (COM)3

SPCM 215, Public Speaking (COM) *3

Electives: 49-56

Specialization and elective courses.....49-56

Total Required Credits: 128

Business and Production Specialization: 54

Group 1 Electives6

ACCT 210, Principles of Accounting I (COM)3

AS 285-285L, Livestock Evaluation and Marketing and Lab4

ECON 201, Principles of Microeconomics * (COM)3

VET 223, Anatomy and Physiology of Domestic Animals4

VET 223L, Anatomy and Physiology of Domestic Animals Lab.....0

Chemistry Requirements:

CHEM 106-106L, Chemistry Survey and Lab* (COM)(3,1)

CHEM 108-108L, Organic and Biochemistry and Lab* (COM)(4, 1)

or CHEM 120-120L, Elementary Organic Chemistry and

Lab*(3, 1)

Choose the following:

PHYS 101-101L, Survey of Physics * (COM) and Lab.....4

MICR 231-231L, General Microbiology and Lab (COM).....4

CHEM 464, Biochemistry I (COM)3

Animal Science Production Courses. Select three from:

AS 365-365L, Horse Production and Lab3

AS 441, Advanced Meat Science and Lab.....3

AS 474-474L, Cow/Calf Management and Lab3

AS 475, Feedlot Operations and Management3

AS 477-477L, Sheep and Wool Production and Lab.....3

AS 478-478L, Swine Production and Lab3

RANG 485-485L, Advanced Integrated Ranch

Management and Lab3

Business Electives 12 Select from the following:

General Electives7-12

ACCT 211, Principles of Accounting II (COM).....3

AGEC 271-271L, Farm and Ranch Management and Lab4

AGEC 352, Agricultural Law3

AGEC 354, Agricultural Marketing and Prices3

AGEC 364, Introduction to Cooperatives3

AGEC 371, Agricultural Business Management3

AGEC 421-521, Farming and Food Systems Economics **3

AGEC 454, Economics of Grain and Livestock Marketing3

AGEC 471-571, Advanced Farm & Ranch Management.....3

AGEC 478-478L, Agricultural Finance and Lab3

AGEC 479, Agricultural Policy (AW) (G).....3

AGEC 484, Trading in Agricultural Futures and Options3

BADM 280, Personal Finance (COM).....3

BADM 310, Business Finance (COM).....3

BADM 334, Small Business Management (COM)3

BADM 350, Legal Environment of Business (COM)3

BADM 351, Business Law (COM).....3

BADM 360, Organization and Management (COM)3

ECON 330, Money and Banking (COM)3

ECON 370, Marketing3

STAT 281, Introduction to Statistics (COM)3

Science Specialization

AS 365-365L, Horse Production and Lab3

AS 474-474L, Cow/Calf Management and Lab3

AS 477-477L, Sheep and Wool Production and Lab.....3

AS 478-478L, Swine Production and Lab3

Choose the following:

CHEM 112-112L, General Chemistry I and Lab* (COM).....(3, 1)

CHEM 114-114L, General Chemistry II and Lab * (COM)(3, 1)

Choose from the following:

PHYS 111-111L, Introduction to Physics I and Lab* (COM).....4

PHYS 113-113L, Introduction to Physics II and Lab* (COM).....4

Or

PHYS 211-211L, University Physics I and Lab* (COM)4

PHYS 213-213L, University Physics II and Lab * (COM).....4

Choose from the following:

BIOL 221-221L, Human Anatomy and Lab(COM)4

BIOL 325-325L, Physiology and Lab (COM).....4

Or

VET 223, Anatomy and Physiology of Domestic Animals4

VET 223L, Anatomy and Physiology of Domestic Animals Lab.....0

Choose one from:

ENGL 379, Technical Communication (AW)3

MCOM 313, Publicity Methods.....2

SPCM 201, Interpersonal Communication (COM)3

SPCM 215, Public Speaking (COM) *3

* The 30 credit Board of Regents System **General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits.

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**.

(G) Globalization Requirement.

(AW) Advanced Writing Requirement.

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.

Animal Science Minor

Requirements for Animal Science Minor: 20-21 cr

AS 101-101L, Introduction to Animal Science and Lab	3
AS 233-233L, Applied Animal Nutrition and Lab	4
AS 285-285L, Livestock Evaluation and Marketing and Lab	4

One of the following courses:

AS 323, Advanced Animal Nutrition.....	3
AS 332, Livestock Breeding and Genetics.....	4
AS 433-433L, Livestock Reproduction and Lab.....	3

Two of the following courses:

(one must be 474-474L, 477-477L or 478-478L)	
AS 241-241L, Introduction to Meat Science and Lab	3
AS 365-365L, Horse Production and Lab	3
AS 474-474L, Cow/Calf Management and Lab	3
AS 477-477L, Sheep and Wool Production and Lab	3
AS 478-478L, Swine Production and Lab.....	3

Equine Studies Minor

Requirements for Equine Studies Minor: 18-20 cr

AS 104-104L, Introduction to Horse Management and Lab	2
AS 105-105L, Western Horsemanship and Lab	1
AS 213-213L, Equine Health and Diseases and Lab.....	3
AS 220, Equine Nutrition	3
AS 365-365L, Horse Production and Lab	3
AS 494, Internship	(1-12)

Choose one from the following:

AS 370, Stable Management	2
AS 420-420L, Equine Reproductive Management and Lab	3

Choose one:

AGEC 271-271L, Farm and Ranch Management and Lab	4
BADM 334, Small Business Management (COM)	3
ENTR 336, Entrepreneurship I (COM)	3

Range Science (RANG) Major

Requirements for Range Science Major, Bachelor of Science in Agriculture:

System General Education Requirements*: 31

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	3
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity :	
ECON 201 or	
ECON 202.....	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: MATH 102 or higher.....	3
Goal #6 Natural Sciences:	
BIOL 103-103L, or	
BOT 201-201L and	
CHEM 106-106L or CHEM 112-112L.....	7

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 30

Capstone Course.....	3
Communications Elective †	3
Senior Seminar (see note three)	1
BIOL 101-101L, Biology Survey I and Lab ** (COM).....	3
RANG 105-105L, Introduction to Range Management and Lab**	3
RANG 415-415L, Range Improvements and Grazing Management and Lab	4
PS 213-213L, Soils and Lab * **	2
STAT 281, Introduction to Statistics (COM)	3

Choose one from the following:

PHYS 101-101L, Survey of Physics * (COM) and Lab.....	4
or CHEM 464, Biochemistry I (COM).....	3
and CHEM 466, Laboratory Methods- Biochemistry	1
or MICR 231-231L, General Microbiology and Lab (COM).....	4

Choose one of the following:

ABS 475-475L, Integrated Natural Resource Management and Lab (AW)	3
or RANG 485-485L, Advanced Integrated Ranch Management and Lab.....	3

Electives (see below): 49-91

Total Required Credits: 128

†: 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.

Range Science Minor

Requirements for Range Science Minor: 18 cr

Twelve (12) hours of Range Science course to include RANG 105 and 415. Six (6) additional credits selected from the following list and outside of the students major field of study: additional RANG courses; AS 233, 474, 477; PS 213, 313; BOT 301, 305; BIOL 311, 440; GEOG 365, 487, 488; WL 110, 220, 411.

Apparel Merchandising (AM)

(See Consumer Sciences)

Architecture (ARCH) Department

Brian Rex, Head
Department of Architecture
Intramural Building 108
605-688-4723
e-mail: brian.rex@sdstate.edu

Programs

The new architecture program consists of two degrees, a 4-year undergraduate BS in Architectural Studies followed by a 2 year Master's in Architecture graduate degree (M.Arch). The program places special

emphasis on sustainable and renewable design practices. The curriculum will lead students to meet 34 specific learning outcomes as required by the National Architecture Accrediting Board (NAAB). In addition to SDSU's General Education Requirements, students will take classes in math, general engineering, physics, art, global studies, construction management, and architecture courses devoted to specific aspects of design, construction, theory, and practice.

During their first year in the undergraduate program, students will have a pre-architecture status. Those who wish to continue in the program and who are in good academic standing, will apply for formal admission to the undergraduate program in Architectural Studies at the beginning of their second year.

Architectural Studies Major

Requirements for Architectural Studies Major, Bachelor of Science in Architecture:

System General Education Requirements*: 34

Goal #1 Written Communication.....	6
Goal #2 Oral Communication.....	3
Goal #3 Social Sciences/Diversity.....	6
Goal #4 Arts and Humanities/Diversity.....	6
Goal #5 Mathematics: MATH 121-121L.....	5
Goal #6 Natural Sciences: PHYS 111-111L, and PHYS 113-113L..	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship.....	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 11-12

Biological Science.....	6
Social Science.....	2-3
Humanities (other than ART).....	3

Major Requirements: 68

ARCH 201, Architectural History I (International).....	3
ARCH 202, Architectural History II (Regional).....	3
ARCH/CM 216, Construction Materials.....	3
ARCH/CM 232, Cost Estimating.....	3
ARCH/GE 241, Applied Mechanics.....	3
ARCH 301, Architecture Lab I.....	3
ARCH 302, Architecture Lab II.....	3
ARCH 315, Principles of Sustainable Design.....	3
ARCH/CM 321-321L, Strength of Materials.....	3
ARCH/CM 333, Mechanical, Electrical, Plumbing Systems.....	3
ARCH/CM 353-353L, Construction Structures.....	3
ARCH 411-511, Architectural Studio I.....	6
ARCH 421-521, Architectural Studio II.....	6
ARCH 483, Travel Studies in Architecture.....	2
ARCH 101, Introduction to Architecture.....	3
GE 120-120L, Engineering Drawing/CAD and Lab.....	3
ART 111, Drawing I * ** (COM).....	3
ART 112, Drawing II * ** (COM).....	3
ART 121, Design I 2D * ** (COM).....	3
ART 123, Three Dimensional Design * ** (COM).....	3
GLST 201, Global Studies I * ** (G).....	3

Electives: 5-7

Total Required Credits: 128

* The 30 credit Board of Regents System **General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Army ROTC (MSL)

(See Military Science)

Art (ART)

(See Visual Arts)

Athletic Coaching Certification

(See Health and Nutritional Sciences)

Athletic Training (AT)

(See Health and Nutritional Sciences)

Aviation

(See Consumer Sciences)

Biochemistry Major

(See Chemistry & Biochemistry)

Biology and Microbiology Department

Volker Brözel, Acting Head

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Dairy Microbiology 228

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Faculty

Professor Brözel, Acting Head; Professors Bleakley, Cheesbrough, Cochrane, Dieter, Erickson, Gibbons, Gibson, Gilmanov, Granholm, Henebry, Hildreth, Johnston, Kayongo- Male, Larson, Reese, Ruffolo, Troelstrup, Wake, West, Yen; Professors Emeriti Chen, Evenson, Haertel, McMullen, Myers, Peterson, Pengra, Whalen; Associate Professors Auger, Bücking, Kaushik, F. Li, Pedersen, Rushton, Wang, Xu, Zhou; Associate Professor Emeritus Morrill; Assistant Professor Fang, Hill, W. Li, Nepal, Rohila, Wu; Instructors Ellis, Ladonski, Lenertz, McCutcheon, Murphy, Warren; Adjunct faculty Chase (Vet.Sci.), Cooper, Dwivedi (PHA), Epperson (Vet. Sci.), Fennell (HFLP), Francis (Vet.Sci.), Henry (SDPURC), Hughes (USDA-ARS), Johnson (PS),

Kightlinger (SD Dept Health), Lundgren (NGIRL-USDA), McFarland (ARS), Nelson (Vet.Sci.), Reidel (NGIRL-USDA), Rietz (Brookings Medical Clinic), Sergeev (NFSH), Steece (CUC), Specker (FFS), Todd, Wixon (Vet. Sci.)

Programs

Biology (BIOL)

The Biology and Microbiology Department offers curricula leading to the Bachelor's degree with a major in Biology. A Bachelor of Science with a major in biology is available in the College of Agricultural and Biological Sciences. Biology majors are required to take a core of foundation courses upon which many career specializations may be built. Courses selected may be taken from the Biology and Microbiology Department and related areas such as wildlife and fisheries sciences. The biology major can also well prepare you for health-related professional schools or for entry into occupations related to life science in industry and government. The biology major is the only life science major offered by the university that is approved for teacher certification. There are two areas of specialization: pre-professional/health related and secondary education. Another option with the Biology degree is an emphasis in organismal biology. A minimum GPA of 2.0 must be maintained in the major courses.

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

The Secondary Education specialization provides students with the background needed for a successful career teaching biology in middle and high schools.

Microbiology (MICR)

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. The Microbiology degree provides students with a broad background in all facets of microbiology, preparing them to pursue careers in the breadth of areas related to microbiology. These include fermentation, vaccine, enzyme and antibiotic production, medical and veterinary diagnostics, public health, biomedical, molecular, agricultural and biotechnology research, and production and quality control in the food and dairy industry.

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 the microbiology major.

Botany (BOT)

The Department offers a Botany minor for those wishing to augment their knowledge in the area of plant biology.

Ecology and Environmental Management

The Biology and Microbiology Department offers curricula leading to the Bachelor's degree with a major. A Bachelor of Science with a major in Ecology and Environmental Science offers opportunities for students to pursue career interests in academia, state and federal agencies, consulting, and industry. Students develop a strong core in biology, chemistry, soils, geology, mathematics, physics and statistics. Beyond the core, students select either the ecology or the environmental science emphasis, each providing advanced coursework to complement a future career path. A broad selection of elective courses within each emphasis provides flexibility to define a particular career path. Students are strongly encouraged to engage in an undergraduate internship and/or research experience. Those following the ecology emphasis will graduate with coursework qualifying them to become certified ecologists through the Ecological Society of America. Post-graduate placement with graduate schools, environmental consulting firms,

natural resource agencies, and environmental education is very high. A minimum GPA of 2.0 must be maintained in the required credits in the major.

Zoology (ZOOL)

The Department offers a Zoology Minor for those wishing to augment their knowledge in the area of animal biology.

Biology (BIOL) Major

Requirements for Biology Major, Bachelor of Science:

Majors must complete the core curriculum and one of the specializations for their B.S.

System General Education Requirements*: 33-35

Goal #1 Written Communication:

ENGL 101 **and**

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics: Choose A, B, C, or D ¹4-6

a. MATH 102 and MATH 120

b. MATH 115

c. MATH 121-121L

d. MATH 123 MATH 123L

Goal #6 Natural Sciences:

BIOL 151-151L **and**

BIOL 153-153L8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources: BIOL 311 ² **or**

BIOL 383 ³ **or**

ENVM 2753-4

Goal #2 Personal Wellness: (any course listed except BIOL 105)2

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:3

Major Requirements: 44-48

Biology

BIOL 202-202L, Genetics and Organismal Biology and Lab4

BIOL 204, Genetics and Cellular Biology3

BIOL 204L, Genetics and Cellular Lab1

MICR 231-231L, General Microbiology and Lab (COM)4

BIOL 290, Seminar1

Senior-research and communication skills: Select one of the following:

BIOL 490, Seminar (COM) (AW)1

BIOL 496, Field Experience (COM)(1-12)

BIOL 498, Undergraduate Research/Scholarship (COM)(1-6) ⁴

Chemistry

CHEM 112-112L, General Chemistry I and Lab* (COM)(3, 1)

CHEM 114-114L, General Chemistry II and Lab * (COM)(3, 1)

CHEM 326-326L, Organic Chemistry I and Lab(COM)(3, 1)

CHEM 328-328L, Organic Chemistry II and Lab(COM)(3, 1)

Physics

Choose one of the following:

PHYS 111-111L, Introduction to Physics I and Lab* (COM)4

and PHYS 113-113L, Introduction to Physics II and Lab* (COM) ...4

or PHYS 101-101L, Survey of Physics * (COM) and Lab4 ⁵

Mathematics

Choose one of the following:

MATH 125, Calculus II * (COM)4

STAT 281, Introduction to Statistics (COM)3

Advanced Writing

ENGL 379, Technical Communication (AW).....3

Specialization Courses/Electives: 36-43

Total Required Credits: 128

- 1 If you select this option to complete Goal #5, and are planning to enter professional or graduate degree programs you should also take MATH 121 or 123 and 125.
2 Suggested for Biology-Organismal emphasis.
3 Recommended for Biology-Pre-professional specialization.
4 Consult with the 490 instructor before selecting 496/498.
5 PHYS 101-101L is not sufficient for students planning to enter professional or graduate degree programs.

Organismal Biology Emphasis: 25-30

Strongly Recommended Courses: 1

BIOL 200-200L, Animal Diversity and Lab*4 (Animal)
BIOL 373, Evolution (COM).....3 (Concept)
BOT 201-201L, General Botany and Lab* (COM)3 (Plant)

Focus Electives:

Take at least five (5) courses from the following list 2:

BIOL 221-221L, Human Anatomy and Lab(COM)4
BIOL 325-325L, Physiology and Lab (COM).....4
BIOL 383, Bioethics ** (G)4
BIOL 440, Restoration Ecology.....4
BIOL 440L, Restoration Ecology Lab..... 0
BIOL 466-566, Environmental Toxicology and Contaminants3
BIOL 494, Internship (COM)(1-12)
BIOL 496, Field Experience (COM)(1-12)
BOT 301-301L, Plant Systematics (COM).....4
BOT 327-327L, Plant Physiology and Lab (COM).....4
BOT 405-405L/505-505L, Grasses and Grasslike Plants and Lab.....3
BOT 419-419L, Plant Ecology and Lab(COM) (G).....4
ENVM 275, Introduction to Environmental Science ** (G)3
ENVM 425-425L/525-525L, Disturbance Ecology and Lab4
MICR 310-310L, Environmental Microbiology and Lab4
MICR 421-421L/521-521L, Soil Microbiology and Lab3
WL 363-363L, Ornithology and Lab(COM)4
WL 367-367L, Ichthyology and Lab3
ZOOL 302, Animal Behavior (COM).....3
ZOOL 305-305L, Insect Biology and Lab(COM)3
ZOOL 355-355L, Mammalogy and Lab(COM).....3
ZOOL 365-365L, Vertebrate Zoology and Lab (COM)4
ZOOL 467-467L/567-567L, Parasitology and Lab (COM)3
ZOOL 483-483L, Developmental Biology and Lab (COM)4

- 1 In addition to BOR, SDSU, College, and Major requirements, students must take 8 courses in their particular field of study. Of these 8 courses, the following 3 are required of ALL organismal biology students.
2 General Biology Focus: Core + 1 BIOL, 1 BOT + 1 ZOOL/WL + 2 additional courses from elective list
Botany Focus: Core + 3 BOT + 2 additional courses from elective list
Zoology Focus: Core + 3 ZOOL/WL + 2 additional courses from elective list

Preprofessional Specialization Requirements, Health Related: 23-27

Required courses:

BIOL 221-221L, Human Anatomy and Lab(COM).....41
BIOL 325-325L, Physiology and Lab (COM).....4
MICR 439-539, Medical and Veterinary Immunology3

Elective courses:

Take at least four (4) courses from the following list:

BIOL 491, Independent Study (COM)(1-4)
or BIOL 494, Internship (COM)(1-12)
or BIOL 498, Undergraduate Research/Scholarship (COM)...(1-6)
CHEM 464, Biochemistry I (COM)3
CHEM 466, Laboratory Methods- Biochemistry1

HSC 445, Epidemiology3
MICR 424-524, Medical and Veterinary Virology3
MICR 311-311L, Food Microbiology and Lab4
MICR 433-533, Medical Microbiology (COM)3
MICR 491, Independent Study2.....(1-3)
MICR 494, Internship2.....(1-12)
MICR 498, Undergraduate Research/Scholarship2(1-4)
NURS 323, Introduction to Pathophysiology3
PE 454, Biomechanics (COM)3
ZOOL 423-523, Advanced Mammalian Physiology4
ZOOL 467-467L/567-567L, Parasitology and Lab (COM)3
ZOOL 483-483L, Developmental Biology and Lab (COM).....4
Recommended General Electives (if not taken to meet core requirements) to complete the 128 credits required for graduation:
BIOL 373, Evolution (COM).....3
CHEM 465, Biochemistry II (COM).....3
HLTH 120, Community Health2
HLTH 364-364L, Emergency Medical Technician and Lab (COM) ...4
MICR 440L, Infectious Disease Lab3
NFS 315, Human Nutrition3
PSYC 101, General Psychology * ** (COM)3
SPCM 201, Interpersonal Communication (COM)3
STAT 281, Introduction to Statistics (COM)3
MATH 121-121L, Survey of Calculus and Lab* (COM).....5
or MATH 123, Calculus I * (COM).....4
and MATH 125, Calculus II * (COM)4

- 1 Pre-Vet students can substitute VET 223-223L, Anatomy and Physiology of Domestic Animals and Lab and one additional course (at least 4 credits) from the Health Related electives (or an advanced animal science course like Advanced Animal Nutrition or Reproductive Physiology).
2 A total of 3 credits is required for field study, internships, and research experiences to count as one elective. These credits can e combined from various experiences.
Note: Most professional schools require at least 1 year math (e.g., MATH 121 and STAT 281), 1 year physics, 1 year majors biology and 2 years majors chemistry.

Secondary Education Specialization: 26-30

Required Courses1

BIOL 221-221L, Human Anatomy and Lab(COM).....4
BIOL 325-325L, Physiology and Lab (COM)4
BIOL 373, Evolution (COM)3
BOT 201-201L, General Botany and Lab* (COM)3

Take at least four (4) courses from the following list:

BIOL 200-200L, Animal Diversity and Lab*4
BIOL 383, Bioethics ** (G)4
BIOL 440, Restoration Ecology4
BIOL 440L, Restoration Ecology Lab0
BIOL 466-566, Environmental Toxicology and Contaminants3
BOT 127, Ethnobotany3
BOT 301-301L, Plant Systematics (COM)4
BOT 327-327L, Plant Physiology and Lab (COM).....4
BOT 405-405L/505-505L, Grasses and Grasslike Plants and Lab3
BOT 419-419L, Plant Ecology and Lab(COM) (G).....4
ENVM 275, Introduction to Environmental Science ** (G).....3
ENVM 425-425L/525-525L, Disturbance Ecology and Lab4
MICR 310-310L, Environmental Microbiology and Lab.....4
MICR 436, Molecular and Microbial Genetics4
MICR 439-539, Medical and Veterinary Immunology3
WL 363-363L, Ornithology and Lab(COM).....4
WL 367-367L, Ichthyology and Lab3
ZOOL 302, Animal Behavior (COM)3
ZOOL 305-305L, Insect Biology and Lab(COM)3
ZOOL 355-355L, Mammalogy and Lab(COM).....3

ZOOL 365-365L, Vertebrate Zoology and Lab (COM).....	4
ZOOL 467-467L/567-567L, Parasitology and Lab (COM).....	3
ZOOL 483-483L, Developmental Biology and Lab (COM).....	4

1 Students selecting the Biology: Secondary Education Specialization need the well rounded exposure to biology that is provided by the Core Requirements (BIOL 151-151L, 153-153L, 202-202L, 204-204L, 311, MICR 231-231L) and the Specialization Requirements (BIOL 221-221L, 373, 325-325L and BOT 201-201L). The BioMicro Core contains 41-49 hours of General Education, IGR, and Biology requirements. The Secondary Education Specialization requires an additional 22-26 credits. Students complete their degree by taking additional courses from Education, the life sciences and other areas to complete the required 128 credits.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Biology Minor

Requirements for Biology Minor: 18 cr

The minor in Biology consists of BIOL 101-101L or 151-151L, 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 or above. No more than 3 credits can come from 493, 494, 495, 496, 497 and 498. A minimum GPA of 2.0 is required in these courses.

Biotechnology Major

This interdisciplinary program helps prepare students in fundamental sciences so that they may successfully compete for career opportunities in the growing life sciences industries. Both a major and minor are available. Graduates with expertise in biotechnology will help fill the increasing demand from employers utilizing technologies such as molecular biology, genetic engineering, tissue culture, reproductive intervention, and biomass conversion in a variety of applications, such as vaccine and pharmaceutical development, agronomic seed production, livestock breeding, genetic diagnostic testing, identity and parentage verification, criminal forensics, biorenewable product development, or biomedical research. Students could also choose this major for preparation for admission to professional schools such as medicine, dentistry, optometry, pharmacy, and veterinary medicine. The Biotechnology Major will also provide career alternatives for preprofessional students that are not admitted to a professional program. The program will provide excellent background for students entering graduate school in a life sciences discipline.

Biotechnology Major

Requirements for Biotechnology Major, Bachelor of Science in Biological Science

System General Education Requirements*: 34

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201.....	6
Goal #2 Oral Communication.....	3
Goal #3 Social Sciences/Diversity.....	6
Goal #4 Humanities and Arts/Diversity.....	6
Goal #5 Mathematics:	
MATH 121-121L or	
MATH 123 MATH 123L.....	5
Goal #6 Natural Sciences:	
BIOL 151-151L and	
BIOL 153-153L.....	8

Institutional Graduation Requirements**: 9

Goal #1 Land and Natural Resources: BIOL 383.....	4
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 61-62

CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM).....	(3, 1)
BIOL 202-202L, Genetics and Organismal Biology and Lab.....	4
CHEM 326-326L, Organic Chemistry I and Lab(COM).....	(3, 1)
ABS 205, Biotechnology in Agriculture and Medicine.....	2
BIOL 204, Genetics and Cellular Biology.....	3
BIOL 204L, Genetics and Cellular Lab.....	1
CHEM 328-328L, Organic Chemistry II and Lab(COM).....	(3, 1)
CHEM 464, Biochemistry I (COM).....	3
CHEM 466, Laboratory Methods- Biochemistry.....	1
PHYS 111-111L, Introduction to Physics I and Lab* (COM).....	4
MICR 231-231L, General Microbiology and Lab (COM).....	4
PHYS 113-113L, Introduction to Physics II and Lab* (COM).....	4
BIOT 399-399L, Biotechnology and Lab.....	4
STAT 281, Introduction to Statistics (COM).....	3

Select one of the following:

Any course from the Advanced Writing List

AGEC 479, Agricultural Policy (AW) (G).....	3
PS 383-383L, Principles of Crop Improvement and Lab(AW).....	3

Advanced Genetics Requirement

BIOL 453-553, Advanced Genetics.....	3
PS 453-553, Advanced Genetics.....	3
MICR 436, Molecular and Microbial Genetics.....	4

Applications Requirement

Select one of the following courses:

ABE 343-343L, Engineering Properties of Biological Materials and Lab.....	3
BIOL 459-559, Bioinformatics.....	3
MICR 450, Applied Microbiology and Biotechnology.....	3

Experiential Learning Requirement

Minimum 3 credits total required from the following:

(Prefix could be different if approved by program coordinator.)

BIOT 494, Internship.....	1-6
BIOT 498, Undergraduate Research.....	1-6

Electives Credits: additional credits to reach a total of 128

Total Required Credits: 128

* The 30 credit Board of Regents System **General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 for details.)

Biotechnology Minor

Requirements for Biotechnology Minor: 18 credits minimum

ABS 205, Biotechnology in Agriculture and Medicine.....	2
BIOL 202-202L, Genetics and Organismal Biology and Lab.....	4
MICR 436, Molecular and Microbial Genetics.....	4

Choose one from the following:

CHEM 464, Biochemistry I (COM).....	3
CHEM 466, Laboratory Methods- Biochemistry.....	1

Restricted Electives. Must complete remaining credits from the following list:

AS 332, Livestock Breeding and Genetics	4
AS 433-433L, Livestock Reproduction and Lab	3
BIOL 373, Evolution (COM).....	3
BIOL 383, Bioethics ** (G).....	4
BIOL 453-553, Advanced Genetics	3
CHEM 464, Biochemistry I (COM)	3
DS 301-301L, Dairy Microbiology and Lab	3
DS 411-411L, Dairy Breeds and Breeding and Lab.....	3
HO 312-312L, Plant Propagation and Lab	3
HO 383-383L, Principles of Crop Improvement and Lab	3
MICR 332L, Microbial Physiology Lab	2
MICR 424-524, Medical and Veterinary Virology	3
PS 383-383L, Principles of Crop Improvement and Lab(AW).....	3
PS 453-553, Advanced Genetics	3
VET 424-524, Medical and Veterinary Virology	3
ZOOL 483-483L, Developmental Biology and Lab (COM)	4

Internship or Undergraduate Research credits may be substituted for electives if approved by the biotechnology program coordinator.

Botany (BOT)

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.

Botany Minor

Requirements for Botany Minor: 18 credits

The minor in Botany consists of BIOL 101-101L or 151-151L, BOT 201-201L, 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. No more than 3 credits can come from 494, 496, 497 and 498. A minimum GPA of 2.0 is required in these courses.

Ecology and Environmental Science Major

A Bachelor of Science degree in Ecology and Environmental Science offers opportunities for students to pursue career interests in academia, state and federal agencies, consulting, and industry. Students develop a strong core in biology, chemistry, soils, geology, mathematics, physics and statistics. Beyond the core, students select either the ecology or environmental science emphasis, each providing advanced coursework to complement a future career path. A broad selection of elective courses within each emphasis provides flexibility to define a particular career path. Students are strongly encouraged to engage in an undergraduate internship and/or research experience. Those following the ecology emphasis will graduate with coursework qualifying them to become certified ecologists through the Ecological Society of America. Post-graduate placement with graduate schools, environmental consulting firms, natural resource agencies and environmental education is very high.

Ecology and Environmental Science Major

Requirements for Ecology and Environmental Science Major, Bachelor of Science in Biological Science:

System General Education Requirements*: 33-35

Goal #1 Written Communication:

ENGL 101 and	
ENGL 201	6

Goal #2 Oral Communication:

SPCM 101*	3
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Goal #3 Social Sciences/Diversity

Goal #4 Arts and Humanities/Diversity

Goal #5 Mathematics: Choose A, B, C, or D

a. MATH 102 **and** MATH 120

b. MATH 115

c. MATH 121-121L

d. MATH 123

Goal #6 Natural Sciences: BIOL 151-151L **and** BIOL 153-153L.....8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources: BIOL 311 **and** BIOL 311L....4

Goal #2 Personal Wellness, any course listed except BIOL 105**2

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

Major Requirements: 41-44

It is recommended that in addition to completing the major core requirements than an emphasis is selected.

Biology

BIOL 202-202L, Genetics and Organismal Biology and Lab.....4

or BIOL 371, Genetics (COM)

MICR 231-231L, General Microbiology and Lab (COM).....4

BIOL 290, Seminar

Chemistry

CHEM 112-112L, General Chemistry I and Lab* (COM).....(3, 1)

CHEM 114-114L, General Chemistry II and Lab * (COM).....(3, 1)

Advanced Chemistry

CHEM 326-326L, Organic Chemistry I and Lab(COM).....(3, 1)

CHEM 328-328L, Organic Chemistry II and Lab(COM)

Mathematics

STAT 281, Introduction to Statistics (COM)

or MATH 125, Calculus II * (COM)

Physics

PHYS 111-111L, Introduction to Physics I and Lab* (COM).....4

PHYS 113-113L, Introduction to Physics II and Lab* (COM).....4

Advanced Writing Requirement

ABS 475-475L, Integrated Natural Resource Management and

Lab (AW)

Globalization Requirement:

Select course from this list of courses.

Electives: 40-46

Select one of the following emphases:

Ecology emphasis: 40-51

Strongly Recommended Courses.....21

BIOL 373, Evolution (COM)

BIOL 464-564, Ecosystem Ecology

BOT 419-419L, Plant Ecology and Lab(COM) (G).....4

ENVM 425-425L/525-525L, Disturbance Ecology and Lab

BIOL 200-200L, Animal Diversity and Lab*

BOT 201-201L, General Botany and Lab* (COM)

Systematics/Survey Electives: 6-8

Choose 1 BOT and 1 BIOL, WL, or ZOO

BOT 301-301L, Plant Systematics (COM)	4
BOT 405-405L/505-505L, Grasses and Grasslike Plants and Lab 3	3
BOT 415-415L/515-515L, Aquatic Plants and Lab	3
WL 363-363L, Ornithology and Lab(COM).....	4
WL 367-367L, Ichthyology and Lab	3
ZOOL 305-305L, Insect Biology and Lab(COM)	3
ZOOL 355-355L, Mammalogy and Lab(COM).....	3
ZOOL 365-365L, Vertebrate Zoology and Lab (COM).....	4
ZOOL 467-467L/567-567L, Parasitology and Lab (COM).....	3

Other Suggested Electives: 9-12 Choose at least 3

BIOL 221-221L, Human Anatomy and Lab(COM).....	4
BIOL 325-325L, Physiology and Lab (COM)	4
BIOL 440, Restoration Ecology	4
BIOL 440L, Restoration Ecology Lab	0
BIOL 457-557, Ecological Modeling.....	3
BIOL 466-566, Environmental Toxicology and Contaminants	3
BIOL 496, Field Experience (COM).....(1-12)	
or BIOL 498, Undergraduate Research/ Scholarship (COM).....(1-6)	
BOT 303-303L, Forest Ecology and Management and Lab.....	3
BOT 327-327L, Plant Physiology and Lab (COM).....	4
ENVM 275, Introduction to Environmental Science ** (G).....	3
MICR 310-310L, Environmental Microbiology and Lab.....	4
MICR 421-421L/521-521L, Soil Microbiology and Lab.....	3
PS 213-213L, Soils and Lab * **	2
RANG 325-325L, Measurement Topics and Lab.....	3
WL 427-427L/527-527L, Limnology of Lakes & Streams and Lab.....	4
ZOOL 302, Animal Behavior (COM)	3

Electives: 4-10
Selected with approval from advisor.

Environmental Science emphasis: 38
Strongly Recommended Courses: 13

PS 213-213L, Soils and Lab * **	2
PS 243, Principles of Geology* **	3
ENVM 275, Introduction to Environmental Science ** (G).....	3
ENVM 425-425L/525-525L, Disturbance Ecology and Lab.....	4

Suggested Electives: 25
Choose 25 credits from the list below.

AST 353-353L, Physical Climatology and Meteorology ** and Lab.....	3
BIOL 200-200L, Animal Diversity and Lab*	4
BIOL 383, Bioethics ** (G)	4
BIOL 440, Restoration Ecology	4
BIOL 440L, Restoration Ecology Lab	0
BIOL 457-557, Ecological Modeling.....	3
BIOL 464-564, Ecosystem Ecology	3
BIOL 466-566, Environmental Toxicology and Contaminants	3
BOT 201-201L, General Botany and Lab* (COM)	3
BOT 301-301L, Plant Systematics (COM)	4
BOT 303-303L, Forest Ecology and Management and Lab.....	3
BOT 405-405L/505-505L, Grasses and Grasslike Plants and Lab	3
BOT 415-415L/515-515L, Aquatic Plants and Lab	3
BOT 419-419L, Plant Ecology and Lab(COM) (G).....	4
CEE 333, Hydrology.....	3
CHEM 332-332L, Analytical Chemistry and Lab (COM).....(3, 1)	
CHEM 464, Biochemistry I (COM).....	3
CHEM 466, Laboratory Methods- Biochemistry.....	1
CHEM 482, Environmental Chemistry (COM)	(3-4)
GEOG 483-483L, Air Photo Interpretation and Lab.....	3
GEOG 484-484L, Remote Sensing and Lab	3

GEOG 472, Introduction to GIS.....	3
HLTH 443, Public Health Science (G).....	3
HLTH 445, Epidemiology	3
LA 322, Landscape Site Engineering	3
LA 324-324L, Planning Public Grounds and Lab.....	3
LA 364, Planting Design and Specifications	4
MICR 310-310L, Environmental Microbiology and Lab.....	4
MICR 421-421L/521-521L, Soil Microbiology and Lab.....	3
PS 362-362L, Environmental Soil Management and Lab**.....	3
PS 412-512, Environmental Soil Chemistry.....	3
STAT 441-541, Statistical Methods II	3
WL 363-363L, Ornithology and Lab(COM).....	4
WL 367-367L, Ichthyology and Lab	3
WL 427-427L/527-527L, Limnology of Lakes & Streams and Lab	4
WL 417-417L/517-517L, Large Mammal Ecology and Management and Lab	3
WL 419-419L/519-519L, Waterfowl Ecology and Management and Lab	3
ZOOL 302, Animal Behavior (COM)	3
ZOOL 305-305L, Insect Biology and Lab(COM)	3
ZOOL 355-355L, Mammalogy and Lab(COM).....	3
ZOOL 365-365L, Vertebrate Zoology and Lab (COM).....	4

Total Required Credits: 128

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits.
** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs).
(G) Globalization Requirement.
(AW) Advanced Writing Requirement.
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 (MICR) Major

Requirements for Microbiology Major, Bachelor of Science

System General Education Requirements*: 33-35

Goal #1 Written Communication:

ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication: SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: Choose A, B, C, or D	4-6
a. MATH 102 and MATH 120	1
b. MATH 115	
c. MATH 121-121L	
d. MATH 123	
Goal #6 Natural Sciences:	
BIOL 151-151L and	
BIOL 153-153L	8

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources Choose one:	3
BIOL 311 or	
BIOL 383 or	
ENVM 275	
Goal #2 Personal Wellness, any course listed except BIOL 105**	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 67-74

BIOL 202-202L, Genetics and Organismal Biology and Lab.....	4
BIOL 204, Genetics and Cellular Biology.....	3
BIOL 204L, Genetics and Cellular Lab.....	1
MICR 231-231L, General Microbiology and Lab (COM).....	4

BIOL 290, Seminar	1
or MICR 390, Seminar	1
MICR 332, Microbial Physiology	2
MICR 332L, Microbial Physiology Lab	2
MICR 439-539, Medical and Veterinary Immunology	3
MICR 436, Molecular and Microbial Genetics	4

Applied and Environmental Microbiology

Choose at least two courses from the following:

MICR 414-414L/514-514L, Anaerobic Microbiology and Lab	3
MICR 450, Applied Microbiology and Biotechnology	3
MICR 421-421L/521-521L, Soil Microbiology and Lab	3
MICR 310-310L, Environmental Microbiology and Lab	4
MICR 311-311L, Food Microbiology and Lab	4

Infectious Disease

Choose at least two courses from the following:

MICR 424-524, Medical and Veterinary Virology	3
MICR 433-533, Medical Microbiology (COM)	3
ZOOL 467-467L/567-567L, Parasitology and Lab (COM)	3
MICR 440L, Infectious Disease Lab	3

Capstone and Advanced Writing

MICR 490, Seminar (AW)	1
ENGL 379, Technical Communication (AW)	3

Chemistry

CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM)	(3, 1)
CHEM 326-326L, Organic Chemistry I and Lab(COM).....	(3, 1)
CHEM 328-328L, Organic Chemistry II and Lab(COM)	(3, 1)
CHEM 464, Biochemistry I (COM)	3
CHEM 466, Laboratory Methods- Biochemistry	1

Physics

PHYS 111-111L, Introduction to Physics I and Lab* (COM)	4
and PHYS 113-113L, Introduction to Physics II and Lab* (COM)4	
or PHYS 101-101L, Survey of Physics * (COM) and Lab.....	4 ²

Mathematics

MATH 125, Calculus II * (COM)	4 ³
or STAT 281, Introduction to Statistics (COM)	3 ³

Electives: 12-21

Total Required Credits: 128

- 1 If you select this option to complete Goal #5, and are planning to enter professional or graduate degree programs you should also take MATH 121 or 123 and 125.
 - 2 PHYS 101-101L is not sufficient for students planning to enter professional or graduate degree programs
 - 3 Pe-professional students should talk to their advisor before selecting an option.
- * The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)
- ** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Microbiology (MICR) Minor

Requirements for Microbiology Minor: 18 cr

The minor in Microbiology consists of MICR 231-231L, 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. No more than 3 credits can come from 493, 494, 495, 496, 497 and 498. A minimum GPA of 2.0 is required in these courses.

Zoology (ZOOL) Minor

The Department of Biology and Microbiology offers a Zoology Emphasis as an option for those seeking a degree in biology with a specialization in Organismal Biology. The Zoology Emphasis concentrates on the scientific study of animals. The graduate with an emphasis in zoology is qualified for professions in animal research and industry. Graduates wishing to pursue a career in a specialized area of zoology are encouraged to consider an advanced degree program. The Department also offers a Zoology Minor for those wishing to augment their knowledge in the area of animal biology.

Requirements for Zoology Minor: 18 cr

The minor in Zoology consists of BIOL 101-101L or 151-151L, 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. No more than 3 credits can come from 493, 494, 495, 496, 497 and 498. A minimum GPA of 2.0 is required in these courses.

Biomedical Engineering

Lewis Brown, Dean

College of Engineering

Crothers Engineering Hall 201

605-688-4161

e-mail: lewis.brown@sdstate.edu

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

Students interested in both engineering and the life sciences, especially medicine, should strongly consider a career in biomedical engineering. Biomedical engineering is defined as the application of the concepts and methods of engineering and the physical sciences to medicine and biology. The biomedical engineering field covers a very broad range of topics from formalized mathematical theory through experimental science and technological development to practical clinical applications. It is a broad multidisciplinary field that offers rewarding careers related to computer science, electrical engineering, engineering physics, mathematics and statistics, mechanical engineering, software engineering and agricultural & biosystems engineering. SDSU has long prepared students for careers in biomedical engineering by tailoring their engineering degrees for this specialty. Engineering students who complete the 18 credit minor will be well prepared for engineering careers in industry or for entering graduate programs for advanced degrees related to biomedical engineering or medicine. The institution has placed graduates in the top M.D. and biomedical engineering graduate schools in the country.

Students desiring the minor in biomedical engineering complete an 18-credit curriculum in addition to their engineering degree, which adds both coursework and practical experience in the field. The minor is intended for engineering majors only and includes courses and experience in three categories: (1) engineering core, (2) life science core, and (3) biomedical engineering core. Before graduation, the student must complete a two-semester capstone design project related to biomedical engineering. Students are also encouraged to seek practical experience by completing an internship in biomedical engineering. The College can provide assistance to students who desire an internship with a biomedical company or research institute.

Student Outcomes:

Students will:

1. demonstrate an ability to apply knowledge of mathematics, engineering and the life sciences by completing a major capstone design project in the field of biomedical engineering;
2. demonstrate an ability to independently conduct literature research on a current biomedical engineering topic and its

- application/impact on society and his/her engineering major; and
3. demonstrate an ability to communicate biomedical engineering related technical information in high quality written and oral presentation forms.

Biomedical Engineering Minor

Requirements for Biomedical Engineering Minor: 18 credits

Elective***	3
BIOL 221-221L, Human Anatomy and Lab(COM)	4
BIOL 325-325L, Physiology and Lab (COM)	4
EE 464-464L, Senior Design I and Lab(COM)*	2
EE 465-465L, Senior Design II and Lab(COM) (AW)*	2
EE 491, Independent Study (COM)**	(1-3)

* or equivalent course from ABE, ME, or PHYS. The capstone design project must focus on biomedical engineering and be approved by the Coordinator.

** must be biomedical engineering project approved by the Coordinator.

*** selected from: EE 454-554, Biomedical Instrumentation and Electrical Safety or EE 450-550, Biomedical Signal Processing

Botany (BOT)

(See Biology and Microbiology)

Business Area Studies

(See Economics)

Career and Technical Education (CTE)

(See Teacher Education)

Chemistry and Biochemistry Department

James A. Rice, Head
 Department of Chemistry and Biochemistry
 Shepard Hall 121
 605-688-5151
 e-mail: james.rice@sdstate.edu
 http://chembiochem.sdstate.edu

Including the areas of Medical Laboratory Science (MLS)

Faculty

Professor Rice, Head; Professors Cole-Dai, Halaweish, Utecht; Professors Emeriti Emerick, Gehrke, Hecht, Hilderbrand, Palmer, Rue, Spinar, Wadsworth; Associate Professors Cartrette, Logue, Miller, Raynie, Shore; Assistant Professors Hoppe, Robinson, Tille, Zhang; Instructors Dewtz, Hall.

Programs

The Department of Chemistry and Biochemistry is approved by the American Chemical Society (ACS) for training professional chemists and biochemists. 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, biochemistry, or related area. The department's courses serve three general purposes. First, you can major in chemistry or biochemistry by choosing one of the following curricula. Second, a chemistry minor can be obtained by students wanting a more extensive chemistry background without majoring in chemistry. Third, because chemistry and biochemistry are so closely related to other fields of study, a number of courses are offered to provide sufficient chemical and biochemical background to meet professional needs.

Biochemistry

The American Chemical Society (ACS) approved curriculum in biochemistry is a truly interdisciplinary degree intended for students planning to pursue graduate study in biochemistry, molecular biology or similar fields emphasizing the molecular aspects of the biological sciences. It is an ideal major for students intending to pursue careers in medicine, dentistry, or veterinary science. Numerous careers are available to students with biotechnology and pharmaceutical industry laboratories, and government service. Nontraditional career paths that a student can follow include law (particularly patent law), bioethics, and entrepreneurship. A grade of "C" or better is required in all courses required for the major.

Chemistry

The American Chemical Society (ACS) approved curriculum in chemistry is intended for students planning to pursue graduate work in chemistry for positions in research, industrial or governmental laboratories, allied health, careers in business, quality control, environmental regulation and remediation or as pre-professional majors in medicine, dentistry, optometry or chiropractics. Students 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. A grade of "C" or better is required in all courses required for the major.

Emphases

The ACS-certified chemistry major offers optional emphases in 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. Chem 112/112L and Chem 114/114L are required courses. The remaining required 12 credits must be courses with the "Chem" prefix and be at the 300-level or above.

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.

Medical Laboratory Science (MLS) also known as Medical Technology

Patricia Tille, Program Director

SDSU offers a four-year program in Medical Laboratory Science (MLS). The MLS program is housed within the Department of

Chemistry and Biochemistry through the College of Arts and Sciences. The program provides the scientific background in hematology, immunohematology, urinalysis, phlebotomy, microbiology,

immunology, molecular biology, clinical chemistry, and mathematics necessary for a laboratory career.

The Medical Laboratory Science program prepares its graduates for employment in hospital or medical laboratories. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Rd. Suite 720, Rosemont, IL 60018-5119. During the first two years, students take the background science courses necessary for entrance into the professional clinical year. Upon completion of the sophomore year of college, students apply for entrance into the professional component of the major. Admission into the professional component is contingent upon the student successfully meeting the following criteria: 1.) Minimum cumulative GPA of 2.8 on a 4.0 scale in all college work attempted. 2.) Completion of a minimum of 60 credit hours and a grade of “C” or “70%” minimum in all prerequisite courses in biology, chemistry and math by the start of the fall semester of the professional program. 3.) Successfully passed the SDSU Academic Proficiency Exams. 4.) Ability to meet the non-academic Essential Functions of the program as described in the MLS Student Handbook.

The first year of the professional program includes several courses in the medical laboratory field as well as additional science courses and completion of the general education requirements of the university. The final year consists of on-campus medical laboratory science courses and an off-campus experience at a clinical affiliate. A grade of “C” or better is required in all courses required for the major. Graduates will be eligible to take the certification examination as a medical laboratory scientist from the Board of Certification by the American Society of Clinical Pathologists.

Biochemistry Major

Requirements for Biochemistry Major-ACS certified, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication: ENGL 101	6
Goal #2 Oral Communication: SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: MATH 123-MATH 123L	3
Goal #6 Natural Sciences:	
CHEM 115-115L, and	
CHEM 127-127L	6

Institutional Graduation Requirements**: 8-9¹

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 11

Social Sciences	3
Arts & Humanities	2
BIOL 151-151L, General Biology I and Lab* (COM)	4
BIOL 153-153L, General Biology II and Lab*	4

Major Requirements: 48

MATH 125, Calculus II * (COM).....	4
STAT 381, Introduction to Probability and Statistics (COM)	3
PHYS 211-211L, University Physics I and Lab* (COM)	4
PHYS 213-213L, University Physics II and Lab * (COM).....	4
CHEM 229-229L, Transformations of Organic Molecules and Lab.....	(3, 1)
CHEM 237, Intermediate Laboratory Investigations.....	2
CHEM 332-332L, Analytical Chemistry and Lab (COM)	(3, 1)
CHEM 348-348L, Biophysical Chemistry and Lab.....	(3, 1)
CHEM 434-434L, Instrumental Analysis and Lab(COM).....	(3, 1)

CHEM 452-452L, Inorganic Chemistry and Lab(COM).....	(3, 1)
CHEM 464, Biochemistry I (COM)	3
CHEM 466, Laboratory Methods- Biochemistry	1
CHEM 465, Biochemistry II (COM).....	3
CHEM 498, Undergraduate Research/Scholarship (COM) (AW) ³	(3-6)

Electives: 30-31

General Electives†	20-21
Advanced Biology Electives (300- and 400-level) ²	10

Total Required Credits: 128

1. SDSU IGR-SDSU Institutional Graduation Requirement, a part of the General Education core requirements.
2. Advanced Biology Electives-Ten credits from the following list of courses are taken as electives to develop the biochemistry emphasis in the student's areas of interest: one course (4 semester hours) taken from Genetics and Cellular Biology and Lab (BIOL 203-204) (must take BIOL 201-202 as a prerequisite), Molecular Biology I and II (BIOL 462 and 464-465), General Microbiology and Lab (MICR 231-231L), Genetics (BIOL 372), Molecular and Microbial Genetics and Lab (MICR 436-438), or Physiology and Lab (BIOL 325-325L).
3. CHEM 498, Undergraduate Research - The required undergraduate research project must be in biochemistry and for at least 3 credits. The research project is usually completed during the summer preceding registration in CHEM 498. (Students must register for CHEM 498 in spring semester) CHEM 498 credit is given for completing a written paper of the research project and presenting the paper at a scientific meeting.

† Electives may include at least 8 credits of Chemistry selected from CHEM 344-344L, or 482, or 498. MATH 125 is recommended as an elective.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Chemistry (ACS certified) Major

Requirements for Chemistry Major – ACS Certified, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201	6
Goal #2 Oral Communication:SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity.....	6
Goal #5 Mathematics: MATH 123-MATH 123L	3
Goal #6 Natural Sciences:	
CHEM 115-115L, and	
CHEM 127-127L	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 11

Biological Sciences	6
Social Sciences.....	3
Arts & Humanities	2

Major Requirements: 42

MATH 125, Calculus II * (COM).....	4
MATH 225, Calculus III * (COM)	4
PHYS 211-211L, University Physics I and Lab* (COM)	4
PHYS 213-213L, University Physics II and Lab * (COM).....	4
CHEM 229-229L, Transformations of Organic Molecules and Lab.....	(3, 1)

CHEM 237, Intermediate Laboratory Investigations.....	2
CHEM 242-242L, Chemical Equilibrium and Thermodynamics and Lab.....	(4, 1)
CHEM 332-332L, Analytical Chemistry and Lab (COM)	(3, 1)
CHEM 452-452L, Inorganic Chemistry and Lab(COM).....	(3, 1)
CHEM 464, Biochemistry I (COM)	3
CHEM 466, Laboratory Methods- Biochemistry	1
CHEM 498, Undergraduate Research/ Scholarship (COM) (AW).....	(3-6)

Electives: 36-37

Required Advanced Chemistry Electives (300- or 400- level) ^{1,2}	9
General Electives ¹	27-28

Total Required Credits: 128

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.

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 498) 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 482 and one of the following sequences; PS 213-213L and PS 412, MICR 231-231L and MICR 310-310A or PS 421-421L, CEE 333 and BIOL 475. The required undergraduate research experience (CHEM 498) 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.

¹ Electives must include at least 9 credits of Chemistry selected from CHEM 320/320L, 343, 345, 348/348L, 433, 465, 488, 484.

² CHEM 498, Undergraduate Research. The required undergraduate research project must be in Chemistry or biochemistry and for at least 3 credits. The research project is usually completed during the summer preceding registration in CHEM 498. CHEM 498 credit is given for completing a written paper of the research project and presenting the paper at a scientific meeting.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Chemistry Minor

Requirements for Chemistry Minor: 20

A minor in chemistry is given for a minimum of 20 semester credit hours (or equivalent) coursework. Twelve or more credits of upper division chemistry (CHEM 3XX or CHEM 4XX) should be chosen beyond general chemistry (CHEM 112-112L and CHEM 114-114L) from the following areas: 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.

Medical Laboratory Sciences (MLS) Major

Requirements for Medical Laboratory Sciences Major, Clinical Laboratory Specialization, Bachelor of Science in Arts and Sciences

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102	3
Goal #6 Natural Sciences:	
CHEM 112-112L, and	
CHEM 114-114L,	
General Chemistry II and Lab * (COM)	6

Institutional Graduation Requirements: 8**

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 11¹

Social Sciences.....	3
Arts and Humanities.....	2
BIOL 101-101L, Biology Survey I and Lab ** (COM).....	3
BIOL 103-103L, Biology Survey II and Lab* (COM).....	3

Major Requirements: 81

BIOL 221-221L, Human Anatomy and Lab(COM)	4
BIOL 325-325L, Physiology and Lab (COM).....	4
BIOL 371, Genetics (COM)	3
CHEM 108-108L, Organic and Biochemistry and Lab* (COM) .(4, 1)	
MLS 301-301L, Hematology I and Lab	3
MLS 311-311L, Clinical Chemistry I and Lab.....	4
MLS 321, Hemostasis	1
MLS 341-341L, Diagnostic Microbiology I and Lab.....	3
MLS 403, Diagnostic Immunology	2
MLS 401, Hematology II.....	2
MLS 402L, Advanced Hematology and Hemostasis Lab.....	1
MLS 411, Clinical Chemistry II	2
MLS 411L, Clinical Chemistry II Laboratory.....	1
MLS 412L, Laboratory Methods	1
MLS 431, Principles of Immunohematology.....	3
MLS 441-441L, Diagnostic Microbiology II and Lab	3
MLS 451, Urine and Body Fluid Analysis	1
MLS 461, Introduction to Management and Education	2
MLS 471, Molecular Diagnostics.....	2
MLS 481, Clinical Chemistry Practice.....	4
MLS 482, Hematology Clinical Practice ²	4
MLS 483, Clinical Immunology Clinical Practice ²	1
MLS 484, Clinical Immunohematology Clinical Practice ²	4
MLS 485, Diagnostic Microbiology Clinical Practice ²	6
MLS 486, Coagulation Clinical Practice ²	1
MLS 488, Urinalysis and Clinical Microscopy Clinical Practice ²	2
MLS 480, Molecular Diagnostics Clinical Practice ²	2
MLS 489, Phlebotomy Clinical Practice ²	1
MICR 231-231L, General Microbiology and Lab (COM).....	4
STAT 281, Introduction to Statistics (COM).....	3

Total Required Credits: 130

- 1 Required by the College of Arts and Sciences Core. See College of Arts and Sciences requirements.
- 2 Clinical Practice courses will be completed at a clinical affiliate site. Placement at the clinical affiliate will be made by MLS program faculty. Current available sites are Brookings Health System, Avera McKennan University Medical Center, Avera Queen of Peace Hospital, Avera Sacred Heart Hospital, Avera St. Luke's Hospital, Huron Regional Medical Center, Prairie Lakes Healthcare, VA Medical Center Black Hills of Hot Springs, Rapid City Regional Hospital, Sanford Health Network Affiliated Hospitals and Spearfish Regional Hospital.

South Dakota State University is seeking initial accreditation for its Medical Laboratory Sciences program from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). SDSU has received "serious applicant" status for accreditation from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631-3415; phone (773) 714-8880.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

(Pre-) Chiropractic

Greg Heiberger, Coordinator and Advisor
Pre-Health Professional Programs, Bioogy and Microbiology
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Wecota Hall 218
605-688-4294
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Area of Study

Students who are applying to chiropractic college must demonstrate a strong science background as well as a basic understanding of communications, social sciences and humanities. Chiropractic colleges require a minimum of 90 semester credits in general biology, general and organic chemistry, physics, communication, social sciences and humanities. No standardized entrance examination is required.

Students are strongly encouraged to complete a degree to ensure that they meet licensing requirements in all states. The pre-chiropractic curriculum is compatible with many majors and includes all of the prerequisites for chiropractic college admission.

Suggested Pre-Chiropractic Coursework:

These courses represent the requirements for successful application to chiropractic colleges. Contact the pre-chiropractic advisor for assistance coordinating requirements with your major degree program or special interests.

Suggested Courses

BIOL 199/199L, First Year Seminar and Lab.....2
BIOL 290, Seminar1
PSYC 101, General Psychology * **3

Biology

BIOL 151-151L, General Biology I and Lab* (COM)4
BIOL 153-153L, General Biology II and Lab*4
BIOL 221-221L, Human Anatomy and Lab(COM)4
BIOL 325-325L, Physiology and Lab (COM).....4
MICR 231-231L, General Microbiology and Lab (COM)4

Chemistry

CHEM 112-112L, General Chemistry I and Lab* (COM).....(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM)(3, 1)

Organic Chemistry and Biochemistry

CHEM 326-326L, Organic Chemistry I and Lab(COM).....(3, 1)
CHEM 328-328L, Organic Chemistry II and Lab(COM) (3, 1)
CHEM 464, Biochemistry I (COM)3
CHEM 466, Laboratory Methods- Biochemistry1

Physics

PHYS 111-111L, Introduction to Physics I and Lab* (COM)4

At least one of the following:

PE 350, Exercise Physiology (COM)(2-3)
PE 454, Biomechanics (COM)3
PHYS 113-113L, Introduction to Physics II and Lab* (COM)4
STAT 281, Introduction to Statistics (COM).....3

NOTE: All science courses must be taken with the associated labs. Chiropractic colleges will not accept survey science courses such as BIOL 101-Biology Survey I, CHEM 106-Chemistry Survey, and CHEM 108-Organic & Biochemistry. Students must earn a grade of C or better in all specified courses and must maintain a cumulative GPA of 2.5 to be considered for chiropractic college admission.

Civil and Environmental Engineering (CEE)

Bruce W. Berdanier, Head
Department of Civil and Environmental Engineering
Crothers Engineering Hall 120
605-688-5427
fax: 605-688-6476
e-mail: bruce.berdanier@sdstate.edu
<http://www.sdstate.edu/cvlee/index.cfm>

Faculty

Professor Berdanier, Head; Professor Burckhard, Undergraduate and Graduate Programs Coordinator; Professors DeBoer, Reid, Schmit, Ting, Wehbe; Professors Emeriti Dornbush, Hassoun, Rollag, Selim, Sigl; Associate Professors Jones, Mahgoub; Associate Professor Emeritus Tiltrum; Assistant Professors Emmons, Pei, Qin.

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. Civil Engineers are responsible for aspects of the world's infrastructure.

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 that describe the expected accomplishments of our graduates after graduation.

The Civil Engineering Program at SDSU prepares students to achieve the following educational objectives within the first five years of their career:

1. Completion of professional licensure or specialized certification,
2. Completion of advanced academic degrees and/or active participation in professional development societies, and
3. Assume leadership positions within organizations in their profession, in their communities, and in the global society.

The program's mission and educational objectives are accomplished by providing undergraduate students with an educational program that will result in the following outcomes:

Graduates of the CEE Department will 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 American Society of Civil Engineers (ASCE) Student Chapter Program; encouraging seniors to take the Fundamentals of Engineering (FE) examination; and promoting summer, cooperative education, and internship 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, Civil Engineering Capstone Design 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.

Electives are provided to broaden the student's knowledge in the social-humanistic area and to provide the opportunity for technical specialization. A minimum number of 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. Civil Engineering elective credits are provided in order to provide the students technical specialization and breadth in the sub-discipline or subdisciplines of their interest. The sub-disciplines within Civil Engineering at SDSU include Environmental, Geotechnical, Structural, Transportation, and Water Resources engineering. The program

requirements for selecting Civil Engineering electives are available from the adviser, department head, or undergraduate program coordinator. All technical electives must be approved by the adviser or department head.

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; a combined average of "C" or better in the mathematics courses; and a minimum grade of "C" in each of the following courses: Math 123, Math 125, EM 214, EM 215, EM 321, and EM 331. Students that fail to earn a "C" or better in any of these courses will be required to take them in each subsequent semester until the requirement is met. Students must follow course prerequisite requirements and take the Fundamentals of Engineering examination prior to graduation.

The Department will assist those interested in arranging internships with consulting and testing firms, governmental agencies and industry. Credit may be obtained for work experiences by registering for CEE 494 Internship. These credits, upon approval of the Department, may fulfill part of the technical-elective or applied elective requirements.

The Civil Engineering program at South Dakota State University has been continuously accredited by the Engineering Accreditation Commission of ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202, Telephone: 410-347-7700, www.abet.org since 1936.

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.

Civil Engineering (CEE) Major

Requirements for Civil Engineering Major, Bachelor of Science in Civil Engineering: (Accredited by the Engineering Accreditation Commission of ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202, Telephone: 410-347-7700, www.abet.org)

System General Education Requirements*: 33

Goal #1 Written Communication:

ENGL 101, **and**
 ENGL 201 **or**
 ENGL 277.....6

Goal #2 Oral Communication:

SPCM 101*.....3

Goal #3 Social Sciences/Diversity.....6

Goal #4 Arts and Humanities/Diversity.....6

Goal #5 Mathematics: MATH 123.....4

Goal #6 Natural Sciences:

PHYS 211-211L, **and**
 PHYS 213-213L8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources: CEE 2253

Goal #2 Personal Wellness.....2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

Major Requirements: 81

MATH 125, Calculus II * (COM).....4

MATH 225, Calculus III * (COM)4

MATH 321, Differential Equations (COM).....3

STAT 381, Introduction to Probability and Statistics (COM)3

GE 101, Introduction to Engineering and Technology1

GE 121, Engineering Design Graphics I1

GE 122, Engineering Design Graphics II1

GE 123, Computer Aided Drawing.....1

EM 214, Statics (COM)	3
EM 215, Dynamics (COM).....	3
EM 321, Mechanics of Materials (COM).....	3
EM 331, Fluid Mechanics (COM).....	3
CHEM 112-112L, General Chemistry I and Lab* (COM)	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM)	(3, 1)
or CHEM 120-120L, Elementary Organic Chemistry and Lab*.....	(3, 1)
CSC 150, Computer Science I (COM)	3
CEE 106-106L, Elementary Surveying and Lab	4
CEE 216-216L, Materials and Lab	3
CEE 311, Structural Materials Lab.....	1
CEE 323-323L, Water Supply and Wastewater Engineering and Lab.....	3
CEE 331, Fluid Mechanics Lab.....	1
CEE 340-340L, Engineering Geology and Lab.....	3
CEE 346-346L, Geotechnical Engineering (COM) and Lab.....	4
CEE 353, Structural Theory (COM).....	3
CEE 363, Highway and Traffic Engineering	3
CEE 432, Hydraulic Engineering.....	3
CEE 455-455L, Steel Design and Lab.....	3
CEE 456, Concrete Theory and Design (COM).....	3
CEE 464, Civil Engineering Capstone Design I (COM).....	1
CEE 465, Civil Engineering Capstone Design II (COM) (AW).....	2
CEE 482, Engineering Administration.....	3
CEE 490, Seminar (COM).....	(1-3)

Electives: 14

Technical Electives (four courses from 2 areas)	12
Applied Elective††	2

Technical Electives: 12

Civil Engineering majors are required to complete a total of four courses in at least two of the five technical areas: (geotechnical, environmental, structural, transportation, and water resources).

CEE 208-208L, Engineering Surveys and Lab	3
CEE 304, Land Surveying	3
CEE 306-306L, Photo Interpretation and Photogrammetry and Lab	3
CEE 333, Hydrology.....	3
CEE 411-411L/511-511L, Bituminous Materials and Lab.....	3
CEE 422-422L/522-522L, Environmental Engineering Instrumentation and Lab.....	3
CEE 423/523, Municipal Water Distribution and Collection System Design.....	3
CEE 424/524, Industrial Waste Treatment.....	3
CEE 429-429L/529-529L, Solid Waste Engineering and Management and Lab	3
CEE 435/535, Water Resources Engineering	3
CEE 443/543, Matrix Analysis of Structures	3
CEE 444/544, Precast Concrete Structures	3
CEE 446/546, Advanced Geotechnical Engineering.....	3
CEE 452/552, Prestressed Concrete	3
CEE 457-457L, Indeterminant Structures (COM) and Lab	3
CEE 458/558, Design of Timber Structures	3
CEE 459-459L/559-559L, Advanced Structural Mechanics and Lab	3
CEE 467/567, Transportation Engineering.....	3
CEE 472/572, Geosynthetics	3
CEE 483-483L, Municipal Engineering and Lab.....	3
CEE 491, Independent Study (COM).....	(1-3)
CEE 492/592, Topics (COM).....	(1-3)
CEE 494, Internship.....	(1-6)
CEE 496, Field Experience.....	(1-6)
CEE 497, Cooperative Education	(1-6)
EE 300-300L, Basic Electrical Engineering I and Lab	3
ME 314, Thermodynamics.....	3

Applied Elective 2

Chosen from Departmental Approved List

Total Required Credits: 136

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Communication Studies and Theatre (CST)

Laurie Haleta, Head

Department of Communication Studies and Theatre

Pugsley Center 115

605-688-6131

e-mail: laurie.haleta@sdsu.edu

Faculty

Professor Haleta, Head; Distinguished Professor Emeriti J. Johnson; Professors Ackman, Jorgensen, Shelsta; Professors Emeriti Ferguson, Hoogestraat, Meyer, Schliessmann, Widvey; Associate Professor Tolman; Assistant Professors Hefling, Hunter, Kuehl, Lampson, Wilburn; Instructors Hauschild Mork, Kleinjan, Westwick.

Programs

A student may major or minor in either Speech Communication (SPCM) or Theatre (THEA), or choose a specialization in Speech Education (SPED), select courses for self- improvement, take courses to meet humanities requirements, or participate in speech or theatre activities.

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

Assistant Professor Peterson, 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 undergraduate credit through Prairie Repertory Theatre.

Forensics

Assistant 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.

Speech-Language Clinic

Assistant Professor Lampson, Supervisor

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

Communication Studies and Theatre (CST) Minor

Requirements for Communication Studies and Theatre

Minor: 20 cr

20 semester credits including SPCM 101*, approved by the department head. Not more than 8 credits chosen from activity courses (SPCM 281 and SPCM 491, THEA 135, THEA 145, THEA 195, and THEA 491) may be counted.

Required courses in Theatre Minor to include:

THEA 100, THEA 131, THEA 241-241L, THEA 351, and THEA 480. One additional course must be selected from the following: THEA 243, THEA 355, THEA 375, THEA 441, or THEA 445-445L.

Dance Minor

Students interested in pursuing the dance minor are required to take 12 credits of required coursework and choose 6 credits from a selected list of courses.

Fall

DANC 230, Technique 1 (odd years)	1*
DANC 330, Technique 3 (odd years)	1*
DANC 430, Composition and Choreography (even years)	1
DANC 431, Dance for the Musical Theatre (even years)	1

Fall or Spring

DANC 130, Dance Fundamentals **	1
---------------------------------------	---

Spring

DANC 131, Movement 1 (odd years)	2
DANC 132, Movement 2 (odd years)	2
DANC 231, Technique 2 (odd years)	1*
DANC 240, Multicultural Dance Activities ** (odd years)	1
DANC 241-241L, Creative Movement for Children and Lab (even years)	2
DANC 331, Technique 4 (even years)	1*

Note: Students need only take 2 credits from the group of these courses – either DANC 230 and 231 or 330 and 331.

Elective Courses in the Minor: (6 credits from this list)

BIOL 221-221L, Human Anatomy and Lab (COM)	4
MUS 100, Music Appreciation * ** (COM)	3
PE 204, Professional Preparation: Rhythm and Dance (COM)	1
PE 454, Biomechanics (COM)	3
THEA 100, Introduction to Theatre * (COM)	3
THEA 131, Introduction to Acting * (COM)	3
THEA 435, History of American Musical Theater (COM)	3

Speech Communication Major

Requirements for Speech Communication Major, Bachelor of Science

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, and

ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity (not in CST)	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements**: 8

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 11

Natural Science	14
Social Science	12
Humanities	8

Major Requirements: 36

SPCM 201, Interpersonal Communication (COM)	3
SPCM 215, Public Speaking (COM) *	3
SPCM 222, Argumentation and Debate (COM) *	3
SPCM 305, Communication Research (COM) (AW)	3
SPCM 405, Theories of Communication (COM)	3
SPCM 410-510, Organizational Communication (COM) (AW)	2-3
SPCM 434, Small Group Communication (COM)	3
SPCM 470, Intercultural Communication (COM) (G)	3
DCOM 211, Phonetics	3

Choose 9 credits from the following:

SPCM 281, Speech and Debate Activities (COM)	(1-4)
SPCM 320, Communication in Interviewing (COM)	3
SPCM 340, Oral Interpretation of Literature (COM)	3
SPCM 415, Communication and Gender (COM)	3
SPCM 417, Political Communication (COM)	3
SPCM 460, Family Communication (COM)	3

Electives: 19-20

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Speech Communication Major- Speech Education specialization

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, and

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity6

Goal #4 Arts and Humanities/Diversity (Not in CST).....6

Goal #5 Mathematics3

Goal #6 Natural Sciences6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

College Requirements: 34

See the College of Arts and Sciences for additional information.

Natural Science14

Humanities.....8

Social Sciences.....12

Major Requirements: 36

SPCM 201, Interpersonal Communication (COM)3

SPCM 215, Public Speaking (COM) *3

SPCM 222, Argumentation and Debate (COM) *3

SPCM 305, Communication Research (COM) (AW).....3

DCOM 131, Introduction to Communication Disorders3

THEA 131, Introduction to Acting * (COM)3

THEA 241-241L, Stagecraft and Lab (COM).....3

SPCM 340, Oral Interpretation of Literature (COM).....3

SPCM 470, Intercultural Communication (COM) (G).....3

SPCM 281, Speech and Debate Activities (COM)1

THEA 135, Theatre Activities-Acting1

THEA 145, Theatre Activities-Technical1

SPCM 476, 7-12 Speech Methods3

THEA 351, Directing (COM)3

or THEA 355, Children's Theatre (COM).....3

SPCM 410-510, Organizational Communication (COM) (AW).....2-3

Electives: 19

Total Required Credits: 128

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs). (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Theatre Major

Requirements for Theatre Major, Bachelor of Science in Arts and Sciences

Minimum Theatre hours required for major — 40 hours

Maximum Activities Credit toward major — 8 hours

(from THEA 135, THEA 145, THEA 195, and THEA 480)

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, and

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity6

Goal #4 Arts and Humanities/Diversity: (Not in CST)6

Goal #5 Mathematics3

Goal #6 Natural Sciences6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

College Requirements: 34

Natural Science14

Social Sciences.....12

Humanities.....8

Major Requirements: 52

THEA 131, Introduction to Acting * (COM)3

THEA 135, Theatre Activities-Acting1

or THEA 145, Theatre Activities-Technical1

THEA 240, Stage Costuming (COM).....3

THEA 241-241L, Stagecraft and Lab (COM).....3

THEA 243, Make-Up (COM).....3

THEA 250, Play Analysis3

THEA 351, Directing (COM)3

THEA 410-510, Dramatic Literature (AW)3

THEA 460-560, History of Theatre3

THEA 470, Portfolio and Resume Building.....3

THEA 480, Summer Theatre(1-5)

THEA 375, Theatre Arts Management3

or THEA 441, Scene Design (COM).....3

or THEA 445-445L, Lighting and Lab (COM)3

Choose 16 credits from the following:

THEA 100, Introduction to Theatre * (COM)3

THEA 191, Independent Study1

THEA 355, Children's Theatre (COM).....3

THEA 435, History of American Musical Theater (COM).....3

THEA 455, Advanced Acting (COM)3

THEA 491, Independent Study (COM).....(1-3)

THEA 492-592, Topics (COM)1-5

THEA 494-594, Internship (COM)0-12

Electives: 3-4

Total Required Credits: 128

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs). (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Computer Science (CSC)

(See Electrical Engineering and Computer Science)

Construction Management (CM)

(See Engineering Technology & Management)

Consumer Sciences (AM, AVIA, CA, HMGT, ID, LEAD, LMNO)

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Faculty

Professor Hegland, Head; Professors Boulware, Isham; Professors Emeriti Enevoldsen, Kamstra, Nussbaumer, Semeniuk, Stoflet; Associate Professors Lyons, Peterson, Strickler; Associate Professor Emerita Rose; Assistant Professors Bell, Boersma, Cho, Christensen, Dickinson, Jeong Hee, Saboe-Wounded Head, Yoon; Adjunct Assistant Professor McKillip; Assistant Professor Emerita Swedlund; Instructors Patel, Trautman; Lecturer Yseth.

Programs

The Department of Consumer Sciences is one of four departments in the College of Education & Human Sciences (EHS): Consumer Sciences; Counseling & Human Development; Health & Nutritional Sciences; and Teaching, Learning & Leadership.

The Department of Consumer Sciences offers a Bachelor of Science (BS) degree with undergraduate majors and minors in Apparel Merchandising (AM), Aviation (AVIA), Consumer Affairs (CA), Hospitality Management (HMGT), and Interior Design (ID) and minors in Leadership (LEAD) and Leadership and Management of Nonprofit Organizations (LMNO). We also offer two graduate programs where students earn a Master of Science in Family Financial Planning or in Merchandising.

While the department is home to a diverse collection of disciplines, all of our programs are professionally based. All academic and extension programs have integrated elements of leadership, management, customer service, design, and technology. In addition, a strong general education curriculum is part of all majors, which aids students in learning to assimilate all of their educational components. We have occasionally referred to this department as “Main Street USA” because we are educating students in professions that exist in cities and towns around the country. We are developing business professionals and community leaders.

Consumer Sciences faculty are committed to SDSU’s tripartite mission of teaching, scholarship, and outreach, where the focus is on integrating students into the learning environment under close supervision of qualified faculty. As well as teaching and mentoring students, faculty are researchers and scholars who produce new knowledge and serve related professional organizations in leadership capacities.

Practical learning experiences complement traditional academic settings. Internship and practicum courses prepare students for the real world and provide the industry with well-trained employees. In most programs, students begin preparation for their internship or practicum with a professional development course. This course helps students to become aware of current trends and expectations in the industry as well as providing a professional foundation.

Because of the world economy and the importance of developing an international perspective, we offer travel study opportunities regionally, nationally, and internationally to such places as Kansas City, Chicago, New York, Las Vegas, Rome, London and Paris. For longer-term study opportunities, students may choose to attend classes in New York City, London, England, or Sydney, Australia (for example) for a summer, a semester, or for a year. In addition, numerous other study abroad programs around the world are available to our students via the Office of International Affairs. Students work with an advisor to ensure that the transfer of credits occurs prior to taking advantage of one of these opportunities.

There are active student organizations in each of our major areas of study. Students plan educational programs and tours, attend regional and national professional meetings, undertake service projects for the SDSU campus and community, and often plan field trips to manufacturers, professional businesses, museums, trade shows, and the like.

All of these opportunities provide students with experiences that highlight the uses of their university education as well as broaden their thinking about the world around them.

Graduates of our programs have found exciting professional opportunities in their fields, after graduating from one of our programs.

To indicate your interest in one of our programs, contact our department. We would be happy to visit with you personally about your interests and career goals. We can arrange a campus and department tour, visit a class, or visit with one of our current students or faculty members.

The Department of Consumer Sciences is brand new as of July 1, 2010 and is the result of ongoing restructuring efforts at South Dakota State University to align programs with similar missions together into academic units.

The Department of Consumer Sciences enhances the quality of life for consumers, with particular emphasis on the sustainable management of resources in a global context. Consumer Sciences will be known for high quality dynamic, and innovative teaching, scholarship, and outreach in its quest to develop successful professionals in the areas of apparel merchandising, aviation, consumer affairs, hospitality management, interior design, and leadership.

Three major themes underpin the Consumer Sciences vision and mission:

- **Commerce:** Consumer Sciences students learn about design and production processes and consumption patterns and behavior in the global marketplace;
- **Creativity:** Consumer Sciences students engage in problem-solving activities that produce experiential work within project constraints that is a result of creative collaboration; and
- **Resource Management:** Consumer Sciences students understand the need for prioritization of resources to help consumers and businesses make optimal decisions.

In all our work, faculty and students commit themselves to fostering scholarship and outreach efforts that reflect local, regional, national, and/or global contexts; promoting careers in an ever-changing global marketplace; inspiring critical thinking and theory building; encouraging activities with socially responsible impacts on individuals, households, communities, and environments; and celebrating diversity.

Apparel Merchandising (AM)

Apparel Merchandising is the perfect major for students who would like an exciting career in the dynamic, ever-changing fashion industry. Students acquire a broad knowledge of people and their behavior, an understanding of the global business environment, and technical knowledge and skills to select, plan, and produce fashion goods. Typical

careers include store or department manager, buyer, or visual. A special feature of the Apparel Merchandising program at SDSU is our cooperative arrangement with the Fashion Institute of Technology (FIT) located in New York City. Students may spend one year studying fashion in New York while applying those classes directly to their bachelor's degree at SDSU. At the same time, they earn an associate degree from FIT.

A 7-week (280 hour) fulltime summer practicum compatible with career goals is a program requirement.

Aviation (AVIA)

The South Dakota State University Aviation Program is a top-grade 4-year program that produces quality graduates who are well prepared for careers in the aviation industry. The SDSU Aviation Program offers students high quality aviation training at competitive rates. Students in the program graduate with a Bachelor of Science Degree in Aviation and may choose between three avenues to specialize in to further hone their education experience.

The *Aviation Education specialization* is for students who wish to become Certified Flight Instructors and later be professional pilots in industry. Many of our graduates are in the airlines, military, government, and corporate workplaces. Top performing students of this option are often brought on as flight instructors in the SDSU program during their junior and senior years. It is a wonderful opportunity for individuals to instruct and improve the very program they are a part of.

The *Aviation Management specialization* is focused on students who wish to someday operate their own aviation business or be the head of a flight department. The Certified Flight Instructor certificate is not required for graduation, but there is a strong emphasis on mathematics, finance, and business courses.

The *Aviation Maintenance Management specialization* is focused on students who someday wish to repair and maintain aircraft. SDSU has partnered with approved FAA A&P programs across the United States to offer a four-year degree in aviation maintenance management. Students will go through maintenance training at an approved maintenance school and will then come to SDSU to finish up the degree requirements. Students may work for the Chief of Aviation Maintenance at SDSU prior to graduation. This is an excellent opportunity for maintenance students to gain real-world experience.

Minor in Aviation

Nineteen credit hours are required for a minor in Aviation. Plan your minor with an academic advisor early in your program.

Consumer Affairs (CA)

The Consumer Affairs program focuses on the development of abilities in management, planning, organization, and problem solving for students who will assist individuals and families to improve their economic wellbeing. The curriculum focuses on the interaction between consumers and the marketplace, the family financial planning process, the management of resources, public policy affecting individuals and families, and consumer behavior.

The Consumer Affairs curriculum prepares students to qualify for employment or graduate study in family financial planning, consumer behavior, consumer product marketing, consumer economics, and consumer education/policy. Career opportunities also exist in non-profit organizations and government.

An 8-week (320 hour) fulltime summer internship compatible with career goals is a program requirement.

Students in the program graduate with a Bachelor of Science Degree in Consumer Affairs and may choose between two specializations:

The *Family Financial Management (FFM) specialization* is for students interested in the financial services industry and focuses on principles and practice related to family financial planning including insurance planning, investment strategies, income tax planning, retirement preparation, and estate planning, and case studies to assist individuals and families with individualized family financial planning goals.

The *Consumer Services Management (CSM) specialization* focuses on the application of resource management concepts for families of varying structures and conditions and implementation strategies for working with diverse adult audiences.

Hospitality Management (HMGT)

The Hospitality Management program seeks to create visionary leaders by achieving excellence in student-centered education, skill development, research, service, and collaboration with global hospitality and tourism industries. Today's employers are looking for people with general management skills that are useful in the hospitality industry. Business leaders have identified four factors critical for an individual's success: communication skills, lifetime-learning skills, problem-solving and critical-thinking skills, and ethical leadership skills.

The curriculum is designed to expose students to many aspects of the hospitality industry and to instill in them the critical skills required in today's workplace. Students are required to complete two professional practicum courses while pursuing their degree, and will gain important practical industry experience. Graduation requires 128 credits.

Interior Design (ID)

The Interior Design program at SDSU seeks to promote the awareness and knowledge of the contributions of interior design to the health, safety, and well being of people in the built environment and to prepare graduates of the program to succeed in the profession throughout the region, nationally and internationally.

The Interior Design program prepares graduates for practice in the interior design profession by enriching their personal and professional lives through a student centered, studio-based learning environment. SDSU's program provides a broad-based education, opportunities for a variety of national and international travel, service learning experiences, opportunities for various minors, and collaboration among various disciplines. Small class sizes provide for extended student/faculty interactions, active learning environments, instruction, and critique by faculty and local professionals alike. The curriculum infuses sustainable practices, develops and increases creativity through a process-driven conceptual framework, and offers various learning environments that use technologies appropriate to students' expanding skill levels and abilities.

A 7-week (280 hour) practicum compatible with career goals is a program requirement. *Students are also required to buy a laptop computer and software for use in the beginning of their sophomore year.*

Interior Design faculty maintain currency in their fields of knowledge, uses of technology, and understanding of current issues to inform students, regional professional, and the citizens of the state and region of the important design plays in quality of life issues.

Leadership (LEAD) Minor

The 18-credit undergraduate leadership minor is an interdisciplinary and multi-dimensional program that allows students to explore and experience multiple frameworks of leadership. The minor prepares students for real-life leadership experiences, both on-campus and in larger global communities. Leadership development will relate to student aspirations as they transition from the on-campus extracurricular

services to professions, communities, and public and private organizations. By completing the minor, students will acquire skills and abilities to serve as competent leaders as they transition to life after graduation.

Students take a core of coursework specifically focused on leadership theory and practice. In addition, students choose courses from two key leadership elements, communication and ethics. Finally, students complete a leadership project in LEAD 496: Leadership in Action.

Leadership and Management in Nonprofit Organizations (LMNO) Minor

The Leadership and Management of Nonprofit Organizations minor prepares students to enhance nonprofit organizations. This minor consists of 18 credits of coursework. Students need to declare their intentions to minor in LMNO by contacting the American Humanics Campus Executive Director, Dr. Denise Peterson.

National Certification through American Humanics in nonprofit management requires an additional 300-hour internship with a nonprofit organization. American Humanics, Inc. is a national alliance of colleges, universities, and nonprofit organizations dedicated to educating, preparing, and certifying professionals to strengthen and lead nonprofit organizations. The certification, recognized by nonprofit organizations, particularly the national nonprofit partners of American Humanics, signifies that the student has met foundational and professional competencies of the organization and is well prepared for a dynamic career in the nonprofit sector. Certification requirements are met through course work, co-curricular involvement, an internship, and the American Humanics Management Institute.

Apparel Merchandising (AM) Major

Requirements for Apparel Merchandising Major, Bachelor of Science

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101* or	
SPCM 215	3
Goal #3 Social Sciences/Diversity:	
ECON 201 or ECON 202 and	
PSYC 101 or SOC 100	6
Goal #4 Arts and Humanities/Diversity:	
ARTH 100 and	
HIST 121 or HIST 122	6
Goal #5 Mathematics:	
MATH 102	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
AM 381	3

College Requirements: 2

EHS 140, Enhancing Human Potential	2
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Major Requirements: 48

AM 172, Introduction to Apparel Merchandising	2
AM 231-231L, Ready-To-Wear Analysis and Lab	3
AM 242-242L, Textiles I and Lab	3
AM 274-274L, Fashion Promotion and Lab	3

AM 315-315L, Apparel Design and Lab	3
AM 331-331L, Aesthetics of Dress and Lab	3
AM 352, History of Dress in the Western World	3
AM 372, Trending and Buying	3
AM 453, Socio-Psychological Aspects of Dress	3
AM 462, Retail Management	3
AM 472-472L, Merchandising and Lab	3
AM 473, Global Sourcing	3
AM 480, Travel Studies	(1-5)
AM 487, Workplace Strategies	2
AM 490, Seminar	3
AM 495, Practicum	(1-7)

Electives: 39-40

Electives in ACCT, CA, CSC, BADM, ECON, ENTR, MCOM, PSYC, SOC	15
General Electives	24-25

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Aviation (AVIA) Major

Requirements for Aviation Major Major, Bachelor of Science in Aviation:

System General Education Requirements*: 32

Goal #1 Written Communication:	
ENGL 101, Composition I * and	
ENGL 201, Composition II *	6
Goal #2 Oral Communication:	
SPCM 101*, Fundamentals of Speech (COM)	3
Goal #3 Social Sciences/Diversity:	
ECON 202, Principles of Macroeconomics * (COM) (G) and	
PSYC 101 General Psychology * ** (COM) or	
SOC 100 Introduction to Sociology * (COM) (G)	6
Goal #4 Humanities and Arts/Diversity	6
Goal #5 Mathematics:	
MATH 102, College Algebra * (COM)	3
Goal #6 Natural Sciences:	
GEOG 131-131L Physical Geography: Weather and Climate and Lab and	
PHYS 101-101L Survey of Physics * (COM) and Lab	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness: GS 143 Mastering Lifetime Learning Skills ** or	
WEL 100-100L Wellness for Life and Lab *(COM)	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 2

EHS 140, Enhancing Human Potential	2
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Major Requirements: 24

AVIA 101, Introduction to General Aviation	1
AVIA 200, Aviation Safety	3

AVIA 302, Aviation Law.....	2
AVIA 305, Introduction to Aviation Administration.....	3
AVIA 300, Human Factors in Aviation.....	3
AVIA 400, Air Transportation System.....	3
CSC 105, Introduction to Computers (COM).....	3
ACCT 210, Principles of Accounting I (COM).....	3
ENGL 379, Technical Communication (AW).....	3

Choose one of the following specializations:

Aviation Education Specialization Requirements: 41

Electives:.....	20-21
AVIA 150-150L, Introduction to Aviation Meteorology and Lab.....	3
AVIA 270, Private Pilot Theory.....	3
AVIA 272, Private Pilot Flight I.....	2
AVIA 273, Private Pilot Flight II.....	3
AVIA 201, Aviation Weather.....	3
AVIA 250, Advanced Flight Principles.....	3
AVIA 371, Instrument Pilot Theory.....	3
AVIA 372, Instrument Flight.....	2
AVIA 375, Commercial Pilot Theory.....	4
AVIA 376, Commercial Flight I.....	3
AVIA 377, Commercial Flight II.....	3
AVIA 470, Flight Instructor Theory/Flight.....	3
CTE 419/519, Methods of Teaching.....	3
CTE 440/540, Curriculum Design in Career and Technical Education (AW).....	3

Aviation Management Specialization Requirements: 55

Electives:.....	6-7
AVIA 150-150L, Introduction to Aviation Meteorology and Lab.....	3
AVIA 270, Private Pilot Theory.....	3
AVIA 272, Private Pilot Flight I.....	2
AVIA 273, Private Pilot Flight II.....	3
AVIA 201, Aviation Weather.....	3
AVIA 250, Advanced Flight Principles.....	3
AVIA 371, Instrument Pilot Theory.....	3
AVIA 372, Instrument Flight.....	2
AVIA 375, Commercial Pilot Theory.....	4
AVIA 376, Commercial Flight I.....	3
AVIA 377, Commercial Flight II.....	3
MATH 121-121L, Survey of Calculus and Lab* (COM).....	5
ACCT 211, Principles of Accounting II (COM).....	3
BADM 310, Business Finance (COM).....	3
ECON 201, Principles of Microeconomics * (COM).....	3
SOC 353, Sociology of Work (COM).....	3
BADM 350, Legal Environment of Business (COM).....	3
BADM 360, Organization and Management (COM).....	3

Aviation Maintenance Management Specialization Requirements: 18

Electives:.....	43-44
ACCT 211, Principles of Accounting II (COM).....	3
BADM 310, Business Finance (COM).....	3
ECON 201, Principles of Microeconomics * (COM).....	3
BADM 350, Legal Environment of Business (COM).....	3
BADM 360, Organization and Management (COM).....	3
SOC 353, Sociology of Work (COM).....	3

Total Required Credits: 128

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs). (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Aviation (AVIA) Minor

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

Consumer Affairs (CA) Major

Requirements for Consumer Affairs Major, Bachelor of Science:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201.....	6
Goal #2 Oral Communication:	
SPCM 101*.....	3
Goal #3 Social Sciences/Diversity:	
ECON 202 and	
PSYC 101 or SOC 100.....	6
Goal #4 Arts and Humanities/Diversity.....	6
Goal #5 Mathematics:	
MATH 102.....	3
Goal #6 Natural Sciences.....	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship.....	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
AM 381 or LEAD 310.....	3

College Requirements: 2

EHS 140, Enhancing Human Potential.....	2
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Major Requirements: 30

CA 150, Introduction to Consumer Affairs.....	2
CA 230, Consumer Behavior.....	3
CA 289, Consumers in the Market.....	3
CA 340, Work Family Interface (AW).....	3
CA 345, Foundations in Financial Management.....	3
CA 412, Emerging Issues in Consumer Affairs.....	2
CA 487, Transition to the Professional World.....	3
CA 494, Internship.....	8
HDFS 241, Family Relations.....	3

Electives: 21-22

Choose a specialization below:

Consumer Services Management Specialization Requirements: 36

BADM 350, Legal Environment of Business (COM).....	3
BADM 360, Organization and Management (COM).....	3
CA 442, Family Resource Management Lab.....	3
FCSE 421, Adult Education.....	3
HMG 455, Meeting and Convention Management.....	3
Must take 21 credits from the following list:	
BADM 334, Small Business Management (COM).....	3

BADM 351, Business Law (COM)	3
BADM 474, Personal Selling (COM).....	3
ECON 370, Marketing.....	3
ENGL 379, Technical Communication (AW).....	3
HDFS 210, Lifespan Development *.....	3
HMGT 171, Introduction to Hospitality Industry	3
HMGT 361, Hospitality Industry Law	2
HMGT 482, Hospitality Marketing.....	3
LEAD 210, Foundations of Leadership.....	3
MCOM 161-161L, Fundamentals of Desktop Publishing and Lab (COM).....	3
MCOM 314, Sales, Promotion and Marketing.....	3
MCOM 370, Advertising Principles (COM).....	3
MCOM 475-575, Public Relations (COM).....	3
SPCM 201, Interpersonal Communication (COM).....	3
STAT 281, Introduction to Statistics (COM).....	3

Family Financial Management Specialization Requirements: 36

ACCT 210, Principles of Accounting I (COM).....	3
BADM 350, Legal Environment of Business (COM).....	3
CA 350, Family Financial Management: Theory and Practice	3
CA 450, Family Financial Management: Applications	3
ECON 201, Principles of Microeconomics * (COM).....	3

Must take 21 credits from the following list:

ACCT 211, Principles of Accounting II (COM)	3
ACCT 430, Income Tax Accounting (COM).....	3
BADM 310, Business Finance (COM).....	3
BADM 334, Small Business Management (COM)	3
BADM 351, Business Law (COM)	3
BADM 360, Organization and Management (COM).....	3
BADM 411, Investments (COM)	3
BADM 474, Personal Selling (COM).....	3
ECON 330, Money and Banking (COM).....	3
ECON 370, Marketing.....	3
ENGL 379, Technical Communication (AW).....	3
HDFS 210, Lifespan Development *.....	3
LEAD 210, Foundations of Leadership.....	3
SPCM 201, Interpersonal Communication (COM).....	3
STAT 281, Introduction to Statistics (COM).....	3

Total Required Credits: 128

Note: A grade of “C” or better is required in all courses with a CA prefix.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Hospitality Management (HMGT) Major

Requirements for Hospitality Management Major: Bachelor of Science

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201.....	6
Goal #2 Oral Communication:	
SPCM 101*.....	3
Goal #3 Social Sciences/Diversity:	
PSYC 101, and	
ECON 202.....	6

Goal #4 Arts and Humanities/Diversity:.....	6
Must be two different disciplines/prefixes or Modern Language sequence	
Goal #5 Mathematics:	
MATH 102 or higher	3
Goal #6 Natural Sciences.....	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
PHIL 220.....	3

College Requirements: 2

EHS 140, Enhancing Human Potential.....	2
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Major Requirements: 72-73

NFS 141-141L, Foods Principles and Lab.....	4
HDFS 241, Family Relations	3
HMGT 171, Introduction to Hospitality Industry.....	3
HMGT 251, Foodservice Sanitation	1
HMGT 295, Practicum.....	2
HMGT 361, Hospitality Industry Law.....	(2-3)
or BADM 351, Business Law (COM)	
HMGT 370, Lodging Operations and Purchasing Management.....	3
HMGT 372, Hospitality Facilities Management and Design	3
HMGT 380, Foodservice Operations and Purchasing Management ...	3
HMGT 381-381L, Quantity Food Production and Service and Lab ...	3
HMGT 465, Cost Controls in Hospitality Industry	3
HMGT 481, Food Science, Dietetics, and Hospitality Human Resource Management.....	3
HMGT 482, Hospitality Marketing	3
HMGT 495, Practicum.....	2
NFS 490, Seminar (AW).....	2
CSC 105, Introduction to Computers (COM).....	3
ECON 201, Principles of Microeconomics * (COM)	3
ACCT 210, Principles of Accounting I (COM).....	3
ACCT 211, Principles of Accounting II (COM).....	3
BADM 350, Legal Environment of Business (COM)	3
BADM 360, Organization and Management (COM)	3
BADM 474, Personal Selling (COM).....	3
or MCOM 370, Advertising Principles	3

Choose 4 or more from the following:

NFS 221, Survey of Nutrition.....	3
AS 241-241L, Introduction to Meat Science and Lab.....	3
HMGT 412-412L, Fine Dining and Catering Management and Lab	3
BADM 334, Small Business Management (COM)	3
or ENTR 336, Entrepreneurship I (COM)	3
HMGT 371-371L, Leisure Activities Management and Lab.....	3
HMGT 455, Meeting and Convention Management	3
LEAD 210, Foundations of Leadership	3

Electives: 14-16

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Interior Design (ID) Major

Requirements for Interior Design Major, Bachelor of Science

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101 **and**

ENGL 2016

Goal #2 Oral Communication:

SPCM 101* **or** SPCM 2223

Goal #3 Social Sciences/Diversity:

PSYC 101 **and** SOC 1006

Goal #4 Arts and Humanities/Diversity:

ARTH 100 and HIST 1226

Goal #5 Mathematics:

MATH 1023

Goal #6 Natural Sciences:

GEOG 131-131L **and** GEOG 132-132L6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship:

PSYC 244 (recommended)3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:

AM 3813

College Requirements: 2

EHS 140, Enhancing Human Potential2

Major Requirements: 64-68

ID 150, Introduction to Interior Design I4

ID 150L, Introduction to Interior Design I Studio0

ID 151-151L, Introduction to Interior Design II and Lab4

ID 215-215L, Materials and Lab3

ID 222, Interior Design Studio I4

ID 223, Interior Design Studio II4

ID 224, History of Interiors4

ID 290, Seminar1

ID 317, Professional Practices in Interior Design2

ID 319-319L, Building Systems I and Lab2

ID 320-320L, Lighting and Acoustics and Lab2

ID 322, Interior Design Studio III (AW)4

ID 323, Interior Design Studio IV4

ID 329-329L, Building Systems II and Lab2

ID 422, Interior Design Studio V4

ID 423, Interior Design Studio VI4

ID 377-377L, Portfolio and Lab2

ID 480, Travel Studies(1-5)

ID 495, Practicum(1-7)

AM 242-242L, Textiles I and Lab3

ART 122, Design II Color (COM)3

Electives: 23-24

General Electives20-21

Electives in ECON, ACCT, AM, BADM, ENTR3

ID 492-592, Topics(1-3)

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Interior Design (ID) Minor

Requirements for Interior Design Minor: 18 cr

Interior Design Electives10

ID 150, Introduction to Interior Design I4

ID 150L, Introduction to Interior Design I Studio0

ID 151-151L, Introduction to Interior Design II and Lab4

Leadership (LEAD) Minor

Requirements for Leadership Minor: 18 cr

LEAD 210, Foundations of Leadership3

LEAD 310, Leadership in Context3

LEAD 410, Leadership: Senior Seminar1

LEAD 496, Field Experience: Leadership in Action2

SOC 433-533, Leadership and Organizations (COM)3

Choose one course from the following:

SPCM 201, Interpersonal Communication (COM)3

SPCM 215, Public Speaking (COM) *3

SPCM 222, Argumentation and Debate (COM) *3

SPCM 410-510, Organizational Communication (COM) (AW)2-3

SPCM 417, Political Communication (COM)3

SPCM 434, Small Group Communication (COM)3

Choose one course from the following:

MSL 302-302L, Leadership in Changing Environment and Lab (COM)3

MSL 402-402L, Leadership in a Complex World and Lab (COM)4

PHIL 220, Introduction to Ethics * ** (COM)3

PHIL 320, Professional Ethics3

PHIL 383, Bioethics (G)4

PHIL 454-554, Environmental Ethics ** (COM)3

Leadership and Management of Nonprofit Organizations (LMNO) Minor

Requirements for Leadership and Management of Nonprofit Organizations Minor: 18 cr

HDFS 210, Lifespan Development *3

(or HDFS majors take HDFS 227, 337, 347)

LMNO 201, Introduction to Leadership and Management of Nonprofit Organizations3

Choose one from the following:

BADM 460, Human Resource Management (COM)3

PSYC 331, Industrial and Organizational Psychology (COM)3

SOC 353, Sociology of Work (COM)3

Choose one from the following:

ACCT 210, Principles of Accounting I (COM)3

ACCT 406-506, Accounting for Entrepreneurs (COM)3

BADM 334, Small Business Management (COM)3

BADM 360, Organization and Management (COM)3

POLS 320, Public Administration (COM)3

Choose one from the following:

FCSE 421, Adult Education3

HDFS 355, Program Design, Implementation and Evaluation3

Choose:

MCOM 313, Publicity Methods **2 and** LMNO 486-586, Service Learning(1-3)

or MCOM 370, Advertising Principles (COM)3

or MCOM 475-575, Public Relations (COM)3

or MCOM 314, Sales, Promotion and Marketing3

Counseling and Human Development (CHD)

Jay Trenhaile, Head
Department of Counseling and Human Development
Wenona Hall 312
605-688-4190
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Faculty

Associate Professor Trenhaile, Head; Professors Britzman, Davis, Harper, Muxen, Nichols; Emeritus Professor Smith, Associate Professors H. Briddick, W. Briddick, Daniels, Oscarson, Rasmussen; Assistant Professors Bates, Fellner (HEC- WR), Gillman; Instructor Graves.

Programs

The Department offers an undergraduate major in Human Development and Family Studies. The major focuses on human development, families, 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/adult focused human services, and/or continued coursework in graduate school. Minors are available in Gerontology; Human Development and Family Studies; and Rehabilitation Services. The department also offers a number of graduate degrees such as Administration of Student Affairs, College Counseling, Community/Agency Counseling, Family and Consumer Sciences with a specialization in Child and Family Studies, Rehabilitation Counseling, and School Counseling.

Human Development and Family Studies Major

Requirements for Human Development and Family Studies Major,
 Bachelor of Science:

System General Education Requirements*: 30

Goal #1 Written Communication:
 ENGL 101 **and**
 ENGL 2016

Goal #2 Oral Communication:
 SPCM 101*4

Goal #3 Social Sciences/Diversity:
 PSYC 101, **and** SOC 1006

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:
 MATH 1023

Goal #6 Natural Sciences:
 BIOL 101-101L3

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources3
 Goal #2 Personal Wellness2-3
 Goal #3 ABS 310 **or** GERO 201 **or** SOC 1503

College Requirements: 2

EHS 140, Enhancing Human Potential2

Major Requirements: 57-61

CA 442, Family Resource Management Lab3
 ECE 227, Human Development I: Childhood3
 ECON 201, Principles of Microeconomics * (COM)3
or ECON 202, Principles of Macroeconomics * (COM) (G)3

or POLS 100, American Government * ** (COM)	3
ENGL 379, Technical Communication (AW)	3
FCSE 421, Adult Education	3
HDFS 141, Individual and the Family *	3
HDFS 150-150L, Early Experience and Lab	2
HDFS 227, Human Development and Personality I: Childhood	3
HDFS 241, Family Relations	3
HDFS 337, Human Development II: Adolescence	3
HDFS 341, Family Theories	3
HDFS 347, Human Development III: Adulthood	3
HDFS 355, Program Design, Implementation and Evaluation	3
HDFS 410/510, Parenting	3
HDFS 441, Professional Issues in Human Development and Family Studies	3
HDFS 487, Preparation for Practicum	1
HDFS 495, Practicum	(7-9)
SOC 270, Introduction to Social Work (COM)	3
SOC 307, Research Methods I	3
SOC 400, Social Policy (COM)	3
SOC 308, Research Methods II	3
or STAT 281, Introduction to Statistics (COM)	3
SPCM 201, Interpersonal Communication (COM)	3
or SPCM 460, Family Communication (COM)	3
or SPCM 470, Intercultural Communication (COM) (G)	3

Electives: 20-23

Total Required Credits: 128

Notes: A pregraduation check is required 1 semester before graduation semester. A Graduation Application must be completed at beginning of graduation semester.
 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 (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)
 ** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)
 (G) **Globalization Requirement**. (See page 46 for details.)
 (AW) **Advanced Writing Requirement**. (See page 47 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.

Human Development and Family Studies (HDFS) Minor

Requirements for Human Development and Family Studies Minor:

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 *3
 HDFS 210, Lifespan Development *3
 HDFS 227, Human Development and Personality I: Childhood3
 HDFS 241, Family Relations3
 HDFS 250, Development of Human Sexuality3
 HDFS 337, Human Development II: Adolescence3
 HDFS 347, Human Development III: Adulthood3
 HDFS 410/510, Parenting3

Gerontology (GERO) Minor

Interdisciplinary minors in Gerontology are available at the undergraduate and graduate levels. Contact the Coordinator of Gerontology, College of Education and Human Sciences, for further information on these minors.

Requirements for Gerontology Minor: 18 cr

Seminar, Topics, or Independent Study approved by the Gerontology Coordinator. The topic and credits vary by semester.

Choose 11 credits from the following Level One (Aging) courses:

BIOL 425, Biology of Aging	3
CA 442, Family Resource Management Lab.....	3
GERO 201, Introduction to Gerontology.....	3
GERO 491/591, Independent Study.....	(1-3)
GERO 492/592, Topics.....	(1-3)
HDFS 347, Human Development III: Adulthood.....	3
NURS 201, Medical Terminology.....	1
PSYC 324, Psychology of Aging **.....	3
SOC 490, Seminar (COM).....	(1-3)

Choose 7 credits from list of Levels Two and Three courses:

Students who plan to complete a gerontology minor need to contact the Gerontology Coordinator, Renee Oscarson, for a list of courses which meet Level Two and Three requirements.

(Renee.Oscarson@sdstate.edu)

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.

Note: A grade of "C" or better is required in all courses in the minor.

Rehabilitation Services Minor

Requirements for Rehabilitation Services Minor: 18 credits

Required	15
CHRD 301, Introduction to Rehabilitation.....	3
CHRD 351, Medical and Vocational Case Management.....	3
CHRD 352, Counseling Special Populations.....	3
CHRD 353, Ethics and the Helping Professions	3
CHRD 451, Individual and Group Counseling	3
Electives:	6
CHRD 452, Addictions Rehabilitation.....	3
or CHRD 453, Family Therapy	3

Criminal Justice (CJUS)

(See Sociology and Rural Studies)

Curriculum and Instruction

Andrew Stremmel, Head

Department of Teaching, Learning, and Leadership

Wenona Hall 108

605-688-6418

e-mail: andrew.stremmel@sdstate.edu

Web site: <http://learn.sdstate.edu/edgrad/programs.html>

See Graduate Catalog for requirements.

Dairy Manufacturing

(See Dairy Science)

Dairy Production

(See Dairy Science)

Dairy Science (DS)

Vikram V. Mistry, Head

Department of Dairy Science

Dairy-Microbiology Building 136

605-688-4116

fax: 605-688-6276

e-mail: vikram.mistry@sdstate.edu

Faculty

Professor Mistry, Head; Professors Hippen; Professor Emeritus Baer, Parsons; Distinguished Professor Schingoethe, Associate Professor Emeritus Henning; Associate Professors Anand, Garcia, Hassan, Kalscheur, and Metzger; Instructor Bonnemann; Lecturer Crego; Plant Manager Anderson.

Programs

Dairy Science is an application of the sciences, engineering and technology, and business for the study of milk production and processing. Dairy Science students may choose a major in Dairy Production, Dairy Manufacturing, or both. Dairy Production is the study of production of milk, management of the farm, feeding, breeding and herd health. Dairy Manufacturing is the study of processing and merchandising of milk and milk products. In addition, specialization in Science or Business is available with both majors as well as a Manufacturing-Microbiology specialization.

The Dairy Research and Training Facility (DRTF) of the Dairy Science Department houses 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 education in dairy cattle evaluation and other aspects of dairy farming. Milk produced at the DRTF is delivered to the dairy plant where it is processed into fluid milk, ice cream, butter, cheese, and other dairy products. These products are sold through the Dairy Sales Bar and used in campus dining facilities. Most students work part-time at the processing plant and/or at the DRTF. Both are opportunities for students to work part-time and gain practical experience while earning a pay. Both facilities are also extensively used for research. Students are encouraged to supplement their class instruction with summer internships and extracurricular activities. Leadership opportunities are available through participation in the Dairy Club, Dairy Cattle Judging, Intercollegiate Dairy Challenge, and Dairy Products Evaluation Teams. The Department has strong research programs in both areas. It is an active member of the Midwest Dairy Foods Research Center. Research opportunities for undergraduate students are also available.

Dairy Science degrees are designed to prepare students for a wide range of outstanding, challenging and rewarding career opportunities in both majors ranging from industry to private enterprise, government, research and others.

Dairy Manufacturing (DS) Major

Requirements for Dairy Manufacturing Major, Bachelor of Science in Agriculture

System General Education Requirements*: 31

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
ECON 202 and an additional non ECON class	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102 or	
MATH 115	3
Goal #6 Natural Sciences:	
CHEM 106-106L or	
CHEM 112-112L and	
BIOL 103-103L	7

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship:BIOL 101-101L....	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 11

Group I Electives.....	4
DS 130-130L, Introduction to Dairy Science and Lab.....	3
MICR 311-311L, Food Microbiology and Lab	4

Major Requirements: 47

ACCT 210, Principles of Accounting I (COM).....	3
AST 443-443L, Food Processing and Engineering Fundamentals and Lab.....	3 (Fall)
CHEM 108-108L, Organic and Biochemistry and Lab* (COM).....	(4, 1) or
CHEM 120-120L, Elementary Organic Chemistry and Lab*	(3, 1)
DS 101, Opportunities in Dairy Science	1
DS 202, Dairy Products Judging	1
DS 301-301L, Dairy Microbiology and Lab	3
DS 313-313L, Technical Control of Dairy Products I and Lab.....	3
DS 321-321L, Dairy Product Processing I and Lab.....	5
DS 322-322L, Dairy Product Processing II and Lab.....	5
DS 421, Dairy Plant Management	3
DS 422-422L, Technical Control of Dairy Products II and Lab	4
DS 490, Seminar (AW)	1
DS 496, Field Experience	(3-12)
MICR 231-231L, General Microbiology and Lab (COM)	4
PHYS 101-101L, Survey of Physics * (COM) and Lab.....	4 or
PHYS 111-111L, Introduction to Physics I and Lab* (COM) ..	4 or
PHYS 211-211L, University Physics I and Lab* (COM).....	4

Electives: 31

Communications Elective (to be selected from: ENGL 379; courses prefixed MCOM; courses prefixed SPCM numbered 200 or above) ..	2
ECON, BADM, STAT, ACCT or ENTR Elective, except ECON 202 and	
ACCT 210	3
NFS Elective.....	3
Other Elective.....	23

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Business Specialization Requirements: 21

ACCT 210, Principles of Accounting I (COM).....	3
BADM 360, Organization and Management (COM)	3
ECON 201, Principles of Microeconomics * (COM)	3
Plus 12 hours to be chosen from:	
ACCT 211, Principles of Accounting II (COM)	3
AGEC 354, Agricultural Marketing and Prices.....	3
BADM 280, Personal Finance (COM)	3
BADM 310, Business Finance (COM).....	3
ECON 370, Marketing.....	3
ECON 330, Money and Banking (COM).....	3
ECON 476-576, Marketing Research.....	3
STAT 281, Introduction to Statistics (COM).....	3

Science Specialization Requirements: 13

Chemistry, Mathematics and/or Physics	11
Biological Science to be selected from the following areas:	
Botany, Entomology-Zoology or Plant Pathology	2

Microbiology Specialization:

System General Education Requirements*: 32

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
ECON 202 and an additional non ECON class	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102 or	
MATH 115	3
Goal #6 Natural Sciences:	
CHEM 112-112L and	
CHEM 114-114L	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship:BIOL 101-101L....	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Specialization Requirements: 87

ACCT 210, Principles of Accounting I (COM).....	3
AST 443-443L, Food Processing and Engineering Fundamentals and Lab	3
BIOL 103-103L, Biology Survey II and Lab* (COM).....	3
BIOL 202-202L, Genetics and Organismal Biology and Lab.....	4
BIOL 204, Genetics and Cellular Biology.....	3
BIOL 204L, Genetics and Cellular Lab.....	1
CHEM 326-326L, Organic Chemistry I and Lab(COM).....	(3, 1)
CHEM 328-328L, Organic Chemistry II and Lab(COM)	(3, 1)
CHEM 464, Biochemistry I (COM)	3
CHEM 466, Laboratory Methods- Biochemistry	1
DS 101, Opportunities in Dairy Science	1
DS 130-130L, Introduction to Dairy Science and Lab.....	3
DS 202, Dairy Products Judging	1
DS 301-301L, Dairy Microbiology and Lab	3
DS 313-313L, Technical Control of Dairy Products I and Lab.....	3
DS 321-321L, Dairy Product Processing I and Lab.....	5
DS 322-322L, Dairy Product Processing II and Lab.....	5

DS 421, Dairy Plant Management	3
DS 422-422L, Technical Control of Dairy Products II and Lab	4
DS 490, Seminar (AW)	1
DS 496, Field Experience	(3-12)
MICR 311-311L, Food Microbiology and Lab	4
MICR 332, Microbial Physiology	2
MICR 332L, Microbial Physiology Lab	2
MICR 436, Molecular and Microbial Genetics	4
STAT 281, Introduction to Statistics (COM)	3

Electives: 0-4

Total Required Credits: 128

Dairy Production (DS) Major

Requirements for Dairy Production Major, Bachelor of Science in Agriculture

System General Education Requirements*: 31

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
ECON 202 and an additional non ECON class	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102 or	
MATH 115	3
Goal #6 Natural Sciences:	
CHEM 106-106L or	
CHEM 112-112L and	
BIOL 103-103L	7

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship:BIOL 101-101L.....	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 11

AGEC 271-271L, Farm and Ranch Management and Lab	4
AS 233-233L, Applied Animal Nutrition and Lab	4
PS 103-103L, Crop Production and Lab.....	3

Major Requirements: 53-54

AS 433-433L, Livestock Reproduction and Lab	3
BIOL 371, Genetics (COM).....	3
or AS332-332L, Principles of Animal Breeding and Lab.....	4
CHEM 108-108L, Organic and Biochemistry and Lab* (COM).....	(4, 1)
or CHEM 120-120L, Elementary Organic Chemistry and Lab*	(3, 1)
DS 101, Opportunities in Dairy Science	1
DS 130-130L, Introduction to Dairy Science and Lab.....	3
DS 202, Dairy Products Judging	1
DS 212, Dairy Cattle Evaluation	2
DS 301-301L, Dairy Microbiology and Lab	3
DS 411-411L, Dairy Breeds and Breeding and Lab.....	3
DS 412-412L, Dairy Farm Management and Lab	4
DS 413-513, Physiology of Lactation	3
DS 432, Dairy Cattle Feeding	3
DS 490, Seminar (AW)	1
DS 496, Field Experience	(3-12)
MICR 231-231L, General Microbiology and Lab (COM)	4
PHYS 101-101L, Survey of Physics * (COM) and Lab	4
or PHYS 111-111L, Introduction to Physics I and Lab* (COM).....	4

or PHYS 211-211L, University Physics I and Lab* (COM)	4
VET 223, Anatomy and Physiology of Domestic Animals	4
VET 223L, Anatomy and Physiology of Domestic Animals Lab.....	0

Electives: 25

Communications Elective (to be selected from: ENGL 379; courses prefixed MCOM; courses prefixed SPCM numbered 200 or above).....	2
Plant Science Elective (to be selected from PS 213-213L or 313-313L.....	3
General Electives.....	20

Total Required Credits: 128

Specializations

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 Requirements: 21

ACCT 210, Principles of Accounting I (COM).....	3
BADM 360, Organization and Management (COM)	3
ECON 201, Principles of Microeconomics * (COM)	3
Plus 12 hours to be chosen from:	
ACCT 211, Principles of Accounting II (COM)	3
AGEC 354, Agricultural Marketing and Prices.....	3
BADM 280, Personal Finance (COM)	3
BADM 310, Business Finance (COM).....	3
ECON 330, Money and Banking (COM).....	3
ECON 370, Marketing.....	3
ECON 476-576, Marketing Research.....	3
STAT 281, Introduction to Statistics (COM).....	3

Science Specialization Requirements: 13

Chemistry, Mathematics and/or Physics	11
Biological Science to be selected from the following areas:	
Botany, Entomology-Zoology or Plant Pathology	2

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Dance (DANC)

(See Communication Studies and Theatre)

(Pre-) Dental

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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. Dental schools require at least three years of college, but most now require that applicants have received their baccalaureate degree before they enter 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 three years of biology) in order to prepare the student for the Dental Admission Test (DAT). These courses do not restrict a student's ability to shift into other programs at SDSU and provide excellent career alternatives for those 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 3.5 GPA on the 4.0 scale, 2) Dental Admission Test (DAT) scores, 3) recommendation letters from faculty and employers, and 4) a personal statement describing the students' motivation for this career choice.

The Pre-Health Professional Advisor provides advising services to assist each student in developing a plan and selecting a major to best suit his or her goals.

Suggested Pre-Dental Coursework

See your Pre-Dental Adviser for a complete listing

Suggested Courses

BIOL 199-199L, First Year Seminar2
BIOL 290, Seminar1

Biology

BIOL 151-151L, General Biology I and Lab* (COM)4
BIOL 153-153L, General Biology II and Lab*4
BIOL 202-202L, Genetics and Organismal Biology and Lab4
BIOL 204-204L, Genetics and Cellular Biology and Lab4
BIOL 204L, Genetics and Cellular Lab1
BIOL 325-325L, Physiology and Lab (COM)4
MICR 231-231L, General Microbiology and Lab (COM)4

Chemistry

CHEM 112-112L, General Chemistry I and Lab* (COM)(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM)(3, 1)

Organic Chemistry

CHEM 326-326L, Organic Chemistry I and Lab(COM)(3, 1)
CHEM 328-328L, Organic Chemistry II and Lab(COM)(3, 1)

Biochemistry

CHEM 464, Biochemistry I (COM)3

CHEM 466, Laboratory Methods- Biochemistry1

Mathematics: Calculus and Statistics

MATH 121-121L, Survey of Calculus and Lab* (COM) or5
MATH 123-123L, Calculus I * and Lab (COM)5
STAT 281, Introduction to Statistics (COM)3

Physics

PHYS 111-111L, Introduction to Physics I and Lab* (COM)4
PHYS 113-113L, Introduction to Physics II and Lab* (COM)4

Dietetics

(See Health and Nutrition Sciences)

Early Childhood Education

(See Teaching, Learning and Leadership)

Ecology and Environmental Science

(See Biology and Microbiology)

Economics (ACCT, AGEC, BADM, ECON, ENTR)

David Hilderbrand, Interim Head

e-mail: david.hilderbrand@sdstate.edu

Jason Zimmerman, Assistant Head

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Department of Economics

Scobey Hall 138

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Faculty

Professor Emeritus Hilderbrand, Interim Head; Professors Beutler, Cumber, Diersen, Fausti, Janssen, Klein, Lyons, O'Brien, Pflueger, Santos, Sondey, Van der Sluis, Warmann, Zimmerman; Professors Emeriti Allen, Dobbs, Greenbaum, Kim, Lamberton, Lundeen, Murra, Peterson, Shane, Taylor, Thompson; Associate Professors Adamson, Davis, Gustafson, Langelett, Qasmi, Taylor; Assistant Professors Chang, Li, Miller, Swain, Wang; Instructors Heine, Heller; Management Specialist Davis.

Programs

The Department of Economics' teaching objectives are to:

1. present the economic principles necessary for understanding the complexities of the global economy;
2. educate students to apply economic concepts and techniques for decision-making in agricultural business, agricultural and resource economics, economics, business, and entrepreneurship; and,

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

The Department of Economics offers majors leading to:

1. a Bachelor of Science degree in Agricultural Business from the College of Agriculture and Biological Sciences.
2. a Bachelor of Science degree in Agricultural and Resource Economics from the College of Agriculture and Biological Sciences.
3. a Bachelor of Science or Bachelor of Arts degree in Economics from the College of Arts and Sciences.
4. a Bachelor of Science or Bachelor of Arts degree in Economics with a Business Specialization from the College of Arts and Sciences.
5. a Bachelor of Science degree in Entrepreneurial Studies from the College of Arts and Sciences.

Courses in the Department of Economics are offered in the following areas: Accounting (ACCT), Agricultural and Resource Economics (AGEC), Business Administration (BADM), Economics (ECON), and Entrepreneurial Studies (ENTR). See the Course Descriptions section of this catalog.

Courses in the Department of Economics are offered in the following areas: Accounting (ACCT), Agricultural and Resource Economics (AGEC), Business Administration (BADM), Economics (ECON), and Entrepreneurial Studies (ENTR). See the Course Descriptions section of this catalog.

These programs provide students with backgrounds in agribusiness, agricultural finance, banking, business finance, business management, entrepreneurship, farm and ranch management, marketing, public service, research, sales, and related fields.

Accelerated Master's Program

The Department of Economics offers an accelerated Master's program, which allows qualified students to study towards a Master's degree while completing their undergraduate degree. By combining course requirements for the Bachelor's and Master's degrees, students enrolled in the accelerated Master's program may be able to complete a Master's degree within five years.

Students may apply for admission into the accelerated Master's program as early as the end of their sophomore year, but must have a GPA of at least 3.5 in Department of Economics courses to be considered for acceptance in the accelerated program.

Students interested in the accelerated program should contact the Department of Economics graduate coordinator to obtain application requirements. Application and admission to the Graduate School is required.

Minors

The following minors are available through the Department of Economics: Accounting, Agricultural Business, Agricultural Marketing, Economics, Entrepreneurial Studies, Business, and Marketing. A minimum GPA of 2.0 over courses taken in the minor is required for each departmental minor.

Entry Requirement

Formal application is required for admission into each departmental major, except for Entrepreneurial Studies. To be admitted, students must have completed at least 64 semester credits toward graduation, earned a cumulative grade point average of at least 2.1 for all courses taken, and attained 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 remain enrolled in Pre-Economics in the appropriate college until the above requirements are met.

Accounting (ACCT) Minor

Requirements for Accounting Minor: 21 cr

ACCT 210, Principles of Accounting I (COM)	3
ACCT 211, Principles of Accounting II (COM)	3
ACCT 310, Intermediate Accounting I (COM)	3
ACCT 311, Intermediate Accounting II (COM)	3
ACCT 320, Cost Accounting (COM)	3
ACCT 430, Income Tax Accounting (COM)	3
Choose one from the following:	
ECON 201, Principles of Microeconomics * (COM)	3
ECON 202, Principles of Macroeconomics * (COM) (G)	3

Note: A minimum GPA of 2.0 is required in the minor.

Agricultural and Resource Economics (AGEC) Major

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

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, and	
ENGL 201	3
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: MATH 102	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 4

Major Requirements: 66

ACCT 210, Principles of Accounting I (COM)	3
ACCT 211, Principles of Accounting II (COM)	3
ECON 201, Principles of Microeconomics * (COM)	3
ECON 301, Intermediate Microeconomics (COM)	3
ECON 302, Intermediate Macroeconomics (COM)	3
ECON 330, Money and Banking (COM)	3
ECON 423, Statistics II (COM)	3
ECON 428, Mathematical Economics	3
ECON 472-572, Resource and Environmental Economics ** (COM)	3
AGEC 271-271L, Farm and Ranch Management and Lab	4
AGEC 354, Agricultural Marketing and Prices	3
AGEC 421-521, Farming and Food Systems Economics **	3
AGEC 478-478L, Agricultural Finance and Lab	3
AGEC 479, Agricultural Policy (AW) (G)	3
MATH 121-121L, Survey of Calculus and Lab* (COM)	5
or MATH 123, Calculus I * (COM)	4
STAT 281, Introduction to Statistics (COM)	3
Choose one of the following:	
ECON 403-503, History of Economic Thought (COM)	3
ECON 440-540, Economics of International Sector	3
ECON 450-550, Industrial Organization (COM)	3
ECON 460-560, Economic Development (G)	3
Choose one of the following:	
SPCM 201, Interpersonal Communication (COM)	3
SPCM 215, Public Speaking (COM) *	3

SPCM 222, Argumentation and Debate (COM) *.....3

Electives: 19-20

Group I Elective¹.....5

General Electives14-15

Environmental Economics Emphasis:

PS 213-213L, Soils and Lab * **2

WL 110, Environmental Conservation ** (G).....3

One of the following:

BIOL 383, Bioethics ** (G).....4

PHIL 100, Introduction to Philosophy * ** (COM)3

PHIL 383, Bioethics (G).....4

PHIL 454-554, Environmental Ethics ** (COM)3

REL 332, Environmental Ethics **3

Two of the following:

One of these courses may be substituted for ECON 428, Mathematical Economics.

ABS 475-475L, Integrated Natural Resource Management and Lab (AW).....3

PS 362-362L, Environmental Soil Management and Lab**3

PS 446-546, Agroecology (G)3

Total Required Credits: 128

Accelerated Master's Degree:

Outstanding students majoring in Agricultural and Resource Economics, Agricultural Business, Economics, or Economics with a Business specialization may complete their Baccalaureate degree and Master of Science in Economics combined in five years. Students may apply for admission to the combined program during the Fall Semester of their junior year. Those admitted as graduate students may take dual listed 400-500 level courses at the graduate (500) level during their fourth (senior) year (see below). See the SDSU Graduate Catalog or the Department's Graduate Coordinator Dr. Santos for complete details for the fifth year.

Fourth Year (Replaces Senior Year):

General Electives4-7

ECON 403-503, History of Economic Thought (COM)3

ECON 420-520, Economics of the Public Sector.....3

ECON 431-531, Managerial Economics3

ECON 440-540, Economics of International Sector3

ECON 450-550, Industrial Organization (COM)3

ECON 460-560, Economic Development (G)3

Two of the following:

ECON 403-503, History of Economic Thought (COM).....3

ECON 420-520, Economics of the Public Sector3

ECON 431-531, Managerial Economics3

ECON 440-540, Economics of International Sector3

ECON 450-550, Industrial Organization (COM)3

ECON 460-560, Economic Development (G).....3

¹ Group I courses are listed under the College of Agriculture and Biological Sciences.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Agricultural Business Major

Requirements for Agricultural Business Major, Bachelor of Science in Agriculture:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, Composition I *, and ENGL 201, Composition II *6

Goal #2 Oral Communication3

Goal #3 Social Sciences/Diversity6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics3

Goal #6 Natural Sciences6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

College Requirements: 4

Major Requirements: 56-57

ACCT 210, Principles of Accounting I (COM).....3

ACCT 211, Principles of Accounting II (COM).....3

ECON 201, Principles of Microeconomics * (COM)3

ECON 202, Principles of Macroeconomics * (COM) (G)3

ECON 301, Intermediate Microeconomics (COM).....3

ECON 302, Intermediate Macroeconomics (COM).....3

ECON 330, Money and Banking (COM)3

BADM 350, Legal Environment of Business (COM)3

BADM 360, Organization and Management (COM)3

BADM 424, Operations Research (COM).....3

AGEC 271-271L, Farm and Ranch Management and Lab4

AGEC 354, Agricultural Marketing and Prices3

AGEC 478-478L, Agricultural Finance and Lab3

AGEC 479, Agricultural Policy (AW) (G).....3

MATH 121-121L, Survey of Calculus and Lab* (COM) or5

MATH 123, Calculus I * (COM).....4

STAT 281, Introduction to Statistics (COM)3

CSC 105, Introduction to Computers (COM) or3

CSC 205, Advanced Computer Applications (COM).....3

ENGL 379, Technical Communication (AW)3

Electives: 28-30

General Electives22-23

One Additional course prefixed AGEC.....3

Electives prefixed ACCT, AGECE, BADM, or ECON3

Total Required Credits: 128

Accelerated Master's Degree

Outstanding students majoring in Agricultural and Resource Economics, Agricultural Business, Economics, or Economics with a Business specialization may complete their Baccalaureate degree and Master of Science in Economics combined in five years. Students may apply for admission to the combined program during the Fall Semester of their junior year. Those admitted as graduate students may take dual listed 400-500 level courses at the graduate (500) level during their fourth (senior) year (see below). See the SDSU Graduate Catalog or the Department's Graduate Coordinator Dr. Santos for complete details for the fifth year.

Fourth Year (Replaces Senior Year)

Adjustments to baccalaureate course requirements are as follows:

General Electives4-10

General Electives4-7

BADM 360, Organization and Management (COM)3

ECON 423, Statistics II (COM).....3

ECON 428, Mathematical Economics3

AGEC 479, Agricultural Policy (AW) (G).....	3
BADM 424, Operations Research (COM).....	3
Four of the following:	
AGEC 421-521, Farming and Food Systems Economics **	3
ECON 403-503, History of Economic Thought (COM).....	3
ECON 420-520, Economics of the Public Sector	3
ECON 431-531, Managerial Economics	3
ECON 440-540, Economics of International Sector	3
ECON 450-550, Industrial Organization (COM).....	3
ECON 460-560, Economic Development (G).....	3
ECON 472-572, Resource and Environmental Economics ** (COM)	3

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Agricultural Business Minor

Requirements for Agricultural Business Minor: 21-22 cr

AGEC 300-level or above	9
ECON 201, Principles of Microeconomics * (COM)	3
ECON 202, Principles of Macroeconomics * (COM) (G)	3
Two of the following:	
ACCT 210, Principles of Accounting I (COM).....	3
AGEC 271-271L, Farm and Ranch Management and Lab	4
AGEC 354, Agricultural Marketing and Prices.....	3
BADM 310, Business Finance (COM).....	3
BADM 350, Legal Environment of Business (COM).....	3
BADM 360, Organization and Management (COM).....	3
BADM 370, Marketing (COM).....	3
ECON 370, Marketing.....	3

Agricultural Marketing Minor

Requirements for Agricultural Marketing Minor: 21-22 cr

AGEC 354, Agricultural Marketing and Prices	3
AGEC 454, Economics of Grain and Livestock Marketing	3
BADM 370, Marketing (COM) or	3
ECON 370, Marketing	3
ECON 201, Principles of Microeconomics * (COM)	3
Three (3) of the following: 9-10 cr	
AGEC 430/530, Advanced Agricultural Marketing and Prices.....	3
AGEC 484, Trading in Agricultural Futures and Options.....	3
AGEC 479, Agricultural Policy (AW) (G)	3
AS 285-285L, Livestock Evaluation and Marketing and Lab.....	4
BADM 474, Personal Selling (COM).....	3
ECON 440-540, Economics of International Sector	3
ECON 476-576, Marketing Research.....	3

Note: A minimum GPA of 2.0 is required in the minor.

Business Area Studies

The Department of Economics offers majors in Economics, Economics with a Business Economics Specialization, Agricultural Business, Agricultural and Resource Economics, and Entrepreneurial Studies. Courses taken under Business Area Studies may supplement these majors. Business Area Studies represent a multidisciplinary collection of courses in or related to business, and include courses from accounting, agricultural and resource economics, apparel merchandizing, business administration, computer science, construction

management, economics, entrepreneurial studies, geography, mathematics, mass communications, psychology, and speech.

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.

The following group of business related courses represents offerings from all academic departments (or in cooperation with other institutions) of interest to majors in the various business related curricula of the University.

Accounting:

ACCT 310, Intermediate Accounting I (COM)	3
ACCT 320, Cost Accounting (COM)	3
ACCT 430, Income Tax Accounting (COM).....	3
ACCT 210, Principles of Accounting I (COM).....	3
ACCT 211, Principles of Accounting II (COM).....	3
ACCT 311, Intermediate Accounting II (COM).....	3

Agricultural and Resource Economics:

AGEC 352, Agricultural Law	3
AGEC 354, Agricultural Marketing and Prices	3
AGEC 473-473L, Rural Real Estate Appraisal and Lab	3
AGEC 478-478L, Agricultural Finance and Lab	3
AGEC 271-271L, Farm and Ranch Management and Lab	4
AGEC 454, Economics of Grain and Livestock Marketing	3

Design, Merchandising, and Consumer Sciences:

AM 372, Trending and Buying	3
AM 462, Retail Management.....	3
AM 473, Global Sourcing.....	3

Business Administration:

BADM 310, Business Finance (COM).....	3
BADM 334, Small Business Management (COM)	3
BADM 350, Legal Environment of Business (COM)	3
BADM 351, Business Law (COM).....	3
BADM 360, Organization and Management (COM)	3
BADM 424, Operations Research (COM).....	3
BADM 474, Personal Selling (COM).....	3
BADM 482, Business Policy and Strategy (COM)	3
BADM 483, Small Business Consulting (COM).....	(1-3)
BADM 280, Personal Finance (COM).....	3
BADM 416, Commercial Bank Management (COM).....	3

Computer Science:

CSC 330, Cobol I (COM)	3
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Economics:

ECON 467, Labor Law and Economics	3
BADM 370, Marketing (COM)	3
BADM 476-576, Marketing Research (COM)	3
ECON 330, Money and Banking (COM)	3
ECON 370, Marketing	3
ECON 476-576, Marketing Research	3

Engineering Technology and Management:

BADM 260, Principles of Production and Operations Management ..	3
CM 443, Construction Planning and Scheduling	3
MNET 260, Principles of Production and Operations Management...	3

Entrepreneurial Studies:

ENTR 336, Entrepreneurship I (COM)	3
ENTR 410, Financing Innovative Ideas	3
ENTR 438-538, Entrepreneurship II (COM).....	3

Geography:

GEOG 472, Introduction to GIS.....	3
GEOG 473-573, GIS: Data Creation and Integration.....	3

<i>Mathematics:</i>	
MATH 440, Mathematics of Finance.....	3
<i>Mass Communications:</i>	
MCOM 370, Advertising Principles (COM)	3
MCOM 313, Publicity Methods.....	2
<i>Psychology:</i>	
PSYC 331, Industrial and Organizational Psychology (COM)	3
<i>Speech:</i>	
SPCM 201, Interpersonal Communication (COM).....	3
SPCM 215, Public Speaking (COM) *	3

Business Minor¹

Requirements for Business Minor: 21 cr

Two courses from Business Area Studies ²	6
ACCT 210, Principles of Accounting I (COM).....	3
ECON 201, Principles of Microeconomics * (COM).....	3
ECON 202, Principles of Macroeconomics * (COM) (G).....	3
Two (2) of the following:	
BADM 310, Business Finance (COM).....	3
BADM 334, Small Business Management (COM).....	3
BADM 350, Legal Environment of Business (COM).....	3
BADM 360, Organization and Management (COM).....	3
BADM 370, Marketing (COM) or	3
ECON 370, Marketing	

1 This Business minor provides prerequisites for the Master of Science in Industrial Management (MSIM) offered by the Department of Engineering Technology and Management at South Dakota State University (605-688-6417). Careful course selection within this minor helps prepare for a Master's in Business Administration (MBA) offered by many business schools.

2 A minimum GPA of 2.0 is required in the minor.

Economics (ECON) Major

Requirements for Economics Major, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201	3
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: MATH 102.....	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 42-43

ACCT 210, Principles of Accounting I (COM).....	3
ACCT 211, Principles of Accounting II (COM).....	3
ECON 201, Principles of Microeconomics * (COM)	3
ECON 202, Principles of Macroeconomics * (COM) (G)	3
ECON 301, Intermediate Microeconomics (COM).....	3
ECON 302, Intermediate Macroeconomics (COM).....	3
ECON 330, Money and Banking (COM)	3
ECON 423, Statistics II (COM).....	3
ECON 428, Mathematical Economics.....	3
ECON 433, Public Finance (COM) (AW).....	3
ECON 472-572, Resource and Environmental	
Economics ** (COM).....	3

MATH 121-121L, Survey of Calculus and Lab* (COM).....	5
or MATH 123, Calculus I * (COM).....	4
STAT 281, Introduction to Statistics (COM).....	3
CSC 105, Introduction to Computers (COM).....	3
or CSC 205, Advanced Computer Applications (COM).....	3
ENGL 379, Technical Communication (AW).....	3
Choose one of the following:	
SPCM 201, Interpersonal Communication (COM).....	3
SPCM 215, Public Speaking (COM) *	3
SPCM 222, Argumentation and Debate (COM) *	3

Select one course from the following:

ECON 403-503, History of Economic Thought (COM).....	3
ECON 405, Comparative Economic Systems (COM)	(2-3)
ECON 440-540, Economics of International Sector	3
ECON 450-550, Industrial Organization (COM).....	3
ECON 460-560, Economic Development (G).....	3
Business Economics specialization: Select one 400 level course ...	
prefixed Econ – excluding internship	

Electives: 46-48

Electives in ACCT, AGECE, BADM, ECON, or ENTR, except	
ECON 101	9
Business Economics Specialization Courses or	
General Electives†	37-39

Total Required Credits: 128

Business Economics Specialization Requirements: 18

BADM 280, Personal Finance (COM).....	3
BADM 310, Business Finance (COM).....	3
BADM 334, Small Business Management (COM)	3
BADM 350, Legal Environment of Business (COM)	3
BADM 360, Organization and Management (COM)	3
BADM 370, Marketing (COM)	3
BADM 424, Operations Research (COM).....	3
BADM 482, Business Policy and Strategy (COM)	3
Three of the specialization courses can be substituted for:	
One of the electives in ACCT, AGECE, BADM, or ENTR, except ..	
ECON 101	3
ECON 423, Statistics II (COM)	3
ECON 428, Mathematical Economics.....	3

Accelerated Master's Degree:

Outstanding students majoring in Agricultural and Resource Economics, Agricultural Business, Economics, or Economics with a Business Economics specialization may complete their Baccalaureate degree and Master of Science in Economics combined in five years. Students may apply for admission into the accelerated Master's Program as early as the end of their sophomore year, but must have a GPA of at least 3.5 in Department of Economics courses to be considered for acceptance in the accelerated program. Those admitted as graduate students may take dual listed 400-500 level courses at the graduate (500) level during their fourth (senior) year (see below). See the SDSU Graduate Catalog or the Department's Graduate Coordinator Dr. Santos for complete details for the fifth year.

Adjustments to baccalaureate course requirements are as follows:

Fourth Year (Replaces Senior Year)

Business Economics Specialization Courses or General Electives	1
Business Economics Specialization Courses or General	
Electives †	4-8
ECON 423, Statistics II (COM) 3	
ECON 428, Mathematical Economics.....	3
ECON 433, Public Finance (COM) (AW).....	3
Choose four classes for Fall and four classes for Spring:	
AGEC 421-521, Farming and Food Systems Economics **	3

Requirements for Entrepreneurial Studies Major, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:
 Goal #1 Written Communication:
 ENGL 101, **and**
 ENGL 2016
 Goal #2 Oral Communication:
 SPCM 101*3
 Goal #3 Social Sciences/Diversity6
 Goal #4 Arts and Humanities/Diversity6
 Goal #5 Mathematics: MATH 102.....3
 Goal #6 Natural Sciences6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources3
 Goal #2 Personal Wellness2-3
 Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

College Requirements: 10

Biological or Physical Science8
 STAT 281 Introduction to Statistics (COM)3
 Humanities.....2

Major Requirements: 64

ECON 201, Principles of Microeconomics * (COM)3
 ECON 202, Principles of Macroeconomics * (COM) (G)3
 ACCT 210, Principles of Accounting I (COM)3
 ACCT 211, Principles of Accounting II (COM).....3
 ENTR 236, Innovation & Creativity3
 SPCM 215, Public Speaking (COM) *3
 BADM 334, Small Business Management (COM)3
 ENTR 336, Entrepreneurship I (COM)3
 BADM 370, Marketing (COM)3
 PHIL 320, Professional Ethics3
 ENTR 410, Financing Innovative Ideas3
 ENTR 438-538, Entrepreneurship II (COM).....3
 ENTR 489, Business Plan Writing and Competition (COM)1
 BADM 474, Personal Selling (COM).....3
 ENTR 483, Small Business Consulting.....3
 ENTR 494, Internship3

Choose 18 credits from the following list or choose specialization:

AM 372, Trending and Buying.....3
 AM 381, Professional Behavior at Work.....3
 AM 462, Retail Management3
 BADM 260, Principles of Production and Operations Management3
 BADM 350, Legal Environment of Business (COM).....3
 BADM 460, Human Resource Management (COM).....3
 CA 230, Consumer Behavior.....3
 ENTR 202, Human Resource Operations in Entrepreneurship.....1
 ENTR 203, Intellectual Property in Entrepreneurship1
 ENTR 204, Finance/ Venture Capital in Entrepreneurship1
 ENTR 205, Legal Issues/Business Structure/Risk Management ...1
 ENTR 206, Taxation in Entrepreneurship1
 ENTR 207, Financial Analysis/Record Keeping/Accounting in Entrepreneurship.....1
 ENTR 208, E commerce in Entrepreneurship1
 ENTR 301, Marketing/Promotion in Entrepreneurship1
 ENTR 302, International & Global Marketing in Entrepreneurship1
 ENTR 304, Strategy/Pricing/Location in Entrepreneurship1
 ENTR 305, Selling in Entrepreneurship.....1
 ENTR 306, The Harvest in Entrepreneurship1
 ENTR 320, Principles and Practices of Social Entrepreneurship ..3
 MCOM 370, Advertising Principles (COM)3

SOC 433-533, Leadership and Organizations (COM)3
 SOC 353, Sociology of Work (COM).....3

Electives: 16-18

Total Required Credits: 128

Social Entrepreneurship Specialization Requirements: 18

SOC 150, Social Problems * ** (COM) (G)3
 LMNO 201, Introduction to Leadership and Management of Nonprofit Organizations3
 CA 230, Consumer Behavior3
 ENTR 320, Principles and Practices of Social Entrepreneurship.....3
 Choose 6 credits from the following list:
 PSYC 331, Industrial and Organizational Psychology (COM).....3
 SOC 240, The Sociology of Rural America* ** (COM) (G).....3
 SOC 353, Sociology of Work (COM)3
 SOC 433-533, Leadership and Organizations (COM)3
 SOC 440, Urban Sociology ** (COM) (G)3

Technology Management Specialization Requirements: 20

GE 121, Engineering Design Graphics I1
 GE 123, Computer Aided Drawing.....1
 BADM 260, Principles of Production and Operations Management3
 GE 231, Technology and Society3
 GE 425-525, Occupational Safety and Health Management.....3
 MNET 460, Manufacturing Cost Analysis3
 MNET 462, Quality Management3
 GE 469-469L, Project Management and Lab3

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Entrepreneurial Studies Minor

Requirements for Entrepreneurial Studies Minor: 22 cr

BADM 334, Small Business Management (COM)3
 BADM 370, Marketing (COM)3
 BADM 474, Personal Selling (COM)3
 ENTR 336, Entrepreneurship I (COM)3
 ENTR 438-538, Entrepreneurship II (COM).....3
 ENTR 489, Business Plan Writing and Competition (COM).....1 Credits / Units: 1

Choose from the following:

ACCT 210, Principles of Accounting I (COM)3
 ACCT 211, Principles of Accounting II (COM) **or**3
 ACCT 406-506, Accounting for Entrepreneurs (COM) **or**.....3

Note: A minimum GPA of 2.0 is required in the minor.

Entrepreneurship Certificate

The Entrepreneurship Certificate offers specialized courses enabling individuals to gain the skills to start their own businesses and pursue entrepreneurial product and service development ideas.

All courses are offered through interactive video at networked sites across South Dakota and are scheduled during evenings and/or weekends. The courses are usually four to six weeks long and offer a practical side of the different aspects of entrepreneurship.

To obtain the Certificate in Entrepreneurship, students are required to take ten of the twelve one-credit courses. Generally, three courses are offered each semester on a two-year rotation.

Electrical Engineering and Computer Science (EE, CSC, SE)

Steven Hietpas, Acting Head
Department of Electrical Engineering and Computer Science
Electrical Engineering and Computer Science Building 214
605-688-4526
e-mail: steven.hietpas@sdstate.edu
Web site: <http://eecse.sdstate.edu/>

For more information regarding the programs offered within this department please refer to the Electrical Engineering, Computer Science, or Software Engineering majors.

Electrical Engineering (EE)

Faculty

Professor Hietpas, Acting Head; Professors A. Andrawis, M. Andrawis, Brown, Galipeau, Helder; Professors Emeriti Ellerbruch, Knabach, Sander; Associate Professor Fourney, Tan, Assistant Professors Baroughi, Bayat, Bommisetty, He, Qiao, Yan.

Program

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, control systems, alternative energy and power systems.

The mission of the Electrical Engineering program 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.

As a practicing electrical engineer, three years or more into their career, our alumni will:

1. Have achieved increases in duties and responsibilities within their positions and/or have been promoted to new positions.
2. Have achieved advanced studies in electrical engineering or other engineering/ professional fields.

The program begins the first year developing a strong foundation in mathematics, science, and communications. Following this are two intensive years of study in circuit theory, electronics, signal and system theory, material science, and digital systems/microprocessors. The capstone of the program is Senior Design I-II, a two-semester sequence taken in the senior year, that places every student on a team that designs, builds, tests, and demonstrates a significant electrical engineering project. The projects are often in collaboration with industry and provide students valuable “real world” team design experience.

Academic and Graduation Requirements

Realizing that each student is an individual, the degree program is arranged to include 28 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. Students will be admitted into junior level EE courses only after they have completed EE 220, 220L, 221, 221L, 245 and 245L with minimum grades of “C.” Students will not be permitted to enroll in subsequent courses for which

Required Courses for the Certificate-choose 10 of the following 12

ENTR 202, Human Resource Operations in Entrepreneurship	1
ENTR 203, Intellectual Property in Entrepreneurship	1
ENTR 204, Finance/ Venture Capital in Entrepreneurship.....	1
ENTR 205, Legal Issues/Business Structure/Risk Management.....	1
ENTR 206, Taxation in Entrepreneurship.....	1
ENTR 207, Financial Analysis/Record Keeping/Accounting in Entrepreneurship	1
ENTR 208, E commerce in Entrepreneurship	1
ENTR 301, Marketing/Promotion in Entrepreneurship.....	1
ENTR 302, International & Global Marketing in Entrepreneurship	1
ENTR 304, Strategy/Pricing/Location in Entrepreneurship	1
ENTR 305, Selling in Entrepreneurship	1
ENTR 306, The Harvest in Entrepreneurship.....	1

Marketing Minor

David Hilderbrand, Interim Head

Department of Economics

Scobey Hall 138

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Requirements for Marketing Minor: 18 cr

ECON 370, Marketing or

BADM 370, Marketing (COM)

MCOM 370, Advertising Principles (COM)

Choose one from the following:

ECON 476-576, Marketing Research.....

MCOM 472, Media Research and Planning (COM).....

Elective Courses: (9 credits from this list)

AM 462, Retail Management.....

BADM 334, Small Business Management (COM)

BADM 474, Personal Selling (COM).....

HMGMT 482, Hospitality Marketing

MCOM 314, Sales, Promotion and Marketing.....

MCOM 474-574, Media Administration and Management (COM)....

MCOM 475-575, Public Relations (COM)

MCOM 476, International and Ethnic Advertising

Note: A minimum GPA of 2.0 is required in the minor.

EE 220, EE 221, or EE 245 is a prerequisite until the above requirement has been met. Students must also pass all junior electrical engineering courses (with the exception of EE 385) prior to taking EE 464 (Senior Design I). 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 required to take the Fundamentals of Engineering examination which leads to professional registration.

The non-technical (18), technical (10 EE 400 level), and required (108) credits comprise the 136 credit degree. The 18 required non-technical electives must be from a list of approved courses to meet graduation requirements. To meet the 12 credits of the South Dakota Regental System's General Education requirements, students are required to take a minimum of six approved credits in Social Science/Diversity (SGR Goal 3) and six approved credits in Humanities and Arts/Diversity (SGR Goal 4). To meet the six credits of the Institutional Graduation requirements, students are required to take a minimum of three approved credits in Social Responsibility/ Cultural and Aesthetic Awareness (IGR Goal 1) and three approved credits in Land and Natural Resources (IGR Goal 3).

The 10 required technical electives must be from Electrical Engineering courses at the 400 level. These may be selected from specialization areas: Biomedical, Communications, Computers, Electronic Devices, Image Processing, or Power Systems.

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 and Computer Science provides assistance to students desiring this practical experience. The Department also provides assistance in resume preparation and job placement.

Electrical Engineering (EE) Major

Requirements for Electrical Engineering Major, Bachelor of Science in Electrical Engineering:

System General Education Requirements*: 33

Goal #1 Written Communication:

ENGL 101, **and**

ENGL 277.....6

Goal #2 Oral Communication:

SPCM 101*.....3

Goal #3 Social Sciences/Diversity6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:

MATH 1234

Goal #6 Natural Sciences:

CHEM 112-112L, **and**

PHYS 211-211L.....8

Institutional Graduation Requirements**: 8

Goal #1 Land and Natural Resources3

Goal #2 Personal Wellness2

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

College Requirements: 28

GE 101, Introduction to Engineering and Technology1

MATH 125, Calculus II * (COM).....4

MATH 225, Calculus III * (COM)4

MATH 331, Advanced Engineering Mathematics3

MATH 321, Differential Equations (COM).....3

PHYS 213-213L, University Physics II and Lab * (COM).....4

ME 314, Thermodynamics.....3

CSC 218, Introduction to C/C++/Unix for Engineers3

CSC 317, Computer Organization and Architecture (COM).....3

Major Requirements: 53

EE 102, Introduction to Electrical Engineering II.....1

EE 220-220L, Circuits I and Lab (COM).....4

EE 222-222L, Circuits and Machines and Lab.....4

EE 245-245L, Digital Systems and Lab4

EE 260, Electronic Materials3

EE 310, Probabilistic Methods in Electrical Engineering3

EE 316, Signals and Systems I (COM)3

EE 320-320L, Electronics I (COM).....4

EE 347-347L, Microcontroller Systems Design and Lab.....4

EE 360, Electronic Devices3

EE 315, Linear Control Systems.....3

EE 317, Signals and Systems II (COM)3

EE 321-321L, Electronics II and Lab4

EE 385, Electromagnetics4

EE 422, Engineering Economics and Management2

EE 464-464L, Senior Design I and Lab(COM).....2

EE 465-465L, Senior Design II and Lab(COM) (AW)2

Technical Electives: 14

All EE majors are strongly advised to select technical electives in a coherent manner to meet desired professional/employment goals. Fourteen (14) approved EE technical elective credits are required to complete the program, and they must all be EE-400 Level. Some suggested areas of emphasis are listed below, which also identify courses outside of EE (courses outside of EE do not apply toward the required 14 technical elective credits). Thus, students are not required to take all courses in an emphasis area. Following are some suggested areas and supporting courses.

Biomedical Engineering Emphasis:

BIOL 221-221L, Human Anatomy and Lab(COM)4

BIOL 325-325L, Physiology and Lab (COM).....4

EE 420-420L/520-520L, Electronics III and Lab.....4

EE 450-550, Biomedical Signal Processing3

EE 454-554, Biomedical Instrumentation and Electrical Safety.....3

Communications and Advanced Electronics Emphasis:

CSC 474/574, Computer Networks3

EE 420-420L/520-520L, Electronics III and Lab.....4

EE 424-524, RF Electronics3

EE 470, Communications Engineering.....3

EE 471-471L/571-571L, Fiber Optic Communications and Lab4

PHYS 361, Optics (COM)3

Computers-Digital Hardware Emphasis:

CSC 474/574, Computer Networks3

EE 420-420L/520-520L, Electronics III and Lab.....4

EE 440-440L/540-540L, VLSI Design and Lab (COM).....3

EE 492-592, Topics (COM)(1-3)

MATH 373, Introduction to Numerical Analysis (COM).....3

Electronic Devices and Materials Emphasis:

CHEM 342-342L, Physical Chemistry I and Lab (COM) (AW).....(3, 1)

CHEM 344-344L, Physical Chemistry II and Lab (COM)(3, 1)

EE 424-524, RF Electronics3

EE 440-440L/540-540L, VLSI Design and Lab (COM).....3

EE 460-460L/560-560L, Sensor Theory and Design and Lab3

EE 491, Independent Study (COM).....(1-3)

EE 492-592, Topics (COM)(1-3)

PHYS 331, Introduction to Modern Physics (COM).....3

PHYS 361, Optics (COM)3

PHYS 439-539, Solid State Physics (COM)	4
PHYS 471-571, Quantum Mechanics (COM)	4

Image Processing Emphasis:

EE 470, Communications Engineering	3
EE 475-575, Digital Image Processing	3
MATH 373, Introduction to Numerical Analysis (COM)	3
PHYS 361, Optics (COM)	3

Power Systems Emphasis:

CEE 482, Engineering Administration	3
EE 434-434L, Power Systems and Lab	4
EE 436-536, Applied Photovoltaics	3
EE 436L-536L, Applied Photovoltaics Lab	1
EE 470, Communications Engineering	3
EE 492-592, Topics (COM)	(1-3)
MATH 315, Linear Algebra (COM)	4
MATH 373, Introduction to Numerical Analysis (COM)	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 497. A formal work plan must be approved by the Electrical Engineering program coordinator prior to the work experience. Further information can be found in the Program's Cooperative Education policy, located on the program's Web site.

Total Required Credits: 136

- * The 30 credit Board of Regents System General Education Requirements (SGRs).
- ** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs).

(G) Globalization Requirement.

(AW) Advanced Writing Requirement.

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 Science (CSC)

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Electrical Engineering and Computer Science Building 214

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Web site: <http://eecse.sdstate.edu/CS>

Faculty

Professors: Salehnia, Shin; Professor Emeritus Bergum; Associate Professors: Fournery, Hamer, Svec; Assistant Professors: Ezenwoye, Liu, Min, Wang; Instructors: Cooley, Gamradt, Gibbons, Kurtenbach, Prohaska

Programs

The Program is structured to serve students in three ways:

1. The program provides educational opportunities so that all students on campus can receive educational literacy in computers.
2. The Program offers a Bachelor of Science degree in Computer Science as well as a degree for Secondary Computer Science teachers. A Certificate Program in Computer Applications sponsored by the Department can be obtained through Capital University Center, Pierre. Computer Science majors must earn at least a "C" in all computer science/software engineering courses. Applied electives should be chosen so as to provide the student with a strong background for 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.

3. For those students who need more support courses, a Computer Science minor is offered. The minor requires three programming courses which permit 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 Program two semesters before graduation. Failure to meet the deadline may disqualify you from receiving a minor.

Students interested in the Certificate Program in Computer Applications should visit with the Dean of Continuing and Extended Education on the SDSU campus or with the Director of the Certificate Program in Computer Applications at Capital University Center in Pierre.

Computer Science (CSC) Major

Requirements for Computer Science Major, Bachelor of Science in Computer Science:

System General Education Requirements*: 33

Goal #1 Written Communication:

ENGL 101, and	
ENGL 277	6

Goal #2 Oral Communication:

SPCM 101*	3
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Goal #3 Social Sciences/Diversity

Goal #4 Arts and Humanities/Diversity

Goal #5 Mathematics:

MATH 123	4
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Goal #6 Natural Sciences²:

PHYS 111-111L, and PHYS 113-113L, or	8
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PHYS 211-211L, and PHYS 213-213L, or	8
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CHEM 112-112L, and CHEM 114-114L, or	8
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BIOL 153-153L, and BIOL 151-151L	8
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Institutional Graduation Requirements: 8**

Goal #1 Land and Natural Resources

Goal #2 Personal Wellness

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness

College Requirements: 27

Natural Science²

GE 101, Introduction to Engineering and Technology

MATH 125, Calculus II * (COM)

MATH 253, Logic, Sets, and Proof

MATH 215, Matrix Algebra

MATH 316, Discrete Mathematics (COM)

MATH 373, Introduction to Numerical Analysis (COM)

EE 245-245L, Digital Systems and Lab

STAT 281, Introduction to Statistics (COM)

Major Requirements: 45

CSC 150, Computer Science I (COM)

CSC 250, Computer Science II (COM)

CSC 300, Data Structures (COM)

CSC 314, Assembly Language (COM)

CSC 317, Computer Organization and Architecture (COM)

CSC 346, Object Oriented Programming (COM)

CSC 354, Introduction to Systems Programming

CSC 445, Introduction to Theory of Computation (COM)

CSC 303, Ethical and Security Issues in Computing (G)

CSC 446, Compiler Construction

CSC 456, Operating Systems (COM)

CSC 461, Programming Languages (COM)

CSC 470, Software Engineering (COM)

CSC 484, Database Management Systems (COM)	3
CSC 485, Software Engineering II (AW)	3

Electives¹: 15

Applied Electives	12
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Total Required Credits: 128

- 1 Courses numbered 300 or above, at least 9 of the credits from CSC and SE courses, the rest may be from a support discipline and must support a coherent field of study.
- 2 PHYS 111-111L, Introduction to Physics I and Lab, and *
 PHYS 113-113L, Introduction to Physics II and Lab or *
 PHYS 211-211L, University Physics I and Lab, and *
 PHYS 213-213L, University Physics II and Lab or *
 CHEM 112-112L, General Chemistry I and Lab, and *
 CHEM 114-114L, General Chemistry II and Lab or *
 BIOL 151-151L, General Biology I and Lab, and *
 BIOL 153-153L, General Biology II and Lab *

Computer Networking Emphasis

The Computer Science Program 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 Networking Emphasis should take the following

courses:

Note: A maximum of 3 credits of EET coursework (30+ level) may be applied to electives.

CSC 474/574, Computer Networks	3
EET 252-252L, Electricity and Electronics II and Lab	3
EET 370-370L, Computer Systems and Lab	4
EET 472-472L, Networking I and Lab	4
EET 474-474L, Networking II and Lab	4

Game Programming Emphasis

The Computer Science program offers an emphasis in game programming. This emphasis deals with a wide range of both hardware and software related topics relating to game development. The Game Programming course will provide the students with an understanding of some of the tools used in game development such as C/C++, DirectX and OpenGL. The Artificial Intelligence course will provide the students with a foundation that will allow the students to understand how games can make effective decisions based upon the current game state. The Computer Networks course will provide the students with a foundation that will allow the students to understand how to deal with multiplayer LAN and WAN based games. The Microcontroller Systems Design course will provide the students with a foundation that will allow the students to understand how to communicate with the microcontrollers found inside of console and handheld gaming systems. The Embedded Systems Programming course will provide the students with a foundation that will allow students to understand how to develop games for console and handheld gaming systems. Students interested in the Game Programming Emphasis are encouraged to take courses from the list of elective courses below.

CSC 450/550, Game Programming	3
CSC 447/547, Artificial Intelligence (COM)	3
CSC 474/574, Computer Networks	3
EE 347-347L, Microcontroller Systems Design and Lab	4
SE 440, Embedded Systems	3

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 205, Advanced Computer Applications (COM).....	3
CSC 325, Management Information Systems (COM)	3
CSC 474/574, Computer Networks	3
CSC 484, Database Management Systems (COM).....	3

Software Engineering Emphasis

The Computer Science Program offers an emphasis in Software Engineering. This emphasis deals with the engineering design aspects of software such as quality control, software assurance, requirements and specifications as well as the human-machine interface. Students interested in the Software Engineering Emphasis should take the courses below.

SE 320, Software Requirements and Formal Specifications (AW)	3
SE 330, Human Factors and User Interface (G).....	3
SE 410, Software Test and Quality Assurance	3
SE 440, Embedded Systems	3

- * The 30 credit Board of Regents System General Education Requirements (SGRs).
- ** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs).
- (G) Globalization Requirement.
- (AW) Advanced Writing Requirement.
 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 Science (CSC) Minor

Requirements for Computer Science Minor: 21 cr

Applied Electives [†]	12
CSC 150, Computer Science I (COM)	3
CSC 250, Computer Science II (COM).....	3
CSC 300, Data Structures (COM)	3

[†] Courses numbered 300 or above with at least 9 of the credits from CSC and SE courses. 3 credits from one's discipline may be used subject to approval by adviser and department head.

Software Engineering (SE)

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Faculty

Professors: Salehnia, Shin; Associate Professors: Fourney, Hamer;
 Assistant Professors: Ezenwoye, Liu, Min, Wang.

Program

Software Engineering combines the principles of engineering with the science of computing. The Software Engineering Curriculum is designed to provide students with a broad background of knowledge related to software, its development, architecture, configuration, revision, human interface, and quality assurance. Software Engineering is the application of engineering concepts, methods and tools to the development of software systems.

The mission of the program is to offer a Bachelor of Science degree in Software Engineering providing 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 Software Engineering Program, under the Department of Electrical Engineering and Computer Science at SDSU, has adopted the following ABET Program Educational Objectives (Criterion 2) for the training of our undergraduates pursuing the Bachelor of Science in Software Engineering:

Objectives

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

As a practicing software engineer three years or more into their career, our alumni will:

- Have achieved higher levels of competency through advanced studies in software engineering or other engineering/professional fields.
- Have achieved advancement in an engineering/professional career path to positions of greater responsibility.

The program begins in the first year by developing abilities in mathematics, science, communications and basic programming skills. Following this are two years of intense study in software engineering topics. A two-semester capstone 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.

Software Engineering students must earn at least a “C” in all software engineering and computer science courses. Technical/applied electives should be chosen to provide depth of study in an emphasis area. The choice of such courses should be discussed with the major advisor.

Software Engineering (SE) Major

This program will be discontinued beginning fall 2011.

System General Education Requirements*: 33

Goal #1 Written Communication:

ENGL 101, and

ENGL 277.....6

Goal #2 Oral Communication.....3

Goal #3 Social Sciences/Diversity.....6

Goal #4 Arts and Humanities/Diversity.....6

Goal #5 Mathematics:

MATH 123.....4

Goal #6 Natural Sciences:

PHYS 211-211L, and

PHYS 213-213L.....8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources.....3

Goal #2 Personal Wellness.....2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

College Requirements: 57

GE 101 - Introduction to Engineering and Technology.....	1
MATH 125 - Calculus II * (COM).....	4
MATH 253 - Logic, Sets, and Proof.....	3
MATH 215 - Matrix Algebra.....	2
MATH 316 - Discrete Mathematics (COM).....	3
MATH 321 - Differential Equations (COM).....	3
CSC 150 - Computer Science I (COM).....	3
CSC 250 - Computer Science II (COM).....	3
CSC 300 - Data Structures (COM).....	3
CSC 314 - Assembly Language (COM).....	3
CSC 354 - Introduction to Systems Programming.....	3
CSC 456 - Operating Systems (COM).....	3
CSC 461 - Programming Languages (COM).....	3
CSC 484 - Database Management Systems (COM).....	3
EE 245-245L - Digital Systems and Lab.....	4
EE 300-300L - Basic Electrical Engineering I and Lab.....	3
EE 302-302L - Basic Electrical Engineering II and Lab.....	3
EE 347-347L - Microcontroller Systems Design and Lab.....	4
STAT 381 - Introduction to Probability and Statistics (COM).....	3

Major Requirements: 34

Applied or Technical Elective.....	9††
SE 305 - Foundation of Software Engineering.....	3
SE 320 - Software Requirements and Formal Specifications (AW)....	3
SE 340 - Software Architecture.....	3
SE 330 - Human Factors and User Interface (G).....	3
SE 420 - Software Project Management.....	3
SE 410 - Software Test and Quality Assurance.....	3
SE 464 - Senior Design I.....	2
SE 465 - Senior Design II.....	2
SE 440 - Embedded Systems.....	3

Total Required Credits: 132

Computer Science Emphasis:

The Software Engineering Program offers an emphasis in Computer Science. This emphasis helps Software Engineering students to enhance their understanding of foundations of compiler construction as well as the graphical user-interface programming environments. Students interested in the Computer Science Emphasis should take the courses below:

CSC 303 - Ethical and Security Issues in Computing (G).....	3
CSC 346 - Object Oriented Programming (COM).....	3
CSC 422 - GUI Programming (COM).....	3
CSC 445 - Introduction to Theory of Computation (COM).....	3
CSC 446 - Compiler Construction.....	3

Six of the nine applied or technical elective credits must be SE coursework.

Software Engineering majors must earn at least a “C” in all software engineering and computer science courses (all courses with the SE and CSC prefix).

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Engineering Mechanics (EM)

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Course objectives in Engineering Mechanics are to develop an educational background by 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.

Electronics Engineering Technology (EET)

(See Engineering Technology and Management)

Engineering Physics

(See Physics)

Engineering Technology and Management (ETM) Department

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e-mail: teresa.hall@sdstate.edu

Faculty

Professor Hall, Head; Professor Lu; Professors Emeriti Heusinkveld, Skubic, Sorensen; Associate Professors Garry, Pannell, Qian; Assistant Professors Steinlicht, M. Tolle, Instructors Bertolini, Nusz-Chandler, Sternhagen, Visser, Yordanova.

Programs

The Department of Engineering Technology and Management offers five Bachelor of Science degree programs which include Construction Management (CM), Electronics Engineering Technology (EET), Industrial Management (IM), Manufacturing Engineering Technology (MNET), Each program offers the student a combination of practical, applications-based and technology management courses. Programs in the

ETM Department are developed and continuously updated to enhance career opportunities for students enrolled in these programs. The Department also offers and coordinates a Master's program in Industrial Management (MSIM). For more information about the MSIM, please see the Graduate Catalog.

Additional program information is available from the department office.

Construction Management (CM)

Program Coordinator: Pat Pannell, 605-688-6417
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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 exit exam for the CM program is the Certified Professional Constructor (CPC) Level 1 exam from the American Institute of Constructors Certification Commission. Students must take this exam and earn C or better in selected core courses in the program prior to graduation. The CM program is accredited by the American Council for Construction Education (ACCE) which is the accreditation body for construction management programs.

Electronics Engineering Technology (EET)

Program Coordinator: Byron Garry, 605-688-6417
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Electronics and computers permeate every part of our lives, and will continue to grow in importance and in complexity. This growth can provide exciting, challenging, and rewarding career opportunities for forwardlooking 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 mission of the EET program at SDSU is to provide the student a solid foundation in electronics, with 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 the student for lifelong learning.

EET program 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. Graduates secure jobs in computer network installation and administration, electronics design, production support, customer support, and test engineering. 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. Students learn fundamental electronics technology applications and theory during the first two years of their program. During the last half of the program, students focus on one of three emphasis areas: business, computer networking, or industrial electronics. The computer networking emphasis is designed to prepare students to work with the installation of new systems, and the maintenance of existing Local-Area-Networks (LANs), resolving hardware and software issues. An emphasis is placed on the complete system, including management of the system, personnel, and information exchanged.

Cooperative Education Program:

Students have the opportunity to work in industry and receive technical elective credit for the experience through EET 497. A formal work plan must be approved by the Program Coordinator of Electronics Engineering Technology prior to the work experience. Further information can be found in the Program's Cooperative Education policy.

General Engineering (GE)

The ETM department also delivers the non-degree General Engineering program for the College of Engineering. The General Engineering program provides advising for students who are undecided in their choice of a specific engineering, engineering technology, or industry-related management major. Students in the GE program take fundamental courses required in most programs in the College of Engineering while considering their options. Guidance is also provided for those students who are not pursuing engineering or related degree programs but wish to establish a fundamental understanding in a technical area.

General Engineering (GE) Service Courses

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

Industrial Management (IM)

Program Coordinator: Teresa Hall, 605-688-6417
e-mail: teresa.hall@sdstate.edu

The Industrial Management Bachelor of Science degree program prepare students to transfer their knowledge of technology, engineering, manufacturing management, and business principles to provide technical managerial support for industrial and related business. Individuals selecting the Industrial Management program will be able to apply production/operations management, logistics, lean manufacturing principles, and engineering technology applications to improve workplace productivity, serve as liaison between engineering and management functions, and/or manage projects.

Manufacturing Engineering Technology (MNET)

Program Coordinator: Carrie Steinlicht, 605-688-6417
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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 forwardlooking students in Manufacturing Engineering Technology (MNET). 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 mission of the MNET program is to 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.

The MNET program provides the students with the opportunity to learn 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 areas such as quality, supervision, production planning, product and process design, work design, plant layout, and plant management. The exit exam for the MNET program is the Certified Manufacturing Technologist (CMfgT) exam from the Manufacturing Engineering Certification Institute of the Society of Manufacturing Engineers. Students must take this exam and must earn a C or better in all MNET courses to qualify for graduation. The Manufacturing Engineering Technology curriculum at South Dakota State University has been developed using guidelines provided by the National Center of Excellence for Advanced Manufacturing Education, the Society for Manufacturing Engineers, and input from regional manufacturing businesses. The MNET program is fully accredited by the Accreditation Board for Engineering and Technology – Technology Accreditation Commission (ABET-TAC).

Construction Management (CM) Major

Requirements for Construction Management Major, Bachelor of Science in Construction Management:

System General Education Requirements*: 34

Goal #1 Written Communication:

ENGL 101, **and**
ENGL 2776

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity:

ECON 2016

Goal #4 Arts and Humanities/Diversity:

PHIL 2206

Goal #5 Mathematics:

MATH 121-121L5

Goal #6 Natural Sciences:

PHYS 111-111L, **and**
CHEM 106-106L8

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness3

Major Requirements: 68

GE 121, Engineering Design Graphics I1

ACCT 210, Principles of Accounting I (COM)3

CM 101, Introduction to Construction1

MATH 102, College Algebra * (COM)3

MATH 120, Trigonometry * (COM)3

ACCT 211, Principles of Accounting II (COM)3

CSC 105, Introduction to Computers (COM)3

GE 101, Introduction to Engineering and Technology1

GE 123, Computer Aided Drawing1

MSL 102, Introduction to Tactical Leadership (COM)1

CM 216, Construction Materials3

CM 232-232L, Cost Estimating and Lab3

ECON 202, Principles of Macroeconomics * (COM) (G)	3
CM 210-210L, Construction Surveying and Lab	3
STAT 281, Introduction to Statistics (COM)	3
BADM 360, Organization and Management (COM)	3
CM 333, Mechanical, Electrical, Plumbing Systems	3
CM 332, Building Construction Methods and Systems	3
CM 374, Heavy Construction Methods and Systems	3
CM 353-353L, Construction Structures and Lab	3
BADM 350, Legal Environment of Business (COM)	3
CM 400, Risk Management and Construction Safety	3
CM 443, Construction Planning and Scheduling	3
CM 410, Construction Project Management and Supervision	3
CM 473, Construction Law and Accounting (AW)	3
CM 320-320L, Construction Soil Mechanics and Lab	3
or PS 243, Principles of Geology* **	3

Electives: 18

Tech Elective Construction	9
Tech Elective Construction Science	6
Tech Elective Business & Management	6

Total Required Credits: 128

Students in the Construction Management Program will be required to maintain a minimum cumulative GPA of 2.25. 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. With proper planning, the students can fulfill the Business minor requirements and without exceeding the 128 credits required for Construction Management majors.

Cooperative Education Program

Students have the opportunity to work in industry and receive technical elective credit for the experience through CM 497. A formal work plan must be approved by the Program Coordinator of Construction Management prior to the work experience. Further information can be found in the Program's Cooperative Education policy.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Electronics Engineering Technology (EET) Major

This program will be discontinued beginning fall 2011.

System General Education Requirements*: 32

Goal #1 Written Communication:	
ENGL 101, and ENGL 277 (preferred) or	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
ECON 202	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102	3
Goal #6 Natural Sciences:	
PHYS 111-111L and	
PHYS 113-113L	8

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 1

GE 101, Introduction to Engineering and Technology	1
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Major Requirements: 67

GE 121, Engineering Design Graphics I	1
GE 123, Computer Aided Drawing	1
CSC 105, Introduction to Computers (COM)	3
or CSC 205, Advanced Computer Applications (COM)	3
CSC 150, Computer Science I (COM)	3
MATH 121-121L, Survey of Calculus and Lab* (COM)	5
STAT 281, Introduction to Statistics (COM)	3
MNET 260, Principles of Production and Operations Management	3
MNET 462, Quality Management	3
EET 118-118L, DC and AC Concepts and Lab	6
EET 122-122L, Introductory Circuits and Lab	4
EET 220-220L, Advanced Circuits and Lab	4
EET 230-230L, Introductory Digital and Lab	4
EET 232-232L, Advanced Digital and Lab	4
EET 320-320L, Analog Devices and Lab	4
EET 330-330L, Microprocessors and Lab	4
EET 370-370L, Computer Systems and Lab	4
EET 380-380L, Prototype Techniques and Lab	4
EET 426-426L, Communication Systems and Lab	4
EET 470-470L, Project Management and Lab (AW)	2
EET 471-471L, Capstone Experience and Lab (AW)	1

Electives: 15 - 17

Choose one of three Technical Emphasis Electives Areas:

Computer Networking Emphasis:

EET 472-472L, Networking I and Lab	4
EET 474-474L, Networking II and Lab	4
Choose 3 courses from the following:	
CSC 250, Computer Science II (COM)	3
CSC 300, Data Structures (COM)	3
CSC 325, Management Information Systems (COM)	3
CSC 474/574, Computer Networks	3

Manufacturing and Industrial Automation Emphasis:

MNET 451-451L, Industrial Electronics and Control and Lab	3
MNET 453-453L, Manufacturing Automation and Lab	3
MNET 231-231L, Manufacturing Processes I and Lab	3
MNET 334-334L, CAM/CNC and Lab	3
MNET 350-350L, Fluid Power Technology and Lab	3

Business Minor:

Choose additional courses needed to fulfill the Requirements for the Business Minor offered through the Economics Department	9
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Total Required Credits: 128

Cooperative Education Program:

Students have the opportunity to work in industry and receive technical elective credit for the experience through EET 497. A formal work plan must be approved by the Program Coordinator of Electronics Engineering Technology prior to the work experience. Further information can be found in the Program's Cooperative Education policy.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Industrial Management (IM) Major

Requirements for Industrial Management Major, Bachelor of Science in Industrial Management

System General Education Requirements*: 34

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 277	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
ECON 202, and	
SOC 100	6
Goal #4 Arts and Humanities/Diversity:	
PHIL 220, student selection.....	6
Goal #5 Mathematics:	
MATH 115	5
Goal #6 Natural Sciences:	
CHEM 106-106L, and	
PHYS 101-101L.....	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness: WEL 100-100L or GS 143	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
PSYC 101.....	3

College Requirements: 1

GE 101, Introduction to Engineering.....	1
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Major Requirements: 63

CSC 105, Introduction to Computers (COM).....	3
ECON 201, Principles of Microeconomics * (COM)	3
MNET 231-231L, Manufacturing Processes I and Lab	3
ACCT 210, Principles of Accounting I (COM).....	3
MNET 260, Principles of Production and Operations Management.....	3
STAT 281, Introduction to Statistics (COM).....	3
MNET 365, Occupational Safety and Health	3
BADM 350, Legal Environment of Business (COM)	3
MNET 367-367L, Plant Layout and Material Handling and Lab	3
MNET 460, Manufacturing Cost Analysis	3
MNET 463, Production and Inventory Management	3
MNET 470-470L, Project Management and Lab(AW)	2
MNET 494, Internship (AW).....	(1-3)
MNET 471-471L, Capstone Experience and Lab (AW)	1
MNET 462, Quality Management	3
MNET 492, Topics.....	(1-3)
SOC 353, Sociology of Work (COM).....	3
CSC 325, Management Information Systems (COM).....	3
BADM 334, Small Business Management (COM)	3
BADM 360, Organization and Management (COM)	3
ECON 467, Labor Law and Economics	3
Choose one from the following:	
GE 121, Engineering Design Graphics I AND	1
GE 122, Engineering Design Graphics II AND	1
GE 123, Computer Aided Drawing	1
or GE 120-120L, Engineering Drawing/CAD and Lab.....	3

Electives: 16-22

Electives	4
Technical Electives.....	12-18

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Manufacturing Engineering Technology (MNET) Major

This program will be discontinued beginning fall 2011.

System General Education Requirements*: 34

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
ECON 202.....	6
Goal #4 Arts and Humanities/Diversity:	
ECON 202.....	6
Goal #5 Mathematics:	
MATH 115	5
Goal #6 Natural Sciences:	
CHEM 106-106L,	
PHYS 111-111L.....	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness: WEL 100-100L or GS 143	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 1

GE 101, Introduction to Engineering.....	1
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Major Requirements: 75

Departmentally approved computer programming course.....	3
MNET 231-231L, Manufacturing Processes I and Lab	3
MATH 121-121L, Survey of Calculus and Lab* (COM).....	5
MNET 251-251L, Electricity and Electronics I and Lab	3
MNET 260, Principles of Production and Operations Management	3
MNET 243-243L, Introduction to Materials Science and Lab.....	3
PHYS 113-113L, Introduction to Physics II and Lab* (COM).....	4
MNET 365, Occupational Safety and Health	3
STAT 281, Introduction to Statistics (COM)	3
MNET 367-367L, Plant Layout and Material Handling and Lab	3
MNET 460, Manufacturing Cost Analysis	3
MNET 463, Production and Inventory Management	3
MNET 470-470L, Project Management and Lab(AW)	2
MNET 494, Internship (AW)	(1-3)
MNET 471-471L, Capstone Experience and Lab (AW)	1
MNET 462, Quality Management	3
MNET 241, Applied Mechanics	3
MNET 334-334L, CAM/CNC and Lab.....	3
MNET 320-320L, Computer Aided Design/Drawing and Lab	3
MNET 252-252L, Electricity and Electronics II and Lab.....	3
MNET 436-436L, Production Tooling Methods and Measurement and Lab	3
MNET 453-453L, Manufacturing Automation and Lab.....	3
MNET 451-451L, Industrial Electronics and Control and Lab.....	3
MNET 350-350L, Fluid Power Technology and Lab.....	3
Choose one from the following:	
GE 121, Engineering Design Graphics I	1
and GE 122, Engineering Design Graphics II	1
and GE 123, Computer Aided Drawing 1	1

or GE 120-120L, Engineering Drawing/CAD and Lab 3

Electives: 10

Electives4
Technical Electives6

Total Required Credits: 128

Cooperative Education Program:

Students have the opportunity to work in industry and receive technical elective credit for the experience through MNET 497. A formal work plan must be approved by the Program Coordinator of Manufacturing Engineering Technology prior to the work experience. Further information can be found in the Program’s Cooperative Education policy.

Note: A grade of “C” or above is required in all MNET courses.

† 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 (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

English (ENGL) Department

Jason McEntee, Acting Head
Bruce E. Brandt, Program Coordinator
Department of English
Scobey Hall 014
605-688-5191
e-mail: jason.mcentee@sdstate.edu

Faculty

Associate Professor McEntee, Acting Head; Distinguished Professor Woodard; Professors Brandt, Danker, Keller, Taylor; Professors Emeriti Alexander, Brown, Duggan, Evans, Flynn, Kildahl, O’Connor, Ryder, Williams, Witherington, West, Yarbrough; Associate Professor Emerita Mary Haug; Associate Professor Nagy; Assistant Professors Baggett, Barst, Smith Palo, Stewart-Nuñez; Instructors Bielfeldt, Bieber, Brown, Ferrell, Michael Haug, Halverson, Horsley, Hublou, Myrick, Serfling.

Programs

Courses in the English Department are divided into two areas: English (ENGL) and Linguistics (LING); see the Course Descriptions section of this catalog. 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 creative writing and technical and professional communication. 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 three ways: (1) English major, (2) English Major – Writing Emphasis, and (3) English Major, English Education Specialization. English Education Specialization majors also register with the College of Education and Human Sciences before beginning Education courses, usually in the Sophomore or Junior year, and fulfill the Education Curriculum for Teachers of Academic Subjects.

All English majors must take either World Civilizations I and II (HIST 111 and 112) or Western Civilization I and II (HIST 121 and 122), ENGL 151, and ENGL 479 (the “capstone” course), as well as the modern language courses required for the B.A. ENGL 101, 201, and 283 fulfill SGE requirements, but do not count towards the English majors or minors, nor does non-honors Engl 210. Minimum college and university requirements are given in the appropriate sections of this catalog 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 Minor in Professional Writing. The Minor in Professional Writing requires 18 credits. Four courses are required: LING 203, ENGL 277 (for Engineering majors) or ENGL 379 (for all other majors), MCOM 161, and ENGL 492 Topics: Issues in Professional Writing: Visual Rhetoric. An additional six credits are required from the following list of electives: ARTD 202, ENGL 383, ENGL/GLST 380; LING 420, LING 452, MCOM 220, MCOM 225, ENGL 492 Topics: Issues in Professional Writing: Writing for the Professions in the Sciences and Humanities, and ENGL 494.

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

To count toward an English Major, the English Minor or the Minor in Professional Writing, a course must be passed with a minimum grade of “C.”

English (ENGL) Major

Requirements for English Major, Bachelor of Arts in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication: ENGL 1016
Goal #2 Oral Communication: SPCM 101*3
Goal #3 Social Sciences/Diversity Credits¹6
Goal #4 Arts and Humanities/Diversity Credits²6
Goal #5 Mathematics3
Goal #6 Natural Sciences6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship³3
Goal #2 Personal Wellness2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness⁴3

College Requirements: 5-16

Modern Languages: Competency at the 202 level3-14
Social Science2

Major Requirements: 39

300-400 Level English or American Literature Courses9
One course in Multi-Cultural/Minority Topics (Native American
Literature, World Literature, Diverse Cultures; Women in Literature)
Mythology and Literature:3
Linguistics Course (203, 425, 420, 443, 452).....3
English or Linguistics Electives:6
HIST 111, World Civilizations I * (COM)3
and HIST 112, World Civilizations II * (COM) (G).....3
or HIST 121, Western Civilization I * ** (COM).....3
and HIST 122, Western Civilization II * ** (COM) (G)3
ENGL 151, Introduction to English Studies3

ENGL 221, British Literature I * ** (G).....	3
ENGL 241, American Literature I * **	3
ENGL 222, British Literature II * ** (G).....	3
or ENGL 242, American Literature II * **	3
ENGL 379, Technical Communication (AW).....	3
or ENGL 383, Creative Writing	3

Electives: 34-46

Writing Emphasis:

The Writing Emphasis will provide a well-rounded background in literature, but with more intensive work in Creative and/or Professional writing than is provided by the English Major. It will serve students seeking careers in creative or professional writing.

Total Required Credits: 128

English Education Specialization Requirements: 49-64

English or Linguistics Elective	3
300-400 Level English or American Literature Courses:	3
LING 203, English Grammar	3
ENGL 221, British Literature I * ** (G).....	3
ENGL 240, Juvenile Literature * **	3
ENGL 241, American Literature I * **	3
ENGL 222, British Literature II * ** (G).....	3
or ENGL 242, American Literature II * **	3
ENGL 330, Shakespeare	3
ENGL 424, 7-12 Language Arts Methods (AW).....	3
ENGL 445, American Indian Literature	3
or ENGL 447, American Indian Literature of the Present.....	3
PSYC 101, General Psychology * ** (COM)	3
or SOC 100, Introduction to Sociology * (COM) (G).....	3
EPSY 302, Educational Psychology (COM)	3
EDFN 338, Foundations of American Education (COM)	(1-2)
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EDFN 427-527, Middle School: Philosophy and Application	2
EDFN 475, Human Relations (COM)	3
SEED 314, Supervised Clinical/Field Experience.....	1
SEED 400, Curriculum and Instruction in Middle and Secondary Schools.....	4
SEED 410, Social Foundations, Management and Law	2
SEED 450, 7-12 Reading and Content Literacy (COM)	2
SEED 488, 7-12 Student Teaching (COM).....	(2-16)

Note: English majors must meet the College of Arts and Sciences requirements for a B.A., and the 128 semester credits must include at least 33 hours at the 300-level or higher.

Note: English majors take three out of four Literature survey courses: ENGL 221 and 241 are required. Students elect either ENGL 222 or 242, and also take one 300-400 level course representing the survey not taken. (i.e., ENG 222 plus a 300-400 level American Lit course, or ENGL 242 plus a 300-400 level English literature course).

Note: To count toward the English Major (option A or B), the English Minor or the Minor in Professional Writing, a course must be passed with a minimum grade of "C."

Note: English majors must meet the additional College of Arts and Sciences Requirements for the B.A.

- English Ed majors should take Psyc 101 or Soc 100 as part of SGR Goal #3.
- Goal #4 can be fulfilled by the History and English courses required for the English Major. For students in the Writing Emphasis, any ENGL course on the SGR Goal # 4 list, except a non-honors Engl 210 are acceptable.
- Engl 256 is an English elective that fulfills IGR Goal #1. For English Education, Hist 368 fulfills both an education requirement and IGR goal #1.
- English requirements or electives meeting IGR Goal #3 include Hist 121 and 122, the 101 or 102 level foreign language courses, and the ENGL courses on the IGR Goal # 3 list except for non-honors Engl 210.
- Students who take Engl 222, one of the three required 300-400 level courses on British or American literature or the Capstone course must be on American literature since 1860; for students who take Engl 242, one of these courses must be on British literature since 1660.)

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

English (ENGL) Minor

Requirements for English Minor: 20 cr

(ENGL 101 and 201 do not apply)	
Three courses in British Literature	9
Two courses in American Literature	6
One elective.....	2-3
One of the following courses:	
ENGL 379, Technical Communication (AW)	3
ENGL 383, Creative Writing.....	3
LING 203, English Grammar	3
LING 420-520, The New English.....	3
LING 443-543, Development of the English Language	3

Note: To count toward the English Major (option A or B), the English Minor or the Minor in Professional Writing, a course must be passed with a minimum grade of "C."

Professional Writing Minor

David Faflik, Coordinator, Professional Writing

Requirements for the Minor in Professional Writing: 18cr

ENGL 492-592, Topics	(1-5)
LING 203, English Grammar	3
MCOM 161-161L, Fundamentals of Desktop Publishing and Lab (COM)	3
Choose one of the following:	
ENGL 277, Technical Writing in Engineering*	3 (Engineering majors)
ENGL 379, Technical Communication (AW).....	3 (All other majors)
Choose six credits from the following:	
ENGL/GLST 399, Futuristic Communications:.....	3cr
ARTD 202, Computer Graphics I.....	3
ENGL 383, Creative Writing.....	3
ENGL 492-592, Topics (1-5) Professional Writing: Writing for Professions in the Sciences and Humanities	
ENGL 494, Internship	(1-12)
LING 420-520, The New English.....	3
MCOM 220-220L, Introduction to Digital Media and Lab	2
MCOM 225-225L, Introduction to Digital Production and Lab.....	2

To count toward the English Major (option A or B), the English Minor or the Minor in Professional Writing, a course must be passed with a minimum grade of "C."

Entomology (ENT)

(See Plant Science)

Entrepreneurial Studies (ENTR)

(See Economics)

Entrepreneurship Certificate

(See Economics)

Equine Studies

(See Animal and Range Sciences)

Family and Consumer Sciences Education (FCSE)

(See Teaching, Learning and Leadership)

Food Safety

(See Health and Nutrition Sciences)

Food Science

(See Health and Nutrition Sciences)

French Studies (FREN)

(See Modern Languages)

General Agriculture

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Programs

The General Agriculture curriculum is designed for the student undecided as to a specific major field of study within the area of agriculture, or who may want to combine multiple fields of study within agriculture, or plans to return to the farm or ranch after college. A large number of free electives are available allowing the student to 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. Courses in the major field of concentration 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 courses in the major field of concentration. These courses should relate to your career interests.

General electives may be selected from any area and allow students to develop special competencies or interests. 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 Agriculture Major

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 requirements are as follows:

Mathematics: (minimum level: MATH 102 or MATH 104)	3
SGR Goal 3 *: Social Science	3
SGR Goal 4 *: Humanities and Arts	3
SGR Goal 6 *: Natural Science	3
Major field of concentration	16
General electives	28
ENGL 101	3
SPCM 101*	3
GS 143 or WEL 100-100L	2

* A minimum of 15 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 32 credits.

Proficiency Examination

Each student enrolled in an Associate of Arts degree program must take the Proficiency Examination after the completion of 32 passed credit hours or prior to graduation. The student must have completed, or be enrolled in courses required to complete the 18 credit hours. Students who do not complete the proficiency exam requirements cannot continue registration at the university.

Requirements for General Agriculture Major, Bachelor of Science in Agriculture

System General Education Requirements*: 31

Goal #1 Written Communication: ENGL 101 and ENGL 201	6
Goal #2 Oral Communication: SPCM 101*	3
Goal #3 Social Sciences/Diversity: ECON 201 or ECON 202	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: MATH 102	3
Goal #6 Natural Sciences: BIOL 103-103L and CHEM 106-106L	7

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship: BIOL 101-101L	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 13

AS 101-101L, Introduction to Animal Science and Lab	3
or DS 130-130L, Introduction to Dairy Science and Lab	3
AGEC 271-271L, Farm and Ranch Management and Lab	4
PS 103-103L, Crop Production and Lab	3
PS 213-213L, Soils and Lab * **	2

Major Requirements: 22

ACCT 210, Principles of Accounting I (COM)	3
or STAT 281, Introduction to Statistics (COM)	3
AGEC 354, Agricultural Marketing and Prices	3
AS 233-233L, Applied Animal Nutrition and Lab	4
AGEC 271-271L, Farm and Ranch Management and Lab	4
BIOL 371, Genetics (COM)	3
or PS 383-383L, Principles of Crop Improvement and Lab(AW)	3
CHEM 108-108L, Organic and Biochemistry and Lab* (COM)	(4, 1)
or CHEM 120-120L, Elementary Organic Chemistry and Lab*	(3, 1)
MICR 231-231L, General Microbiology and Lab (COM)	4
or PHYS 101-101L, Survey of Physics * (COM) and Lab	4
Choose one of the following:	
ABS 100, Exploring Ag and the Food System Credits	1
AS 100, Opportunities in Animal and Range Sciences Credits	1
PS 101, Opportunities in Plant Science Credits	1

Electives: 53-54

Agriculture Electives 6: *at least 6 credits to be selected from the following:*

- PS 223-223L, PS 307-307L, any course(s) with prefix(es) of ABE, ABS, AST, DS, HO, LA, PR, PRM, RANG, or VET6

Ag Product Elective 2-4:

Choose one from the following:

- AS 241-241L, Introduction to Meat Science and Lab3
- AS 285-285L, Livestock Evaluation and Marketing and Lab 4
- AST 443-443L, Food Processing and Engineering Fundamentals and Lab.....3
- DS 231, Dairy Foods3
- PS 303-303L, Seed Technology and Lab.....3
- PS 308-308L, Grain Grading and Lab.....2
- PS 312, Grain and Seed Production and Processing3

Capstone Requirement 3-4:

Choose one from the following:

- ABS 475-475L, Integrated Natural Resource Management and Lab (AW).....3
- AGEC 421-521, Farming and Food Systems Economics ** 3
- AS 474-474L, Cow/Calf Management and Lab3
- AS 477-477L, Sheep and Wool Production and Lab.....3
- AS 478-478L, Swine Production and Lab.....3
- AST 303-303L, Design Management Experience and Lab3
- DS 412-412L, Dairy Farm Management and Lab.....4
- PS 440-440L, Crop Management with Precision Farming and Lab Credits3
- RANG 485-485L, Advanced Integrated Ranch Management and Lab Credits3

Communications Elective (AW) 3:

Choose one from the following:

- ABS 475-475L, Integrated Natural Resource Management and Lab (AW).....3
- ENGL 379, Technical Communication (AW).....3
- PS 383-383L, Principles of Crop Improvement and Lab (AW)3

Program Concentration Electives or General Electives.....37-40

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

General Studies (Associate of Arts)

Christy Osborne, Coordinator and Advisor

College of General Studies

Medary Commons 121

605-688-4153

e-mail: christy.osborne@sdstate.edu

Program

The Associate of Arts degree in General Studies provides a foundation of general education courses 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. Many courses necessary to fulfill the requirements of the AA in General Studies are available by distance education. The Associate of Arts degree requires 64 credits.

Requirements for Associate of Arts in General Studies: 64

SGR Goal 3 *: Social Sciences/Diversity	6
SGR Goal 4 *: Humanities and Arts/Diversity	6
SGR Goal 5 *: Mathematics	3
SGR Goal 6 *: Natural Sciences.....	6
Selected Electives.....	34
ENGL 101, Composition I *.....	3
ENGL 201, Composition II *	3
SPCM 101*, Fundamentals of Speech (COM).....	3

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits.

Proficiency Examination

Each student enrolled in an Associate of Arts degree program must take the Proficiency Examination after the completion of 32 passed credit hours or prior to graduation. The student must have completed, or be enrolled in courses required to complete the 18 credit hours specified below. Students who do not complete the proficiency exam requirements cannot continue registration at the university.

General Studies (Bachelor of)

Carey Kilmer

Student Services Facilitator

Continuing and Extended Education

Wecota Hall 224

605-688-4959 or 1-866-827-3918 (toll free)

e-mail: Carey.Kilmer@sdstate.edu

Programs

The Bachelor of General Studies program through the College of Arts and Sciences is designed for adult and returning students who have already completed significant college credit and want to complete a baccalaureate degree. The Bachelor of General Studies offers students the flexibility to select coursework from a variety of focus areas: allied health; business; education; fine arts; humanities; social science; science, engineering and mathematics; technology; and wellness. Adult and returning students will have the ability to complete the Bachelor of General Studies online, on-campus, or through an attendance center (Capital University Center, University Center – Sioux Falls, or University Center – Rapid City.

Admission Requirements

Visit www.sdstate.edu/admissions for admissions requirements.

Getting Started

Potential students should pick up an application from an attendance center or apply online:

Visit SDSU's site www.sdstate.edu

Choose "Admissions"

Choose "Undergraduate Admissions"

Complete the online application.

Potential students should schedule an appointment to meet with the student services facilitator to have their transcript evaluated.

Once accepted, students will work closely with their advisor to prepare their degree completion plan.

Requirements for General Studies Major, Bachelor of General Studies

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, Composition I *, and

ENGL 201, Composition II *

Goal #2 Oral Communication.....

Goal #3 Social Sciences/Diversity..... 6

Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements:** 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 48

At least 20 credits of the focus area credits must be numbered 300 or above.

Completion of 15 credits in at least 3 of the designated General Studies focus areas (45 credits):

- Allied Health (Courses such as anatomy, athletic training, health .. sciences)
 - Business (Courses such as business administration, consumer affairs, economics, ag econ, entrepreneurial studies) (Courses such as early childhood education, art education, ag education)
 - Fine Arts (Courses such as art, art history, interior design, theater, music)
 - Humanities (Courses such as foreign languages, English, religion, philosophy, mass and speech communication)
 - Social Science (Courses such as anthropology, human development, political science, psychology, sociology)
 - Science, Engineering and Mathematics (Courses such as biology, . chemistry, construction management, mathematics)
 - Technology (Courses such as agricultural systems technology, computer science, electrical engineering technology)
 - Wellness (health, physical education and recreation; wellness)
- GS 491, Independent Study1-3

Electives: 41-42

Total Required Credits: 128

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits.

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs).

(G) Globalization Requirement.

(AW) Advanced Writing Requirement.

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.

Genetics

Donald Marshall, Associate Dean

College of Agriculture and Biological Sciences

Agricultural Hall 156

605-688-5133

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

Though there is no separate instructional department, a student wishing to specialize in Genetics can obtain an excellent program by selecting among the courses listed below. Also, a major and minor in Biotechnology are available (see requirements elsewhere in this Catalog).

ABS 205, Biotechnology in Agriculture and Medicine.....	2
AS 332, Livestock Breeding and Genetics	4
BIOL 202-202L, Genetics and Organismal Biology and Lab	4
BIOL 204, Genetics and Cellular Biology.....	3
BIOL 204L, Genetics and Cellular Lab.....	1
BIOL 371, Genetics (COM).....	3
BIOL 373, Evolution (COM).....	3

BIOL 453-553, Advanced Genetics	3
Crosslisted with PS 453-553	
BIOL 483-483L, Developmental Biology and Lab	4
CHEM 464, Biochemistry I (COM)	3
CHEM 466, Laboratory Methods- Biochemistry	1
CHEM 465, Biochemistry II (COM).....	3
HO 312-312L, Plant Propagation and Lab	3
HO 383-383L, Principles of Crop Improvement and Lab	3
Crosslisted with PS 383/383L	
MICR 436, Molecular and Microbial Genetics	4
PS 383-383L, Principles of Crop Improvement and Lab(AW).....	3
Crosslisted with HO 383/383L	
PS 453-553, Advanced Genetics.....	3
Crosslisted with BIOL 453-553	
ZOOL 483-483L, Developmental Biology and Lab (COM).....	4
Crosslisted with BIOL 483/483L	

Geographic Information Sciences (GIS)

(See also Geography)

Geography (GEOG)

Department

George White, Head

Department of Geography

Scobey Hall 232

605-688-4511

e-mail: george.white@sdstate.edu

Faculty

Professor White, Head; Professors, J. Gritzner, Hansen, Napton; Associate Professor Watrel; Assistant Professor Millett; Adjunct Faculty Bliss, Fouberg, Giri, Loveland; Professors Emeritus Hogan and Sandness. Distinguished Professor Emeritus C. Gritzner.

Programs

Geography is the scientific study of the distribution of both physical and human features of the Earth's surface. Geographers seek to describe, analyze and synthesize the natural and cultural phenomena that distinguish places around the world. Geographical study focuses on three principal questions: what is there? why is it there? and how does it relate to other phenomena? The processes of change and examinations of how humans modify the Earth are 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 is an Environmental Planning and Management emphasis available. 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.

Geographic Information Sciences Certificate

The certificate in Geographic Information Sciences (GISc) will prepare students to utilize their knowledge of geography, the physical environment, the cultural environment, geographic applications, and various technologies to meet the challenges of today's society.

Geographic information sciences (GISc) are concerned with geographic concepts, the basic elements used to describe, analyze, model, and make decisions on phenomena distributed on the earth Department and surface. This GISc certificate includes the necessary courses to prepare the graduate to function in geographic information science.

Geographic information sciences are utilized by many local, state, and federal governmental agencies, including the US Geologic Survey. Nearly every job advertisement for geographers requests a GIS background. With GIS's capability to visually display large amounts of geo-spatial data, thereby making it easier to analyze, there is a demand for college graduates educated in its use.

The certificate targets people seeking a different level of learning outside of a traditional degree format. The Department delivers the certificate statewide, especially targeting employees of the EROS Data Center. A total of 15 to 21 credits are required. Total credits for persons holding degrees in environmental sciences are 15, while 21 credits are required for those with degrees other than in environmental science.

Certificate Requirements: 12

GEOG 383-383L, Cartography and Lab.....	3
or GEOG 483-483L, Air Photo Interpretation and Lab.....	3
GEOG 472, Introduction to GIS	3

Since the targeted audience will in most cases minimally hold a bachelor's degree, some flexibility in the certificate plan of study will need to be made on a case by case basis. Substitutions and alternate courses may be approved as the need arises.

Students must earn at least a "C" in each course used to meet the departmental requirements of all majors, minors, and certificates.

Choose one set of technical electives: 6

GIS technical electives: Choose two from the following:

GEOG 473-573, GIS: Data Creation and Integration.....	3
GEOG 474-574, GIS: Vector and Raster Modeling	3
GEOG 475/575, GIS Applications.....	3

Remote Sensing/ Cartography technical electives: Choose two from the following:

GEOG 384-384L, Advanced Cartography and Lab.....	3
GEOG 484-484L, Remote Sensing and Lab	3
GEOG 485-485L, Quantitative Remote Sensing and Lab.....	3

Geographic Information Sciences (GISc) Major

Faculty

Professor White, Head; Distinguished Professor C. Gritzner; Professors Berg, Cochrane, J. Gritzner, Hanan, Hansen, Henebry, Napton, Roy, Wimberly; Associate Professor Watrel; Assistant Professor Millett; Adjunct Faculty Bliss, Fouberg, Giri, Loveland, Vogelmann; Professors Emeritus Hogan and Sandness. Distinguished Professor Emeritus C. Gritzner.

Programs

Geographic Information Sciences (GISc) is the science of geographic and spatial analysis. It is concerned with the basic elements of spatial information including data acquisition, 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 expand in opportunities. GISc is a highly technical field. Graduates will find themselves on the cutting edge of an important sub-discipline 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, 483, 484, 487, 488 and 489. MATH 120 and STAT 281 are also required and included in the 41 credit hours.

Minors in Geography and Geographic Information Sciences are also offered by the Department.

A Certificate in Geographic Information Sciences is available to those who hold a bachelor's degree in areas other than geography.

A Ph.D. in Geospatial Science and Engineering is now available. Geography faculty participate in that doctoral program as teachers and advisers.

Requirements for Geographic Information Sciences Major, Bachelor of Science in Geographic Information Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and ENGL 201	6
Goal #2 Oral Communication: SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences.....	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness 2-3	
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness (not GEOG)	3

College Requirements: 11

Humanities.....	3
Natural Sciences.....	8

Major Requirements: 41

GEOG 131-131L, Physical Geography: Weather and Climate and Lab	4
GEOG 132-132L, Physical Geography: Natural Landscapes and Lab	4
GEOG 200, Introduction to Human Geography * ** (G)	3
GEOG 210, World Regional Geography * ** (COM) (G).....	3
GEOG 383-383L, Cartography and Lab.....	3
GEOG 447, Geography of the Future	3
GEOG 483-483L, Air Photo Interpretation and Lab	3
GEOG 484-484L, Remote Sensing and Lab	3
GEOG 472, Introduction to GIS	3
GEOG 473-573, GIS: Data Creation and Integration.....	3
GEOG 474-574, GIS: Vector and Raster Modeling	3
or GEOG 475/575, GIS Applications	3
MATH 120, Trigonometry * (COM)	3
STAT 281, Introduction to Statistics (COM)	3

Electives: 37-38

For those seeking careers in GISc programming, these additional courses are suggested:

GEOG 384-384L, Advanced Cartography and Lab	3
GEOG 485-485L, Quantitative Remote Sensing and Lab	3
CSC 105, Introduction to Computers (COM)	3
CSC 150, Computer Science I (COM)	3
CSC 205, Advanced Computer Applications (COM).....	3
CSC 474/574, Computer Networks	3
MATH 115, Precalculus * (COM).....	5
MATH 215, Matrix Algebra	2
GE 120-120L, Engineering Drawing/CAD and Lab	3
GE 121, Engineering Design Graphics I	1
CEE 106-106L, Elementary Surveying and Lab.....	4
CEE 304, Land Surveying	3
CEE 333, Hydrology.....	3

Total Required Credits: 128

Students must earn at least a “C” in each course used to meet the departmental requirements of all majors, minors, and certificates.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Geographic Information Sciences (GISc) Minor

Requirements for Geographic Information Sciences Minor: 18 cr

Courses from Electives Lists I and II available at the department	9
CEE 304, Land Surveying	3
GEOG 472, Introduction to GIS	3
GEOG 473-573, GIS: Data Creation and Integration.....	3
GEOG 474-574, GIS: Vector and Raster Modeling	3

Students must earn at least a “C” in each course used to meet the departmental requirements of all majors, minors, and certificates.

Geography (GEOG) Major

Requirements for Geography Major, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 11

Humanities.....	3
Natural Sciences	8

Major Requirements: 35

GEOG 131-131L, Physical Geography: Weather and Climate and Lab	4
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GEOG 132-132L, Physical Geography: Natural Landscapes and Lab	4
GEOG 200, Introduction to Human Geography * ** (G)	3
GEOG 210, World Regional Geography * ** (COM) (G).....	3
GEOG 382, Geographic Research Methods (AW)	3
GEOG 472, Introduction to GIS	3

Electives: 43-44

Total Required Credits: 128

Total 128 credits, 35 credits in Geography, minimum 18 upper division credits. GEOG 382 meets the Advanced Writing Requirement.

Students must earn at least a “C” in each course used to meet the departmental requirements of all majors, minors, and certificates.

* The 30 credit Board of Regents System **General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

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 310-310L, Soil Geography and Land Use Interpretation and Lab ** (G).....	3
GEOG 337, Atmospheric Sciences	3
GEOG 339, Geomorphology	3
GEOG 343, Environmental Disasters and Human Hazards	3
GEOG 351, Economic Geography.....	3
GEOG 365, Land Use Planning.....	3
GEOG 383-383L, Cartography and Lab.....	3
GEOG 425, Population Geography.....	3
GEOG 484-484L, Remote Sensing and Lab	3
GEOG 473-573, GIS: Data Creation and Integration.....	3
GEOG 474-574, GIS: Vector and Raster Modeling	3

Greater Emphasis

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, Local and Regional Planning.....	3
GEOG 483-483L, Air Photo Interpretation and Lab	3
GEOG 484-484L, Remote Sensing and Lab	3
GEOG 473-573, GIS: Data Creation and Integration.....	3
GEOG 474-574, GIS: Vector and Raster Modeling	3

Electives

Recommended electives outside of the Department:

PLAN 471-571, Principles of State, Regional and Community Planning...3	
PLAN 472-572, Techniques of State, Regional and Community Planning	3

Geography (GEOG) Minor

Requirements for Geography Minor: 20 cr

Upper-division courses or substitutions approved by the Department	6
GEOG 131-131L, Physical Geography: Weather and Climate and Lab	4
GEOG 132-132L, Physical Geography: Natural Landscapes and Lab	4
GEOG 200, Introduction to Human Geography * ** (G)	3

GEOG 210, World Regional Geography * ** (COM) (G).....3

Students must earn at least a "C" in each course used to meet the departmental requirements of all majors, minors, and certificates.

German (GER)

(See Modern Languages)

Gerontology (GERO)

(See Counseling and Human Development)

Health and Nutritional Sciences (HNS)

Matthew Vukovich, Head

Department of Health and Nutritional Sciences

IM Building 116

605-688-4668

e-mail: matt.vukovich@sdstate.edu

Faculty

Associate Professor Vukovich, Head; Adjunct Professors Looby, Rosentrater, Warren; Professor Cassel, Dalaly, Hacker, Kattelman, Krishnan, Specker, Wake, Wang; Professors Emeriti Forsyth, Huether; Associate Professor Dey, Droke, Fokken, Sergeev; Assistant Professor Binkley, Bower, Fountaine, Kemmer, Meendering, Olson, Roiger, Zwart; Instructors Baumberger, Brandenburger, Gengler, Hegerfeld-Baker, Heinze, Kirby, Kopriva, Nelson, Stluka.

Programs

The Department of Health and Nutritional Sciences provides academic programs in Athletic Training; Health Promotion; Health, Physical Education, and Recreation; Nutrition and Food Science; and Park and Recreation Management; as well as Physical Education Teaching Specialization and a number of supporting minors. We foster a collaborative effort within our department and college to promote interaction among students in different majors.

The course offerings help develop students with a strong foundation of knowledge, skills and abilities to enter graduate school or employment within the health care field, industry, or education. Students learn how to critique and analyze research within their designated field and have access to state-of-the-art teaching and research laboratories, nationwide internship programs, and study abroad experiences. Our faculty are nationally recognized as experts in their field and are dedicated to student success.

Athletic Coaching Certification

Tracy Nelson, Coordinator

Department of Health & Nutritional Sciences

SIM 116

605-688-4034

e-mail: tracy.nelson@sdstate.edu

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) Major

Trevor Roiger, Program Director

Department of Health and Nutritional Sciences

Intramural Building 116

605-688-5824

e-mail: Trevor.Roiger@sdstate.edu

Athletic Training Major

The undergraduate Athletic Training major is accredited by the Commission on Accreditation of Athletic Training Education (CAATE). The professional portion of the Athletic Training curriculum takes two years to complete and implements competencies and proficiencies as defined by the Education Council of the National Athletic Trainers' Association. As a competency based program, instruction occurs through didactic (classroom), clinical education and clinical experience components. Upon successful completion of the Athletic Training curriculum, a student is eligible to write the Board of Certification (BOC) national certifying examination to become an Athletic Trainer.

South Dakota State University offers two options for students to complete the undergraduate Athletic Training Education Program (ATEP).

Regular Option

The Regular Option is designed for students attending SDSU. Students interested in athletic training should complete coursework to meet system and institutional general education requirements, as well as AT 164 Introduction to Athletic Training. They will be assigned an adviser within the ATEP. Application for admission into the athletic training major can begin during or after a student's sophomore year (approximately 32 credit hours). Students must complete BIOL 221 Human Anatomy and PE 354 Prevention and Care of Athletic Injuries by the final semester of the application year. Transfer students must complete the same or equivalent requirements.

Qualified Transfer Student

A Qualified Transfer Student (QTS) is an individual who is not currently attending SDSU, but would like to complete the professional portion of the Athletic Training major at SDSU and has the opportunity to work with a Certified Athletic Trainer at his/her current institution. The QTS will complete an application process for the athletic training major that is comparable to the application process for students currently enrolled at SDSU. The ability to complete a parallel application process would enable the QTS to qualify for an interview and acceptance directly into the fall semester of the professional program. The QTS is a student who has a strong interest in athletic training as his/her chosen profession, can complete the prerequisite coursework for the athletic training education major, and has access to a certified athletic trainer at his/her current institution to assist his/her with observation hours and taping competency completion. These students preferably have some experience as an "athletic training student" at their current institution.

Admission into the Athletic Training Major

During the application year, students will complete the following requirements: attendance at monthly meetings, observations of the ATEP at SDSU, outside observations, proficiencies in taping skills, letter of interest, health assessment, three letters of recommendation, formal application, and a personal interview. The number of students accepted into the clinical experience each year is based on the availability of clinical experience opportunities and certified staff. Each year, there are

more students applying than can be accepted, so the process may be competitive. Therefore, completion of basic requirements does not guarantee entrance into the ATEP. The minimum selection criteria are as follows: student should display an interest and desire to become an athletic trainer; successful completion (C or better) of AT 164 Introduction to Athletic Training, BIOL 221 Anatomy, and PE 354 Prevention and Care of Athletic Injuries; completed application process which culminates with a letter of interest; three letters of reference; personal interview; cumulative GPA of 2.75 or better; completed Health Assessment; and the verification and demonstration of technical standards.

For the qualified transfer student, application for admission into the ATEP may also begin during or after a student's sophomore year (approximately 32 credit hours). Students choosing the QTS option are strongly encouraged to complete an on-site visit with an adviser in the ATEP early in the fall to begin the application process and establish open communication. The QTS should also identify a sponsor who is a certified athletic trainer (ATC). The function of the sponsor is to assist a student in completing his or her observations as well as achieving proficiency in taping skills. The ATC sponsor will also be asked to write a letter of recommendation for the student into the SDSU ATEP. The basic selection criteria are similar to the regular option: acceptance into SDSU; interest and desire of student to become an athletic trainer; sophomore status (more than 32 credits); successful completion (C or better) of courses comparable to AT 164 Introduction to Athletic Training, BIOL 221 Anatomy, and PE 354 Prevention and Care of Athletic Injuries; completed application process, which culminates with a letter of interest; three letters of reference and personal interview; cumulative GPA of 2.75 or better; completed Health Assessment; and verification of technical standards.

Technical standards set the guidelines for the application process and progress in the major by describing the essential skills considered necessary for admitted students to possess in order to complete the responsibilities associated with being an athletic training student and subsequently, a practicing certified athletic trainer. They are requirements set by the Commission on Accreditation of Athletic Training Education (CAATE). Technical standards are assessed at the time of application as well as during progress and at completion of the program. Skills are described in five areas: cognitive ability and skills, psychomotor skills, affective behaviors, interpersonal skills, and knowledge or/interest in the profession of Athletic Training. The technical standards also describe policy statements regarding accommodations, standards for English as a second language, and eligibility requirements for the BOC national certifying examination.

A complete description of the application processes and the technical standards can be found on the SDSU Web site through the College of Education and Human Sciences, or by contacting the program chair.

Requirements for Athletic Training Major, Bachelor of Science:

System General Education Requirements*: 32-33

Goal #1 Written Communication:
 ENGL 101 **and**
 ENGL 2016

Goal #2 Oral Communication:
 SPCM 101*3

Goal #3 Social Sciences/Diversity:
 HDFS 210 **and**
 PSYC 101 6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:
 MATH 1023

Goal #6 Natural Sciences:

CHEM 106-106L **and**
 CHEM 120-120L **or**
 CHEM 108-108L8-9

Institutional Graduation Requirements: 8**

Goal #1 Land and Natural Resource Stewardship3
 Goal #2 Personal Wellness: PHA 2012
 Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:
 HLTH 4433

College Requirements: 2

EHS 140, Enhancing Human Potential2

Major Requirements: 59

AT 164, Introduction to Athletic Training (COM).....2
 PE 354-354L, Prevention and Care of Athletic Injuries and
 Lab(COM).....2
 HLTH 250-250L, Pre-Professional First Aid and CPR and
 Lab (COM)2
 HLTH 120, Community Health.....2
or HLTH 212, Contemporary Health2
or HLTH 443, Public Health Science (G)3
 NFS 221, Survey of Nutrition3
 NURS 201, Medical Terminology.....1
 NURS 323, Introduction to Pathophysiology3
 PE 350, Exercise Physiology (COM) (2-3)
 PE 400-400L, Exercise Test and Prescription and Lab (COM).....3
 PE 454, Biomechanics (COM)3
 PSYC 451, Psychology of Abnormal Behavior ** (COM).....3
 AT 441-541, Athletic Training Techniques I.....3
 AT 442-542, Athletic Training Techniques II.....3
 AT 443-543, Athletic Training Techniques III3
 AT 444-544, Athletic Training Techniques IV3
 AT 371, Athletic Training Clinical Experience I2
 AT 372, Athletic Training Clinical Experience II.....2
 AT 373, Athletic Training Clinical Experience III.....2
 AT 374, Athletic Training Clinical Experience IV2
 AT 454-554, Athletic Injury Assessment-Lower Extremity2
 AT 456-556, Athletic Injury Assessment-Upper Extremity.....2
 AT 464-564, Therapeutic Modalities in Athletic Training.....2
 AT 471, Fall Clinical Experience1
 AT 474-574, Rehabilitation of Athletic Injuries (AW)2
 AT 490, Seminar2
 BIOL 221-221L, Human Anatomy and Lab(COM)4
 BIOL 325-325L, Physiology and Lab (COM).....4

Electives: 19-20

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Food Safety Minor

Requirements for Food Safety Minor: 18cr

MICR 311-311L, Food Microbiology and Lab4
 NFS 151, Food Safety and Technology.....3
 Choose 8 credits from the following:
 AS 241-241L, Introduction to Meat Science and Lab3
 AS 345-345L, Value-Added Meat Products and Lab.....3
 AST 443-443L, Food Processing and Engineering Fundamentals .

and Lab	3
DS 301-301L, Dairy Microbiology and Lab	3
DS 321-321L, Dairy Product Processing I and Lab.....	5
HMG 251, Foodservice Sanitation.....	1
HSC 445, Epidemiology	3
NFS 351-351L, Principles of Food Processing and Lab	3
NFS 451-451L/551-551L, New Food Product Development and Lab.....	4
NFS 495, Practicum.....	2
STAT 281, Introduction to Statistics (COM).....	3

Health, Physical Education and Recreation (HPER) Major

Patty Hacker, PETE Coordinator
Department of Health and Nutritional Sciences
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The HPER major provides interested students with opportunities to study human movement, health, recreation and related areas. It is a generalist degree, including 36 credit hours of coursework in the areas of dance, health, physical education and recreation. All HPER majors are encouraged to pursue a minor field of study as well as additional hours in an area of interest to meet the 128 hours required for graduation. If interested, HPER majors may also pursue a specialization in physical education teacher education. A minimum grade of “C” is required in each course in the major.

Requirements for HPER major – Teaching Specialization

Application for admission into the Physical Education Teacher Education Specialization is required, and can begin during the spring semester of the freshman year, providing PE 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 specialization students are strongly encouraged to obtain a health education minor (21-23 hours). Information on courses that fulfill the health education minor is in this catalog. A minimum final grade of “C” is required in each course in the major and specialization area. All teacher education students are required to take the PRAXIS II Physical Education content test, as well as the PRAXIS II Principles of Learning and Teaching test, and be admitted to the College of Education and Human Sciences Teacher Education program. If pursuing the Health Education minor, the Praxis II Health Education test must be taken by graduation.

Required courses for the HPER Major, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, Composition I *, and	
ENGL 201, Composition II *	6
Goal #2 Oral Communication	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences.....	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 2

EHS 140, Enhancing Human Potential.....	2
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Major Requirements: 44-45

Minimum of one additional course in each prefix (HLTH/HSC,RECR, PE, DANC)	10
PE 170, Fundamental Movement (COM)	1
PE 180, Foundations of HPER/A (COM).....	2
PE 252-252L, Fundamentals of Motor Learning and Development and Lab (COM).....	2
PE 321-321L, Water Safety Instructor and Lab(COM).....(1-2)	
or PE 320-320L, Lifeguard Training and Lab (COM)	1-2

Health Education (HLTH) Minor

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A Health Education minor is an interdisciplinary minor offered to any student at South Dakota State University; it may be of particular interest to those pursuing a teaching degree. The minor can be obtained by completing a required core and set of elective courses offered across several disciplines. One purpose of the Health Education minor is to enable those with a teaching degree to teach health education in schools in South Dakota; it also prepares students to pursue a major in health education in other states. All students interested in obtaining this minor must obtain written approval from the PETE Coordinator. A minimum final grade of “C” is required in each course taken in the minor.

Requirements for Health Education Minor: 21 cr (minimum)

Required Courses (18 credits)	
HDFS 210, Lifespan Development *	3
HDFS 250, Development of Human Sexuality	3
HLTH 420/520, K-12 Methods of Health Instruction (COM).....	2
NFS 221, Survey of Nutrition	3
Choose one from the following:	
EPSY 302, Educational Psychology (COM).....	3
PSYC 324, Psychology of Aging **	3
PSYC 327, Child Psychology ** (COM).....	3
Choose one from the following:	
HLTH 120, Community Health	2
HLTH 212, Contemporary Health	2
Choose one from the following:	
HLTH 250-250L, Pre-Professional First Aid and CPR and Lab (COM)	2
HLTH 251, First Aid and CPR (COM).....	1

Elective Courses (3-5 credits for total 21-23)

CA 289, Consumers in the Market.....	3
HDFS 141, Individual and the Family *	3
HDFS 241, Family Relations	3
HLTH 445, Epidemiology	3
HSC 302, Wellness and the Family	2
NURS 201, Medical Terminology	1
PE 354-354L, Prevention and Care of Athletic Injuries and Lab(COM)	2
PHA 201, Medications and Wellness **	2
PSYC 417, Health Psychology (COM)	3
SOC 250, Courtship and Marriage * ** (COM).....	3

and PE 322, Lifeguard Instructor (COM).....	1
PE 350, Exercise Physiology (COM).....	(2-3)
PE 354-354L, Prevention and Care of Athletic Injuries and Lab(COM).....	2
PE 454, Biomechanics (COM)	3
PE 490, Seminar (AW).....	(1-3)
DANC 130, Dance Fundamentals **	1
HLTH 120, Community Health	2
or HLTH 212, Contemporary Health	2
HLTH 251, First Aid and CPR (COM).....	1
or HLTH 250-250L, Pre-Professional First Aid and CPR and Lab (COM).....	2
RECR 342, Recreational Sports Programs and Administration (COM)	3
WEL 100-100L, Wellness for Life and Lab **(COM)	2
BIOL 325-325L, Physiology and Lab (COM).....	4
BIOL 221-221L, Human Anatomy and Lab(COM).....	4

Electives: 42-44

Health Physical Education, and Recreation Major, Teaching Specialization

Requirements for HPER Major – Teaching Specialization, Bachelor of Science:

Application for admission into the Physical Education teaching specialization is required and can begin during the Spring Semester of the freshman year, providing PE 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 specialization students are strongly encouraged to obtain a health education minor (21-23 hours). Information on courses that fulfill the health education minor is in this catalog. A minimum final grade of “C” is required in each course in the major and specialization area. All teacher education students are required to take the PRAXIS II Physical Education content test, as well as the PRAXIS II Principles of Learning and Teaching test. If pursuing the Health Education minor, the Praxis II Health Education test must be taken by graduation. A minimum score must be achieved on the Praxis II Physical Education content test to be eligible to enroll in Professional Semester III. A minimum score on the Praxis II PLT must be obtained for teaching licensure, and a minimum score on the Praxis II Health test must be obtained for health teaching licensure. Students must maintain a 2.8 GPA in Education courses and a 2.9 GPA in HPER/PETE courses to remain in good standing in the program.

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, Composition I *, and	
ENGL 201, Composition II *	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
PSYC 101 and	
SOC 100.....	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics: MATH 102.....	3
Goal #6 Natural Sciences.....	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources:	
HIST 368.....	3
Goal #2 Personal Wellness:	
WEL 100-100L.....	2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3
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College Requirements: 2

EHS 140, Enhancing Human Potential.....	2
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Major Requirements: 56-57

DANC 130, Dance Fundamentals **	1
PE 170, Fundamental Movement (COM).....	1
PE 180, Foundations of HPER/A (COM).....	2
HLTH 120, Community Health	2
or HLTH 212, Contemporary Health	2
PE 252-252L, Fundamentals of Motor Learning and Development and Lab (COM).....	2
HLTH 250-250L, Pre-Professional First Aid and CPR and Lab (COM)	2
RECR 260, Fundamentals of Recreation Leadership	3
RECR 342, Recreational Sports Programs and Administration (COM)	3
PE 354-354L, Prevention and Care of Athletic Injuries and Lab(COM).....	2
PE 454, Biomechanics (COM)	3
PE 321-321L, Water Safety Instructor and Lab(COM).....	(1-2)
or PE 320-320L, Lifeguard Training and Lab (COM)	1-2
and PE 322, Lifeguard Instructor (COM).....	1
BIOL 325-325L, Physiology and Lab (COM).....	4
PE 350, Exercise Physiology (COM).....	(2-3)
PE 490, Seminar (AW).....	(1-3)
PE 200, Professional Preparation: Fitness (COM)	1
PE 201, Professional Preparation: Gymnastics (COM).....	1
PE 202, Professional Preparation: Individual and Dual Activities (COM)	(1-2)
PE 203, Professional Preparation: Team Activities (COM).....	1
PE 204, Professional Preparation: Rhythm and Dance (COM).....	1
PE 341, Curriculum Development and Evaluation (COM).....	2
PE 335, Assisting Teaching	1
PE 352, Adapted Physical Education (COM).....	2
PE 360-360L, K-8 Physical Education Methods and Lab (COM).....	2
PE 451-451L, Tests and Measurements and Lab (COM).....	2
PE 480-480L, K-12 Methods of Teaching PE and Lab(COM)	3
DANC 240, Multicultural Dance Activities **	1
or DANC 241-241L, Creative Movement for Children and Lab.....	2
HLTH 420/520, K-12 Methods of Health Instruction (COM)	2
PE 440, Organization and Administration of HPER/Athletics (COM).....	2

Teaching Specialization: 27

EDFN 338, Foundations of American Education (COM)	(1-2)
EDFN 475, Human Relations (COM)	3
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EDFN 427-527, Middle School: Philosophy and Application	2
ELED 488, K-8 Student Teaching (COM).....	(2-16)
SEED 488, 7-12 Student Teaching (COM).....	(2-16)
EPSY 302, Educational Psychology (COM)	3
SEED 314, Supervised Clinical/Field Experience.....	1
SEED 450, 7-12 Reading and Content Literacy (COM).....	2

Total Required Credits: 135

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Health Promotion Major

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 605-688-5387
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The Health Promotion (HP) graduate possesses the knowledge, skills and abilities to enhance awareness, change behavior, and create environments that support good health practices, including, but not limited to exercise and physical activity. The HP professional assists people to develop self-responsibility for their own health and wellness, and implement health assessments and wellness programs that promote a healthy lifestyle. Health Promotion professionals work and study in commercial, clinical, and workplace settings to improve health and quality of life of the general population as well as to enhance performance of athletes. Application for admission to the Health Promotion major occurs during a student's sophomore year. Applications are due January 1st and are only taken one time during an academic year. The number of students accepted each year is based on availability of facilities and staff; there may be more students applying that can be accepted, so the process may be more competitive.

Minimum admission requirements include: sophomore standing with a minimum 2.75 GPA and completion of WEL 100: Wellness for Life. BIOL 221 Anatomy and BIOL 325 Physiology must be completed with a C grade or better PRIOR to starting the major courses. Students admitted to the major will complete a 4 semester sequence of courses. Students are encouraged to choose career orientation electives from a minor area of study to complete course work.

The Health Promotion program at South Dakota State University prepares students by meeting the knowledge, skills and abilities expected of an American College of Sports Medicine Health Fitness Specialist.

Health Promotion Major

Requirements for Health Promotion Major, Bachelor of Science:

System General Education Requirements*: 32-33

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
HDFS 210 and	
PSYC 101	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102	3
Goal #6 Natural Sciences:	
CHEM 106-106L and	
CHEM 108-108L or	
CHEM 112-112L and	
CHEM 114-114L	8-9

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship:	
BIOL 101-101L or	
NFS 111	3
Goal #2 Personal Wellness:	
WEL 100-100L	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
HLTH 443	3

College Requirements: 2

EHS 140, Enhancing Human Potential	2
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Major Requirements: 58-62

PE 180, Foundations of HPER/A (COM)	2
PE 354-354L, Prevention and Care of Athletic Injuries and Lab(COM)	2
HLTH 120, Community Health	2
or HLTH 212, Contemporary Health	2
HLTH 364-364L, Emergency Medical Technician and Lab (COM) ...4	
or HLTH 250-250L, Pre-Professional First Aid and CPR and Lab (COM)	2
HLTH 445, Epidemiology	3
NURS 201, Medical Terminology	1
NURS 323, Introduction to Pathophysiology	3
PE 350, Exercise Physiology (COM)	(2-3)
PE 454, Biomechanics (COM)	3
PSYC 417, Health Psychology (COM)	3
HLTH/HSC 200, Complementary and Alternative Health Care	3
or HSC/HLTH 302, Wellness and the Family	2
NFS 315, Human Nutrition	3
PSYC 358, Behavior Modification	3
PE 367, Health and Human Performance	3
PE 395, Practicum (COM)	3
PE 400-400L, Exercise Test and Prescription and Lab (COM)	3
PE 450/550, Clinical Exercise Physiology	3
HSC 490, Seminar (AW)	2
HSC 494, Internship (COM)	1
HSC 496, Field Experience	2
HLTH 479-479L, Health Promotion Programming and Evaluation and Lab	2
BIOL 221-221L, Human Anatomy and Lab(COM)	4
BIOL 325-325L, Physiology and Lab (COM)	4

Electives: 22-28

Career Orientation Electives	12
Other Electives	0-16

Total Required Credits: 128

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs). (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Nutrition (NFS) Minor

A minor in Nutrition can be beneficial to individuals who are pursuing an undergraduate degree in many health related fields and pre-professional programs. It may also assist students who are interested in attending graduate or medical school by providing a strong science knowledge base. The minor would benefit students in the hospitality and/or food service industries. The Nutrition minor provides students a strong fundamental knowledge of metabolism and the complex interaction between foods and our bodies. The minor does not allow students to become a registered dietitian.

Requirements for Nutrition Minor: 18 cr

Required courses include:	
NFS 141-141L, Foods Principles and Lab	4
NFS 151, Food Safety and Technology	3
NFS 315, Human Nutrition	3
NFS 323, Nutrition Across the Life Cycle	3
NFS 422-522, Advanced Human Nutrition	4

Plus one of the following:

NFS 322-322L, Assessment Skills in Nutrition and Lab	3
NFS 423-423L/523-523L, Medical Nutrition Therapy I and Lab	3
NFS 424-424L/524-524L, Community Nutrition and Lab	3

Note: 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.

Nutrition and Food Science (NFS) Major

Nutrition and Food Science Major

The Nutrition and Food Science Major is a dynamic field based in science and focuses on the chemical, physiological and biological aspects of foods and nutrients. The curriculum can be designed to meet the student's interest in food science or nutritional sciences.

Individuals who graduate with a NFS major are prepared to pursue advanced degrees in nutrition or food science or professional degrees in health professions such as medicine, dentistry, physical therapy and public health. Business and industry positions are available for individuals interested in applying the principles of science and nutrition to the development of food products as well as culinary science, food safety, food quality control, ingredient management, and sales and service. Students interested in a career in nutrition education and counseling in a clinical setting should choose the dietetics specialization.

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 an understanding and competency in food, nutrition, and management. South Dakota State University's dietetics program is developmentally accredited by the Commission on Accreditation for Dietetics Education of the American Dietetics Association (120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040 ext 5400) as a Didactic Program in Dietetics (DPD). Students enrolled in the dietetics program who have completed 45 credit hours are assessed a discipline fee each semester until graduation. Upon completion of the program and Bachelors of Science requirements, the student will receive a verification statement from the program director and are then eligible to apply for the supervised practice experience (dietetic internship). To become a registered dietitian, one must satisfactorily complete the South Dakota State University's dietetics program, apply, be accepted and complete an accredited dietetic internship and pass the national registration examination for registered dietitians. The dietetic internships are post-graduation, require additional fees, and are competitive.

System General Education Requirements*: 32

Goal #1 Written Communication:

ENGL 101, and	
ENGL 201	6

Goal #2 Oral Communication:

SPCM 101*	3
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Goal #3 Social Sciences/Diversity:

PSYC 101, and	
ECON 202	6

Goal #4 Arts and Humanities/Diversity

Goal #5 Mathematics:

MATH 102	3
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Goal #6 Natural Sciences:

CHEM 112-112L, and	
CHEM 114-114L	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources:

NFS 111	3
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Goal #2 Personal Wellness

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness

College Requirements: 2

EHS 140, Enhancing Human Potential	2
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Major Requirements: 33

NFS 141-141L, Foods Principles and Lab	4
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NFS 151, Food Safety and Technology	3
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NFS 315, Human Nutrition	3
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NFS 481, Food Science, Dietetics, and Hospitality Human

Resources Management	3
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NFS 490/590, Seminar (AW)	2
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PHYS 111-111L, Introduction to Physics I and Lab* (COM)	4
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STAT 281, Introduction to Statistics (COM)	3
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CHEM 326-326L, Organic Chemistry I and Lab(COM)	(3, 1)
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CHEM 328-328L, Organic Chemistry II and Lab(COM)	(3, 1)
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CHEM 464, Biochemistry I (COM)	3
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CHEM 466, Laboratory Methods- Biochemistry	1
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Electives: 52-53

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Nutrition and Food Science (NFS) Major- Dietetics specialization

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 an understanding and competency in food, nutrition, and management. South Dakota State University's dietetics program is developmentally accredited by the Commission on Accreditation for Dietetics Education of the American Dietetics Association (120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040 ext 5400) as a Didactic Program in Dietetics (DPD). Students enrolled in the dietetics program who have completed 45 credit hours are assessed a discipline fee each semester until graduation. Upon completion of the program and Bachelors of Science requirements, the student will receive a verification statement from the program director and are then eligible to apply for the supervised practice experience (dietetic internship). To become a registered dietitian, one must satisfactorily complete the South Dakota State University's dietetics program, apply, be accepted and complete an accredited dietetic internship and pass the national registration examination for registered dietitians. The dietetic internships are post-graduation, require additional fees, and are competitive.

System General Education Requirements*: 32

Goal #1 Written Communication:
ENGL 101, **and**
ENGL 2016

Goal #2 Oral Communication:
SPCM 101*3

Goal #3 Social Sciences/Diversity:
PSYC 101, **and**
ECON 2026

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:
MATH 1023

Goal #6 Natural Sciences:
CHEM 112-112L, **and**
CHEM 114-114L6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources:
BIOL 101-101L3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness3

College Requirements: 2

EHS 140, Enhancing Human Potential2

Major Requirements: 44

HMGD 251, Foodservice Sanitation1

NFS 141-141L, Foods Principles and Lab4

NFS 315, Human Nutrition3

NFS 322-322L, Assessment Skills in Nutrition and Lab3

NFS 323, Nutrition Across the Life Cycle3

NFS 341-341L, Food Science and Lab4

NFS 380, Foodservice Operations and Purchasing Management3

NFS 381-381L, Quantity Food Production and Service and Lab3

NFS 422-522, Advanced Human Nutrition4

NFS 423-423L/523-523L, Medical Nutrition Therapy I and Lab3

NFS 424-424L/524-524L, Community Nutrition and Lab3

NFS 425-425L/525-525L, Medical Nutrition Therapy II and Lab3

NFS 481, Food Science, Dietetics, and Hospitality Human Resources Management3
or BADM 460, Human Resource Management (COM)3

NFS 490/590, Seminar (AW)2

NFS 495, Practicum2

Specialization: 34

ACCT 210, Principles of Accounting I (COM)3

BIOL 221-221L, Human Anatomy and Lab(COM)4

BIOL 325-325L, Physiology and Lab (COM)4

CHEM 326-326L, Organic Chemistry I and Lab(COM)(3, 1)

CHEM 328-328L, Organic Chemistry II and Lab(COM)(3, 1)

CHEM 464, Biochemistry I (COM)3

STAT 281, Introduction to Statistics (COM)3
or HSC 445, Epidemiology3

MICR 231-231L, General Microbiology and Lab (COM)4

NURS 201, Medical Terminology1

BIOL 371, Genetics (COM)3

NFS 487, Transition to Professional World1

Electives: 8

Total Required 128

- * The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)
- ** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Physical Education Minor

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The Physical Education minor is offered to any student at South Dakota State University interested in the area of study of human movement. The coursework provides students with experiences that will raise the level of knowledge and understanding about how people move and learn sport skills, as well as provide a foundation for developing or enhancing movement skill in their own lives and those of others. This minor would be of interest to those pursuing teaching degrees in other content areas, or individuals pursuing a Park and Recreation Management major. All students interested in obtaining this minor must obtain written approval from the PETE Coordinator. A minimum final grade of "C" is required for all courses taken in the minor.

Required Courses (23 credits):

DANC 130, Dance Fundamentals **1

DANC 241-241L, Creative Movement for Children and Lab2

PE 170, Fundamental Movement (COM)1

PE 180, Foundations of HPER/A (COM)2

PE 202, Professional Preparation: Individual and Dual Activities (COM)(1-2)

PE 203, Professional Preparation: Team Activities (COM)1

PE 352, Adapted Physical Education (COM)2

Choose one from the following:
HLTH 251, First Aid and CPR (COM)1

Choose one from the following:
EPSY 302, Educational Psychology (COM)3

PSYC 324, Psychology of Aging **3

PSYC 327, Child Psychology ** (COM)3

Recreation Administration Specialization

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Park and Recreation professionals are needed to meet recreation demands resulting from expanding populations, increased leisure time, greater mobility and changing social attitudes. The curriculum in Park and Recreation Management is designed to prepare students for professional positions in parks and outdoor recreation, and recreation programming and administration. A minor in Recreation Administration is also offered. Two areas of specialization are available:

1. Students interested in parks and outdoor recreation, and employment with federal, state, county and municipal parks and recreation agencies and with private recreation and tourism enterprises, can tailor their program of study using the Park Management Specialization curriculum, offered through the Horticulture, Forestry, Landscape and Parks department.
2. Students interested in recreation programming and administration, and employment with municipal recreation agencies, YMCA/YWCAs, business, and therapeutic recreation in clinical as well as community settings, should follow the Recreation Administration Specialization curriculum, offered through the Health, Physical Education and Recreation department.

The Recreation Administration Specialization is based on an interdisciplinary approach providing a broad, comprehensive background for leadership and administrative roles in the recreation profession. All students transferring into the Recreation Administration Specialization 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 Recreation Administration Specialization. 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 student in the Recreation Administration Specialization must have a 2.4 cumulative GPA to be recommended for the required internship experience. A minimum final grade of "C" is required in all courses taught in the major.

Requirements for Park and Recreation Management, Recreation Administration Specialization, Bachelor of Science:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101 **and**

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:

MATH 1023

Goal #6 Natural Sciences6

Institutional Graduation Requirements**: 8

Goal #1 Land and Natural Resource Stewardship3

Goal #2 Personal Wellness2

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

College Requirements: 2

EHS 140, Enhancing Human Potential2

Major Requirements: 66-73

ACCT 210, Principles of Accounting I (COM).....3

BADM 350, Legal Environment of Business (COM)3

BADM 360, Organization and Management (COM)3

ECON 202, Principles of Macroeconomics * (COM) (G)3

ECON 370, Marketing3

or MCOM 313, Publicity Methods2

ENGL 379, Technical Communication (AW)3

HLTH 251, First Aid and CPR (COM).....1

PE 320-320L, Lifeguard Training and Lab (COM).....1-2

PE 322, Lifeguard Instructor (COM).....1

POLS 210, State and Local Government * ** (COM).....3

PRM 100, Introduction to Park and Recreation.....1

PRM 101, Parks and Society3

PRM 202-202L, Outdoor Recreation Resource

Management and Lab3

PRM 300-300L, Park and Recreation Facility Management and Lab.....3

PRM 302, Commercial Recreation and Tourism3

PRM 360, Recreation and Outdoor Programming3

PRM 496, Field Experience(1-12)

(8-12 credits required for program)

RECR 260, Fundamentals of Recreation Leadership3

RECR 342, Recreational Sports Programs and

Administration (COM)3

RECR 362, Recreation Across the Lifespan.....3

RECR 395, Practicum (COM)(1-3)

RECR 410, Current Issues in Recreation (AW)3

RECR 440, Administration of Leisure Services (COM)3

SPCM 215, Public Speaking (COM) *3

Electives: 15-22

Total Required Credits: 128

Recreation Administration Minor

Requirements for Recreation Administration Minor: 21-22 cr

PE 180, Foundations of HPER/A (COM).....2

or PRM 100, Introduction to Park and Recreation1

PRM 360, Recreation and Outdoor Programming3

RECR 260, Fundamentals of Recreation Leadership3

RECR 440, Administration of Leisure Services (COM)3

Take two of the following:

RECR 342, Recreational Sports Programs and

Administration (COM)3

RECR 362, Recreation Across the Lifespan3

Select 5 credits from the following courses:

BADM 350, Legal Environment of Business (COM).....3

BADM 360, Organization and Management (COM).....3

DANC 130, Dance Fundamentals **1

HDFS 141, Individual and the Family *3

HLTH 250-250L, Pre-Professional First Aid and CPR and

Lab (COM)2

PE 320-320L, Lifeguard Training and Lab (COM)1-2

PE 321-321L, Water Safety Instructor and Lab(COM).....(1-2)

POLS 210, State and Local Government * ** (COM)3

PR 301-301L, Park Interpretation and Lab3

PRM 101, Parks and Society3

PRM 302, Commercial Recreation and Tourism.....3

RECR 330, Therapeutic Recreation (COM).....3

RECR 395, Practicum (COM).....(1-3)

RECR 410, Current Issues in Recreation (AW)3

WL 110, Environmental Conservation ** (G)3

NFS 221, Survey of Nutrition3

Health Science (HSC)

(See Nursing)

History and Political Science Department

April Brooks, Head
Department of History and Political Science
Scobey Hall 310
605-688-4311
e-mail: april.brooks@sdstate.edu

Faculty

Professor Brooks, Head; Professors Berg, Schmidt; Professors Emeriti Bell, Crain, Funchion, Miller, Sweeney; Assistant Professor Agostini, Brewer, Fisher, Johnson, Vollan, York.

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 or 111, 112 plus 151, 152, and 480.

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

Mission Statement

The Department of History and Political Science complements the vision of South Dakota State University and the College of Arts and Sciences to be nationally distinctive and locally relevant through faculty teaching, service and scholarship. Departmental faculty efforts support a challenging curriculum which encourages civic participation to perpetuate the values and historic traditions of democracy. Its members encourage and prepare students, through a liberal education, to live in an increasingly interconnected world and to understand and appreciate the human diversity created by cultures, geography and time. The political science faculty engenders an awareness and understanding of global events, while the history faculty identifies the historic background and historical trends that influence these events. This curriculum is presented in a manner that develops and enhances critical thinking and communication skills to prepare students for meaningful employment, further scholarship and community engagement. These efforts facilitate the achievement of national distinction by the department's majors as scholars and engaged citizens.

The courses offered by the Department of History will prepare majors for careers in various professional occupations, and 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 Sciences core curriculum appropriate to the degree desired. See separate sections of this catalog for these requirements.

Teaching Specialization

Majors who wish to teach in the secondary schools are required to enroll in the teacher education program; for details, contact the College of Education and Counseling.

History (HIST) Major

Requirements for History Major, Bachelor of Science in Arts and Sciences

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity (not History).....	6
Goal #4 Arts and Humanities/Diversity: (not History).....	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 4

See the College of Arts and Sciences for additional information.	
Physical Science (CHEM, GEOG, PHYS, or PS)	4

Major Requirements: 36

HIST 300-400 level	18
HIST 151, United States History I * ** (COM).....	3
HIST 152, United States History II * ** (COM)	3
HIST 111, World Civilizations I * (COM)	3
or HIST 121, Western Civilization I * ** (COM)	3
HIST 112, World Civilizations II * (COM) (G)	3
or HIST 122, Western Civilization II * ** (COM) (G)	3
HIST 280, Writing History	3
HIST 480, Historical Methods and Historiography (COM) (AW)	3

Electives: 50

Total Required Credits: 128

No more than 6 credits in Independent Study (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.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Teaching Specialization Requirements:

Education Curriculum for Teachers of Academic Subjects

Professional Semester I

(Sophomore or Junior Year)

EDFN 338, Foundations of American Education (COM)	(1-2)
EPSY 302, Educational Psychology (COM)	3

Professional Semester II

(Junior or Senior Year)

SEED 420, 5-12 Teaching Methods.....	2
SEED 450, 7-12 Reading and Content Literacy (COM)	2
SEED 314, Supervised Clinical/Field Experience.....	1

Professional Semester III

(Senior Year)

SPED 405, Educating Secondary Students with Disabilities	2
SEED 410, Social Foundations, Management and Law	2
EDFN 475, Human Relations (COM)	3
ELED 488, K-8 Student Teaching (COM).....	(2-16)

SEED 488, 7-12 Student Teaching4-8

Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits between SEED 488 and ELED 488.

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

Special Methods (varies by content area) 3

EDFN 365, Computer-Based Technology and Learning (COM) (2)

EDFN 427-527, Middle School: Philosophy and Application 2

History (HIST) Minor

History Minor Requirements: 18

Additional 6 credits of upper level courses.....6

HIST 151, United States History I * ** (COM).....3

HIST 152, United States History II * ** (COM)3

Choose one of the following:

HIST 111, World Civilizations I * (COM).....3

HIST 121, Western Civilization I * ** (COM)3

Choose one of the following:

HIST 112, World Civilizations II * (COM) (G).....3

HIST 122, Western Civilization II * ** (COM) (G)3

Political Science (POLS)

April Brooks, Head

Gordon Tolle, Program Coordinator

Department of History and Political Science

Scobey Hall 304

605-688-4912

e-mail: gordon.tolle@sdstate.edu

Faculty

Distinguished Professor Emeritus Burns; Professors Lonowski, Tolle; Professor Emeritus Cheever; Associate 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 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). All must complete 6 hours in Political Science comparative government and/or international courses, either upper division or lower division. Further, all majors must complete POLS 461 or POLS 462 to satisfy the Advanced Writing Requirement. Majors may not apply Political Science credits toward general education requirements. Up to 6 credits of POLS 491-591 Independent Study may be applied to the POLS Major or Minor. POLS 494 Internship is graded Satisfactory/Unsatisfactory and will not be counted toward the Major or Minor. Finally, the B.S. degree in political science requires 6 additional humanities credits for a total of 12 credits. Students who complete MATH 123 or MATH 121 may apply a total of 6 credits from CSC 205,

STAT 281, SOC 307, and SOC 308 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 Sciences requirements. Finite Math (MATH 104) may be used to satisfy B.A. and B.S. requirements in Political Science. Refer to the Majors and Minors Requirements section for SGE, IGR, Globalization, and Advanced Writing requirements.

Teaching Specialization

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 offcampus 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, non-profit organizations, or advocacy groups 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 or non-profit organization. Students with this focus might pursue the Leadership and Management of Nonprofit Organizations minor.

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 both the public and private sectors. Students with this focus might pursue the Applied Information Technology minor.

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.

Political Science (POLS) Major

Requirements for Political Science Major, Bachelor of Arts in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, **and**

ENGL 201.....6

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity (except POLS).....6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics3

Goal #6 Natural Sciences.....6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship3

Goal #2 Personal Wellness.....2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness

(except POLS).....3

College Requirements: 5-16

See the College of Arts and Sciences for additional information.

Modern Language (proficiency at the 202 level).....	3-14
Social Sciences.....	2

Major Requirements: 36

Comparative or International Requirement ¹	6
POLS Elective (21 must be Upper Division).....	21
POLS 100, American Government * ** (COM).....	3
POLS 461, Early Political Philosophy (COM) (AW).....	3
or POLS 462, Modern Political Philosophy (COM) (AW).....	3
POLS 280, Political Inquiry.....	3

Electives: 37-49

POLS 253 (G) , or other globalization requirement.....	3
General Elective.....	34-46

Total Required Credits: 128

Requirements for Political Science Major, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201.....	6

Goal #2 Oral Communication:

SPCM 101*.....	3
Goal #3 Social Sciences/Diversity (except POLS).....	6
Goal #4 Arts and Humanities/Diversity.....	6
Goal #5 Mathematics.....	3
Goal #6 Natural Sciences Credits ²	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship.....	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness (except POLS).....	3

College Requirements: 20

See the College of Arts and Sciences for additional information.

Natural Sciences.....	8
Humanities.....	6
Social Sciences (except POLS).....	6

Major Requirements: 36

Comparative or International Requirement ¹	6
POLS Electives (must be Upper Division).....	21
POLS 100, American Government * ** (COM).....	3
POLS 461, Early Political Philosophy (COM) (AW).....	3
or POLS 462, Modern Political Philosophy (COM) (AW).....	3
POLS 280, Political Inquiry.....	3

Electives: 33-34

POLS 253 (G) , or other globalization requirement.....	3
General Electives.....	30-31

Total Required Credits: 128

NOTE: Graduate School Emphasis (Students who complete MATH 123 or MATH 121 may apply a total of 6 credits from CSC 205, STAT 281, SOC 307 and 308 toward the required 36 POLS credits.)

¹ For the Comparative or International Requirement, choose from among POLS 165, 253, 341, 343, 347, 350, 352, 417, 454.

² 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 SGR, and two credits must be from IGR Goal 1. The B.A. in Arts and Science requires a total of eight credits of natural science. Six credits must be from SGR Natural Science and two credits must be from the IGR Goal 1.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Political Science (POLS) Minor**Requirements for Political Science Minor: 18 cr**

You may opt for a minor with a concentration in the comparative/international area or the American politics area by carefully choosing your courses.

Upper division (over 300) credits.....	9
Additional POLS courses.....	6
POLS 100, American Government * **.....	3

Honors College (HON)

Timothy Nichols, Dean

Briggs Library 126, 605-688-5268

Box 2115, Brookings, SD 57007

E-mail: timothy.nichols@sdstate.eduWeb site: <http://www.sdstate.edu/honors/>Requirements to graduate with Honor College Distinction¹:

Honors General Education Courses.....	15
Contracted courses (300-400 level) in students' major/minor field of study.....	3-6
HON 100, Honors College Orientation.....	1
HON 303, Honors Colloquium.....	(1-4)
HON 491, Independent Study (COM).....	(1-3)

¹ 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. Honors Orientation is recommended for first semesters Honors students. Students must earn a minimum cumulative 3.5 GPA.

Horticulture, Forestry, Landscape and Parks (HO, LA, PR, PRM) Department

David Graper, Head

Department of Horticulture, Forestry, Landscape and Parks

Northern Plains Biostress Laboratory 201A

605-688-5136

fax: 605-688-4713

e-mail: sdsu.hflp@sdstate.edu**Faculty**

Professor Graper, Head; Professors Ball, Fennell, Johnson, Maca, Schaefer, Schleicher, Stubbles; Professors Emeriti Collins, Peterson; Associate Professors Burrows, Fokken; Associate Professor Emeriti Johnson; Instructor James; Instructor Emeritus Evers; Adjunct Faculty Doolittle (PS), Shunguang (EROS).

Programs

The Department offers instruction leading to the Bachelor of Science in Agriculture degree with majors in Horticulture, Landscape Architecture, and Park and Recreation Management. Courses are offered in Horticulture (HO), Landscape Architecture (LA), Park Management (PR), and Park and Recreation Management (PRM). See the Course Descriptions section of this catalog.

Horticulture (HO)

The Horticulture major is designed to prepare students for careers in nursery production, landscape, tree and turf management, garden center operation, 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. Four areas of specialization are available:

1. 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 curriculum.
2. Students interested in pursuing careers in managing nurseries, landscape maintenance, arboriculture, or garden center or greenhouse businesses should follow the Business curriculum.
3. Students interested in pursuing careers in food crop production and marketing should follow the Food Crops curriculum.
4. Students interested in pursuing careers in turf management should follow the Turfgrass curriculum.

Landscape Architecture (LA)

Landscape Architecture 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 and Recreation Management (PRM)

Park and Recreation professionals are needed to meet recreation demands resulting from expanding populations, increased leisure time, greater mobility and changing social attitudes. The curriculum in Park and Recreation Management is designed to prepare students for professional positions in parks and outdoor recreation, and recreation programming and administration. A minor in Recreation Administration is also offered. Two areas of specialization are available:

- 1) Students interested in parks and outdoor recreation, and employment with federal, state, county and municipal parks and recreation agencies and with private recreation and tourism enterprises, can tailor their program of study using the **Park Management Specialization** curriculum, offered through the Horticulture, Forestry, Landscape and Parks department.
- 2) Students interested in recreation programming and administration, and employment with municipal recreation agencies, YMCA/YWCAs, business, and therapeutic recreation in clinical as well as community settings, should follow the **Recreation Administration Specialization** curriculum, offered through the Health, Physical Education and Recreation department.

Horticulture (HO) Major

Leo Schleicher, Coordinator

Department of Horticulture, Forestry, Landscape and Parks

Northern Plains Biostress Laboratory 201A

605-688-5136

e-mail: leo.schleicher@sdsstate.edu

Requirements for Horticulture Major, Bachelor of Science in Agriculture:

System General Education Requirements*: 31

Goal #1 Written Communication:

ENGL 101 **and**

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:

MATH 1023

Goal #6 Natural Sciences:

BOT 201-201L **and**

CHEM 106-106L7

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship:

BIOL 101-101L3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness3

College Requirements: 12

HO 111-111L, Biology of Horticulture and Lab3

PS 213-213L, Soils and Lab * **2

PS 223-223L, Principles of Plant Pathology and Lab3

PS 305-305L, Insect Biology and Lab (COM)3

Major Requirements: 47

BOT 327-327L, Plant Physiology and Lab (COM)4

CHEM 108-108L, Organic and Biochemistry and Lab* (COM)(4, 1)

HO 100, Survey of Horticulture1

HO 222-222L, Fundamentals of Turf Management and Lab3

HO 231, Greenhouse Crop Production2

HO 250-250L, Woody Plants: Trees and Lab3

HO 260, Woody Plants: Shrubs and Vines2

HO 290, Professionalism in Horticulture Seminar2

HO 311-311L, Herbaceous Plants and Lab3

HO 312-312L, Plant Propagation and Lab3

HO 330, Arboriculture2

HO 350, Environmental Stewardship in Horticulture3

HO 440-440L, Vegetable Crop Systems(1-3)

or HO 411-411L, Fruit Crop Systems(1-3)

HO 464, Senior Project I (AW)1

HO 465, Senior Project II (AW)2

HO 494, Internship(1-12)

or HO 496, Field Experience(1-12)

PHYS 101-101L, Survey of Physics * (COM) and Lab4

STAT 281, Introduction to Statistics (COM)3

Electives: 29-30

General Electives: 5-6

Technical Electives: 24

Students are strongly encouraged to meet with their academic advisor to develop a plan of study that addresses one of the following suggested areas of emphasis. Select 24 credits from one of the following lists:

Production Emphasis: 24

HO 383-383L, Principles of Crop Improvement and Lab3

HO 412-412L, Greenhouse Management and Lab.....	3
HO 415, Nursery Management.....	3
HO 440-540, Vegetable Crop Systems.....(1-3)	
or HO 411-511, Fruit Crop Systems†.....	(1-3)
HO 322-322L, Turfgrass Pests and Lab.....	2
HO 331, Arboricultural Operations.....	1
HO 421, Turfgrass Stress Physiology.....	2
ACCT 210, Principles of Accounting I (COM).....	3
AST 434-434L, Landscape Irrigation and Lab.....	3
BADM 360, Organization and Management (COM).....	3
LA 201, Introduction to Landscape Design.....	3
HO 327-327L, Golf Course Design and Management and Lab.....	3
PS 343-343L, Weed Science and Lab.....	3

Business Emphasis: 24†††

ACCT 210, Principles of Accounting I (COM).....	3
BADM 360, Organization and Management (COM).....	3
ACCT 211, Principles of Accounting II (COM).....	3
AGEC 354, Agricultural Marketing and Prices.....	3
BADM 280, Personal Finance (COM).....	3
BADM 310, Business Finance (COM)††.....	3
BADM 334, Small Business Management (COM)††.....	3
BADM 350, Legal Environment of Business (COM)††.....	3
BADM 351, Business Law (COM).....	3
ECON 201, Principles of Microeconomics * (COM).....	3
ECON 202, Principles of Macroeconomics * (COM) (G).....	3
ECON 330, Money and Banking (COM).....	3
ECON 370, Marketing††.....	3
ECON 476-576, Marketing Research.....	3
AST 434-434L, Landscape Irrigation and Lab.....	3
HO 322-322L, Turfgrass Pests and Lab.....	2
HO 331, Arboricultural Operations.....	1
HO 383-383L, Principles of Crop Improvement and Lab.....	3
HO 440-540, Vegetable Crop Systems.....(1-3)	
or HO 411-511, Fruit Crop Systems†.....	(1-3)
HO 412-412L, Greenhouse Management and Lab.....	3
HO 415, Nursery Management.....	3
PS 343-343L, Weed Science and Lab.....	3

Food Crops Emphasis: 24

AST 434-434L, Landscape Irrigation and Lab.....	3
ENTR 202, Human Resource Operations in Entrepreneurship.....	1
ENTR 204, Finance/ Venture Capital in Entrepreneurship.....	1
ENTR 301, Marketing/Promotion in Entrepreneurship.....	1
HO 412-412L, Greenhouse Management and Lab.....	3
HO 440-540, Vegetable Crop Systems.....(1-3)	
or HO 411-511, Fruit Crop Systems.....(1-3)	
ABS 203, Global Food Systems ** (G).....	3
BADM 334, Small Business Management (COM).....	3
CA 230, Consumer Behavior.....	3
ENTR 205, Legal Issues/Business Structure/Risk Management.....	1
ENTR 207, Financial Analysis/Record Keeping/Accounting in Entrepreneurship.....	1
ENTR 304, Strategy/Pricing/Location in Entrepreneurship.....	1
ENTR 336, Entrepreneurship I (COM).....	3
ENTR 489, Business Plan Writing and Competition (COM).....	1
HMGD 171, Introduction to Hospitality Industry.....	3
HMGD 251, Foodservice Sanitation.....	1
MCOM 161-161L, Fundamentals of Desktop Publishing and Lab (COM).....	3
MICR 231-231L, General Microbiology and Lab (COM).....	4
MICR 311-311L, Food Microbiology and Lab.....	4
NFS 111, Food, People and the Environment **.....	3
NFS 151, Food Safety and Technology.....	3
NFS 341-341L, Food Science and Lab.....	4
NFS 351-351L, Principles of Food Processing and Lab.....	3

Turfgrass Emphasis: 24

HO 322-322L, Turfgrass Pests and Lab.....	2
PS 343-343L, Weed Science and Lab.....	3
BADM 360, Organization and Management (COM).....	3
AST 434-434L, Landscape Irrigation and Lab.....	3
HO 421, Turfgrass Stress Physiology.....	2
HO 422, Current Issues in Turfgrass Science.....	1
AST 213-213L, Ag, Industrial and Outdoor Power and Lab.....	3
BADM 334, Small Business Management (COM).....	3
BADM 350, Legal Environment of Business (COM).....	3
BOT 405-405L/505-505L, Grasses and Grasslike Plants and Lab.....	3
AM 381, Professional Behavior at Work.....	3
HO 383-383L, Principles of Crop Improvement and Lab.....	3
LA 201, Introduction to Landscape Design.....	3
PS 323, Soil Fertility and Plant Nutrient Management.....	3
HO 327-327L, Golf Course Design and Management and Lab.....	3

Science Emphasis: 24

Students wishing to pursue a graduate degree or laboratory science career should replace biology, math and chemistry in the core curriculum with these courses: BIOL 151-151L; MATH 120; and CHEM 112-112L. In addition, students should take BIOL 202-202L, BIOL 204 BIOL 204L, CHEM 114-114L, CHEM 326-326L, and CHEM 464 CHEM 466. Remaining credits should be used to support a focus area in horticulture.

Total Required 128

- † Modules must be different than those used to satisfy core curriculum.
- †† Students seeking a Business Minor must take either BADM/ECON 370, BADM 310, BADM 334, or BADM 350.
- ††† It is recommended that students take no more than 6 credits of HO/AST courses in developing a plan of study for the Business Emphasis.
- * The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits.
- ** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs).
- (G) Globalization Requirement.
- (AW) Advanced Writing Requirement.

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.

Horticulture (HO) Minor

Leo Schleicher, Coordinator
Department of Horticulture, Forestry, Landscape and Parks
Northern Plains Biostress Laboratory 201A
605-688-5136
e-mail: leo.schleicher@sdstate.edu

Horticulture Minor

Requirements for Horticulture Minor

HO 100, Survey of Horticulture.....	1
HO 111-111L, Biology of Horticulture and Lab.....	3
Choose one from the following:	
HO 250-250L, Woody Plants: Trees and Lab.....	3
HO 311-311L, Herbaceous Plants and Lab.....	3
Choose 11 additional credits from the following:	
HO 222-222L, Fundamentals of Turf Management and Lab.....	3
HO 231, Greenhouse Crop Production.....	2
HO 260, Woody Plants: Shrubs and Vines.....	2
HO 290, Professionalism in Horticulture Seminar.....	2
HO 312-312L, Plant Propagation and Lab.....	3
HO 322-322L, Turfgrass Pests and Lab.....	2
HO 330, Arboriculture.....	2
HO 331, Arboricultural Operations.....	1
HO 350, Environmental Stewardship in Horticulture.....	3

HO 383-383L, Principles of Crop Improvement and Lab.....	3
HO 412-412L, Greenhouse Management and Lab	3
HO 415, Nursery Management.....	3
HO 421, Turfgrass Stress Physiology	2
HO 422, Current Issues in Turfgrass Science.....	1
Choose one from the following:	
HO 440-540, Vegetable Crop Systems	(1-3)
HO 411-511, Fruit Crop Systems	(1-3)

Landscape Architecture (LA) Major
Martin Maca, Coordinator
Department of Horticulture, Forestry, Landscape and Parks
Northern Plains Biostress Laboratory 201A
605-688-5136
e-mail: martin.maca@sdstate.edu

Requirements for Landscape Architecture Major, Bachelor of Science in Agriculture:

System General Education Requirements*: 30-31

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity list and ECON 202	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102 or	
MATH 120	3
Goal #6 Natural Sciences list and	
BOT 201-201L or	
CHEM 106-106L	6

Institutional Graduation Requirements: 8-10**

Goal #1 Land and Natural Resource Stewardship:	
BIOL 101-101L or	
BIOL 151-151L	3-4
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 11

Choose at least 2 credits from the College of ABS Group I Courses in Agriculture.

HO 111-111L, Biology of Horticulture and Lab.....	3
LA 201, Introduction to Landscape Design.....	3
PS 213-213L, Soils and Lab * **	2
PS 305-305L, Insect Biology and Lab (COM).....	3
(This course also appears in the list of LA Technical Electives.)	

Major Requirements: 57

AST 434-434L, Landscape Irrigation and Lab.....	3
CEE 106-106L, Elementary Surveying and Lab	4
or CM 210-210L, Construction Surveying and Lab.....	3
ENGL 379, Technical Communication (AW).....	3
GE 123, Computer Aided Drawing.....	1
HO 250-250L, Woody Plants: Trees and Lab	3
HO 260, Woody Plants: Shrubs and Vines	2
HO 311-311L, Herbaceous Plants and Lab	3
LA 120, Fundamentals of Landscape Graphics.....	2
LA 231, Computer Applications in Landscape Architecture.....	3
LA 241, History of Landscape Architecture.....	3
LA 284, Landscape Graphics and Theory of Design	4
LA 314, Landscape Design Studio	4
LA 322, Landscape Site Engineering	3
LA 323, Landscape Construction	3
LA 324-324L, Planning Public Grounds and Lab	3
LA 364, Planting Design and Specifications.....	4

LA 421-421L, City Planning and Lab	3
LA 424-424L, Recreational Facilities Design and Lab	3
LA 464, Landscape Professional Practicum Studio	4
Electives: 23	
General Elective.....	1-3
Technical Elective	15
Must select one of the following emphasis areas: ¹	

Design/Build Emphasis (15 credits)

ACCT 210, Principles of Accounting I (COM).....	3
ACCT 211, Principles of Accounting II (COM).....	3
BADM 280, Personal Finance (COM).....	3
BADM 310, Business Finance (COM).....	3
BADM 334, Small Business Management (COM)	3
BADM 350, Legal Environment of Business (COM)	3
BADM 360, Organization and Management (COM)	3
BADM 474, Personal Selling (COM).....	3
ECON 201, Principles of Microeconomics * (COM)	3
HO 222-222L, Fundamentals of Turf Management and Lab	3
HO 312-312L, Plant Propagation and Lab ²	3
HO 412-412L, Greenhouse Management and Lab ²	3
HO 415, Nursery Management ²	3
PS 305-305L, Insect Biology and Lab (COM).....	3

Professional Practice Emphasis (15 credits)

ART 111, Drawing I * ** (COM).....	3
ART 121, Design I 2D * ** (COM)	3
ART 123, Three Dimensional Design * ** (COM).....	3
BIOL 311, Principles of Ecology *(COM) ²	3
BOT 419-419L, Plant Ecology and Lab(COM) (G) ²	4
GEOG 472, Introduction to GIS	3
GEOG 473-573, GIS: Data Creation and Integration.....	3
GEOG 474-574, GIS: Vector and Raster Modeling	3
LA 440-440L, Restoration Ecology and Lab ²	4
LA 560-560L, Landscape Ecology and Lab ²	4
PHIL 220, Introduction to Ethics * ** (COM).....	3
PHIL 320, Professional Ethics.....	3
PS 243, Principles of Geology* **	3
RANG 210-210L, Range Plant Identification and Lab	2
SOC 240, The Sociology of Rural America* ** (COM) (G).....	3
SOC 440, Urban Sociology * ** (COM) (G)	3

- 1 Students wishing to complete a Business Minor should take ECON 201 and additional 15 credits from ACCT and BADM below. Students wishing to complete a Horticulture Minor should take an additional 12 credits of HO courses.
- 2 Course requires completion of one or more prerequisites.

Total Required Credits: 128

- * The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)
- ** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)
- (G) **Globalization Requirement**. (See page 46 for details.)
- (AW) **Advanced Writing Requirement**. (See page 47 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.

Park and Recreation Management Major-
 Park Management Specialization
Park Management Specialization
Russell Stubbles, Coordinator
Department of Horticulture, Forestry, Landscape and Parks
Northern Plains Biostress Laboratory 201A
605-688-5136
email: sdsu.hflp@sdsu.edu

This program will be discontinued beginning fall 2011.

System General Education Requirements*: 31

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
SOC 150 or	
SOC 240 or	
SOC 100 or	
ANTH 210 and	
PSYC 101	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102	3
Goal #6 Natural Sciences:	
BIOL 101-101L and	
CHEM 106-106L	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship:	
PS 213-213L	3
Goal #2 Personal Wellness	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
POLS 210 or POLS 100	3

Major Requirements: 59

ACCT 210, Principles of Accounting I (COM)	3
BIOL 103-103L, Biology Survey II and Lab* (COM)	3
or BIOL 200-200L, Animal Diversity and Lab*	4
or BOT 201-201L, General Botany and Lab* (COM)	3
ECON 202, Principles of Macroeconomics * (COM) (G)	3
ENGL 379, Technical Communication (AW)	3
HO 111-111L, Biology of Horticulture and Lab	3
HO 222-222L, Fundamentals of Turf Management and Lab	3
HO 250-250L, Woody Plants: Trees and Lab	3
HLTH 251, First Aid and CPR (COM)	1
PHYS 101-101L, Survey of Physics * (COM) and Lab	4
POLS 320, Public Administration (COM)	3
PRM 100, Introduction to Park and Recreation	1
PRM 101, Parks and Society	3
PRM 202-202L, Outdoor Recreation Resource Management and Lab	3
PRM 300-300L, Park and Recreation Facility Management and Lab	3
PRM 302, Commercial Recreation and Tourism	3
PRM 360, Recreation and Outdoor Programming	3
PRM 494, Internship	1-12
PR 301-301L, Park Interpretation and Lab	3
PR 401-401L, Advanced Park Management and Lab	3
RECR 440, Administration of Leisure Services (COM)	3
SPCM 215, Public Speaking (COM) *	3

General Electives: 6

Economics/Business Electives: Choose 6 credits

ACCT 211, Principles of Accounting II (COM)	3
BADM 350, Legal Environment of Business (COM)	3
BADM 351, Business Law (COM)	3
BADM 360, Organization and Management (COM)	3
BADM 474, Personal Selling (COM)	3
ECON 201, Principles of Microeconomics * (COM)	3
ECON 370, Marketing	3
ECON 433, Public Finance (COM) (AW)	3
ECON 472-572, Resource and Environmental Economics ** (COM)	3
STAT 281, Introduction to Statistics (COM)	3

Land-use Planning Electives: Choose 6 credits

GEOG 363, Rural Geography	3
GEOG 415-515, Environmental Geography	3
GEOG 447, Geography of the Future	3
GEOG 464, Local and Regional Planning	3
GEOG 472, Introduction to GIS	3
GEOG 473-573, GIS: Data Creation and Integration	3
GEOG 474-574, GIS: Vector and Raster Modeling	3
LA 201, Introduction to Landscape Design	3
PLAN 471-571, Principles of State, Regional and Community Planning	3
PLAN 472-572, Techniques of State, Regional and Community Planning	3
PS 310-310L, Soil Geography and Land Use Interpretation and Lab** (G)	3
Choose the following:	
GEOG 212, Geography of North America * ** (COM)	3
GEOG 365, Land Use Planning	3

Resource Management Electives: Choose 12 credits

AST 434-434L, Landscape Irrigation and Lab	3
HO 330, Arboriculture	2
HO 331, Arboricultural Operations	1
LA 440-440L, Restoration Ecology and Lab	4
PR 303-303L, Forest Ecology and Management and Lab	3
PS 243, Principles of Geology* **	3
PS 244, Geological Resources of South Dakota Lab	1
RANG 105-105L, Introduction to Range Management and Lab**	3
RANG 321, Wildland Ecosystems	3
WL 220, Introduction to Wildlife and Fisheries Management	3
WL 411-411L, Principles of Wildlife Management and Lab	4
WL 412-412L, Principles of Fisheries Management and Lab	3
WL 430-430L, Human Dimensions in Wildlife and Fisheries and Lab** (G)	4

Total Required Credits: 128

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Hospitality Management (HMGT)

(See Consumer Sciences)

Industrial Management (IM)

(See Engineering Technology and Management)

Interdisciplinary Studies

Kathie Erdman, Coordinator and Advisor
College of Arts and Sciences
Medary Commons 122
605-688-4153
e-mail: kathie.Erdman@sdstate.edu

Programs

The Interdisciplinary 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 and other graduation requirements of the University, the student must complete 40 credits of courses which accomplish the attainment of a uniquely defined goal. These 40 credits should be from two or more disciplines and should include both lower and upper division courses. Students may elect to pursue designated areas of study or complete one or more minors as part of their degree program. Students will be assigned an academic adviser to assist in selecting courses to include in the Plan of Study. Prior to acceptance to the Interdisciplinary Studies major, a Plan of Study must be presented and approved by the College of Arts and Sciences Dean. Any subsequent changes to the plan of study must also be reviewed. Students must be in Interdisciplinary Studies for at least two semesters prior to graduation and must complete a minimum of 24 credits after declaring Interdisciplinary Studies. A cumulative GPA of 2.2 is required for admission into Interdisciplinary Studies. Students pursuing the Interdisciplinary Studies degree at off-campus sites or through distance education must complete their program goal statement and have proposed Plan of Study courses reviewed prior to each semester.

Interdisciplinary Studies Major

Requirements for Interdisciplinary Studies Major, Bachelor of Science:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, Composition I *, and	
ENGL 201, Composition II *	6
Goal #2 Oral Communication	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

Major Requirements: 40

Plan of Study courses selected by student	32
GS 262, Foundations of Interdisciplinary Studies	3
GS 362, Interdisciplinary Inquiry and Integration	2
GS 489, Transition to Careers	1
GS 479, Interdisciplinary Studies Capstone	2

Electives: 50

Total Required Credits: 128

* The 30 credit Board of Regents System **General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Interior Design (ID)

(See Consumer Sciences)

Journalism and Mass Communication (MCOM)

Mary Arnold, Head

Yeager Hall 211
605-688-4171
e-mail: mary.arnold@sdstate.edu

Faculty

Professor Arnold, Head; Professors Giago, Lucchesi, Olson; Professor Emeriti Lee, Getz; Associate Professors M. Cecil, Heinle, Oguntoyinbo, Paulson; Associate Professors Emerita Laird, Perpich; Assistant Professors Klock, Tiernan, Koroglu; Instructor Jensen; Instructor Emeritus C. Cecil.

Programs

The four-year advertising program awards either a Bachelor of Arts or Bachelor of Science Degree. Students are encouraged to select one of the following emphases within Advertising: Creative Strategy, Interactive Media, or Public Relations.

The four-year journalism program awards either a Bachelor of Arts or Bachelor of Science Degree. Students are encouraged to select one of the following emphases within Journalism: Broadcast Journalism, News-editorial Journalism or Media Production. The Journalism major is offered both at the main campus in Brookings and at the University Center in Sioux Falls.

The Department cooperates with the College of Agriculture and Biological Sciences to offer a four-year Bachelor of Science Degree in Agricultural Education, Communication and Leadership.

The Department also cooperates with the Department of Economics in offering the Marketing Minor.

Journalism and Advertising (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 (ACEJMC). It is one of 113 schools so accredited. The Department has been accredited continuously since accrediting began in 1948. Journalism and Advertising majors take a minimum of 80 credit hours outside of journalism and mass communication with a minimum of 65 credit hours in the liberal arts and sciences. Journalism and Mass Communication students must have a "C" or better in Freshman Composition; must have a graduation average of 2.5 in journalism and mass communication courses; and must have grades of "C" or better in all major courses. Students in both the Journalism and Advertising major are required to purchase a Macintosh laptop and software appropriate for the discipline.

Advertising Major

Advertising majors are required to take a minimum of 38 credits of MCOM courses, but may not take more than 44 credits without extending the 128-credit requirement for graduation. Students must take a total of 18-24 credits of social sciences. That total includes credits that fulfill the SGR#3 Social Sciences and the IGR #3 Social Science requirements. Six credits of Humanities and Arts can be used to achieve the 24 credits. Advertising majors select one of the three emphases below.

Creative Strategy Emphasis

Students who want to work in the account management and creative areas of advertising, including copywriting, take this emphasis. It is recommended that students seeking a career in advertising art direction take this emphasis and pursue a double major in Graphic Design or a minor in Art through the Department of Visual Arts.

Interactive Media Emphasis

Students seeking employment in the areas of print and broadcast, online and social media planning; interactive marketing; research; and media sales take this emphasis.

Public Relations Emphasis

Students who want to work in public relations and corporate marketing positions requiring an understanding of integrated marketing communications take this emphasis.

Minor in Advertising

Available for students majoring in other fields. Students take four required advertising courses for 12 credits plus 6 electives for a total of 18 credits.

Journalism Major

Journalism majors are required to take a minimum of 36 credits of MCOM courses, but may not take more than 44 credits without extending the 128-credit requirement for graduation. Students must take a total of 24 credits of social sciences. That total includes credits that fulfill the SGR #3 Social

Sciences and the IGR #3 Social Science requirements. Journalism majors select one of the three emphases below.

News-Editorial Journalism Emphasis

Students who want to be reporters, editors or page designers for print and online media, photojournalists and those seeking employment in corporate or government communications take this emphasis.

Broadcast Journalism Emphasis

Students who want to work in news in radio and television or online media take this emphasis.

Agricultural Education, Communications and Leadership

Students interested in agriculture and developing a flexible program of study including oral, written, electronic, and broadcast communications and studies in areas such as leadership and policy in agriculture should take this major.

Minor in Journalism

Available for students majoring in other fields. Courses required are Basic Newswriting, and other journalism and mass communication courses to total 16 credits.

Graduate Work in Journalism

An M.S. degree is offered on campus and online. (See the Graduate School Catalog for details.)

Facilities

The Department moved into expanded and renovated facilities in 2000 that cost \$2.4 million. The Yeager Media Center, completed in 2011, is an up-to-date high-definition television and new media facility and the primary center for SDSU campus television and media production. There are also four computer laboratories — for newswriting; for news editing and digital media; for broadcasting and advertising; and for photojournalism and media production. All have state-of-the-art equipment and software. Broadcast and advertising courses are in the Joe L. Floyd News Media Laboratory. It is connected to digital video and audio production suites. Second floor of Yeager Hall includes a conference room, a reading room, a student lounge, and individual offices for the Department's 11 faculty members. The building has been renamed Yeager Hall in recognition of the contributions of Anson and Ada May Yeager. Mr. Yeager was the longtime editor of the Argus Leader in Sioux Falls.

Advertising Major

Requirements for Advertising Major, Bachelor of Arts and Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication	6
Goal #2 Oral Communication	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity and ECON 201	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 34

See the College of Arts and Sciences for additional information about additional requirements for the B.A. and B.S. degrees.

Major Requirements: 41

ECON 370, Marketing	3
MCOM 155, Information Gathering	2
MCOM 210-210L, Basic Newswriting and Studio (COM)	3
MCOM 220-220L, Introduction to Digital Media and Lab	2
MCOM 225-225L, Introduction to Digital Production and Lab	2
MCOM 416, Mass Media in Society (G)	3
or MCOM 476, International and Ethnic Advertising	3
MCOM 430-530, Media Law (COM)	3
MCOM 494, Internship (COM)	(1-12)
(2 credits required for Advertising major.)	
MCOM 370, Advertising Principles (COM)	3
MCOM 371-371L, Advertising Copy and Layout and Studio(COM) (AW)	3
MCOM 442-442L, Integrated Marketing Communication and Campaigns Studio (COM)	3

Choose one of the following suggested emphases: 12

Creative Strategies Emphasis

MCOM 372-372L, Advertising Media Strategies and Lab	3
MCOM 314, Sales, Promotion and Marketing	3
MCOM 489, Portfolio Production and Design (COM)	(1-3)

Interactive and Media Emphasis

MCOM 314, Sales, Promotion and Marketing	3
MCOM 372-372L, Advertising Media Strategies and Lab	3
MCOM 411-411L, Media Analytics and Studio	3

Public Relations Emphasis

MCOM 243, Public Relations Principles3
MCOM 472, Media Research and Planning (COM).....3
MCOM 340-340L, Broadcast Announcing and Performance
and Lab 3
or MCOM 492-592, Topics (COM).....(1-5)

Electives: 14-15

Total Required Credits: 128

- * The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)
- ** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)
- (G) **Globalization Requirement**. (See page 46 for details.)
- (AW) **Advanced Writing Requirement**. (See page 47 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.

Advertising Minor

Requirements for Advertising Minor: 18 credits

MCOM 370, Advertising Principles (COM)3
MCOM 371-371L, Advertising Copy and Layout and
Studio(COM) (AW)3
MCOM 372-372L, Advertising Media Strategies and Lab3
MCOM 476, International and Ethnic Advertising3

Choose 6 credits from the following:

MCOM 243, Public Relations Principles3
MCOM 314, Sales, Promotion and Marketing3
MCOM 442-442L, Integrated Marketing Communication and
Campaigns Studio (COM).....3
MCOM 472, Media Research and Planning (COM).....3
MCOM 475-575, Public Relations (COM)3
MCOM 489, Portfolio Production and Design (COM).....(1-3)

Journalism (MCOM) Major

Requirements for Journalism Major, Bachelor of Arts and Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication6
Goal #2 Oral Communication3
Goal #3 Social Sciences/Diversity6
Goal #4 Arts and Humanities/Diversity6
Goal #5 Mathematics3
Goal #6 Natural Sciences6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship3
Goal #2 Personal Wellness2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness
(Option 1):.....3

College Requirements: 34

See the College of Arts and Sciences for additional information about additional requirements for the B.A. and B.S. degrees.

Major Requirements: 17

MCOM 155, Information Gathering..... 2
MCOM 210-210L, Basic Newswriting and Studio (COM)3
MCOM 220-220L, Introduction to Digital Media and Lab2
MCOM 225-225L, Introduction to Digital Production and Lab2
MCOM 416, Mass Media in Society (G)3
or MCOM 417, History of Journalism (G).....3
MCOM 430-530, Media Law (COM).....3

MCOM 494, Internship (COM).....(1-12)
(2 credits of MCOM 494 are required for Journalism major.)

Electives: 38-39

Suggested Emphases: 19 Choose one of the following.

Broadcast Journalism Emphasis

MCOM Electives.....4
MCOM 331-331L, Video Production and Lab(COM)3
MCOM 332-332L, Broadcast Writing and Reporting and Lab.....3
MCOM 333-333L, Television News Reporting and Lab.....3
MCOM 340-340L, Broadcast Announcing and Performance
and Lab3
MCOM 433-433L, Advanced TV News Reporting and Lab (AW).....3

News-Editorial Emphasis

MCOM Electives.....4
MCOM 265-265L, Basic Photography and Studio (COM).....(2-3)
(2 credits of MCOM 265-265L are required.)
MCOM 311-311L, News Editing and Editing Lab(COM)3
MCOM 332-332L, Broadcast Writing and Reporting and Lab.....3
MCOM 370, Advertising Principles (COM)3
MCOM 438-438L, Public Affairs Reporting and
Studio (COM) (AW)3
MCOM 490, Seminar (COM).....1

Notes: All students must demonstrate advanced Information Technology Literacy (ITL). Numerous departmental courses fulfill this requirement, as do courses from other departments.

Total Required Credits: 128

- * The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)
- ** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)
- (G) **Globalization Requirement**. (See page 46 for details.)
- (AW) **Advanced Writing Requirement**. (See page 47 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.

Journalism (MCOM) Minor

Mary Peterson Arnold, Head
Department of Journalism and Mass Communication
Yeager Hall 211
605-688-4171
e-mail: mary.arnold@sdstate.edu

Requirements for Journalism Minor: 16cr

MCOM courses13
MCOM 210-210L, Basic Newswriting and Studio (COM)3

Lakota (LAKL)

(See Modern Languages)

Landscape Architecture (LA)

(See Horticulture, Forestry, Landscape and Parks)

Latin American Studies (LAS)

Minor

(See Modern Languages)

(Pre-) Law

Gordon Tolle, Coordinator

Department of History and Political Science

Scobey Hall 304

605-688-4912

e-mail: gordon.tolle@sdstate.edu

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 Studies. 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.

Leadership and Management of Nonprofit Organizations (LMNO)

Minor (See Consumer Sciences)

Manufacturing Engineering

Technology (MNET)

(See Engineering Technology and Management)

Marketing

(See Economics)

Mathematics and Statistics (MATH, STAT) Department

Kurt Cogswell, Head

Department of Mathematics and Statistics

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Faculty

Mathematics: Professor Cogswell, Head; Professors Abraham, Flint, Kemp, Kindermann, Larson, Nielsen, Schaal, Schmidt; Professors Emeriti Ayers, Kranzler, Lacher, Monahan, Yocom; Associate Professors Biesecker, D. Vestal, S. Vestal; Associate Professors Emeriti Broschat, Clever; Assistant Professors Djira, Ge, Ke, Kimn, Roe, Struck; Instructors Ahrendsen, Alsaker, Bahr, Bingen, Christensen, Clark, Diischer, Ji, Leiferman, Omodt, Ulvestad, Werner.

Statistics: Professors Kindermann, Nielsen, Wicks; Associate Professor Ren; Assistant Professors Brandenburger, Djira, Ge, Ke, Roe, Struck, Wu; Instructors Ahrendsen, Bahr.

Mission

The mission of the SDSU Department of Mathematics and Statistics, in support of the mission of the College of Engineering and the University, is to provide excellent instruction, conduct high-quality research and scholarly activity, and prepare graduates and provide mathematical and statistical services that are both regionally relevant and internationally competitive.

Programs

Mathematics Major (B.S.)

The Department offers the Bachelor of Science in Mathematics through the College of Engineering. This program provides a rigorous preparation for careers in applied mathematics, computational science, financial engineering, or statistics, 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, 48 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 College of Engineering 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.

Minors

The minor in mathematics consists of 23 credits as outlined in the section on Major and Minor Requirements. The minor in statistics consists of 17 credits as outlined in the section on Major and Minor Requirements. The minor in informatics consists of 18 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.

Graduate Programs

The department offers a Ph.D. in Computational Science and Statistics, a Master’s Degree in Mathematics, and a Master’s Degree in Statistics. A specialization in Statistics is available within the Master’s Degree program, as are Graduate Minors in Statistics at the MS and PhD level. Please see the Graduate Catalog for more details.

Mathematics (MATH) Major

Requirements for Mathematics Major, Bachelor of Science in the College of Engineering:

System General Education Requirements*: 33

Goal #1 Written Communication:

ENGL 101, **and**

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity:

ECON 2026

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:

MATH 1234

Goal #6 Natural Sciences:

PHYS 211-211L, **and**

PHYS 213-213L, **or**

CHEM 106-106L, **or**

CHEM 112-112L8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness3

Major Requirements: 33

MATH 401 Senior Capstone and Advanced Writing (AW).....	1
MATH 401 Senior Capstone and Advanced Writing (AW).....	1
CSC 150, Computer Science I (COM)	3
MATH 198, The Mathematics Profession.....	1
MATH 125, Calculus II * (COM).....	4
MATH 225, Calculus III * (COM)	4
MATH 253, Logic, Sets, and Proof	3
MATH 315, Linear Algebra (COM)	4
MATH 321, Differential Equations (COM).....	3
STAT 381, Introduction to Probability and Statistics (COM)	3
MATH 413, Abstract Algebra I (COM).....	3
MATH 425, Real Analysis I (COM).....	3

Electives: 53

Mathematics or Statistics Electives (300 level or above)	15
Electives (consider Emphasis Area or Minor courses)	38

Total Required Credits: 128

Notes: A grade of “C” or above is required in all Math courses.

Two sequences must be completed. Possible sequences include: MATH 413-414, MATH 425-426, MATH 253-316, MATH 261-361, STAT 381-482, MATH 355-355L/492 (Teaching Capstone), or other sequences approved by the department.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Teaching Specialization Requirements: 50

SEED 499, General Methods	2
PSYC 101, General Psychology * ** (COM)	3
or SOC 100, Introduction to Sociology * (COM) (G).....	3
or SOC 150, Social Problems * ** (COM) (G).....	3
ANTH 421-521, Indians of North America **	3
or HIST 368, History and Culture of the American	
Indian ** (COM).....	3
or INED 411/511, South Dakota Indian Studies (COM).....	3
MATH 316, Discrete Mathematics (COM)	3
MATH 261, Geometry for Teachers.....	3
MATH 371, Technology for Mathematics Educators	3
MATH 433, Capstone: Mathematics Education	3
MATH 355-355L, Methods of Teaching Mathematics and Lab.....	3
EDFN 338, Foundations of American Education (COM)	(1-2)
EPSY 302, Educational Psychology (COM)	3
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EDFN 475, Human Relations (COM)	3
EDFN 427-527, Middle School: Philosophy and Application	2
SEED 450, 7-12 Reading and Content Literacy (COM).....	2
SEED 314, Supervised Clinical/Field Experience.....	1
SEED 410, Social Foundations, Management and Law	2
SPED 401, Introduction to Educating Secondary Students with	
Disabilities (COM)	1
SEED 488, 7-12 Student Teaching (COM).....	(2-16)

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Mathematics Majors who are not pursuing an Education Specialization are encouraged to choose an Emphasis Area as early as possible. Possible Emphasis Areas are Actuarial, Applied Mathematics, Mathematical Biology, Pure Mathematics, and Statistics. Associated with each Emphasis Area is a group of courses defined below:

Mathematics (MATH) Minor

Requirements for Mathematics Minor: 23 credits

Mathematics courses at the 200 level or above (note that STAT 281 may not be used for this requirement)	12
MATH 123, Calculus I * (COM).....	4
MATH 125, Calculus II * (COM).....	4
MATH 253, Logic, Sets, and Proof	3
Required for Minors in the Teacher Education Program:	
MATH 123, Calculus I * (COM).....	4
MATH 125, Calculus II * (COM).....	4
MATH 253, Logic, Sets, and Proof	3
MATH 261, Geometry for Teachers.....	3
MATH 355-355L, Methods of Teaching Mathematics and Lab.....	3
Two of the following:	
MATH 315, Linear Algebra (COM).....	4
MATH 316, Discrete Mathematics (COM).....	3
MATH 413, Abstract Algebra I (COM).....	3

Note: An average of "C" is required in the minor courses.

Statistics Minor

Requirements for Statistics Minor: 17 credits

STAT 410-510, SAS Programming I	3
STAT 445-545, Nonparametric Statistics.....	3
STAT 460-560, Time Series Analysis	3
STAT 486-586, Design of Surveys (COM).....	3
Choose one of the following:	
STAT 281, Introduction to Statistics (COM).....	3
STAT 381, Introduction to Probability and Statistics (COM).....	3
Choose one of the following:	
STAT 441-541, Statistical Methods II.....	3
STAT 482-582, Probability and Statistics II.....	3

Informatics Minor

Requirements for Informatics Minor: 18 credits

INFO 101, Introduction to Informatics.....	3
INFO 102, Social and Ethical Aspects of Informatics	3
INFO 201, Applied Informatics	3
Take 9 credits from the following list:	
BIOL 457-557, Ecological Modeling	3
BIOL 459-559, Bioinformatics.....	3
CSC 447/547, Artificial Intelligence (COM).....	3
CSC 484, Database Management Systems (COM).....	3
CSC 492/592, Topics Data Mining (COM).....(1-5)	
ECON 428, Mathematical Economics.....	3
GEOG 484-484L, Remote Sensing and Lab	3
GEOG 472 - Introduction to GIS	3
GEOG 473-573 - GIS: Data Creation and Integration.....	3
STAT 436 - Bioinformatics.....	3
SOC 462-562 - Population Studies (COM).....	3
STAT 460-560 - Time Series Analysis.....	3

Mechanical Engineering (ME) Department

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Faculty

Professor Bassett, Head; Professors Delfanian, Moutsoglou,; Associate Professors Hu, Duan; Assistant Professors Du, Gent, Michna; Instructors Peters, Twedt.

Programs

Bachelor of Science Degree in Mechanical Engineering

Mechanical Engineering is a profession in which knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with sound judgment to efficiently employ the materials and forces of nature for the benefit of society.

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 technical assistance to existing and emerging businesses, industry and government. The program's educational objectives are as follows:

The Mechanical Engineering program provides a learning environment that prepares graduates to achieve the following career and professional accomplishments:

1. Achieve positions of increasing responsibility or leadership with employers, professional organizations, or civic organizations in recognition of professional competence and the ability to function in team environments.
2. Complete licensure, certification, short courses, workshops or advanced degrees in technical or professional subject areas as they adapt to contemporary engineering practice and the global business environment.

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 found in research, development, design, testing, manufacturing, operations and maintenance, marketing and sales, or in management and administration. Mechanical Engineers 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, building HVAC systems, aircraft/aerospace, power, petroleum, computer, machinery (industrial, agricultural, recreational, office, etc), plastics, electronics, textiles, pharmaceutical, paper products, energy 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 a challenging and satisfying career.

The curriculum of 136 credits 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, dynamic systems, controls, materials, electrical fields and others. In the Design category, which is integrated throughout the curriculum, the student deals with the systems approach to solving problems where ideas, imagination, modeling and analysis are joined together to create a new or improved device, product or system. Communications courses include English, speech, graphics and computer applications. The Mechanical Engineering Department recognizes the importance of the humanities and social sciences in the general education component of undergraduate education, and the need for this component to complement the technical content of an education in engineering. 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 courses 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, Mechanical Systems Design I-II, places every student on a team that designs, builds, tests, and demonstrates a significant engineering project. The design projects are often solicited from industry and provide students with valuable real world team design experience. Another significant aspect of the curriculum is the opportunity to take technical electives including courses in various applications of thermal and fluid engineering, machine design, and industrial engineering.

Outcomes of the program are that Mechanical Engineering graduates have:

1. an ability to apply knowledge of mathematics, science, and engineering including multi-variable calculus, differential equations, statistics, and linear algebra
2. an ability to design and conduct experiments, as well as to analyze and interpret data
3. an ability to design a system, component, or process to meet desired needs
4. an ability to function on multi-disciplinary teams
5. an ability to identify, formulate, and solve engineering problems
6. an understanding of professional and ethical responsibility
7. an ability to communicate effectively
8. the broad education necessary to understand the impact of engineering solutions in a global and social context
9. a recognition of the need for, and an ability to engage in lifelong learning
10. a knowledge of contemporary issues
11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The Department helps students arrange internship or cooperative experiences 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, or 497. These credits, upon approval, will fulfill part of the technical-elective requirements.

Several related minors are available that may be of interest to Mechanical Engineering students. Minors in Biomedical Engineering,

Mathematics, Nuclear Engineering, and Sustainable Energy Systems are offered. With proper planning, one or more of these minors can be incorporated into the student's curriculum with little or no extra coursework. Students interested in pursuing one of these minors should work closely with their academic advisor and the minor's coordinator to develop a curriculum plan.

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 that fail to earn a C or better in any of these courses, will be required to take them in each subsequent semester until the requirement is met. Students must follow course prerequisite requirements. Graduating seniors must take the Fundamentals of Engineering exam or similar test as an exit exam.

Each Mechanical Engineering student is assigned an academic adviser who provides valuable assistance with professional career advice and course planning. Students should meet with their adviser at least twice per semester for assistance with their progress and course planning. A student's graduation checklist must be filled in and forwarded to the department head during the second to last semester of a student's program. 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 catalog.

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.

Minor in Sustainable Energy Systems

The Sustainable Energy Systems Minor is appropriate for students interested in gaining a background in sustainability, energy efficiency, and renewable energy technologies. The minor helps to prepare graduates with training that distinguishes them from their peers and supports immediate entry into careers in energy resource development, energy production, and end-use technologies.

There is an existing demand for engineers with expertise in sustainable energy development. Approximately 30% of the recent SDSU mechanical engineering graduates have entered careers with sustainable energy applications. The National Society of Professional Engineers (NSPE) defines sustainable development as "the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management while conserving and protecting environmental quality and the natural resource base essential for future development" (NSPE Code of Ethics, revised July 2007).

An increased emphasis on sustainability in industry and government has resulted in new careers focused on the design and implementation of energy efficiency measures and renewable energy systems. Students who can demonstrate that they have specific academic training in topics that prepare them to facilitate the development and use of sustainable energy systems will be able to fill the increasing number of engineering positions available in regional industries focused on alternative energy and energy efficiency technologies. This training will also prepare them to achieve certifications such as LEED (Leadership in Energy and Environmental Design) that are required by a growing number of agencies, including the State of South Dakota, for the design of buildings under their control.

The minor requires completion of 18 credits of coursework. A basic understanding of thermodynamics is crucial to any study of energy systems, thus it is specified as a core course. Since renewable energy technologies are at the heart of many sustainable systems, the minor includes a core course covering renewable energy topics. Supporting courses have been selected to allow the student to focus on a particular aspect of sustainable systems. Minor approved courses have been chosen for their relevance to sustainable energy system design.

Students completing the minor must understand how energy is produced, the fundamentals of energy conversion and efficiency, and demonstrate technical expertise in some area of sustainable energy systems.

Upon completion of the minor, the student will be able to:

1. Apply mathematics and engineering science to the analysis of energy conversion systems.
2. Understand and apply the concept of sustainability to the design of energy conversion systems.
3. Demonstrate competency in analysis and design of a particular type of energy converting device or system
4. Demonstrate the ability to work effectively in an area of sustainable energy systems.

Mechanical Engineering (ME) Major

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)

System General Education Requirements*: 33

Goal #1 Written Communication:

ENGL 101, **and**
ENGL 2776

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity:

ECON 202 (G)6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:

MATH 1234

Goal #6 Natural Sciences:

CHEM 112-112L,
PHYS 211-211L8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness3

Major Requirements: 78

EE 300-300L, Basic Electrical Engineering I and Lab3

EE 302-302L, Basic Electrical Engineering II and Lab3

EM 214, Statics (COM)3

EM 215, Dynamics (COM)3

EM 321, Mechanics of Materials (COM)3

EM 331, Fluid Mechanics (COM)3

GE 101, Introduction to Engineering and Technology1

GE 121, Engineering Design Graphics I1

GE 122, Engineering Design Graphics II1

GE 123, Computer Aided Drawing1

GE 225, Survey of Machine Tool Applications1

MATH 125, Calculus II * (COM)4

MATH 225, Calculus III * (COM)4

MATH 321, Differential Equations (COM)3

MATH 331, Advanced Engineering Mathematics3

or MATH 471-571, Numerical Analysis I (COM)3

ME 240, Introduction of Mechanical Design3

ME 241, Engineering Materials3

ME 311, Thermodynamics I3

ME 312, Thermodynamics II (COM)3

ME 321, Fundamentals of Machine Design3

ME 323, Vibrations3

ME 376-376L, Measurements and Instrumentation and Lab2

ME 415, Heat Transfer3

ME 421, Design of Machine Elements3

ME 451, Automatic Controls3

ME 452, Dynamic Systems Lab1

ME 476, Thermo-Fluids Lab1

ME 478, Mechanical Systems Design I1

ME 479-479L, Mechanical Systems Design II and

Lab (COM) (AW)2

PHYS 213-213L, University Physics II and Lab * (COM)4

STAT 381, Introduction to Probability and Statistics (COM)3

Technical Electives.....17

The 17 credits of technical electives may be chosen from the following list. At least two courses must be in design. **Design courses are identified by a (D)**. At least three of the electives must have the ME prefix. Courses not listed may qualify as technical electives on approval from the ME department.

ABE 350-350L, Hydraulic and Pneumatic Systems and Lab3

CSC 130, Visual Basic Programming (COM)3

CSC 150, Computer Science I (COM)3

CSC 150L, Computer Science I Lab (COM)0

CSC 218, Introduction to C/C++/Unix for Engineers3

ME 315, Analytical Thermodynamics3

ME 341-341L, Metallurgy and Lab3

ME 362, Industrial Engineering3

ME 381, Mechanical Equipment of Buildings3

ME 410, Principles of HVAC Engineering3

ME 412, Internal Combustion Engines (D)3

ME 413, Turbomachinery (D)3

ME 414/514, Air Pollution Control (D)3

ME 417-417L/517-517L, Computer-Aided Engineering and

Lab (D)3

ME 418, Design of Thermal Systems (D)3

ME 431, Aerodynamics (D)3

ME 437, Gas Dynamics I3

ME 438-438L, Machine Design-Case Studies and Lab (D)3

ME 439-439L, HVAC System Design and Lab (D)3

ME 440/540, Computer-Aided Design (D)3

ME 461, Analysis and Design of Industrial Systems (D)3

ME 491, Independent Study (D)(1-5)

(1-3 Credits allowed to fulfill the Technical elective credits).

ME 492/592, Topics (D)(1-5)

ME 494, Internship (D)(1-3)

ME 497, Cooperative Education (D)(1-3)

ME 498, Undergraduate Scholarship/Research (COM)(1-3)

PHYS 331, Introduction to Modern Physics (COM)3

PHYS 435, Introduction to Nuclear Engineering3

Total Required Credits: 136

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Sustainable Energy Systems Minor

Coordinating Department: Mechanical Engineering

Requirements for Sustainable Energy Systems Minor: 18 credits

ME 311, Thermodynamics I	3
or ME 314, Thermodynamics.....	3
or PHYS 341, Thermodynamics (COM)	2
ME 478, Mechanical Systems Design I	1
ME 479-479L, Mechanical Systems Design II and Lab (COM) (AW)	2 1
ME 492/592, Topics	(1-5)
Topics Course: Renewable Energy Systems	3

Select one course (3 credits minimum):

The internship or Undergraduate Research/Scholarship experience must be a sustainable energy systems application approved by the

Coordinator of the Minor.

ABE 494, Internship	(1-6)
EE 494, Internship	(1-3)
ME 494, Internship	(1-3)
PHYS 494, Internship (COM).....	(1-4)
ABE 498, Undergraduate Research/Scholarship.....	(1-3)
EE 498, Undergraduate Research/Scholarship	(1-3)
ME 498, Undergraduate Scholarship/Research (COM).....	(1-3)
PHYS 498, Undergraduate Research/Scholarship (COM)	1-3

Choose 6 credits from the following:

ABE 444-444L/544-544L, Unit Operations of Biological Materials Processing and Lab.....	4
ABE 455-455L/555-555L, Principles of Biological Separation Processing and Lab.....	3
EE 430-430L, Electromechanical Systems and Lab	4
EE 434-434L, Power Systems and Lab	4
EE 436-536, Applied Photovoltaics.....	3
ME 410, Principles of HVAC Engineering.....	3
ME 412, Internal Combustion Engines	3
ME 413, Turbomachinery	3
ME 414/514, Air Pollution Control	3
ME 415, Heat Transfer	3
ME 418, Design of Thermal Systems.....	3
ME 431, Aerodynamics	3
ME 439-439L, HVAC System Design and Lab	3
PHYS 331, Introduction to Modern Physics (COM)	3
PHYS 435, Introduction to Nuclear Engineering.....	3

1 Project or experience must focus on sustainable energy systems and must be approved by the program coordinator. Senior capstone design projects with ABE, EE, or PHYS prefix will also satisfy the capstone project requirement.

Medical and Laboratory Sciences

(See Chemistry/Biochemistry)

(Pre-) Medicine

Greg Heiberger, Coordinator and Advisor

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Advisers

Dr. Don Auger, Dr. Michael Hildreth, Dr. Scott Pedersen, Mr. Greg Heiberger.

Area of Study

Students preparing for medical careers should recognize the desirability of a 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 are 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 Department of Biology and Microbiology. 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, 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 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 Web site at <http://www.aamc.org> for more specific information on the application process as well as information on specific medical schools or visit the pre-professional section under academics on the SDSU Web site.

Suggested Pre-Medicine Coursework

See your Pre-Medicine Adviser for a complete listing:

Suggested Courses

BIOL 199-199L, First Year Seminar	2
BIOL 290, Seminar	1

Biology

BIOL 151-151L, General Biology I and Lab* (COM)	4
BIOL 153-153L, General Biology II and Lab*	4
BIOL 202-202L, Genetics and Organismal Biology and Lab.....	4
BIOL 204, Genetics and Cellular Biology.....	3
BIOL 204L, Genetics and Cellular Lab.....	1
BIOL 325-325L, Physiology and Lab (COM).....	4
MICR 231-231L, General Microbiology and Lab (COM).....	4

Chemistry

CHEM 112-112L, General Chemistry I and Lab* (COM).....(3, 1)

CHEM 114-114L, General Chemistry II and Lab * (COM)(3, 1)

Organic Chemistry

CHEM 326-326L, Organic Chemistry I and Lab(COM).....(3, 1)

CHEM 328-328L, Organic Chemistry II and Lab(COM)(3, 1)

Biochemistry

CHEM 464, Biochemistry I (COM)3

CHEM 466, Laboratory Methods- Biochemistry1

Mathematics: Calculus and Statistics

MATH 121-121L, Survey of Calculus and Lab* (COM).....5

or MATH 123, Calculus I * (COM).....4

MATH 123L, Calculus I Lab (COM)1

STAT 281, Introduction to Statistics (COM)3

Physics

PHYS 111-111L, Introduction to Physics I and Lab* (COM).....4

PHYS 113-113L, Introduction to Physics II and Lab* (COM).....4

Microbiology (MICR)

(Biology and Microbiology)

Military Science (MSL)

(Army ROTC)

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e-mail: garnet.wosje@sdstate.edu

Faculty

LTC Kory Knight, Professor of Military Science, Head; Assistant Professor of Military Science: Captain Martin Skovly; Assistant Professor of Military Science: Major Troy Ness; Assistant Professor of Military Science: Captain David Cooper; Instructor: SFC Marc McMaster.

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 or master's degree to serve as commissioned officers in the active Army, the Army National Guard or the Army Reserve. The Department has three oncampus 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 Leader's Development 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. ROTC textbooks, uniforms and other essential materials are furnished to the Basic Course student at no cost. Fifty percent tuition credit for Advanced Course Nonscholarship cadets is available.

To be eligible for commissioning, cadets must complete a course in Military History and pass water survival training. Contact the Department for requirements.

Requirements for Advanced Course

All those enrolling in the Advanced Course must:

1. Have completed the Basic Course or its equivalent.
2. Be a U.S. citizen.
3. Be physically qualified under standards prescribed by the Department of the Army.
4. Have an academic cumulative grade point average of 2.0 or higher.
5. Complete a University-offered Military History course prior to graduation.
6. Have two years of academic work remaining for a degree.
7. Sign a written agreement.

Army ROTC Scholarships

Qualified students can compete for 4-year, 3-year, and 2-year scholarships that cover full tuition, laboratory and instructional fees, university student fees, transcript, cap and gown, diploma, and selected graduation fees. A flat book rate of \$1200 a year plus a monthly subsistence allowance of \$300, \$350, \$450, or \$500 a month are provided each semester. Four Year Scholarship competition is conducted by the Department of the Army for university bound high school students. Applications are available from high school guidance counselors, on line at www.armyrotc.com 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. Cultural Understanding and Language Proficiency Internships
7. Professional internships in specific major areas

Minor in Military Science

A minor in Military Science is available for those who complete 18 credits offered and who enroll and complete MSL 494 ROTC Leader Development and Assessment Course. This minor is compatible to fields of major studies.

Military Science (MSL) Minor

Requirements for Military Science Minor: 18 cr

A minor in Military Science is available for those who complete 18 credits offered and who enroll and complete MSL 494 ROTC Leader Development and Assessment Course. This minor is compatible to fields of major studies.

(Pre-) Ministerial

Dennis Bielfeldt, Coordinator
Philosophy and Religion
Scobey Hall 316
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 Interdisciplinary 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 Languages (MFL) Department

Maria Ramos, Head
Department of Modern Languages
SWG 121A
605-688-5102
e-mail: maria.ramos@sdstate.edu

Faculty

Professor Ramos, Head; Professors Emeriti Baker, Beattie, Cardenas, Iden, Redhead, Richter, Sunde; Professor Baggett; Associate Professors Owens,, Rolz, Spitz; Assistant Professors Enz, O'Donnell, Wallace; Instructors Falasca, Garst-Santos, Hanson, Orellana, Snell-Feikema, Iverson-Maggi, Schnaser, Wiederich.

Programs

The Department of Modern Languages provides proficiency-oriented instruction in second languages, literatures, civilizations and cultures, following the Standards of the American Council on the Teaching of Foreign Languages. The Department offers the Bachelor of Arts degree with majors in French Studies, 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, 202)

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, except SPAN, FREN or GER 211, 212) may apply to receive credit for all previous courses up to 202. 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.

Students cannot get first or second year credit for their native language. For more information please check the Modern Language Credit policy in the Academic Evaluation section of this catalog. The faculty of the Department of Modern Languages works with students to determine the program of study that will best prepare them for the career they have chosen. The Department encourages students to investigate programs in other academic areas which will complement or enhance their preparation for a specific career. Such programs include, but are not

limited to: Global Studies (see the requirements for the Global Studies Major and Minor), Economics, Education (see "Education Curriculum for Teachers of Academic Subjects"). Students are also encouraged to plan a summer/semester/year experience studying abroad.

Additional information on the Department's programs is found elsewhere in this Catalog. The Department has placement information as well as specific information on all of its programs available in the main office of the Department of Modern Languages and on the department's Web page.

Global Studies (GLST)

Mission

The Global Studies major fits with the Land-Grant Mission of South Dakota State University to develop, maintain and encourage student self development in international and intercultural understanding consistent with the continually increasing cultural, economic and political interdependence of the modern world. In the 21st century, relationships between people and nations will be affected more by interdependence of the world as a whole than by national boundaries. By embracing two broad themes- intercultural competence and authentic global citizenship- the Global Studies major will:

1. prepare students through the social sciences, natural sciences, and humanities with knowledge and a broad understanding of global society and the societies of diverse foreign countries and cultures;
2. enable students to apply analytical and philosophical tools for interpretation of and critical thinking about global issues and data;
3. prepare students for employment in many fields including government, non-governmental organizations, business with international marketing, journalism and other fields that require professionals with interdisciplinary education, global literacy, and cross-cultural competencies;
4. provide the training, tools, and experiences for global studies majors to become authentic global citizens; and
5. utilize the international resources of SDSU to benefit the citizens of South Dakota, the United States, and the world.

Programs

The Global Studies major integrates content and theory from a number of disciplines leading to an understanding of the interrelated processes of globalization in an increasingly interdependent world. Globalization, which has occurred over centuries, accelerated dramatically in the last half of the 20th century stimulated by rapid transportation and technological developments, leading to instant communication between all parts of the world. International activities are now globally based on new relationships between countries resulting from diminution of national boundaries and increased recognition of the global nature of environmental conditions, economics, politics, health and safety, the spread of terrorism, and the perceived homogenization of culture.

Two required courses, Global Studies I (GLST 201, 3 credits) and Global Studies II (GLST 401, 3 credits) provide a theoretical base to view the world holistically. In Global Studies II, students will integrate information and ideas from previous courses, analyze experiences, and develop a solid global perspective.

Because background from many disciplines is fundamental, the major utilizes courses from several departments that each contribute to breadth of knowledge and understanding. Elective courses are grouped into three foci, globalization, societies, and culture. Within each group, students select courses to fulfill graduation requirements. The choices are grouped by lower and upper division, allowing students to select emphases of their choice.

Global Studies Major (B.A.)

Students must complete 128 credit hours including the 30 credit System General Education Core (Gen Ed) and the 8 credit SDSU Institutional Graduation Requirements (IGR) leading to the Bachelor of Arts degree.

Students earning the B.A. degree will complete 21-22 hours concentrated in one modern, foreign language — French, German or Spanish. Students entering the University with a background in languages are strongly recommended to request a copy of the Modern Languages Department placement policy. Students who are prepared to take courses beyond 101 (up to 310 or 311, except Spanish 211, 213) may apply to receive credit for all previous courses up to 202.

The number of free electives varies from 27-35, depending upon the student's choice of options selected to fulfill General Education and Institutional Graduation Requirements. This flexibility provides an excellent opportunity for students to fulfill requirements for a second major or a minor in another discipline; global studies students are encouraged to do so.

Cross-Cultural Experiential Education

For Global Studies majors, first-hand, cross-cultural experience is mandatory. At least three credits must be earned outside the United States. Students can choose the program they prefer from several options provided by the Office of International Affairs, Department of Modern Languages, and individual colleges:

1. full time study abroad at a university for one semester;
2. a one-semester, paid or unpaid, internship or volunteer service learning project;
3. an intense modern language immersion program worth at least 3 credit hours; or
4. a study abroad seminar or travel experience that includes pre-and post-travel/study orientation worth 3 hours of credit.

The coordinator of the Global Studies Program advises students regarding the selection of an appropriate plan for this requirement based upon the student's interests, time frames, and budget.

Additional information identifying the exact requirements for this major is found in the "Major and Minor Requirements" section of this catalog.

Global Studies Minor

The minor in Global Studies, which can be completed with any SDSU major, consists of 21 credits (18 core credits and one elective). The minor is outlined in the section on Major and Minor Requirements.

International Students

International students enrolled at SDSU are strongly encouraged to discuss with the Coordinator of Global Studies possible variations in requirements for the major and the minor that take into consideration their mastery of foreign language and previous international experiences.

French Studies (FREN) Major

Requirements for French Major, Bachelor of Arts in Arts and Science:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101,	
ENGL 201	6
Goal #2 Oral Communication	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

College Requirements: 6

See the College of Arts and Sciences for additional information.

Humanities (other than languages)	6
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Major Requirements: 36

Electives in French	18
FREN 102, Introductory French II * ** (COM) (G)†	4
FREN 201, Intermediate French I (COM)	4
FREN 202, Intermediate French II (COM)	4
FREN 333, Topics in Francophone Culture (COM)	3
FREN 433, French Culture and Civilization	3

Electives: 44

French Majors will take at least nine hours of electives from the following:

FREN 385, Travel Study Abroad Francophone (COM) (G)	(1-6)
FREN 491, Independent Study (COM)	(1-3)
(may be repeated)	
FREN 492, Topics (COM)	(1-3)
(may be repeated)	
FREN 493, Workshop (COM)	(1-6)

Total Required Credits: 128

Teaching Specialization Requirements:

Professional Semester I

EDFN 338, Foundations of American Education (COM)	(1-2)
EDFN 475, Human Relations (COM)	3

Professional Semester II

EPSY 302, Educational Psychology (COM)	3
SEED 450, 7-12 Reading and Content Literacy (COM)	2
SEED 314, Supervised Clinical/Field Experience	1

Professional Semester III

SEED 400, Curriculum and Instruction in Middle and Secondary Schools	4
SEED 410, Social Foundations, Management and Law	2
SEED 488, 7-12 Student Teaching (COM)	(2-16)
and/or ELED 488, K-8 Student Teaching (COM)	(2-16)

Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits between SEED 488 and ELED 488.

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

Special Methods (varies by content area)	3
SPED 401, Introduction to Educating Secondary Students with Disabilities (COM)	1
EDFN 365, Computer-Based Technology and Learning (COM)	(2)
EDFN 427-527, Middle School: Philosophy and Application	2

† 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 Graduation Requirements (IGRs) must be different from those taken to fulfill the System Graduation Requirements (SGRs).

†† A minimum grade of "C" is required in all French classes for them to count towards the major or minor.

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits.

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**.

(G) Globalization Requirement.

(AW) Advanced Writing Requirement.

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.

French (FREN) Minor

Requirements for the French Minor: 22 cr

French electives, 300 and above.....	10
FREN 102, Introductory French II * ** (COM) (G)	4
FREN 201, Intermediate French I (COM).....	4
FREN 202, Intermediate French II (COM)	4

Note: A minimum grade of “C” is required of all French classes for them to count for the French major or minor.

German (GER) Major

The major in German requires a minimum of 36 credit hours in German. The coursework should include 101, 102, 201, 202, 311, 312, and an additional 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.

Requirements for German Major, Bachelor of Arts in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, **and**

ENGL 201

Goal #2 Oral Communication:

SPCM 101*

Goal #3 Social Sciences/Diversity

Goal #4 Arts and Humanities/Diversity

Goal #5 Mathematics

Goal #6 Natural Sciences

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources

Goal #2 Personal Wellness.....

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....

College Requirements: 6

See the College of Arts and Sciences for additional information.

Humanities (other than languages)

Major Requirements: 36

German coursework (300-400 level).....

GER 101, Introductory German I * ** (COM) (G)†

GER 102, Introductory German II * ** (COM) (G)†

GER 201, Intermediate German I (COM).....

GER 202, Intermediate German II (COM).....

GER 311, Composition and Conversation I (COM).....

GER 312, Composition and Conversation II (COM)

Electives: 47

Total Required Credits: 128

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.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Teaching Specialization Requirements:

Professional Semester I

EDFN 338, Foundations of American Education (COM) (1-2)

EDFN 475, Human Relations (COM) 3

Professional Semester II

EPSY 302, Educational Psychology (COM) 3

SEED 450, 7-12 Reading and Content Literacy (COM) 2

SEED 314, Supervised Clinical/Field Experience 1

Professional Semester III

SEED 400, Curriculum and Instruction in Middle and Secondary

Schools.....

SEED 410, Social Foundations, Management and Law

SEED 488, 7-12 Student Teaching (COM).....(2-16)

and/or ELED 488, K-8 Student Teaching (COM).....(2-16)

Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits between SEED 488 and ELED 488.

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

Special Methods (varies by content area)

SPED 401, Introduction to Educating Secondary Students with

Disabilities (COM)

EDFN 365, Computer-Based Technology and Learning (COM).....(2)

EDFN 427-527, Middle School: Philosophy and Application

German (GER) Minor

Requirements for German Minor: 20 cr

GER 300-400 level Electives

GER 101, Introductory German I * ** (COM) (G)

GER 102, Introductory German II * ** (COM) (G)

GER 201, Intermediate German I (COM).....

GER 202, Intermediate German II (COM).....

Global Studies Major

Requirements for Global Studies Major, Bachelor of Arts in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101

Goal #2 Oral Communication

Goal #3 Social Sciences/Diversity

Goal #4 Arts and Humanities/Diversity

Goal #5 Mathematics

Goal #6 Natural Sciences.....

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources

Goal #2 Personal Wellness.....

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....

Major Requirements: 61-65

FREN, GER, **or** SPAN 101¹

FREN, GER, **or** SPAN 102¹

FREN, GER, **or** SPAN 201

FREN, GER, **or** SPAN 202

Modern Language (300 or 400 level)	3
HIST 112, World Civilizations II * (COM) (G)	3
or HIST 122, Western Civilization II * ** (COM) (G)	3
GLST 201, Global Studies I * ** (G).....	3
POLS 253, Current World Problems * ** (G).....	3
GLST 401, Global Studies II (G).....	3
GLST 481, Travel Studies (Cross Cultural Experience).....	3
Lower Division Culture: 3 credits from the following:	
ANTH 210, Cultural Anthropology * ** (COM).....	3
ENGL 212, World Literature II * ** (G).....	3
PHIL 215, Introduction to Social-Political Philosophy * **	3
REL 250, World Religions * ** (COM) (G).....	3
Lower Division Societies: 6 credits from the following:	
ABS 203, Global Food Systems ** (G)	3
ECON 101, Global Economy * (G).....	3
GEOG 210, World Regional Geography * ** (COM) (G).....	3
POLS 165, Political Ideologies * **.....	3
Modern Language:	
FREN 310, French Language Skills (COM) (AW)	3
or GER 311, Composition and Conversation I (COM).....	2
or SPAN 211, Intermediate Oral Practice I (COM).....	2
Upper Division Globalization – 3 credits from the following:	
ECON 405, Comparative Economic Systems (COM)	(2-3)
ECON 440-540, Economics of International Sector	3
ECON 460-560, Economic Development (G).....	3
POLS 350, International Relations (COM)	3
Modern Language:	
FREN 333, Topics in Francophone Culture (COM).....	3
or GER 312, Composition and Conversation II (COM).....	2
or SPAN 212, Intermediate Oral Practice II (COM)	2
Upper Division Culture, 6 credits from the following:	
EURS 300, Topics in European Culture	3
FREN 333, Topics in Francophone Culture (COM).....	3
GER 433, German Civilization I (COM) (AW)	3
GER 434, German Civilization II (COM) (AW).....	3
HIST 418, History of Latin America (COM).....	3
HIST 420, Contemporary Europe (COM).....	3
LAS 301, Latin American Cultures.....	2-3
PHIL 424, Modern Political Philosophy (AW).....	3
POLS 462, Modern Political Philosophy (COM) (AW).....	3
SPAN 433, Spanish Civilization and Culture (COM) (AW)	3
SPAN 435, Latin American Civilization and Culture (AW).....	3
Advanced Writing Requirement:	
ENGL 410, Mythology and Literature (AW)	3
or PHIL 424, Modern Political Philosophy (AW)	3
or POLS 462, Modern Political Philosophy (COM) (AW).....	3
Upper Division Societies – Select 6 credits from at least two disciplines from the following:	
EURS 301, Topics in European Society	3
GEOG 400, Cultural Geography (COM).....	3
GEOG 415-515, Environmental Geography.....	3
LAS 302, Latin American Societies	3
POLS 454, International Law and Organization (COM)	3

Electives: 24-29

Total Required Credits: 128

- 1 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.
- 2 Global Studies majors are required to complete a cross-cultural experience outside the United States that includes at least 3 credits of coursework. Examples are:
Full time study abroad for one semester at a university outside the United States.

A one-semester, paid or unpaid, internship or volunteer service learning project outside the United States.

One intense language immersion program for at least 3 hours of credit at an institution of higher education outside the United States.

Study abroad seminar or travel experience outside the United States that includes pre- and post-travel/study orientation and carries 3 hours of credit. (In special cases for international students attending SDSU, an individualized plan of study will be developed for the major.)

* The 30 credit Board of Regents System **General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Global Studies Minor

ECON 101, Global Economy * (G).....	3
GEOG 200, Introduction to Human Geography * ** (G)	3
GLST 201, Global Studies I * ** (G).....	3
POLS 253, Current World Problems * ** (G).....	3
REL 250, World Religions * ** (COM) (G)	3

Choose one from the following:

HIST 112, World Civilizations II * (COM) (G).....	3
HIST 122, Western Civilization II * ** (COM) (G)	3

Three credits selected from the following:

EURS 300, Topics in European Culture	3
EURS 301, Topics in European Society	3
GEOG 415-515, Environmental Geography.....	3
GEOG 425, Population Geography	3
LAS 301, Latin American Cultures.....	2-3
LAS 302, Latin American Societies	3
POLS 350, International Relations (COM)	3
POLS 454, International Law and Organization (COM)	3

Choose one from the following:

Other travel/study experience outside the United States.....	3
ABS 381, Multicultural Agriculture/Biological Science	
Experience	(2-4)

Spanish (SPAN) Major

Requirements for Spanish Major, Bachelor of Arts in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication: ENGL 101, and ENGL 201.....	6
Goal #2 Oral Communication: SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics	3
Goal #6 Natural Sciences.....	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 6

See the College of Arts and Sciences for additional information.

Humanities (other than languages)	6
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Major Requirements: 40

Spanish coursework.....	12
Spanish coursework (300-400 level).....	12

SPAN 201, Intermediate Spanish I (COM).....	3
SPAN 202, Intermediate Spanish II (COM)	3
SPAN 211, Intermediate Oral Practice I (COM)	2
SPAN 212, Intermediate Oral Practice II (COM).....	2
SPAN 310, Practical Language Skills.....	3
SPAN 330, Reading and Writing for Communication.....	3

Electives: 44

Total Required Credits: 128

Teaching Specialization Requirements:

Professional Semester I

EDFN 338, Foundations of American Education (COM)	(1-2)
EDFN 475, Human Relations (COM)	3

Professional Semester II

EPSY 302, Educational Psychology (COM)	3
SEED 450, 7-12 Reading and Content Literacy (COM).....	2
SEED 314, Supervised Clinical/Field Experience.....	1

Professional Semester III

SEED 400, Curriculum and Instruction in Middle and Secondary Schools.....	4
SEED 410, Social Foundations, Management and Law	2
SEED 488, 7-12 Student Teaching (COM).....	(2-16)
and/or ELED 488, K-8 Student Teaching (COM).....	(2-16)

Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits between SEED 488 and ELED 488.

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

Special Methods (varies by content area)	3
SPED 401, Introduction to Educating Secondary Students with Disabilities (COM)	1
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EDFN 427-527, Middle School: Philosophy and Application	2

An official Oral Proficiency Interview (OPI) certified by the American Council in the Teaching of Foreign Languages (ACTFL) is required of all students majoring in Spanish. A minimum ranking of Intermediate Mid is required for all Spanish Majors and Intermediate High for majors pursuing education certification only.

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. Please see “Modern Language Credit” on page 19 of this catalog for more detailed information.

†† Junior year course selections, which fulfill the Institutional (SDSU) requirements, must be different from those taken to fulfill the General Education requirements.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Spanish (SPAN) Minor

Requirements for Spanish Minor: 20 cr

Electives (may include 211-212).....	7
SPAN 102, Introductory Spanish II * ** (COM) (G).....	4
SPAN 201, Intermediate Spanish I (COM).....	3
SPAN 202, Intermediate Spanish II (COM)	3
SPAN 310, Practical Language Skills.....	3

(Pre-) Mortuary

Mark Binkley, Advisor
College of General Studies
Medary Commons 124
605-688-4153
e-mail: mark.binkley@sdsu.edu

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 Bachelor 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.

Freshman Year:

Social Science Elective	3
BIOL 151-151L, General Biology I and Lab* (COM)	4
CHEM 106-106L, Chemistry Survey and Lab* (COM)	(3,1)
ENGL 101, Composition I *	3
MATH 102, College Algebra * (COM)	3
PSYC 101, General Psychology * ** (COM)	3
REL 360, Moral and Ethical Perspectives on Death and Dying.....	3
SOC 100, Introduction to Sociology * (COM) (G).....	3
SPCM 101*, Fundamentals of Speech (COM).....	3

Sophomore Year:

Social Science Elective	3
Electives	9 *
ACCT 210, Principles of Accounting I (COM).....	3
BADM 350, Legal Environment of Business (COM)	3
BADM 360, Organization and Management (COM)	3
BIOL 221-221L, Human Anatomy and Lab(COM)	4
HLTH 443, Public Health Science (G)	3
MICR 231-231L, General Microbiology and Lab (COM).....	4
SPCM 201, Interpersonal Communication (COM).....	3

* To meet mortuary school or state requirements, suggest REL 213, Intro to Religion; ENGL 201, Composition II.

Music (MUS)

David Reynolds, Head
Department of Music
Lincoln Music Hall 204
605-688-5187
e-mail: paul.reynolds@sdsstate.edu

Faculty

Professor Reynolds, Head; Professors Crowe, Lis; Professors Emeriti Canaan, Colson, Hatfield, Johnson, McKinney, Piersel, Walker, D.; Associate Professors Brawand, Crawley, Diddle, Grives, Toronto, Walker; Assistant Professors Jorgensen, Peterson, Ragsdale, Walsh; 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 takes advantage of the types of courses central to a liberal arts education. Although the degree is not tied to any specific career aspiration, the flexibility of the curriculum is sometimes used by students to pursue a more performance-based course of study.

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 MUS 270/ 271 general voice for instrument majors. For vocal B.M.E. majors, the four required semesters of vocal pedagogy are augmented by MUS 270/271 general instrument for voice majors. 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 185) 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.

Music (Mus) Major

Requirements for Music Major, Bachelor of Arts in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, **and**

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity: Social Science courses only6

Goal #4 Arts and Humanities/Diversity: Humanities (no foreign language)6

Goal #5 Mathematics3

Goal #6 Natural Sciences6

Institutional Graduation Requirements:** 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness: (no foreign language).....	3

College Requirements: 3-14

Modern Language†	3-14
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Major Requirements: 51

MUAP 100-155, Applied Music	2
MUAP 200-255, Applied Music	2
MUAP 300-355, Applied Music	4
MUAP 400-455, Applied Music	4
MUEN 100-122, Music Organization	4
MUEN 300-322, Music Organization	4
MUS 110, Basic Music Theory I (COM)	4
MUS 110L, Basic Music Theory I Lab (COM)	0
MUS 111, Basic Music Theory II (COM)	4
MUS 111L, Basic Music Theory II Lab (COM)	0
MUS 210, Advanced Music Theory I (COM)	4
MUS 210L, Advanced Music Theory I Lab (COM)	0
MUS 211, Advanced Music Theory II (COM)	4
MUS 211L, Advanced Music Theory Lab II (COM)	0
MUS 313, Form and Analysis (COM)	3
MUS 130, Music Literature and History I * **	2
MUS 131, Music Literature and History II * **	3
MUS 433, Music Literature and History III	3
MUS 185, Recital Attendance (COM)	0
MUS 360, Conducting (COM)	2
MUS 360L, Conducting (COM)	0
MUS 270, Pedagogy I	(1-2)
MUS 271, Pedagogy II	(1-2)
MUAP 483, Public Recital (COM)	0

Electives: 24-36**Total Required Credits:** 128

Students must earn at least a “C” in each course used to meet the departmental requirements of all majors, minors, and certificates.

† Completion and competency in one language at the 202 level or a department-approved advanced upper division language course.

†† Concurrent enrollment with all MUAP courses.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Music (Mus) Minor**Requirements for Music Minor:** 22 cr

Applied (at least two hours upper level—300-400)	6
Music Electives	2
MUS 130, Music Literature and History I * **	2
MUS 360, Conducting (COM)	2

Choose one from the following:

MUS 110, Basic Music Theory I (COM)	4
MUS 110L, Basic Music Theory I Lab (COM)	0
or MUS 111, Basic Music Theory II (COM)	4
MUS 111L, Basic Music Theory II Lab (COM)	0

Choose one from the following:

Music Electives	2
or MUS 361-361L, Music Education II: Conducting and Lab	2

Note: MUS 185 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

Requirements for Music Education Major, Bachelor of Music Education:

System General Education Requirements*: 32

Goal #1 Written Communication:	
ENGL 201, and ENGL 101	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
PSYC 101, or SOC 100	6
Goal #4 Arts and Humanities/Diversity:	
MUS 130 and MUS 131	8
Goal #5 Mathematics	3
Goal #6 Natural Sciences	6

Institutional Graduation Requirements:** 8-9

Goal #1 Land and Natural Resource Stewardship:	
HIST 368	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

Major Requirements: 88-92

MUAP 100-155, Applied Music	2
MUAP 200-255, Applied Music	2
MUAP 300-355, Applied Music	4
MUAP 400-455, Applied Music	2
MUEN 100-122, Music Organization	4
MUEN 300-322, Music Organization	4
MUS 110, Basic Music Theory I (COM)	4
MUS 110L, Basic Music Theory I Lab (COM)	0
MUS 111, Basic Music Theory II (COM)	4
MUS 111L, Basic Music Theory II Lab (COM)	0
MUS 210, Advanced Music Theory I (COM)	4
MUS 210L, Advanced Music Theory I Lab (COM)	0
MUS 211, Advanced Music Theory II (COM)	4
MUS 211L, Advanced Music Theory Lab II (COM)	0
MUS 313, Form and Analysis (COM)	3
MUS 433, Music Literature and History III	3
MUS 185, Recital Attendance (COM)†	0 ¹
MUS 360, Conducting (COM)	2
MUS 360L, Conducting (COM)	0
MUS 361-361L, Music Education II: Conducting and Lab	2
MUS 270, Pedagogy I	(1-2)
MUS 271, Pedagogy II	(1-2)
MUS 370, Pedagogy III	(1-2)
MUS 371, Pedagogy IV	(1-2)
MUS 420, Orchestration and Arranging (COM)	3
MUS 362-362L, Music Education III: Methods and Materials	2
MUS 365-365L, Music Education IV: Supervision and Administration of School Music and Lab	2
MUS 465, Music Education V: Practical Applications	2
MUS 351, Elementary School Music Methods (COM)	(2-3)
EDFN 365, Computer-Based Technology and Learning (COM)	(2)
MUAP 483, Public Recital (COM)	0

EDFN 427-527, Middle School: Philosophy and Application2

Professional Semester I

EDFN 338, Foundations of American Education (COM).....(1-2)

EDFN 475, Human Relations (COM).....3

Professional Semester II

EPSY 302, Educational Psychology (COM).....3

SEED 450, 7-12 Reading and Content Literacy (COM).....2

SEED 314, Supervised Clinical/Field Experience1

Professional Semester III

SEED 400, Curriculum and Instruction in Middle and
Secondary Schools4

SEED 410, Social Foundations, Management and Law.....2

SEED 488, 7-12 Student Teaching (COM)4

ELED 488, K-8 Student Teaching (COM)4

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

Special Methods (varies by content area).....3

SPED 401, Introduction to Educating Secondary Students with
Disabilities (COM)1

Choral Emphasis:

An emphasis in choral or instrumental teaching may be elected, or, by adding appropriate hours, students may prepare in **both areas**.

MUS 270, Pedagogy I(1-2)

(Must be enrolled in more than once per semester)

MUS 271, Pedagogy II.....(1-2)

(Must be enrolled in more than once per semester)

MUS 351, Elementary School Music Methods (COM)2

MUS 360, Conducting (COM)2

MUS 361-361L, Music Education II: Conducting and Lab2

MUS 362-362L, Music Education III: Methods and Materials.....2

MUS 365-365L, Music Education IV: Supervision and

Administration of School Music and Lab2

MUS 370, Pedagogy III(1-2)

MUS 371, Pedagogy IV(1-2)

Instrumental Emphasis:

An emphasis in choral or instrumental teaching may be elected, or, by adding appropriate hours, students may prepare in **both areas**.

MUS 270, Pedagogy I(1-2)

MUS 271, Pedagogy II.....(1-2)

MUS 351, Elementary School Music Methods (COM)(2-3)

MUS 360, Conducting (COM)2

MUS 360L, Conducting (COM)..... 0

MUS 361-361L, Music Education II: Conducting and Lab2

MUS 362-362L, Music Education III: Methods and Materials.....2

MUS 365-365L, Music Education IV: Supervision and

Administration of School Music and Lab2

MUS 370, Pedagogy III(1-2)

MUS 371, Pedagogy IV(1-2)

Total Required Credits: 128

† Concurrent enrollment with all MUAP courses

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Music Merchandising Major

Requirements for Music Merchandising Major, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 201, **and**

ENGL 1016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity: Social Science courses only6

Goal #4 Arts and Humanities/Diversity: Humanities courses only6

Goal #5 Mathematics3

Goal #6 Natural Sciences6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:

No foreign language.....3

College Requirements: 16

Physical Science8

Social Sciences6

Humanities2

Major Requirements: 70

MUAP 100-155, Applied Music2

MUAP 200-255, Applied Music2

MUAP 300-355, Applied Music2

MUAP 400-455, Applied Music2

MUEN 100-122, Music Organization4

MUEN 300-322, Music Organization3-4

MUS 110, Basic Music Theory I (COM)4

MUS 110L, Basic Music Theory I Lab (COM)0

MUS 111, Basic Music Theory II (COM)4

MUS 111L, Basic Music Theory II Lab (COM)0

MUS 130, Music Literature and History I * **2

MUS 185, Recital Attendance (COM).....0

MUS 201, History of Country Music * **3

MUS 202, The Music Industry3

MUS 203, Blues, Jazz, and Rock * **3

MUS 210, Advanced Music Theory I (COM)4

MUS 210L, Advanced Music Theory I Lab (COM)0

MUS 211, Advanced Music Theory II (COM)4

MUS 211L, Advanced Music Theory Lab II (COM)0

MUS 302, Introduction to Recording Industry.....2

MUS 433, Music Literature and History III3

ACCT 210, Principles of Accounting I (COM).....3

ECON 201, Principles of Microeconomics * (COM)3

ECON 370, Marketing3

ENTR 336, Entrepreneurship I (COM)3

ENTR 438-538, Entrepreneurship II (COM).....3

MCOM 161-161L, Fundamentals of Desktop Publishing and

Lab (COM)3

MCOM 370, Advertising Principles (COM)3

MUAP 115-116, Class Instruction- Keyboard.....1

Electives: 3-4

Total Required Credits: 128

† Completion and competency in one language at the 202 level or a department-approved advanced upper division language course

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Music Education

(See Music)

Music Merchandising

(See Music)

Natural Resource Studies

Donald Marshall, Associate Dean

College of Agriculture and Biological Sciences

Agricultural Hall 156

605-688-5133

e-mail: donald.marshall@sdstate.edu

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 many 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 management practices essential to maintain and enhance natural resources.

Programs in the natural resources area include: Agricultural and Biosystems Engineering, Agricultural Systems Technology, Agronomy, Biology, Environmental Management, Landscape Architecture, 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. SDSU also offers courses in other areas that support the natural resource programs. The Economics Department, for example, offers courses in resource economics.

Nuclear Engineering

(See Physics)

Nursing (NURS) Department

Roberta Olson, Dean

College of Nursing

SWG 255

605-688-5178 or 1-888-216-9806

e-mail: roberta.olson@sdstate.edu

Faculty

Professor Olson, Dean; Distinguished Professor Hegge; Professors Bunkers, Craig, Foland, Hendrickx, Lord, Mylant, Peterson; Professors Emeriti Blazey, Hofland; Associate Professors Carson, Fahrenwald, Foland, Hobbs, Kropenske, Lammers, Stenvig, Tschetter, Voss, Wey; Assistant Professors J. Bassett, Bohn, Elverson, Fjelland, Gorder, Jones, Mann, Mennenga, Minton, Randall, Samra, Shaver; Assistant Professors Emeriti Iken, Joffer; Instructors Arends, Atteberry, S. Bassett, Birch, Boysen, Bruner, Calhoon, Cissell, Durfee, Erickson, Forbes, Gibson, Goddard, Haight-Kennedy, Hansen, Hanson, Hesson, Huber, Johansen, Klawiter, Lochridge, Lubeck, Maurer, Mordhorst, Ness, Pasquariello, Pawelek, Peters, Pickard, Roddy, Sieverson, Vockrodt, 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 Standard Option is a five semester program that can be completed in two and a half years. The RN Upward Mobility Option is designed as a degree completion for registered nurses who have completed a National League for Nursing Accrediting Commission (NLNAC) accredited academic diploma or associate degree nursing program.

The third option, the Accelerated Option, is for students who have completed a bachelor's or a master's degree in any field and wish to obtain a Bachelor of Science with a major in Nursing. 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 in both Brookings and Rapid City. Students in the Accelerated Option are admitted once a year at the beginning of the 12-month cycle at the Sioux Falls campus. RN's in the RN Upward Mobility Option are admitted to the nursing major once a year. Major courses can be completed in one year. Students who want to enter the nursing major are required to submit an application for admission to the major. Prior to applying to any option, all students must apply for admission to SDSU.

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. The admission process includes an interview with the Undergraduate Admission and Scholastic Standards Committee and/or additional undergraduate faculty if needed.

Standard Option

Applications to the Nursing Standard Option major can be obtained online at the College of Nursing Web site. To enter for the Spring Semester, the deadline to apply for admission to the Standard Option is September 25. To enter Fall Semester, the deadline is January 25. To be considered for admission to the Standard Option, students must have a cumulative GPA of 2.7, a pre-nursing GPA of 2.7, and a grade of "C" or higher in all completed courses required for graduation. All required pre-nursing courses must be completed or in progress at time of application. Additionally, students must have completed ENGL 101, System Goal #2: Oral Communication, 3 credits of System Goal #4: Humanities, System Goal #5: Mathematics, IGR Goal #1: Land and Natural Resources, and IGR Goal #2: Personal Wellness. Students who have failed (earned a "D" or "F") in two or more of the pre-nursing science courses (CHEM 106/106L or 112/112L, or 108/108L or 114/114L; MICR 231/231L; BIOL 221/221L, 325/325L), repeated and passed them on the second attempt will not be admitted to the Nursing Major. Students who have failed one pre-nursing course (CHEM 106/106L or 112/112L, 108/108L or 114/114L; MICR 231/231L; BIOL 221/221L, 325/325L; PSYC 101; one of the following: SOC 100, 150, or 240; NFS 315; HDFS 210), repeated and failed the same course a second time will not be admitted to the Nursing Major. If the failure is over five years old, it does not count as a failure. Students who have taken Anatomy or Physiology more than seven years prior to their admission date will be required to update these 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 at the Rapid City site.

Accelerated Option

Deadline for application to the Accelerated Option is February 25. The application can be found on the College of Nursing Web site. To be considered for admission to the Accelerated Option, students must have a cumulative GPA of 2.8 or higher, a pre-nursing GPA of 3.0 or higher, and a grade of "C" or higher in all completed nursing major support courses. Students are eligible to apply for the Accelerated Program when they have completed at least 6 of the pre-nursing courses AND have at least 2 of the remaining 4 pre-nursing courses in progress. Applicants with courses in progress at the time of application will be required to provide written documentation of their registration in those courses. The documentation needs to be included with the application form.

Students who have failed (earned a "D" or "F") in two or more of the pre-nursing science courses (CHEM 106/106L or 112/112L, or 108/108L or 114/114L; MICR 231/231L; BIOL 221/221L, 325/325L), repeated and passed them on the second attempt will not be admitted to the Nursing Major. Students who have failed one pre-nursing course (CHEM 106/106L or 112/112L, 108/108L or 114/114L; MICR 231/231L; BIOL 221/221L, 325/325L; PSYC 101; one of the following: SOC 100, 150, or 240; NFS 315; HDFS 210), repeated and failed the same course a second time will not be admitted to the Nursing Major. If the failure is over five years old, it does not count as a failure. Students who have taken Anatomy or Physiology more than seven years prior to their admission date will be required to update these courses. Fulfillment of course requirements does not ensure admission.

RN Upward Mobility

RN's interested in the RN Upward Mobility option are encouraged to contact the RN Upward Mobility office on the Brookings campus for individual advising. RN's may apply to the nursing major with no more than 2 support courses, maximum of 7 credits, remaining. Eligibility requirements include: 2.5 GPA, "C" grades in all coursework applied to baccalaureate requirements, evidence of personal liability insurance,

criminal background check, and evidence of licensure in state of nursing practice. Application materials are provided to all eligible RN's by staff. Applications are accepted each spring, submission date is March 1. Failure to meet submission requirements may disqualify an applicant for the annual admission cycle. Nursing major courses may be completed in one year.

Additional Requirements

Students preparing for or seeking additional education in the field of professional nursing must demonstrate 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 available online or through the Department of Nursing Student Services at the Brookings campus and through the academic adviser at the Rapid City site.

All students seeking admission into a nursing program in the College of Nursing must submit Federal and supplemental Criminal Background Checks. Admission to a program is conditional based on the results of the background check. The required background check is based on requirements for licensure as a registered nurse in South Dakota (South Dakota Nurse Practice Act, SD Codified Law Chapter 36-9-97). If you have been convicted, pled guilty or no contest to, or received a suspended imposition of sentence for a felony or other criminal offense (excluding minor traffic violations), you are advised that it may not be possible for you to be accepted into the major at South Dakota State University. You may also be prevented from taking the required licensure exam for registered nurses, and you may be prevented from gaining employment in the field of nursing. If you have questions about this policy, please contact the Department Head, Nursing Student Services at 605-688-4106.

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.

As 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 student with English as a Second Language to complete the Test of English as a Foreign Language (TOEFL), International English Language Testing System (IELTS), or an accepted substitute. English as a Second Language is defined as a student who was instructed and spoke primarily in a language other than English in the K-12 grades or primary and secondary schooling. The minimum TOEFL score required for admission to the Nursing Major is 600 (paper-based), with no score below 56; 250 (computer-based), with a minimum reading score of 22, writing 23, and listening 22; or 100 (internet-based) (with a minimum reading score of 21, writing 19, listening 22, and speaking 26). The required IELTS band score for admission to the nursing major is 7.0. The TOEFL or IELTS is required for all students for whom English is a second language, regardless of residency status. These scores are required before the student will be accepted into the major. The student is responsible for all testing fees. For more information contact SDSU Nursing Student Services, SWG 363, Box 2275, Brookings, SD 57007. Phone 605-688-4106; Fax 605-688-6073.

Requirements for Continuation in the Nursing Major

A GPA of 2.5 or higher is required for continuation in the nursing major.

A grade of “C” or higher is required in all nursing courses. Students may repeat one failed nursing course with permission. Upon failing a second nursing course, the student is dismissed from the program. A student who needs to retake a failed course is re-enrolled in the course on a space available basis.

A student who fails a course due to unsafe practice in a clinical experience will not be eligible for readmission to the nursing major, unless evidence is submitted that the unsafe behaviors have been corrected.

All undergraduate and graduate nursing students are expected to adhere to the principles of the Code of Ethics for Nurses (American Nurses Association, 2001). 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 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.

Diversity Statement

Recognizing the growing diversity of the nation’s population, and in support of a key goal from many national organizations to eliminate health disparities, the College of Nursing faculty and staff seek to admit and graduate students who value, respect and reflect the diversity of the society in which they will learn and practice.

Nursing (NURS) Major

Requirements for Nursing Major – Standard Option, Bachelor of Science in Nursing:

Prerequisites

System General Education Requirements*: 26-27

Goal #1 Written Communication: ENGL 101	3
Goal #2 Oral Communication	3
Goal #3 Social Sciences/Diversity:	
HDFS 210 and	
SOC 100 or	
SOC 150 or	
SOC 240	6
Goal #4 Arts and Humanities/Diversity	3
Goal #5 Mathematics	3
Goal #6 Natural Sciences:	
CHEM 106-106L, or	
CHEM 112-112L	4
and CHEM 108-108L or	
CHEM 114-114L	5-4

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
PSYC 101	3

Pre-Nursing Requirements

BIOL 221-221L, Human Anatomy and Lab(COM)	4
MICR 231-231L, General Microbiology and Lab (COM)	4
NFS 315, Human Nutrition	3
BIOL 325-325L, Physiology and Lab (COM)	4

Elective: 1

NURS 201, Medical Terminology (E)	1
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Nursing Major Requirements

Must be accepted into Nursing program prior to taking major courses.

System General Education Requirements*: 6

Goal #1 Written Communication: ENGL 201	3
Goal #4 Arts and Humanities/Diversity	3

Major Requirements: 63-65

NURS 323, Introduction to Pathophysiology	3
NURS 215, Professional Nursing	2
NURS 265-265L, Health Assessment and Interventions and Lab	4
NURS 280-280L, Professional Communication and Lab	3
NURS 310-310L, Introduction to Public Health and Population-based Nursing and Lab	4
NURS 325-325L, Beginning Nursing Care of the Client with Health Problems and Lab	6
PHA 321, Pharmacology	3
NURS 355, Research: Appraisal and Utilization	2
NURS 365-365L, Nursing Care of the Client with Health Problems and Lab	6
NURS 380-380L, Nursing Care of the Childbearing Family and Lab	5
NURS 410-410L, Advanced Nursing Care of the Client with Health Problems and Lab	6
NURS 420-420L, Nursing Care of the Client with Mental Health Problems and Lab	5
HSC 445, Epidemiology	3
or STAT 281, Introduction to Statistics (COM)	3
NURS 425, Nursing Leadership	3
NURS 480-480L, Advanced Population based Nursing Practice and Lab	4
NURS 495-495L, Practicum and Clinical Lab(AW)	6

Electives: 6-10

Total Required Credits: 128

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.

A total of 128 credits are required for graduation.

Required pre-nursing major courses: CHEM 106-106L or 112-112L, 108-108L or 114-114L; HDFS 210; MICR 231-231L; NFS 315; PSYC 101; (one of the following) SOC 100, 150, 240; BIOL 221-221L, 325-325L; MAJOR: NURS 215, 265, 280, 310-310L, 323, 325-325L, 355, 365-365L, 380-380L, 410-410L, 420-420L, 425, 480-480L, 495-495L.

Other required support courses: PHA 321; STAT 281 or HSC 445.

(E) Elective

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 Academic Adviser, Sioux Falls, at 605-367-5636 or toll-free at 1-866-661-6230.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Health Science (HSC) Minor

Janet Lord, Head

Department of Undergraduate Nursing

SWG 327

605-688-6153 or 1-888-216-9806 ext. 2

e-mail: janet.lord@sdsstate.edu

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: BIOL, MICR, ZOOL.
- b. Required Health Science Core courses (12 credits).
- c. Electives from set of selected courses (6 credits).

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: BIOL, MICR, ZOOL.

All of the following courses (12 credits):

HDFS 210, Lifespan Development *	3
HSC 212, Contemporary Health Problems **	2
HSC 445, Epidemiology	3
NURS 201, Medical Terminology	1
HSC 443, Public Health Science (G)	3 (IGR Goal 3**)
or NURS 310-310L, Introduction to Public Health and Population-based Nursing and Lab	4
And NURS 480-480L, Advanced Population based Nursing Practice and Lab	4

Elective credits from the following courses (6 credits):

Any changes/additions to elective credits must receive prior approval from the Department Head of Undergraduate Nursing.

HDFS 227, Human Development and Personality I: Childhood	3
HDFS 241, Family Relations	3
HDFS 250, Development of Human Sexuality	3
HDFS 337, Human Development II: Adolescence	3
HDFS 347, Human Development III: Adulthood	3
HLTH 251, First Aid and CPR (COM)	1
or HLTH 250-250L, Pre-Professional First Aid and CPR and Lab (COM)	2
HSC 120, Community Health	2
HSC 200, Complementary and Alternative Health Care	3
HSC 230, Stress Management for Life	3
HSC 260, Women's Health Issues	3

HSC 302, Wellness and the Family	2
HSC 420/520, Methods of Health Instruction	2
HSC 433-533, Occupational Health	3
PSYC 414, Drugs and Behavior (COM)	3
SOC 250, Courtship and Marriage * ** (COM)	3
STAT 281, Introduction to Statistics (COM)	3

Choose one of the following:

HLTH 251, First Aid and CPR (COM)	1
HLTH 364-364L, Emergency Medical Technician and Lab (COM)	4

Any changes/additions to elective credits must receive prior approval from the Department Head of Undergraduate Nursing

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs). (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

(Pre-) Occupational Therapy

Chanda Walter, Coordinator and Advisor

Department of Health and Nutritional Sciences

Intramural Building 116

605-688-6103

e-mail: chanda.walter@sdsstate.edu

Area of Study

The pre-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.

Schools of occupational therapy offer a master's degree or doctoral degree. Students must complete a bachelor's degree and certain number of required courses before applying to a professional occupational therapy program.

Required

PHIL 220, Introduction to Ethics * ** (COM)	3
or PHIL 383, Bioethics (G)	4
PSYC 101, General Psychology * ** (COM)	3
HDFS 210, Lifespan Development *	3
SOC 100, Introduction to Sociology * (COM) (G)	3
or SOC 150, Social Problems * ** (COM) (G)	3
BIOL 221-221L, Human Anatomy and Lab (COM)	4
BIOL 325-325L, Physiology and Lab (COM)	4

Commonly Required

NURS 201, Medical Terminology	1
STAT 281, Introduction to Statistics (COM)	3
PSYC 451, Psychology of Abnormal Behavior ** (COM)	3

Recommended

BIOL 199-199L, First Year Seminar	2
PHTH 142, Introduction to Physical and Occupational Therapy	1
BIOL 151-151L, General Biology I and Lab* (COM)	4
BIOL 153-153L, General Biology II and Lab*	4
CHEM 112-112L, General Chemistry I and Lab* (COM)	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM)	(3, 1)

(Pre-) Optometry

Greg Heiberger, Coordinator and Advisor
Dairy-Microbiology 225C, Box 2104A
West Hall 223
605-688-4294
E-mail: greg.heiberger@sdstate.edu

Area of Study

There are 17 American Optometric Association accredited member schools and colleges of optometry listed by ASCO (Association of Schools and Colleges of Optometry). Students graduating from SDSU with above average grades and competitive Optometry Admissions Test (OAT) scores have been successful in the admissions process. The average GPA for successful applicants is often 3.0 to 3.5 for colleges of optometry. Students usually have completed three years of college work. The majority of students entering professional schools of optometry have completed 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. Required courses include physics, mathematics, English, biological science, anatomy, chemistry and psychology. A program incorporating these courses should be selected to meet the requirements of professional schools of optometry and provide a good background for the Optometry Admissions Test. Certain optometry colleges may also require additional specific classes. For additional information and specific requirements of each college of optometry, please refer to the Web site for ASCO (Association of Schools and Colleges of Optometry), <http://www.opted.org>.

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

Suggested Pre-Professional Coursework, See your Pre-Optometry Adviser for a complete listing.

Suggested Courses

BIOL 199-199L, First Year Seminar	2
BIOL 290, Seminar	1
PSYC 101, General Psychology * ** (COM)	3
PSYC 451, Psychology of Abnormal Behavior ** (COM)	3
NURS 201, Medical Terminology.....	1

Biology

BIOL 151-151L, General Biology I and Lab* (COM).....	4
BIOL 153-153L, General Biology II and Lab*	4
BIOL 202-202L, Genetics and Organismal Biology and Lab	4
BIOL 204, Genetics and Cellular Biology.....	3
BIOL 204L, Genetics and Cellular Lab.....	1
BIOL 221-221L, Human Anatomy and Lab(COM)	4
BIOL 325-325L, Physiology and Lab (COM).....	4
MICR 231-231L, General Microbiology and Lab (COM)	4

Chemistry

CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM)	(3, 1)

Organic Chemistry

CHEM 326-326L, Organic Chemistry I and Lab(COM).....	(3, 1)
CHEM 328-328L, Organic Chemistry II and Lab(COM)	(3, 1)

Biochemistry

CHEM 326-326L, Organic Chemistry I and Lab(COM).....	(3, 1)
CHEM 328-328L, Organic Chemistry II and Lab(COM)	(3, 1)

Mathematics: Calculus and Statistics

MATH 123, Calculus I * (COM)	4
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STAT 281, Introduction to Statistics (COM)	3
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Physics

PHYS 111-111L, Introduction to Physics I and Lab* (COM).....	4
PHYS 113-113L, Introduction to Physics II and Lab* (COM).....	4

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** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Park and Recreation Management

(See Horticulture, Forestry, Landscape and Parks, and Health and Nutrition Sciences)

Peace and Conflict Studies Minor

Jason McEntee, Acting Head

Department of English

Scobey Hall 014

605-688-5191

E-mail: jason.mcentee@sdstate.edu

The peace and conflict studies minor prepares students to be globally informed citizens of a diverse world—supportive of their own culture and of other cultures by respecting their social amenities, rights, abilities, and racial, religious, and cultural attributes. The minor ensures that graduates have come to understand the overriding importance of what SDSU refers to as “the fellowship of many.”

Requirements for Peace and Conflict Studies minor:

Minor Requirements: 18

ENGL 125, Introduction to Peace and Conflict Studies.....	3
ENGL 470, Capstone in Peace and Conflict Studies.....	3
SPCM 470, Intercultural Communication (COM) (G).....	3
Nine credits from the following list:	
POLS 253, Current World Problems * ** (G)	3
POLS 350, International Relations (COM)	3
POLS 454, International Law and Organization (COM).....	3
HIST 469, American Foreign Relations (COM).....	3
HIST 460, American Military History (COM).....	3
PHIL 215, Introduction to Social-Political Philosophy * **	3
GLST 201, Global Studies I * ** (G).....	3
GLST 480, Ethics of Globalization	3
ENGL 380, Futuristic Communications	3

Pest Management

(See Plant Science)

Pharmaceutical Sciences

Chandradhar Dwivedi, Head
Department of Pharmaceutical Sciences
SAV 275
605-688-6198
e-mail: chandradhar.dwivedi@sdstate.edu
www3.sdstate.edu/academics/collegeofpharmacy

Faculty

Professor Dwivedi, Head; Professor Guan; Associate Professors Chandrasekher, Fahmy, Perumal, Rahman; Assistant Professors, Jin, Seefeldt, Tummala, Zhang.

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 and the University General Education Core curriculum is confirmed through the awarding of a B.S. in Pharmaceutical Sciences. See the College of Pharmacy section of this catalog for admission requirements for the Pharm.D. professional program.

The Department also offers the Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences. See the SDSU Graduate Catalog for details regarding the Ph.D. degree or contact the Department directly.

Pharmacy (PHA) Major

Dennis Hedge, Dean
College of Pharmacy
SIM 116
605-688-6197
Web site: www3.sdstate.edu/Academics/CollegeofPharmacy

Progression Standars for Class Standing:

Some pharmacy courses have prerequisites such as P1 Year Standing, etc.

These are defined as follows:

- P1 Year Standing – The student must have been admitted into the professional program.
- P2 Year Standing – Completion of all PHA 300 level required courses and PHA 101.
- P3 Year Standing – Completion of all PHA 400 level required courses and PHA 610, a bachelor's degree, and all capstone activities are required to begin the fall semester. Completion of all required PHA 700, non-advanced practice experience courses are required to progress to the subsequent semester.
- P4YearStanding – completion of all PHA600-700 level required, non-advanced practice 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

System General Education Requirements*: 34

Goal #1 Written Communication:	
ENGL 101, Composition I*	3
ENGL 201, Composition II *	3
Goal #2 Oral Communication:	
SPCM 101*, Fundamentals of Speech	3
Goal #3 Social Sciences/Diversity	3

ECON 202, Principles of Macroeconomics * (G)	3
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 121-121L, Survey of Calculus and Lab *	5
Goal #6 Natural Sciences:	
CHEM 112-112L, General Chemistry I and Lab *	4
CHEM 114-114L, General Chemistry II and Lab *	4

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship:	
BIOL 101-101L, Biology Survey I and Lab **2	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

Major Requirements: 166

BIOL 221-221L, Human Anatomy and Lab	4
BIOL 325-325L, Physiology and Lab	4
CHEM 326-326L, Organic Chemistry I and Lab	4
CHEM 328-328L, Organic Chemistry II and Lab	4
MICR 231-231L, General Microbiology and Lab	4
PHA 101, Introduction to Pharmacy	1
PHA 310, Introduction to Practice Experience I ³	3
PHA 320, Introduction to Pathophysiology	3
PHA 323, Pharmaceutical Biochemistry	4
PHA 324, Biomedical Science I	4
PHA 331, Pharmaceutics I	3
PHA 332-332L, Pharmaceutics II and Lab	4
PHA 340-340L, Medicinal Chemistry I and Lab	4
PHA 341-341L, Medicinal Chemistry II and Lab	4
PHA 367-367L, Pharmacy Practice I and Lab	2
PHA 368-368L, Pharmacy Practice II and Lab	3
PHA 415, Biopharmaceutics and Pharmacokinetics	4
PHA 425, Biomedical Science II	3
PHA 430, Pharmacy Practice Law	3
PHA 442, Pharmacology I	5
PHA 443, Pharmacology II	4
PHA 444, Toxicology	2
PHA 445, Pharmacotherapeutics I	2
PHA 446, Pharmacotherapeutics II	3
PHA 467-467L, Pharmacy Practice III and Lab (AW)	3
PHA 468-468L, Pharmacy Practice IV and Lab	3
PHA 610, Introductory Practice Experience II ⁴	3
PHA 714, Community Pharmacy Practice Experience ⁵	5
PHA 716, Hospital/Institutional Pharmacy Practice Experience	5
PHA 723, Ethics in Healthcare Practice	2
PHA 727, Professional Resources Management	3
PHA 741-741L, Patient Assessment and Self Care I and Lab	2
PHA 742-742L, Patient Assessment and Self Care II and Lab	2
PHA 756, Pharmacotherapeutics III	4
PHA 757, Pharmacotherapeutics IV	4
PHA 761, Pharmacotherapeutics V	5
PHA 762, Pharmacotherapeutics VI	5
PHA 767-767L, Pharmacy Practice V and Lab	3
PHA 768-768L, Pharmacy Practice VI and Lab	3
PHA 772, Internal Medicine I Practice Experience	5
PHA 774, Ambulatory Care Practice Experience	5
STAT 284, Biostatistics for the Health Sciences	3
<i>Assigned Advanced Pharmacy Practice Experiences (choose 2):</i>	
PHA 700, Directed Studies Practice Experience	(4-5)
PHA 706, Critical Care Practice Experience	5
PHA 707, Infectious Disease Practice Experience	5
PHA 717, Community Health and Patient Monitoring Practice Experience	5
PHA 770, Pediatrics Practice Experience	5
PHA 771, Geriatrics Practice Experience	5

PHA 773, Internal Medicine II Practice Experience.....	5
PHA 775, Psychiatry Practice Experience	5
<i>Elective Advanced Pharmacy Practice Experiences (choose 2):</i>	
PHA 700, Directed Studies Practice Experience	4-5
PHA 701, Home Health/Hospice Practice Experience	5
PHA 702, Indian Health Services Practice Experience.....	5
PHA 703, Pharmacy Administration Practice Experience	5
PHA 704, Nutrition Support Practice Experience.....	5
PHA 705, Clinical Research Practice Experience.....	5
PHA 708, Surgery Practice Experience.....	5
PHA 709, Nephrology Practice Experience	5
PHA 710, Pharmacokinetics Practice Experience.....	5
PHA 711, Oncology Practice Experience.....	5
PHA 712, Nuclear Pharmacy Practice Experience	5
PHA 713, Managed Care Practice Experience.....	5
PHA 780, International Pharmacy Practice.....	5
Practice experiences not utilized from list of Assigned Advanced Pharmacy Practice Experiences	

Electives: 10

General Electives†.....	6
Pharmacy Electives PHA 700 level, non APPE.....	4

Total Required Credits: 218

† General Electives: 6 credits required prior to beginning P3 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 all general education requirements, 300 and 400-level PHA courses, and general elective credits for a total of 138 credits.
- 2 Can substitute BIOL 151-151L and select different IGR Goal #1
- 3 Must be completed during the summer between the P1 and P2 years.
- 4 Must be completed during the summer between the P2 and P3 years.
- 5 Must have a bachelor's degree to begin the P3, 700-level courses. P3 year courses are taught at the University Center North in Sioux Falls. Advanced Pharmacy Practice Experiences (APPEs) are completed during Summer Sessions, Fall, and Spring Semesters.

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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.

Pharmacy Practice

James Clem, Head
Department of Pharmacy Practice
 SAV 149
 605-688-6197
 e-mail: college.pharmacy@sdstate.edu
 www3.sdstate.edu/academics/collegeofpharmacy

Faculty

Professor Clem, Head; Professors Farver, Fiechtner, Fischer, Heins, Helgeland, Jensen Bender, Lemon, Messerschmidt, Mort; Associate Professors Baer, A. Johnson, Kutscher, Laible, Strain; Assistant Professors Hansen, Hayes, Hellwig, Jastorff-Gilles, Kappes, Peters, Ritchie, Shiyabola, Van Gilder; Instructor Hendricks; Adjunct Assistant Professor Lunn.

Programs

The Department provides classroom and experiential instruction for the Doctor of Pharmacy (Pharm.D.) degree program. 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.

Philosophy and Religion (PHIL, REL)

Greg Peterson, Coordinator
Department of Philosophy and Religion
 Scobey Hall 318
 605-688-4933
 e-mail: greg.peterson@sdstate.edu

Faculty

Associate Professor Peterson, Program Coordinator; Professors Bahr, Bielfeldt; Professor Emeritus Nelson; Instructor Enander.

Programs

Philosophy deals with the fundamental questions of life, including the nature of knowledge, the basis of morality and politics, and the rational analysis of religious beliefs. A philosophical perspective emphasizes clear thinking about what's truly important to live well.

The academic study of religion includes learning and understanding the history, beliefs, and practices of the world's many religious traditions. Religion scholars seek to understand how believers understand their own traditions as well as examining historical, psychological, and social factors that shape religious traditions.

Minors are available in both Philosophy and Religion, and may be earned either with a B.A. or a B.S. degree. Students may also pursue an Interdisciplinary Studies major with emphasis on philosophy and religion.

Study in philosophy and religion emphasizes critical thinking, the development of sharp reading skills, and mastery of written and verbal communication abilities that are applicable to a wide variety of professions. Courses in religion will be of particular interest for preministerial students planning to go on to seminary, while courses in philosophy, especially logic, are useful for pre-law students. Students are encouraged to consult with faculty for recommendations for their own personal course of study.

Philosophy (PHIL) Minor

Requirements for Philosophy Minor: 15 cr

Upper division courses	6
Additional PHIL courses.....	6
PHIL 100, Introduction to Philosophy * ** (COM)	3

Religion (REL) Minor

Requirements for Religion Minor: 15 cr

Additional Religion Courses.....	12
REL 213, Introduction to Religion * **	3

(Pre-) Physical Therapy

Chanda Walter, Coordinator and Advisor
Department of Health and Nutritional Sciences
Intramural Building 116
605-688-6103
e-mail: chanda.walter@sdsu.edu

Area of Study

The pre-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.

Schools of physical therapy now offer a doctorate degree program. Students must earn a bachelor's degree, have a basic science background and complete a certain number of required courses before applying to a professional physical therapy program.

Suggested Courses

BIOL 199-199L, First Year Seminar	2
PHTH 142, Introduction to Physical and Occupational Therapy	1
NURS 201, Medical Terminology.....	1

Psychology

PSYC 101, General Psychology * ** (COM)	3
HDFS 210, Lifespan Development *	3
PSYC 451, Psychology of Abnormal Behavior ** (COM).....	3

Biology

BIOL 151-151L, General Biology I and Lab* (COM)	4
BIOL 153-153L, General Biology II and Lab*	4
BIOL 221-221L, Human Anatomy and Lab(COM)	4
BIOL 325-325L, Physiology and Lab (COM).....	4

Chemistry

CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM)	(3, 1)

Physics

PHYS 111-111L, Introduction to Physics I and Lab* (COM)	4
PHYS 113-113L, Introduction to Physics II and Lab* (COM).....	4

Mathematics

STAT 281, Introduction to Statistics (COM)	3
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(Pre-) Physician Assistant

Greg Heiberger, Coordinator and Advisor
Department of Biology and Microbiology
Dairy-Microbiology 225C, Box 2104A
605-688-4294
Email: greg.heiberger@sdsu.edu

Area of Study

SDSU offers prerequisite 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.

All PA programs are expected to become master's degree programs in the near future, thus earning a baccalaureate degree while completing prerequisites for the PA school(s) of your choice is strongly recommended. The general Graduate Record Exam (GRE) is a requirement for many programs.

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, general developmental and abnormal psychology, and statistics. All science courses need to have an accompanying laboratory. In addition, courses required by many PA programs include medical terminology, organic chemistry (a prerequisite for biochemistry), and 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, now available online.

Anatomy: 4 credits

BIOL 221-221L, Human Anatomy and Lab(COM)	4
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Biochemistry: 4 credits

CHEM 464, Biochemistry I (COM)	3
CHEM 466, Laboratory Methods- Biochemistry	1

Biology: 8 credits

BIOL 151-151L, General Biology I and Lab* (COM)	4
BIOL 153-153L, General Biology II and Lab*	4

Chemistry: 8 credits

CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM)	(3, 1)

Microbiology: 4 credits

MICR 231-231L, General Microbiology and Lab (COM)	4
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Organic Chemistry: 8 credits

CHEM 326-326L, Organic Chemistry I and Lab(COM).....	(3, 1)
CHEM 328-328L, Organic Chemistry II and Lab(COM)	(3, 1)

Psychology: 9 credits

HDFS 210, Lifespan Development.....	3
PSYC 101, General Psychology * ** (COM)	3
PSYC 451, Psychology of Abnormal Behavior ** (COM).....	3

Physiology: 4 credits

BIOL 325-325L, Physiology and Lab (COM).....	4
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Statistics: 3 credits

STAT 281, Introduction to Statistics (COM)	3
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Other courses required by many PA programs include:

Genetics course with lab:	4
(e.g. BIOL 202-202L)	
NURS 201, Medical Terminology	1

Highly recommended courses include:

BIOL 290, Seminar	1
BIOL 199-199L, First Year Seminar	2
MICR 439-539, Medical and Veterinary Immunology	3
NURS 323, Introduction to Pathophysiology	3
PHA 321, Pharmacology.....	3

Physics (PHYS) Department

Joel Rauber, Head
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605-688-5428
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www.engineering.sdsu.edu/~physics/physics.htm

Faculty

Professor Rauber, Head; Professor Browning; Professors Emeriti Duffey, Graetzer, Leisure, Quist; Associate Professor Huh, McTaggart; Assistant Professors Aaron, Bonvallet, Grams, Sherwin; Instructors Schran, 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 humankind.

Educational Objectives

Graduates of one of the physics programs at SDSU will compare favorably in their theoretical and technical knowledge with students completing similar programs 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.

Programs

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

The Physics Department offers two curricula, or majors, leading to the Bachelors of Science (B.S.) degree: Physics and Engineering Physics. For either curricula, a student must have a Cumulative Grade Point Average (CGPA) of 2.0 or above for all physics courses to be eligible for graduation. 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.

B.S. Degree in Engineering Physics

Educational Outcomes

Graduates will 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 desired needs;
- 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 life-long learning;
- j) a knowledge of contemporary issues; and

- k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

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

B.S. Degree in Physics

Educational Outcomes

The curriculum in Physics has the flexibility to accommodate a wide range of student interests. Students can earn a Physics degree through one of three tracks; the Flexible Emphasis, the Professional Physics Emphasis, or the Science Teaching Specialization. Students interested in a professional physics career, graduate school, medical school, secondary physics/science education, meteorology, or a multitude of related areas choose one of the tracks in this major.

Minor in Physics

The minor in physics consists of 17 credits as outlined in the section on Major and Minor Requirements.

Minor in Nuclear Engineering

Students interested in both engineering, and nuclear science should strongly consider a career that utilizes training in both fields. Nuclear Engineering is a broad multidisciplinary field that offers rewarding careers related to nuclear power, health physics, medical physics, nuclear and particle physics, and industrial applications such as sterilization of medical products or food irradiation. Students who complete the minor in nuclear engineering at SDSU will be well prepared for such engineering/science careers or for entering graduate programs for advanced degrees related to nuclear engineering, health physics, medical physics, or physics.

There is a growing demand for engineers that have some nuclear science training. By 2030, it is estimated that we may need up to 40% more electricity in the United States. Nuclear power can meet this increased demand while emitting zero greenhouse gases and not relying upon foreign sources of energy. Not only is the current nuclear workforce starting to retire, but new power plants must be built to meet the growing demand for electricity. Most of these new hires will not be nuclear engineers, but will be “nuclear-savvy” engineers of the type that this minor can provide. Nuclear medicine and health physics are also areas that have widespread and significant demand for science and engineering majors.

Students desiring the minor in nuclear engineering complete an 18-credit curriculum. The curriculum consists of three required foundational courses: (Modern Physics, Foundations of Health Physics, and Introduction to Nuclear Engineering), an internship/research experience, and six credits of appropriate elective course work from physics, mechanical, and electrical engineering. The curriculum is designed with both coursework and practical field experience components in order to add nuclear engineering/science expertise to the student’s major. The internship/research experience, which requires approval from the coordinator of the program, provides “real-world” training that allows the student to develop valuable experience that is highly desired by employers in prospective hires.

Student Outcomes:

Students will:

1. Apply advanced mathematics, science, and/or engineering science to nuclear and/or radiological systems.

2. Measure nuclear and radiological processes.
3. Understand the biological effects of radiation and standard radiation safety practices.
4. Demonstrate competency in contemporary issues regarding nuclear power.
5. Demonstrate the ability to work effectively in an area of nuclear science.

Engineering Physics Major

This program will be discontinued beginning fall 2011.

System General Education Requirements*: 33

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201 or	
ENGL 277 ¹	6
Goal #2 Oral Communication	3
Goal #3 Social Sciences/Diversity ²	6
Goal #4 Arts and Humanities/Diversity ²	6
Goal #5 Mathematics:	
MATH 123	4
Goal #6 Natural Sciences:	
PHYS 211-211L, and	
PHYS 213-213L.....	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 76

PHYS 316-316L, Measurement Theory and Experiment	
Design and Lab (AW)	2
PHYS 331, Introduction to Modern Physics (COM).....	3
PHYS 490-590, Seminar (COM).....	(1-3)
MATH 125, Calculus II * (COM).....	4
MATH 225, Calculus III * (COM)	4
MATH 321, Differential Equations (COM).....	3
CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM).....	(3, 1)
CSC 150, Computer Science I (COM)	3
or CSC 218, Introduction to C/C++/Unix for Engineers.....	3
PHYS 318, Advanced Laboratory I	1
PHYS 341, Thermodynamics (COM).....	2
PHYS 343, Statistical Physics (COM).....	2
PHYS 361, Optics (COM)	3
PHYS 418, Advanced Lab II	1
PHYS 421-521, Electromagnetism (COM)	4
PHYS 451-551, Classical Mechanics (COM)	4
PHYS 471-571, Quantum Mechanics (COM).....	4
PHYS 435, Introduction to Nuclear Engineering	3
or PHYS 439-539, Solid State Physics (COM)	4
or PHYS 433-533, Nuclear and Elementary Particle Physics (COM).....	3
GE 101, Introduction to Engineering and Technology	1
GE 121, Engineering Design Graphics I	1
GE 123, Computer Aided Drawing.....	1
MATH 331, Advanced Engineering Mathematics	3
or PHYS 481, Mathematical Physics (COM)	4
EE 220-220L, Circuits I and Lab (COM).....	4
EE 221-221L, Circuits II and Lab (COM)	4
EE 320-320L, Electronics I (COM).....	4
EE 321-321L, Electronics II and Lab	4
PHYS 464, Senior Design I	1
PHYS 465-465L, Senior Design II and Lab.....	2

Electives: 10

Technical Electives ³	10
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Total Required Credits: 128

This program will be discontinued beginning fall 2011.

System General Education Requirements*: 33

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201 or	
ENGL 277 ¹	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity ²	6
Goal #4 Arts and Humanities/Diversity ²	6
Goal #5 Mathematics:	
MATH 123	4
Goal #6 Natural Sciences:	
PHYS 211-211L, and	
PHYS 213-213L.....	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 78

PHYS 316-316L, Measurement Theory and Experiment	
Design and Lab (AW)	2
PHYS 331, Introduction to Modern Physics (COM).....	3
PHYS 490-590, Seminar (COM).....	(1-3)
MATH 125, Calculus II * (COM).....	4
MATH 225, Calculus III * (COM)	4
MATH 321, Differential Equations (COM).....	3
CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM).....	(3, 1)
CSC 150, Computer Science I (COM)	3
or CSC 218, Introduction to C/C++/Unix for Engineers.....	3
PHYS 318, Advanced Laboratory I	1
PHYS 341, Thermodynamics (COM).....	2
PHYS 343, Statistical Physics (COM).....	2
PHYS 361, Optics (COM)	3
PHYS 418, Advanced Lab II	1
PHYS 421-521, Electromagnetism (COM)	4
PHYS 451-551, Classical Mechanics (COM)	4
PHYS 471-571, Quantum Mechanics (COM).....	4
PHYS 435, Introduction to Nuclear Engineering	3
or PHYS 439-539, Solid State Physics (COM)	4
or PHYS 433-533, Nuclear and Elementary Particle Physics (COM).....	3
GE 101, Introduction to Engineering and Technology	1
GE 121, Engineering Design Graphics I	1
MATH 331, Advanced Engineering Mathematics	3
or PHYS 481, Mathematical Physics (COM)	4
EE 220-220L, Circuits I and Lab (COM).....	4
GE 122, Engineering Design Graphics II	1
EM 214, Statics (COM)	3
GE 225, Survey of Machine Tool Applications	1
ME 240, Introduction of Mechanical Design	3
EM 331, Fluid Mechanics (COM).....	3
PHYS 464, Senior Design I	1
PHYS 465-465L, Senior Design II and Lab.....	2

Electives: 9

Technical Electives ³	8
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Total Required Credits: 128

- 1 The Engineering Physics Major, either emphasis,-has received an exemption (see * below) in that the second English course may be delayed until the junior year.
 - 2 Check especially the six credits for SGR Goals 3 and 4 which require courses from two different disciplines. It is recommended that ECON 202 Macroeconomics be one of the elective Social Science courses.
 - 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 (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)
- ** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)
- (G) Globalization Requirement.** (See page 46 for details.)
- (AW) Advanced Writing Requirement.** (See page 47 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.

Physics Major

Requirements for Physics Major – College of Engineering, Professional Physics Emphasis, Bachelor of Science in Physics

System General Education Requirements*: 33

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201 or	
ENGL 277 ¹	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity ²	6
Goal #4 Arts and Humanities/Diversity ²	6
Goal #5 Mathematics:	
MATH 123	4
Goal #6 Natural Sciences:	
PHYS 211-211L, and	
PHYS 213-213L.....	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 65

PHYS 316-316L, Measurement Theory and Experiment	
Design and Lab (AW).....	2
PHYS 331, Introduction to Modern Physics (COM).....	3
PHYS 490-590, Seminar (COM).....	1
MATH 125, Calculus II * (COM).....	4
MATH 225, Calculus III * (COM)	4
MATH 321, Differential Equations (COM).....	3
CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM).....	(3, 1)
CSC 150, Computer Science I (COM)	3
or CSC 218, Introduction to C/C++/Unix for Engineers.....	3
PHYS 318, Advanced Laboratory I.....	1
PHYS 341, Thermodynamics (COM).....	2
PHYS 343, Statistical Physics (COM).....	2
PHYS 361, Optics (COM).....	3
PHYS 418, Advanced Lab II	1
PHYS 421-521, Electromagnetism (COM)	4
PHYS 451-551, Classical Mechanics (COM)	4
PHYS 471-571, Quantum Mechanics (COM).....	4
PHYS 435, Introduction to Nuclear Engineering.....	3
or PHYS 439-539, Solid State Physics (COM)	4

or PHYS 433-533, Nuclear and Elementary Particle Physics (COM).....	3
GE 121, Engineering Design Graphics I	1
GE 122, Engineering Design Graphics II	1
or GE 123, Computer Aided Drawing.....	1
MATH 331, Advanced Engineering Mathematics	3
or PHYS 481, Mathematical Physics (COM).....	4
EE 220-220L, Circuits I and Lab (COM).....	4

Electives: 22

Technical Electives [†]	23
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Total Required Credits: 128

Requirements for Physics Major— Flexible Emphasis, Bachelor of Science in Physics

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.

System General Education Requirements*: 33

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201 or	
ENGL 277 ¹	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity ²	6
Goal #4 Arts and Humanities/Diversity ²	6
Goal #5 Mathematics:	
MATH 123	4
Goal #6 Natural Sciences:	
PHYS 211-211L or	
PHYS 111-111L, and	
PHYS 213-213L or	
PHYS 113-113L.....	8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

Major Requirements: 32

PHYS 316-316L, Measurement Theory and Experiment	
Design and Lab (AW).....	2
PHYS 331, Introduction to Modern Physics (COM).....	3
PHYS 490-590, Seminar (COM).....	1
MATH 125, Calculus II * (COM).....	4
MATH 225, Calculus III * (COM)	4
MATH 321, Differential Equations (COM).....	3
CHEM 112-112L, General Chemistry I and Lab* (COM).....	(3, 1)
or CHEM 106-106L, Chemistry Survey and Lab* (COM)....	(3, 1)
CHEM 114-114L, General Chemistry II and Lab * (COM).....	(3, 1)
or CHEM 120-120L, Elementary Organic Chemistry and Lab*	(3, 1)
CSC 150, Computer Science I (COM)	3
or CSC 218, Introduction to C/C++/Unix for Engineers.....	3
PHYS 421-521, Electromagnetism (COM)	4
or PHYS 451-551, Classical Mechanics (COM)	4
or PHYS 471-571, Quantum Mechanics (COM).....	4

Electives: 55	
Physics Electives	10
Technical Electives ¹	19
Directed Electives ²	26

Total Required Credits: 128

Requirements for Physics Major— Science Teaching Specialization,
Bachelor of Science in Physics

System General Education Requirements*: 33

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201 or	
ENGL 277 ¹	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
PSYC 101 or	
SOC 100	6
Goal #4 Arts and Humanities/Diversity:	
PHIL 200	6
Goal #5 Mathematics: MATH 123	4
Goal #6 Natural Sciences:	
PHYS 211-211L or	
PHYS 111-111L, and	
PHYS 213-213L or	
PHYS 113-113L	8

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
ANTH 421-521	3

Major Requirements: 27

PHYS 185-185L, Introduction to Astronomy I and Lab* (COM)	3
PHYS 316-316L, Measurement Theory and Experiment Design and Lab (AW)	2
PHYS 331, Introduction to Modern Physics (COM)	3
PHYS 490-590, Seminar (COM)	1
MATH 125, Calculus II * (COM)	4
MATH 225, Calculus III * (COM)	4
MATH 321, Differential Equations (COM)	3
CSC 150, Computer Science I (COM)	3
or CSC 218, Introduction to C/C++/Unix for Engineers	3
PHYS 421-521, Electromagnetism (COM)	4
or PHYS 451-551, Classical Mechanics (COM)	4
or PHYS 471-571, Quantum Mechanics (COM)	4

Electives: 12-14

Physics Electives	7
Physics or Chemistry Electives	4
General Electives	1-3

Total Required Credits: 128

Science Teaching Specialization Requirements: 46-48

ANTH 421-521, Indians of North America **	3
CHEM 106-106L, Chemistry Survey and Lab* (COM)	(3, 1)
or CHEM 112-112L, General Chemistry I and Lab* (COM) (3, 1)	
BIOL 101-101L, Biology Survey I and Lab ** (COM)	3
or BIOL 151-151L, General Biology I and Lab* (COM)	4
CHEM 114-114L, General Chemistry II and Lab * (COM)	(3, 1)
or CHEM 120-120L, Elementary Organic Chemistry and Lab*	(3, 1)

BIOL 103-103L, Biology Survey II and Lab* (COM)	3
or BIOL 153-153L, General Biology II and Lab*	4
EDFN 338, Foundations of American Education (COM)	(1-2)
EDFN 365, Computer-Based Technology and Learning (COM)	(2)
EDFN 427-527, Middle School: Philosophy and Application	2
EDFN 475, Human Relations (COM)	3
SEED 314, Supervised Clinical/Field Experience	1
SEED 400, Curriculum and Instruction in Middle and Secondary Schools	4
SEED 413, 7-12 Science Methods (COM)	3
SEED 410, Social Foundations, Management and Law	2
SEED 450, 7-12 Reading and Content Literacy (COM)	2
SEED 488, 7-12 Student Teaching (COM)	(2-16)
SPED 401, Introduction to Educating Secondary Students with Disabilities (COM)	1
EPSY 302, Educational Psychology (COM)	3

1 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. 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.

2 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 his or her advisor as emphasis courses are chosen. The emphasis area and emphasis courses, if departing from pre-approved plans must be approved by the Head of the Physics Department.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Nuclear Engineering Minor

Requirements for Nuclear Engineering Minor: 18

PHYS 331, Introduction to Modern Physics (COM)	3
PHYS 337, Foundations of Health Physics	3
PHYS 435, Introduction to Nuclear Engineering	3
Choose one of the following for the internship/research experience:	
The internship/research experience must be related to nuclear science or operations in the nuclear industry and the student must obtain prior approval for the experience from the Coordinator.	
ME 494, Internship	(1-3)
PHYS 494, Internship (COM)	(1-4)
ME 498, Undergraduate Scholarship/Research (COM)	(1-3)
EE 498, Undergraduate Research/Scholarship	(1-3)
PHYS 498, Undergraduate Research/Scholarship (COM)	1-3

Choose a minimum of 6 credits from the following:

ME 341-341L, Metallurgy and Lab	3
ME 410, Principles of HVAC Engineering	3
ME 413, Turbomachinery	3
ME 418, Design of Thermal Systems	3
ME 437, Gas Dynamics I	3
ME 439-439L, HVAC System Design and Lab	3
ME 492/592, Topics	(1-5)
PHYS 418, Advanced Lab II	1
PHYS 433-533, Nuclear and Elementary Particle Physics (COM)	3
EE 430-430L, Electromechanical Systems and Lab	4
EE 434-434L, Power Systems and Lab	4

Physics Minor

Requirements for Physics Minor: 17

Other Physics Department courses, 3 credits of which must be from courses numbered 300 or greater.....6
PHYS 331, Introduction to Modern Physics (COM).....3
Choose one of the following:
PHYS 111-111L, Introduction to Physics I and Lab* (COM).....4
PHYS 113-113L, Introduction to Physics II and Lab* (COM).....4
or:
PHYS 211-211L, University Physics I and Lab* (COM).....4
PHYS 213-213L, University Physics II and Lab * (COM).....4

Planning (PLAN)

George White, Head
Department of Geography
Scobey Hall 232
605-688-4511
e-mail: george.white@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 Science (PS)

Sue Blodgett, Department Head
Douglas Malo, Assistant Department Head
Brent Turnipseed, Teaching Coordinator
Department of Plant Science
Agricultural Hall 219
605-688-5123 (Department Head)
605-688-4450 (Teaching Office, SNP 247)
e-mail: sue.blodgett@sdstate.edu
brent.turnipseed@sdstate.edu
<http://plantsci.sdstate.edu>

Faculty

Professor Sue Blodgett, Head; Distinguished Professor Malo; Distinguished Professor Emeriti Wrage; Professors Beck, Berg, Bleakley, Boe, Carlson, Cantangui, Carter, D. Clay, S. Clay, Doolittle, Fuller, Gelderman, Hall, Johnson, Kephart, Langham, Lemme, Owens, Rickerl, Schumacher, Sutton, Turnipseed, Wicks, Woodard; Professors Emeriti Buchenau, Carson, Dybing, Evenson, Gerwing, Gardner, Horton, Kantack, Kenefick, Kohl, Reeves, Shank, Shubeck, Smolik, Walstrom; Associate Professors Chase, Glover, Nleya, Osborne, Ren, Stein; Associate Professors Emeriti Colburn, Pollmann, Stymiest, Williamson; Assistant Professors Gonzalez, Grady, Gu, Moechnig, Nleya, Stein, Tilmon; Assistant Professors Emeritus Bonnemann, Kingsley.

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; (HFLP) Schaefer; (Biogenetics Inc.) Kahler; (GAEA, Inc.) Butler; (North Central Soil and Water Conservation Research Laboratory, Morris, MN-USDA/ARS)

Forcella, Lindstrom; (North Central Agricultural Research Laboratory-USDA/ARS) Anderson, Dashiell, French, Hesler, Lehman, Lundgren, Osborne, Pikul, Riedell; (Pioneer Hi-Bred) Jackson; (IPNI) Fixen; (Texas A&M) Ibrahim; (USDA/ARS, Soil & Water Cons. SOC.) Moldenhauer.

Programs

The primary goal of the Department is to prepare students for leadership in business, government, and enterprises related to crop production, pest management, breeding/genetics, natural resource management, and soil nutrient management. In addition, you can prepare for graduate study leading to a career in research, teaching, business, 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 offered, provides an excellent background for career success in industry, business, farming or ranching, and graduate school.

The Department offers instruction leading to the Bachelor of Science Degree with a major in Agronomy.

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 nationally recognized crops, soils, and weeds judging teams.

Graduate study opportunities may lead to a Master of Science or Doctor of Philosophy degrees in Agronomy or Biological Sciences.

Agronomy Major

Provides broad training in the plant and soil sciences and in crop production technology. The integrated program is designed to provide students with an understanding and knowledge base in crops, soils, weeds, entomology, plant pathology, breeding and genetics, precision agriculture, natural resource management, and the interaction of production systems. This major is recommended for students interested in cropping systems, natural/agricultural resource management, or the agribusiness areas of crops, soils, and pest management. Individuals can prepare for careers in crop consulting, crop/plant research, and with private industry managing agricultural inputs such as pesticides and fertilizers; developing improved seed traits, plant sciences, genomics, and producing seed; and for work with government agencies, such as the Cooperative Extension Service, Farm Service Agency, Agricultural Research Service, and Natural Resources Conservation Service.

Agronomy Major

Sue Blodgett, Department Head
Brent Turnipseed, Teaching Coordinator
Department of Plant Science
Agricultural Hall 219
605-688-5123 (Department Head)
605-688-4450 (Teaching Office, SNP 247)
e-mail: sue.blodgett@sdstate.edu
brent.turnipseed@sdstate.edu
<http://plantsci.sdstate.edu>

Requirements for Agronomy Major, Bachelor of Science in Agriculture:

System General Education Requirements*: 31-34

Goal #1 Written Communication:

ENGL 101 and
ENGL 201.....6

Goal #2 Oral Communication:
 SPCM 101* **or**
 SPCM 215 **or**
 SPCM 222.....3

Goal #3 Social Sciences/Diversity:
 ECON 201 **or**
 ECON 202 **and**
 SOC 100 **or**
 SOC 150 **or**
 SOC 240.....6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:
 MATH 102 **or**
 MATH 115 **or**
 MATH 120.....3-5

Goal #6 Natural Sciences:
 BIOL 151-151L **and**
 BIOL 153-153L **or**
 BOT 201-201L.....7-8

Institutional Graduation Requirements:** 8-9

Goal #1 Land and Natural Resource Stewardship:
 PS 213-213LA.....3

Goal #2 Personal Wellness: GS 143.....2

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

Major Requirements: 59-62

PS 101, Opportunities in Plant Science^A.....1

PS 103-103L, Crop Production and Lab^A.....3

PS 213-213L, Soils and Lab * ^{***A}.....3
 (credits count for IGR #1)

PS 223-223L, Principles of Plant Pathology and Lab^A.....3

PS 305-305L, Insect Biology and Lab (COM).....3
or PS 307-307L - Insect Pest Management and Lab.....3

PS 323, Soil Fertility and Plant Nutrient Management^A.....3

PS 343-343L, Weed Science and Lab^A.....3

PS 390, Seminar (AW)^A.....1

PS 494, Internship^A.....0.5-2

ABS 475-475L, Integrated Natural Resource Management and
 Lab (AW)^A.....3

PS 383-383L, Principles of Crop Improvement and Lab(AW).....3
or BIOL 202-202L, Genetics and Organismal Biology and Lab...4
or BIOL 371, Genetics (COM).....3

BOT 327-327L, Plant Physiology and Lab (COM).....4

PS 421-451L-521-521L, Soil Microbiology and Lab.....3
and PS 492 Special Topic on Soil Microbiology.....1
or MICR 231-231L General Microbiology and Lab (COM).....4

CHEM 106-106L, Chemistry Survey and Lab* (COM).....(3, 1)
or CHEM 112-112L, General Chemistry I and Lab* (COM).....(3, 1)

CHEM 120-120L, Elementary Organic Chemistry and Lab*.....(3, 1)
or CHEM 108-108L, Organic and Biochemistry and
 Lab* (COM).....(4, 1)

PHYS 101-101L, Survey of Physics * (COM) and Lab.....4
or PHYS 111-111L, Introduction to Physics I and Lab* (COM).....4

STAT 281, Introduction to Statistics (COM).....3

ENGL 379, Technical Communication (AW).....3

AGEC 354, Agricultural Marketing and Prices.....3
or AS 285-285L, Livestock Evaluation and Marketing and Lab...4
or BADM 474, Personal Selling (COM).....3

Natural Resources Stewardship Elective: 3-4

Select one of the following courses^A:

ABS 203, Global Food Systems ** (G).....3

ABS 482-582, International Experience **(G).....(2-4)

BIOL 383, Bioethics ** (G).....4

PS 243, Principles of Geology* ^{***2}.....3

PS 307-307L, Insect Pest Management and Lab².....3

PS 310-310L, Soil Geography and Land Use Interpretation and
 Lab** (G)².....3

PS 362-362L, Environmental Soil Management and Lab** ².....3

PS 446-546, Agroecology (G)².....3

Plant Science Electives (at least two credits from each of three areas
 listed below).....13

Crops

PS 303-303L, Seed Technology and Lab.....3

PS 308-308L, Grain Grading and Lab.....2

PS 312, Grain and Seed Production and Processing.....3

PS 313, Forage Crop and Pasture Management.....3

PS 320, Crop Judging¹.....2

PS 383-383L, Principles of Crop Improvement and Lab(AW)².....3

PS 440-440L, Crop Management with Precision Farming and
 Lab.....3

PS 453-553, Advanced Genetics.....3

Plant Protection

PS 307-307L - Insect Pest Management and Lab.....3
or PS 305-305L, Insect Biology and Lab (COM).....3

PS 333-333L, Diseases of Field Crops and Lab.....3

PS 334-334L, Diseases of Horticultural Crops and Lab.....3

PS 415-415L/515-515L, Mycology and Lab.....3

PS 431-531, Insect Ecology and Biological Control.....3

PS 450-450L/550-550L, Field Study of Plant Disease Diagnosis
 and Lab.....2

Soils/Environmental Protection

PS 243, Principles of Geology* ^{***2}.....3

PS 244, Geological Resources of South Dakota Lab.....1

PS 310-310L, Soil Geography and Land Use Interpretation
 and Lab** (G)².....3

PS 321, Soil Judging¹.....1

PS 362-362L, Environmental Soil Management and Lab**².....3

PS 412-512, Environmental Soil Chemistry.....3

PS 421-421L/521-521L, Soil Microbiology and Lab².....3

PS 446-546, Agroecology (G)².....3

PS 473-473L/573-573L, Rural Real Estate Appraisal and Lab.....3

PS 483, Irrigation – Crop and Soil Practices.....3

Electives: 17

Total Required Credits: 128

1 Cannot be used to solely meet area requirements.

2 Can only be used to meet requirements in one section

A Agronomy Major Core Curriculum: A student must have a 2.5 GPA or higher and a grade of C or higher in the courses used to satisfy the Agronomy core curriculum in order to graduate with a major in Agronomy.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Agronomy Minor

Requirements for Agronomy Minor: 18 cr

PS 103-103L, Crop Production and Lab.....3

PS 213-213L, Soils and Lab * ^{***}.....2

PS 223-223L, Principles of Plant Pathology and Lab.....3

PS 305-305L, Insect Biology and Lab (COM).....	3
or PS 307-307L, Insect Pest Management and Lab.....	3
PS 323, Soil Fertility and Plant Nutrient Management	3
PS 343-343L, Weed Science and Lab	3

Students must have a 2.5 GPA or higher and a grade of C or higher in the courses used to satisfy the Agronomy Minor in order to graduate with an Agronomy Minor.

Pest Management Minor

Requirements for Pest Management Minor: 18 cr

PS 223-223L, Principles of Plant Pathology and Lab	3
PS 305-305L, Insect Biology and Lab (COM) ¹	3
or PS 307-307L, Insect Pest Management and Lab ¹	3
PS 343-343L, Weed Science and Lab	3
Plus 8 additional credits from:	
PS 305-305L, Insect Biology and Lab (COM) ¹	3
or PS 307-307L, Insect Pest Management and Lab ¹	3
PS 333-333L, Diseases of Field Crops and Lab	3
PS 334-334L, Diseases of Horticultural Crops and Lab	3
PS 415-415L/515-515L, Mycology and Lab	3
PS 431-531, Insect Ecology and Biological Control	3
PS 450-450L/550-550L, Field Study of Plant Disease Diagnosis and Lab	2
PS 491, Independent Study ²	(1-5)
PS 492-592, Topics Credits ²	1-3

Notes:

1 Can only be used to meet requirements in one section.

2 Must involve collaboration with pest management faculty.

Students must have a 2.5 GPA or higher and a grade of C or higher in the courses used to satisfy the Pest Management Minor in order to graduate with a Pest Management Minor.

Soil Science Certification

Soil Science Requirements:

The following courses are strongly recommended for students seeking certification or licensure as a professional soil scientist:

Soils Elective	3
PS 213-213L, Soils and Lab * **	2
PS 310-310L, Soil Geography and Land Use Interpretation and Lab** (G).....	3
PS 323, Soil Fertility and Plant Nutrient Management	3
PS 362-362L, Environmental Soil Management and Lab**	3
PS 412-512, Environmental Soil Chemistry	3
PS 421-421L/521-521L, Soil Microbiology and Lab	3

Soil Science Minor

Requirements for Soil Science Minor: 18 credits

PS 213-213L, Soils and Lab * **	3
PS 310-310L, Soil Geography and Land Use Interpretation and Lab** (G).....	3
PS 323, Soil Fertility and Plant Nutrient Management	3
PS 362-362L, Environmental Soil Management and Lab**	3
PS 412-512, Environmental Soil Chemistry	3
PS 421-421L/521-521L, Soil Microbiology and Lab	3

Political Science (POLS)

(See History and Political Science)

Professional Writing Minor

(See English)

Psychology (PSYC) Department

Brad Woldt, Head
Department of Psychology
Scobey Hall 336
605-688-4322
e-mail: bradley.woldt@sdsstate.edu

Faculty

Professor Woldt, Head; Professors Emeriti Branum, Hillner, Norris; Professors Phelps, Spear; Associate Professors Martin, Nowell; Assistant Professor Jensen.

Programs

The Department offers a Bachelor of Science degree with a major in Psychology. Students interested in preparation for a specific area may pursue one of two emphases and one specialization. The emphases include graduate school preparation and psychological services. The specialization is the teaching specialization (preparation for secondary school teaching). The minimum departmental requirement for a psychology degree is 39 credits prefixed PSYC which include core courses of 101, 202, 210, 375, 376, and 409. In addition, courses from each of six Domains are required. A minimum grade of "C" is required in all Psychology courses. Minimum college and university requirements are given in the appropriate sections of this catalog. Advisers assist students to personalize curriculum plans.

Graduate School Preparation Emphasis

The Graduate School Preparation Emphasis 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 and mental processes, the history of psychology and contemporary research. Students engage in hands-on research training and complete an undergraduate research project.

Psychological Services Emphasis

The Psychological Services emphasis is designed to provide preparation for employment working as a diagnostic and therapeutic aide or case manager in human service and/or nonprofit agencies with a Bachelor of Science degree. The program for this emphasis includes familiarization with standard assessment protocols and techniques of therapy, as well as a supervised senior internship.

Teaching Specialization

The Teaching specialization in psychology prepares students to qualify for certification to teach in secondary schools. Students pursuing this specialization should contact the College of Education and Human Sciences before their junior year to obtain complete teacher education information and guidance. See Teacher Education (certification).

Psychology Major

Requirements for Psychology Major, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 201, and

ENGL 1016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity: (3 credits not PSYC).....6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics:

MATH 1023

Goal #6 Natural Sciences.....6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship: (cannot be used to meet another SGE, IGR, or A&S requirement).....3

Goal #2 Personal Wellness.....2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:

Option 23

College Requirements: 13

Natural Sciences8

Social Sciences: (not PSYC).....3

Humanities.....2

Major Requirements: 39

PSYC 101, General Psychology * ** (COM)3

PSYC 202, The Psychology Major3

PSYC 210, Introduction to Biopsychology3

PSYC 375-375L, Research Methods in Psychology and Lab4

PSYC 376-376L, Research Methods II and Lab4

PSYC 409, History and Systems of Psychology (COM) (AW) (G).....3

Domain I- Choose one from the following:

PSYC 244, Environmental Psychology **3

PSYC 287, Controversial Issues in Psychology3

PSYC 289, Pseudoscience and Psychology.....3

Domain II- Choose two from the following:

PSYC 301, Sensation and Perception (COM)3

PSYC 305, Learning and Conditioning (COM)¹.....3

PSYC 406, Cognitive Psychology ** (COM)¹3

PSYC 411, Physiological Psychology¹.....3

PSYC 414, Drugs and Behavior (COM)3

Domain III- Choose one from the following:

PSYC 324, Psychology of Aging **3

PSYC 327, Child Psychology ** (COM)¹.....3

PSYC 364, Cross Cultural Psychology.....3

PSYC 367, Psychological Gender Issues **¹3

Domain IV- Choose one from the following:

PSYC 417, Health Psychology (COM)3

PSYC 441, Social Psychology ** (COM)¹3

PSYC 451, Psychology of Abnormal Behavior ** (COM)¹3

PSYC 461, Theories of Personality ** (COM)¹3

Domain V- Choose one from the following:

PSYC 331, Industrial and Organizational Psychology (COM)3

PSYC 357, Psychological Therapies.....3

PSYC 358, Behavior Modification.....3

PSYC 427, Child Psychopathology3

PSYC 440-540, Forensic Psychology3

PSYC 477, Psychology Testing and Measurement (COM).....3

Domain VI- Choose one from the following:

Lab courses must be taken concurrently with the corresponding lecture course.

PSYC 305L, Learning and Conditioning Lab1

PSYC 367L, Psychological Gender Issues Laboratory1

PSYC 406L, Cognitive Psychology Laboratory1

PSYC 441L, Social Psychology Laboratory.....1

PSYC 477L, Psychology Testing and Measurement Laboratory1

Electives: 38

Total Required Credits: 128

Teaching Specialization: 57

The following Psychology courses are required for the Teaching specialization and may contribute towards the Psychology major.

PSYC 305, Learning and Conditioning (COM)3

PSYC 327, Child Psychology ** (COM).....3

PSYC 367, Psychological Gender Issues **3

PSYC 406, Cognitive Psychology ** (COM)3

PSYC 411, Physiological Psychology3

PSYC 441, Social Psychology ** (COM).....3

PSYC 451, Psychology of Abnormal Behavior ** (COM).....3

PSYC 491, Independent Study (COM).....(1-3)

Teaching Specialization Requirements:

Professional Semester I:

EDFN 338, Foundations of American Education (COM)(1-2)

EDFN 475, Human Relations (COM)3

PS II, Professional Semester II:

EPSY 302, Educational Psychology (COM)3

SEED 450, 7-12 Reading and Content Literacy (COM).....2

SEED 314, Supervised Clinical/Field Experience.....1

PS III, Professional Semester III:

SEED 400, Curriculum and Instruction in Middle and Secondary

Schools.....4

SEED 410, Social Foundations, Management and Law(2-2)

SEED 488, 7-12 Student Teaching (COM).....(2-16)

and/or ELED 488, K-8 Student Teaching (COM).....(2-16)

Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits between SEED 488 and ELED 488.

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

Special Methods (varies by content area) 3

SPED 401, Introduction to Educating Secondary Students with Disabilities (COM) 1

EDFN 365, Computer-Based Technology and Learning (COM) (2)

EDFN 427-527, Middle School: Philosophy and Application 2

1 This course required for the Teaching specialization, and counts towards both the major and the specialization.

2 A 'C' or better is required for all psychology courses.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Psychology (PSYC) Minor

Brad Woldt, Head
Department of Psychology
Scobey Hall 336
605-688-4322
e-mail: bradley.woldt@sdstate.edu

Requirements for Psychology Minor: 18 cr

300-400 level Psychology courses15
PSYC 101, General Psychology * ** (COM)3

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)

Sociology and Rural Studies (ANTH, SOC, CJUS)

Donald Arwood, Acting Head
Department of Sociology and Rural Studies
Scobey Hall 224
605-688-4132
e-mail: Donald.Arwood@sdstate.edu

Faculty

Professor Arwood, Acting Head; Professors Arwood, Kayongo-Male, Redlin, Stover; Distinguished Regental Professor Emeritus R. Wagner; Professor Emeriti Hess, Mendelsohn, Satterlee; Associate Professor Emeritus Grant; Assistant Professors Aschenbrener, Froelich, O'Neil; Instructor McCurry.

Programs

The courses offered by the Department have been organized with two objectives in mind: (1) a sequence for those who may wish to earn an undergraduate major or minor in sociology; and (2) basic service courses that will be of interest and practical help to students in any college. (Students interested in Graduate Program — see University Graduate Catalog and department graduate guide.)

The Department offers the B.A. and B.S. degrees in Arts and Sciences with a major in Sociology. An undergraduate may select from any of the following specializations in the Arts and Sciences curriculum. Each student is assigned to an adviser based on choice of specialization.

General Sociology (BS/BA)

Incoming freshmen and transfer students usually 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 other 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. (Minimum GPA of 2.2 in the major.)

Teaching Specialization (BS)

Prepares for entrance into middle school 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 endorsements to maximize employment opportunities. One semester is set aside for a teaching-block and offcampus teaching assignment. (Minimum GPA of 2.6 in the major.)

Pre-Social Work Option

The undergraduate program in pre-social work at South Dakota State University is a 2 + 2 program. Students who choose this option will take two years at SDSU and two years at the University of South Dakota (USD) to accomplish an accredited degree in Social Work. This degree is for those seeking a specialized career in private or public social welfare. Students need to work closely with the Coordinator of Social Work at SDSU. Students seeking more general social service type careers should select the Human Services specialization. (Minimum GPA of 2.2 in the major.)

Human Services Specialization (BS)

Designed for those interested in “working with people” in a variety of social service type agencies. Students in this specialization must take classes in social work and service learning. They must also complete an internship. Coursework in criminal justice and human development complements this specialization. (Minimum GPA of 2.2 in the major.)

Human Resources Specialization (BS)

Designed for those interested in working with employers and employees in business, industry, or organizations. Students are required to take Business, Economics, and Accounting electives. An internship is strongly encouraged. (Minimum GPA of 2.2 in the major.)

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 in the minor.)

Sociology Minor

Includes SOC 100, and 15 additional (SOC or ANTH) credits. Six credits must be numbered 300 or above. (Minimum GPA of 2.2 in the minor.)

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. Graduating seniors must take the sociology exit exam. Students anticipating Graduate School should enroll in STAT 281 Introduction to Statistics as a part of their general electives.

Criminal Justice (CJUS)

This inter-college program administered by the Department of Sociology and Rural Studies 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, Psychology, 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.

Criminal Justice Minor

Requirements for Criminal Justice Minor: 18 cr

Must have a cumulative GPA of 2.2 to enter the program.

CJUS 201, Introduction to Criminal Justice * ** (COM).....	3
SOC 351, Criminology (COM)	3 ²

12 hours from:

CJUS 203, Policing in a Free Society (COM).....	3
CJUS 331, Civil Rights and Liberties	3
CJUS 412, Criminal Prosecution and Defense (COM).....	3
CJUS 431, Criminal Law (COM).....	3
CJUS 433, Criminal Procedure (COM).....	3
CJUS 436, Juvenile Justice (COM).....	3
CJUS 491-591, Independent Study (COM).....	(1-3)
SOC 325, Domestic and Intimate Violence	3 ²
SOC 354, Victimology	3 ²
SOC 455-555, Juvenile Delinquency (COM)	3 ²
SOC 456-556, Community Corrections (COM).....	3 ²
SOC 460-560, Advanced Criminology (COM).....	3 ²
SOC 492, Topics (COM)	(1-3)

1 Must have a cumulative GPA of 2.2 to enter the program and a minimum GPA of 2.2 in the minor to complete.

2 May not be used for both a Sociology Major or Minor and a Criminal Justice Minor.

CJUS minors may choose any major.

Sociology (SOC) Major

A minimum GPA of 2.2 is required for the major (exception: Teaching specialization requires a minimum GPA of 2.6).

Graduating seniors must take the Sociology exit exam.

Requirements for Sociology Major, Bachelor of Science in Arts and Sciences (B.S.), Bachelor of Arts in Arts and Sciences (B.A.)

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101 , and

ENGL 201.....3

Goal #2 Oral Communication.....3

Goal #3 Social Sciences/Diversity.....6

Goal #4 Arts and Humanities/Diversity.....6

Goal #5 Mathematics.....3

Goal #6 Natural Sciences.....6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship.....3

Goal #2 Personal Wellness.....2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness (outside major).....3

College Requirements: 20-32

Physical Science (up to 5 additional MATH credits including STAT 281).....8

Biological Science.....6

Humanities (SGR Goal #4 or IGR #3).....2

Social Science (SGR Goal #3 or IGR #3) requirement may be met within major requirements.

Bachelor of Arts: 6-14

Modern Language (proficiency must be shown at the 200-level).....6-14

Social Science (SGR Goal #3 or IGR #3) requirement may be met within major requirements.

Major Requirements: 33

SOC/ANTH Electives.....21

SOC 100, Introduction to Sociology * (COM) (G).....3

SOC 307, Research Methods I.....3

SOC 308, Research Methods II.....3

SOC 403, Sociological Theory (COM).....3

Electives: 19-37

Total Required Credits: 128

Teaching Specialization:

Professional Semester I

EDFN 338, Foundations of American Education (COM).....(1-2)

EDFN 475, Human Relations (COM).....3

Professional Semester II

EPSY 302, Educational Psychology (COM).....3

SEED 450, 7-12 Reading and Content Literacy (COM).....2

SEED 314, Supervised Clinical/Field Experience.....1

Professional Semester III

SEED 400, Curriculum and Instruction in Middle and Secondary

Schools.....4

SEED 410, Social Foundations, Management and Law.....2

SEED 488, 7-12 Student Teaching (COM).....(2-16)

and/or ELED 488, K-8 Student Teaching (COM).....(2-16)

Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits between SEED 488 and ELED 488.

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

Special Methods (varies by content area) 3

SPED 401, Introduction to Educating Secondary Students with Disabilities (COM) 1

EDFN 365, Computer-Based Technology and Learning (COM) (2)

EDFN 427-527, Middle School: Philosophy and Application 2

Human Services Specialization (B.S.): 45

SOC/ANTH Elective.....9

SOC 100, Introduction to Sociology * (COM) (G).....3

SOC 307, Research Methods I.....3

SOC 308, Research Methods II.....3

SOC 403, Sociological Theory (COM).....3

SOC 270, Introduction to Social Work (COM).....3

SOC 271, Social Work Skills and Methods I.....3

SOC 286, Service Learning.....(1-3)

SOC 400, Social Policy (COM).....3

SOC 494, Internship.....(1-12)

Human Resources Specialization (B.S.): 39

SOC/ANTH Elective.....5

Electives.....3

SOC 100, Introduction to Sociology * (COM) (G).....3

SOC 307, Research Methods I.....3

SOC 308, Research Methods II.....3

SOC 403, Sociological Theory (COM).....3

SOC 353, Sociology of Work (COM).....3

SOC 453, Industrial Sociology.....3

Select 12 credits from the following:

BADM 350, Individual and Organizational Psychology.....3

BADM 360, Business Management	3
BADM 460, Human Resource Management.....	3
CA 289, Consumers and the Market	3
CSC 105, Introduction to Computers	3
CSC 205, Advanced Microcomputer Applications.....	3
CSC 325, Management Information Systems	3
ECON 101, Global Economics.....	3
ECON 201, Principles of Micro-Economics	3
ECON 370, Marketing.....	3
ECON 433, Public Finance.....	3
ECON 450-550, Industrial Organization (COM)	3
ECON 467, Labor Law and Economics	3
ECON 4/553 Managerial Economics	3
ENGL 379, Technical Communication (AW).....	3
HSC 433-533, Occupational Health	3
POLS 320, Public Administration (COM).....	3
POLS 454, International Law and Organization (COM)	3
PSYC 331, Industrial and Organizational Psychology (COM).....	3
PSYC 477, Psychology Testing and Measurement (COM).....	3
SPAN 350, Spanish for Business Communication (COM)	3
SPCM 215, Public Speaking (COM) *	3
SOC 330, Self and Society (COM)	3
SOC 350, Race and Ethnic Relations ** (COM) (G)	3
SOC 433-533, Leadership and Organizations (COM)	3

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Sociology Minor

A minimum GPA of 2.2 is required for the minor.

Requirements for Sociology Minor: 18 cr

300 level or above	6
Additional SOC or ANTH credits.....	9
SOC 100, Introduction to Sociology * (COM) (G)	3

Software Engineering (SE)

(See Electrical Engineering and Computer Science)

Soils

(See Plant Science)

Spanish (SPAN)

(See Modern Languages)

Speech Communication (SPCM)

(See Communication Studies and Theatre)

Statistics (STAT)

(See Mathematics and Statistics)

Sustainable Energy Systems (Minor)
(See Mechanical Engineering)

Teaching, Learning and Leadership (TLL)

Andrew Stremmel, Head

Department of Teaching, Learning and Leadership (TLL)

Wenona Hall 108

605-688-6418

e-mail: andrew.stremmel@sdstate.edu

Faculty

Professor Stremmel, Head; Professors Andera, DeBates, Erion, Gilkerson, Hacker, Helling, L. Moeller, Penrod, Romerein-Holmes, Wilson; Distinguished Professor Emerita Widvey; Professors Emeriti Amiotte, Edeburn, Everett, C.Hanson, D. Jensen, Lingren, P. Miller, J. Pedersen, Steinley; Associate Professors Cutler, Rasmussen, Whitlatch; Assistant Professors Bowne, Edgar, Emo, M. Moeller, Rogness, Scully, Smith, Waring; Instructors Brokmeier, Ekstrand, Gloege, Kampmann, Russow, Venhuizen, Weber.

Department

The Department of Teaching, Learning, and Leadership prepares educational professionals to be teachers and educational leaders for the 21st century in three major program areas.

Programs

Program units in the Department of Teaching, Learning, and Leadership include Early Childhood Education, Curriculum and Instruction and Educational Administration, and Teacher Education. The program in Early Childhood Education offers specializations in Birth to Age 5 and Birth to Age 8 (K- Grade 3). Students may also enroll in the Cooperative Program in Elementary Education (K-Grade 8) with Dakota State University or Northern University. The Curriculum and Instruction and Educational Administration programs offer Master's of Education degrees. The program in Teacher Education is a certification program in which students who are completing a major in an academic discipline of their choice can become certified in secondary education (middle and high school) in one of 16 different subject areas or K-12 teaching in art, world languages, music, or physical education. The department also offers undergraduate majors in Career Technical Education and Family and Consumer Sciences Education, as well as professional education for the agricultural education, communication and leadership major offered through the College of Agriculture and Biological Sciences.

Career and Technical Education (CTE) Major

Tim Andera

Coordinator

Department of Teaching, Learning, and Leadership

Wenona Hall 104

(605) 688-6798

e-mail: Tim.Andera@sdstate.edu

This program will be discontinued beginning fall 2011.

The Career and Technical Education (CTE) program 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 nontraditional students. The traditional student enters after graduating from high school seeking either teaching or industry interests. The nontraditional makes up a large number of students enrolled in CTE and are individuals currently teaching in a technical field and pursuing a bachelor's 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. Traditional 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 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.....	2
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 and Technical Education (AW)	3 *

* represents a required course for CTE

Individual Students Needs:

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.....	(1-3)
CTE 308, Occupational Internship II.....	(1-3)
CTE 380, Technical Industrial Training.....	(5-6)
CTE 408, Occupational Internship III	(1-3)
CTE 463/563, Technical and Industrial Experience	(1-4)
CTE 491/591, Independent Study.....	(1-4)
CTE 492/592, Topics.....	(1-3)
CTE 189 Technical Specialty:	

The "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 catalog.

Board of Regents requirement:

For the CTE student to meet the Board of Regents requirement for the following:

Globalization Requirement

The student will complete SOC 100, Introduction to Sociology.

Advanced Writing Requirement

The student will complete CTE 440, Curriculum Design in CTE.

The undergraduate curriculum in CTE, along with additional education information, can be found at the CTE homepage at the address listed above.

Early Childhood Education (ECE) Major

Early Childhood Education Major- Birth to 5 Specialization

Requirements for Early Childhood Education Major- Birth to 5 Specialization, Bachelor of Science:

System General Education Requirements* 30

Goal #1 Written Communication:

ENGL 101, and

ENGL 201.....6

Goal #2 Oral Communication:

SPCM 101*.....3

Goal #3 Social Sciences/Diversity:

HDFS 210, and

PSYC 101.....6

Goal #4 Arts and Humanities/Diversity.....6

Goal #5 Mathematics: MATH 102.....3

Goal #6 Natural Sciences and BIOL 101-101L.....6

Institutional Graduation Requirements 8**

Goal #1 Land and Natural Resources.....3

Goal #2 Personal Wellness: WEL 100-100L.....2

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:

AIS 421 or HIST 368 or INED 411/511.....3

College Requirements: 2

EHS 140, Enhancing Human Potential.....2

Major Requirement 72-76

SOC 100, Introduction to Sociology * (COM) (G).....3

CSC 105, Introduction to Computers (COM).....3

DCOM 212, Language Development.....3

EDFN 338, Foundations of American Education (COM).....(1-2)

EDFN 365, Computer-Based Technology and Learning (COM).....(2)

EDFN 475, Human Relations (COM).....3

ECE 150-150L, Early Experience and Lab.....2

ECE 220, Health, Safety and Nutrition of Young Child.....3

ECE 227, Human Development I: Childhood.....3

ECE 228, Guidance with Young Children.....1

ECE 228L, Observation and Participation in Early Childhood

Lab (COM).....1

ECE 361-361L, Methods and Materials/Early Childhood Education

and Lab (AW) †.....4

ECE 362-362L, Early Childhood Education Curriculum and Lab †.....4

ECE 364, Parent/Child Relationships in a Professional Context.....3

ECE 365-365L, Emergent Literacy in Birth to Eight Education

and Lab.....3

ECE 371-371L, Infant and Toddler: Developmentally Appropriate

Practices and Lab(COM).....3

ECE 441, Professional Issues in Child and Family Studies.....3

ECE 455, Administration and Supervision of Early Childhood Setting	3
ECE 468, Early Intervention in Family-Centered Practices	3
ECE 470, Early Childhood Inclusion Strategies.....	3
ECE 495, Practicum (COM).....	(1-12)
ECE 465, Introduction to Developmental Assessment and Teacher-Research with Young Children †	2
ECE 487, Orientation to Child and Family Services Practices	1
ECE 488, Student Teaching (COM) †	(1-12)

Elective 12-16

Total Required 128

A pre-graduate check is required 2 semesters 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 an HDFS or ECE prefix is considered a course in the major.

A grade of “C” or better is required in PSYC 101, ENGL 101, SPCM 101, MATH 102.

Students must meet all GPA Requirements (2.6 for graduation) and be accepted into the ECE Teacher Education program ECE- PSII and ECE-PS III. Students will be required to pass the PRAXIS content and Principles of Teaching and Learning exams in order to be considered a Highly Qualified Teacher.

† Taken concurrently.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Early Childhood Education Major- Birth to 8 Specialization

Requirements for Early Childhood Education Major- Birth to 8 Specialization, Bachelor of Science

System General Education Requirements* 31-32

Goal #1 Written Communication:

ENGL 101 **and**

ENGL 201.....6

Goal #2 Oral Communication: SPCM 101*.....3

Goal #3 Social Sciences/Diversity: HDFS 210 and PSYC 101.....6

Goal #4 Arts and Humanities/Diversity (choose two different prefixes/disciplines or modern language sequence).....6

Goal #5 Mathematics:

MATH 102.....3

Goal #6 Natural Sciences:

GEOG 131-131L **and** one of the following:

PHYS 101-101L **or**

CHEM 106-106L **or**

PHYS 185-185L.....7-8

Institutional Graduation Requirements 8**

Goal #1 Land and Natural Resources: BIOL 101-101L.....3

Goal #2 Personal Wellness: WEL 100-100L.....2

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:

AIS 421 **or**

HIST 368 **or**

INED 411/511.....3

College Requirements: 2

EHS 140, Enhancing Human Potential.....2

Major Requirement 60-85

ECE 150-150L, Early Experience and Lab.....2

ECE 220, Health, Safety and Nutrition of Young Child.....3

ECE 228, Guidance with Young Children.....1

ECE 228L, Observation and Participation in Early Childhood Lab (COM)	1
ECE 361-361L, Methods and Materials/Early Childhood Education and Lab (AW) †	4
ECE 362-362L, Early Childhood Education Curriculum and Lab †	4
ECE 364, Parent/Child Relationships in a Professional Context	3
ECE 365-365L, Emergent Literacy in Birth to Eight Education and Lab	3
ECE 371-371L, Infant and Toddler: Developmentally Appropriate Practices and Lab(COM)	3
ECE 465, Introduction to Developmental Assessment and Teacher-Research with Young Children †	2
ECE 470, Early Childhood Inclusion Strategies.....	3
ECE 473, Orientation to K-3 Student Teaching.....	2
ECE 475, Pedagogy and Guidance in Primary Grade Classrooms	2
ECE 478-478L, Integrated Curriculum in Birth-to-Age Eight Education and Lab	4
ECE 488, Student Teaching (COM) †.....	(1-12)
ECE 495, Practicum (COM).....	(1-12)
EDFN 338, Foundations of American Education (COM) †	(1-2)
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EDFN 475, Human Relations (COM) †	3
EDFN 492-592, Topics (COM).....	(1-3)
MATH 141, Survey of Mathematics.....	3
or MATH 341- Math Concepts for Teachers I	3
MATH 342- Math Concepts for Teachers II	3
PE 360-360L, K-8 Physical Education Methods and Lab (COM).....	2
SOC 100, Introduction to Sociology * (COM) (G).....	3

Electives: 0-26

Total Required 128

A pre-graduate check is required 2 semesters 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 an HDFS or ECE prefix is considered a course in the major.

A grade of “C” or better is required in PSYC 101, ENGL 101, SPCM 101, MATH 102.

Students must meet all GPA Requirements (2.6 for graduation) and be accepted into the ECE Teacher Education program ECE- PSII and ECE-PS III. Students will be required to pass the PRAXIS content and Principles of Teaching and Learning exams in order to be considered a Highly Qualified Teacher.

† Taken concurrently.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement.** (See page 46 for details.)

(AW) **Advanced Writing Requirement.** (See page 47 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.

Early Childhood Education Major- Cooperative Agreement with Black Hills State University

Requirements for Early Childhood Education Major- Cooperative Agreement with Black Hills State University, Bachelor of Science:

System General Education Requirements* 32

Goal #1 Written Communication:

ENGL 101 **and**

ENGL 201.....6

Goal #2 Oral Communication:

SPCM 101*.....3

Goal #3 Social Sciences/Diversity:

HDFS 210 **and**

PSYC 101.....6

Goal #4 Arts and Humanities/Diversity:	
ART 121 and	
ENGL 240.....	6
Goal #5 Mathematics:	
MATH 102.....	3
Goal #6 Natural Sciences:	
GEOG 131-131L and	
CHEM 106-106L or	
PHYS 101-101L.....	8

Institutional Graduation Requirements:** 8

Goal #1 Land and Natural Resources:	
BIOL 101-101L.....	3
Goal #2 Personal Wellness:	
WEL 100-100L.....	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
AIS 421 or HIST 368 or INED 411/511.....	3

College Requirements: 2

EHS 140, Enhancing Human Potential.....	2
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Major Requirements: 68-80

ECE 150-150L, Early Experience and Lab.....	2
ECE 220, Health, Safety and Nutrition of Young Child.....	3
ECE 227, Human Development I: Childhood.....	3
ECE 228, Guidance with Young Children.....	1
ECE 228L, Observation and Participation in Early Childhood Lab (COM).....	1
ECE 361-361L, Methods and Materials/Early Childhood Education and Lab (AW) †.....	4
ECE 362-362L, Early Childhood Education Curriculum and Lab.....	4
ECE 364, Parent/Child Relationships in a Professional Context.....	3
ECE 371-371L, Infant and Toddler: Developmentally Appropriate Practices and Lab(COM).....	3
ECE 400, Orientation to Elementary Education Programs.....	0
ECE 441, Professional Issues in Child and Family Studies.....	3
ECE 465, Introduction to Developmental Assessment and Teacher-Research with Young Children †.....	2
ECE 488, Student Teaching (COM) †.....	(1-12)
EDFN 338, Foundations of American Education (COM) †.....	(1-2)
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EDFN 475, Human Relations (COM) †.....	3
EPSY 302, Educational Psychology (COM).....	3
HIST 151, United States History I * ** (COM).....	3
or HIST 152, United States History II * ** (COM).....	3
GEOG 200, Introduction to Human Geography * ** (G).....	3
or GEOG 210, World Regional Geography * ** (COM) (G).....	3
MATH 141, Survey of Mathematics.....	3
MATH 342- Math Concepts for Teachers II.....	3
MUS 351, Elementary School Music Methods (COM).....	(2-3)
POLS 100, American Government * ** (COM).....	3
PE 360-360L, K-8 Physical Education Methods and Lab (COM).....	2

SPED 300, Students With Exceptionalities (COM).....	3
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Electives: 4-16

Total Required 128

A pre-graduate check is required 2 semesters 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 an HDFS or ECE prefix is considered a course in the major.
 A grade of "C" or better is required in PSYC 101, ENGL 101, SPCM 101, MATH 102.
 Students must meet all GPA Requirements (2.6 for graduation) and be accepted into the ECE Teacher Education program ECE- PSII and ECE-PS III. Students will be required to pass the PRAXIS content and Principles of Teaching and Learning exams in order to be considered a Highly Qualified Teacher.

† Taken concurrently.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Early Childhood Education Major- Cooperative Agreement with Northern State University

Requirements for Early Childhood Education Major- Cooperative Agreement with Northern State University, Bachelor of Science

System General Education Requirements*: 32

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201.....	6
Goal #2 Oral Communication:	
SPCM 101*.....	3
Goal #3 Social Sciences/Diversity:	
HDFS 210 and	
PSYC 101.....	6
Goal #4 Arts and Humanities/Diversity:	
ART 121 and	
ENGL 240.....	6
Goal #5 Mathematics:	
MATH 102 or higher.....	3
Goal #6 Natural Sciences:	
GEOG 131-131L and	
GEOG 131-131L or	
CHEM 106-106L or	
PHYS 101-101L.....	8

Institutional Graduation Requirements:** 8

Goal #1 Land and Natural Resources:	
BIOL 101-101L.....	3
Goal #2 Personal Wellness:	
WEL 100-100L.....	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
AIS 421 or	
HIST 368 or	
INED 411/511.....	3

College Requirements: 2

EHS 140, Enhancing Human Potential.....	2
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Major Requirements: 85

GEOG 200, Introduction to Human Geography * ** (G).....	3
or GEOG 210, World Regional Geography * ** (COM) (G).....	3
ECE 150-150L, Early Experience and Lab.....	2
ECE 220, Health, Safety and Nutrition of Young Child.....	3
ECE 227, Human Development I: Childhood.....	3
ECE 228, Guidance with Young Children.....	1
ECE 228L, Observation and Participation in Early Childhood Lab (COM).....	1
ECE 361-361L, Methods and Materials/Early Childhood Education and Lab (AW) †.....	4
ECE 362-362L, Early Childhood Education Curriculum and Lab †.....	4
ECE 364, Parent/Child Relationships in a Professional Context.....	3
ECE 365-365L, Emergent Literacy in Birth to Eight Education and Lab.....	3
ECE 371-371L, Infant and Toddler: Developmentally Appropriate Practices and Lab(COM).....	3

ECE 400, Orientation to Elementary Education Programs	0
ECE 441, Professional Issues in Child and Family Studies	3
ECE 465, Introduction to Developmental Assessment and Teacher- Research with Young Children †	2
ECE 488, Student Teaching (COM) †.....	(1-12)
ECE 492-592, Topics (1-3)	
EDFN 338, Foundations of American Education (COM) †	(1-2)
EDFN 365, Computer-Based Technology and Learning (COM) †.....	(2)
EDFN 475, Human Relations (COM) †	3
HIST 151, United States History I * ** (COM).....	3
or HIST 152, United States History II * ** (COM)	3
MATH 141, Survey of Mathematics.....	3
MATH 342- Math Concepts for Teachers II.....	3
MUS 351, Elementary School Music Methods (COM)	(2-3)
PE 360-360L, K-8 Physical Education Methods and Lab (COM).....	2
SPED 300, Students With Exceptionalities (COM)	3
EPSY 302, Educational Psychology (COM)	3
POLS 100, American Government * ** (COM)	3

Total Required 128

A pre-graduate check is required 2 semesters 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 an HDFS or ECE prefix is considered a course in the major.

A grade of “C” or better is required in PSYC 101, ENGL 101, SPCM 101, MATH 102.

Students must meet all GPA Requirements (2.6 for graduation) and be accepted into the ECE Teacher Education program ECE- PSII and ECE-PS III. Students will be required to pass the PRAXIS content and Principles of Teaching and Learning exams in order to be considered a Highly Qualified Teacher.

† Taken concurrently.

Early Childhood Education Major- Cooperative Program with Dakota State University

Requirements for Early Childhood Education Major- Cooperative Program with Dakota State University, Bachelor of Science:

System General Education Requirements*: 31-32

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
HDFS 210 and	
PSYC 101	6
Goal #4 Arts and Humanities/Diversity:	
ART 121 and	
ENGL 240.....	6
Goal #5 Mathematics:	
MATH 102 or higher	3
Goal #6 Natural Sciences:	
GEOG 131-131L and	
BIOL 103-103L or	
BOT 201-201L or	
CHEM 106-106L or	
PHYS 101-101L	7-8

Institutional Graduation Requirements: 8**

Goal #1 Land and Natural Resources:	
BIOL 101-101L	3
Goal #2 Personal Wellness:	
WEL 100-100L	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
AIS 421 or	
HIST 368 or	
INED 411/511	3

College Requirements: 2

EHS 140, Enhancing Human Potential.....	2
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Major Requirements: 85

GEOG 210, World Regional Geography * ** (COM) (G).....	3
CSC 105, Introduction to Computers (COM).....	3
ECE 150-150L, Early Experience and Lab	2
ECE 227, Human Development I: Childhood	3
ECE 228, Guidance with Young Children	1
ECE 228L, Observation and Participation in Early Childhood Lab (COM)	1
ECE 361-361L, Methods and Materials/Early Childhood Education and Lab (AW) †	4
ECE 362-362L, Early Childhood Education Curriculum and Lab †	4
ECE 364, Parent/Child Relationships in a Professional Context	3
ECE 365-365L, Emergent Literacy in Birth to Eight Education and Lab	3
ECE 371-371L, Infant and Toddler: Developmentally Appropriate Practices and Lab(COM)	3
ECE 441, Professional Issues in Child and Family Studies	3
EDFN 338, Foundations of American Education (COM)	(1-2)
EDFN 475, Human Relations (COM)	3
HIST 151, United States History I * ** (COM).....	3
or HIST 152, United States History II * ** (COM)	3
MUS 351, Elementary School Music Methods (COM)	(2-3)
PE 360-360L, K-8 Physical Education Methods and Lab (COM).....	2
SPED 300, Students With Exceptionalities (COM).....	3
ECE 465, Introduction to Developmental Assessment and Teacher- Research with Young Children.....	2
POLS 100, American Government * ** (COM)	3
PSYC 101, General Psychology * ** (COM)	3
ECE 488, Student Teaching (COM) †	(1-12)
ECE 492-592, Topics	(1-3)
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EPSY 302, Educational Psychology (COM)	3
HIST 368, History and Culture of the American Indian ** (COM) ...	3
HLTH 420/520, K-12 Methods of Health Instruction (COM)	2
ECE 400, Orientation to Elementary Education Programs	0

Electives: 6

Total Required 128

A pre-graduate check is required 2 semesters 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 an HDFS or ECE prefix is considered a course in the major.

A grade of “C” or better is required in PSYC 101, ENGL 101, SPCM 101, MATH 102. Students must meet all GPA Requirements (2.6 for graduation) and be accepted into the ECE Teacher Education program ECE- PSII and ECE-PS III. Students will be required to pass the PRAXIS content and Principles of Teaching and Learning exams in order to be considered a Highly Qualified Teacher.

† Taken concurrently.

* A minimum of 15 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 32 credits.

Proficiency Examination

Each student enrolled in an Associate of Arts degree program must take the Proficiency Examination after the completion of 32 passed credit hours or prior to graduation. The student must have completed, or be enrolled in courses required to complete the 18 credit hours. Students who do not complete the proficiency exam requirements cannot continue registration at the university.

Early Childhood Education Major- Cooperative Program with University of South Dakota

Requirements for Early Childhood Education Major- Cooperative Program with University of South Dakota, Bachelor of Science:

System General Education Requirements*: 32

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6

Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
HDFS 210 and	
PSYC 101	6
Goal #4 Arts and Humanities/Diversity:	
ART 121 and	
ENGL 240	6
Goal #5 Mathematics:	
MATH 102 or higher	3
Goal #6 Natural Sciences:	
GEOG 131-131L and	
PHYS 101-101L or	
CHEM 106-106L	8
Institutional Graduation Requirements**: 8	
Goal #1 Land and Natural Resources:	
BIOL 101-101L	3
Goal #2 Personal Wellness:	
WEL 100-100L	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
ANTH 421-521	3
College Requirements: 2	
EHS 140, Enhancing Human Potential	2
Major Requirements: 82	
ECE 150-150L, Early Experience and Lab	2
ECE 220, Health, Safety and Nutrition of Young Child	3
ECE 227, Human Development I: Childhood	3
ECE 228, Guidance with Young Children	1
ECE 228L, Observation and Participation in Early Childhood Lab (COM)	1
ECE 361-361L, Methods and Materials/Early Childhood Education and Lab (AW) †	4
ECE 362-362L, Early Childhood Education Curriculum and Lab †	4
ECE 364, Parent/Child Relationships in a Professional Context	3
ECE 371-371L, Infant and Toddler: Developmentally Appropriate Practices and Lab(COM)	3
ECE 400, Orientation to Elementary Education Programs	0
ECE 441, Professional Issues in Child and Family Studies	3
ECE 465, Introduction to Developmental Assessment and Teacher-Research with Young Children †	2
ECE 488, Student Teaching (COM) †	(1-12)
ECE 492-592, Topics	(1-3)
EDFN 338, Foundations of American Education (COM) †	(1-2)
EDFN 365, Computer-Based Technology and Learning (COM)	(2)
EDFN 475, Human Relations (COM) †	3
EPSY 302, Educational Psychology (COM)	3
GEOG 131-131L, Physical Geography: Weather and Climate and Lab	4
GEOG 210, World Regional Geography * ** (COM) (G)	3
HIST 151, United States History I * ** (COM)	3
or HIST 152, United States History II * ** (COM)	3
MATH 141, Survey of Mathematics	3
MATH elective (check with advisor)	
MUS 351, Elementary School Music Methods (COM)	(2-3)
PE 360-360L, K-8 Physical Education Methods and Lab (COM)	2
POLS 100, American Government * ** (COM)	3
SPED 300, Students With Exceptionalities (COM)	3

Total Required 128

Courses taken at USD to meet state elementary education certification will require additional semesters. Enroll in ECE 400 (0 cr) while at USD.

A pre-graduate check is required 2 semesters 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" or better for all courses required for teacher certification.

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 an HDFS/ECE prefix is considered a course in the major.

Students must meet all requirements for admission to Teacher Education Program at USD and SDSU and be successfully admitted into ECE-PS III.

† Taken concurrently.

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits.

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs).

(G) Globalization Requirement.

(AW) Advanced Writing Requirement.

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 Kindergarten Education Endorsement

A Kindergarten Education Endorsement Program may be added to the Birth through Age 5 Specialization, Birth through Age 8 Specialization, or Cooperative Programs in the Early Childhood Education major.

Requirements for the Kindergarten Education Endorsement Program:

Completion of 9 semester hours in early childhood education, including a course in kindergarten education, a practicum, internship, or student teaching in kindergarten. Verified teaching experience in kindergarten within the five-year period immediately preceding the application may be accepted in lieu of the above field experiences at the equivalency of one year's teaching experience for one semester hour credit for a maximum of three semester hours of the total credit hours required.

Required Coursework:

Other required courses to total 6 credits.

ELED 412, Kindergarten Education Credit: (Fall)	3
ECE 495, Practicum (COM)	(1-12)

Early Childhood Special Education Endorsement

An Early Childhood Special Education Endorsement Program may be added to the Birth through Age 5 Specialization, Birth through Age 8 Specialization, or Cooperative Programs in the Early Childhood Education major.

Requirements:

Completion of 9 semester hours in early childhood education, including two courses in early intervention and family practices and a practicum in a setting inclusive of children with special needs.

ECE 468, Early Intervention in Family-Centered Practices	3
ECE 470, Early Childhood Inclusion Strategies	3
ECE 495, Practicum (COM)	(1-12)

Family and Consumer Sciences Education Major

Requirements for Family and Consumer Sciences Education Major, Bachelor of Science:

System General Education Requirements* 30

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity:	
PSYC 101 and	
Elective from Globalization Requirement List (G)	6

Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics:	
MATH 102	3
Goal #6 Natural Science:	
Biology or Chemistry (recommended)	6

Institutional Graduation Requirements 8-9**

Goal #1 Land and Natural Resources:	
NFS 111	3
Goal #2 Personal Wellness:	
HSC 212 or	
WEL 100-100L	2
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness:	
AIS 421 or	
HIST 368 or	
INED 411/511	3

College Requirements: 2

EHS 140, Enhancing Human Potential	2
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Major Requirement 73

AM 231-231L, Ready-To-Wear Analysis and Lab	3
CA 289, Consumers in the Market	3
CA 345, Foundations in Financial Management	3
CA 442, Family Resource Management Lab	3
CTE 295, Practicum	1
CTE 405, Philosophy of Career and Technical Education.....	2
ECE 220, Health, Safety and Nutrition of Young Child	3
ECE 228, Guidance with Young Children	1
ECE 228L, Observation and Participation in Early Childhood Lab (COM)	1
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EDFN 427-527, Middle School: Philosophy and Application	2
EDFN 475, Human Relations (COM)	3
EPSY 302, Educational Psychology (COM)	3
FCSE 331, Work Force Preparation in Family and Consumer Sciences.....	2
FCSE 411, Philosophy and Methods Family and Consumer Sciences (AW).....	4
FCSE 412-412L, Preparation for Student Teaching and Lab	5
FCSE 473, Supervised Student Teaching.....	10
HDFS 227, Human Development and Personality I: Childhood.....	3
ID 150, Introduction to Interior Design I	4
ID 150L, Introduction to Interior Design I Studio.....	0
NFS 141-141L, Foods Principles and Lab.....	4
NFS 221, Survey of Nutrition.....	3
SEED 314, Supervised Clinical/Field Experience.....	1
SEED 450, 7-12 Reading and Content Literacy (COM)	2
SPED 401, Introduction to Educating Secondary Students with Disabilities (COM)	1

Elective 14-15

Elective.....	7-8
HIDFS/ECE Elective.....	3

Total Required 128

Students must receive a grade of “C” or better in SPCM 101, ENGL 101 and MATH 102 and have a cumulative GPA of 2.5 or above in order to be admitted to the College of Education and Counseling for teacher certification.

A grade of “D” on courses in the major cannot be counted and course must be repeated.

Students must pass the PRAXIS content area exam before student teaching.

* The 30 credit Board of Regents **System General Education Requirements (SGRs)** must be completed as part of a student’s first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) **Globalization Requirement**. (See page 46 for details.)

(AW) **Advanced Writing Requirement**. (See page 47 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.

Teacher Education – Certification Only

Admission to the program requires a 2.5 CGPA; a 2.6 GPA in the major; and completion of English Composition, Speech, and College Algebra with no grade less than “C.”

A certification only program meets the needs of individuals who have completed baccalaureate degrees and want to pursue academic course work in pedagogy rather than complete an alternative certification process.

The following guidelines are applicable at all South Dakota Regental institutions:

1. The teacher candidate must have a baccalaureate degree from an accredited institution of higher education.
2. In order to be admitted to the certification only program, the candidate must meet teacher education program admission requirements. In addition, the candidate must complete the PRAXIS II content exam in his/her major as specified by the South Dakota Department of Education (SDDOE). The candidate must meet or exceed the minimum score required for certification in South Dakota.
3. The candidate will complete all teacher certification courses as identified by the institution, including the appropriate special methods course but not to include other content major courses, and sit for the PRAXIS II Principles of Learning and Teaching exam.
4. When the candidate meets the minimum required score on the PRAXIS II Principles of Learning and Teaching exam for certification in South Dakota and all other program completion requirements set forth by the institution, the institution will recommend the candidate for teacher certification.
5. The SDDOE will maintain accountability for the candidate scores on the PRAXIS II content exam. The universities will maintain accountability for the candidate scores on the PRAXIS II Principles of Learning and Teaching exam.
6. The certification only program is limited to K-12 specific content areas and 7-12 specific content areas.

Requirements for the Teacher Education – Certification Only Program: 35 cr

Content Area Methods Course	3
EDFN 338, Foundations of American Education (COM)	(1-2)
EDFN 365, Computer-Based Technology and Learning (COM).....	(2)
EDFN 427-527, Middle School: Philosophy and Application	2
EDFN 475, Human Relations (COM)	3
EPSY 302, Educational Psychology (COM)	3
SEED 314, Supervised Clinical/Field Experience.....	1
SEED 400, Curriculum and Instruction in Middle and Secondary Schools.....	4
SEED 410, Social Foundations, Management and Law	2
SEED 450, 7-12 Reading and Content Literacy (COM).....	2
SEED 488, 7-12 Student Teaching (COM).....	(2-16)
SPED 401, Introduction to Educating Secondary Students with Disabilities (COM)	1
Choose one from the following:	
ANTH 421-521, Indians of North America **	3
HIST 368, History and Culture of the American Indian ** (COM)	3
INED 411/511, South Dakota Indian Studies (COM).....	3

Education Curriculum for Teachers of Academic Subjects

Admission to Teacher Education

(in 22 subjects areas)

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:

Admission into Professional Semester I:

In order to register for the two courses of Professional Semester I (PS I) a candidate must be at least a sophomore at the beginning of the semester in which he/she is taking the PS-I courses.

Admission into Professional Semester II:

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

1. Achieved a junior status at the University;
2. Completed PS-I with grades of "C" or better and be recommended by PS-I faculty;
3. Hold an overall GPA of 2.5 or higher;
4. Completed PSYC 101, SOC 100 or SOC 150, with a grade of "C" or better;
5. Met competency requirements:
 - English: a grade of "C" or above in ENGL 101 or credit by examination
 - Math: a grade of "C" or above in MATH 102 or 104 or higher level math course or credit by examination
 - Speech: a grade of "C" or above in SPCM 101 or higher or credit by examination;
6. Completed an application for admission to Teacher Education which includes appropriate biographical and background information; and
7. Have a current transcript on file in the department office.

Admittance into Professional Semester III:

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

1. Achieved senior standing at the University;
2. Achieved a passing score on the Praxis Content Exam;
3. Been admitted to the Teacher Education Program and successfully completed all standard requirements therein (or alternatives decided by the Admissions and Scholastic Standards Committee);
4. 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;
5. Have the following minimum GPA's:
 - Education courses 2.8
 - All courses completed at the "c" level or above
 - Courses in the major 2.6
 - Overall cumulative 2.5or
 - Completed all competency plans and/or other activities prescribed by the Admissions and Scholastic Standards Committee;
6. Have recommendations on file in the Teacher Education Office from both the major adviser and the content methods instructor (these recommendations must include the candidate's GPA in his/her major);
7. 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 PS-III);

8. Hold non-probationary status; and
 9. When student teaching, a background check maybe required.
- * See major department section for special methods courses.

Recommendation for Certification

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

1. A bachelor's degree, in an approved content area;
2. Satisfactory student teaching recommendations from both the cooperating teacher(s) and university supervisor;
3. The following minimum GPA's:
 - Education courses 2.8
 - All courses completed at the "c" level or above
 - Courses in the major 2.6
 - Overall cumulative 2.5or
 - Completed all competency plans and/or other activities prescribed by the Admissions and Scholastic Standards Committee;
4. Taken the required exit exam(s), including the Praxis Principles of Teaching and Learning earning required cut score;
5. Satisfactorily completed exit interview with Performance Portfolio and required projects in PS-III; and
6. Applied for certification through the Certifying Officer in the College of Education and Counseling.

Education Curriculum for Teachers of Academic Subjects

Professional Semester I

(Sophomore or Junior Year)

EDFN 338, Foundations of American Education (COM)(1-2)
EPSY 302, Educational Psychology (COM)3

Professional Semester II

(Junior or Senior Year)

SEED 420, 5-12 Teaching Methods.....2
SEED 450, 7-12 Reading and Content Literacy (COM)2
SEED 314, Supervised Clinical/Field Experience.....1

Professional Semester III

(Senior Year)

SPED 405, Educating Secondary Students with Disabilities2
SEED 410, Social Foundations, Management and Law2
EDFN 475, Human Relations (COM)3
ELED 488, K-8 Student Teaching (COM).....(2-16)
SEED 488, 7-12 Student Teaching4-8

Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits between SEED 488 and ELED 488.

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

Special Methods (varies by content area) 3

EDFN 365, Computer-Based Technology and Learning (COM) (2)

EDFN 427-527, Middle School: Philosophy and Application 2

Veterinary Science (VET)

David Zeman, Head

Department of Veterinary and Biomedical Sciences

SAR 105

605-688-5172

www.vetsci.sdstate.edu

Faculty

Professor Zeman, Head; Professors Chase, Christopher-Hennings, Erickson, Francis, Graham, Knudsen, Hildreth, Holler, Miskimins, Neiger, Nelson, Young; Associate Professors Kaushik, Li; Assistant Professors Fang, Leslie-Steen, Zhang; Adjunct Professors Benfield, Harland, Robl, Rowland, Sathiyaseelan, Lunney, Martin, Patrick, Rinehart, Hamilton, Hurley, X. Wang, Patel, Ridpath, Tadepalli.

Programs

The Veterinary and Biomedical Sciences 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. Graduate training is supported by active research programs in natural diseases of food-producing animals and zoonotic diseases.

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, but most take four years. 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, Wildlife and Fisheries, 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 experiences. The applicant should be aware of the challenges involved in being accepted to a College of Veterinary Medicine. Keen competition should be anticipated.

The Veterinary and Biomedical Sciences Department is home to the SD Animal Disease Research and Diagnostic Laboratory, the Olson Agricultural Analytical Service Laboratory (OAASL), and the Center for Infectious Disease Research and Vaccinology.

(Pre-) Veterinary Science

David Zeman, Head

Department of Veterinary and Biomedical Sciences

SAR 105

605-688-5172

www.vetsci.sdstate.edu

Suggested Pre-Veterinary Medicine Plan of Study:

System General Education Requirements*

Goal #1 Written Communication:

ENGL 101 **and**

ENGL 2016

Goal #2 Oral Communication:.....3

Goal #3 Social Sciences/Diversity:

ECON 201 **or**

ECON 202 **and**

SOC 100 **or**

SOC 150 **or**
SOC 240.....6

Goal #4 Arts and Humanities/Diversity.....6

Goal #5 Mathematics:

MATH 102 **or**

MATH 115 **or**

MATH 120.....3-5

Goal #6 Natural Sciences:

BIOL 151-151L **and**

BIOL 153-153L ;

CHEM 112-112L **and**

CHEM 114-114L;

PHYS 111-111L **and**

PHYS 113-113L8

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resource Stewardship.....3

Goal #2 Personal Wellness.....2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....3

Other Suggested Courses

VET 103, Introduction to Veterinary Medicine1

CHEM 326-326L, Organic Chemistry I and Lab(COM).....(3, 1)

CHEM 328-328L, Organic Chemistry II and Lab(COM)(3, 1)

MICR 231-231L, General Microbiology and Lab (COM).....4

VET 223, Anatomy and Physiology of Domestic Animals4

BIOL 202-202L, Genetics and Organismal Biology and Lab.....4

or BIOL 371, Genetics (COM)3

CHEM 464, Biochemistry I (COM)3

CHEM 466, Laboratory Methods- Biochemistry1

VET 403-503, Animal Diseases and Their Control.....3

Requirements for specific B.S.

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.

Note: See adviser for chemistry specializations in sophomore year.

Visual Arts (ART, Graphic Design)

Tim Steele, Acting Head

Department of Visual Arts

Grove Hall 101

605-688-4103

fax: 605-688-6769

e-mail: sdsu.artdept@sdstate.edu

http://www3.sdstate.edu/Academics/CollegeOfArtsAndScience/VisualArts/Index.cfm

Faculty

Professor Steele, Acting Head; Professors French, Wallace; Professors Emeriti Edie, Gambill, Spinar; Professors Emeritae Morgan, Stuart; Associate Professors Benzer, Clark, Assistant Professors Cempellin and Hardin. Visiting artists include Behl, Frewaldt, and Stemwedel in Brookings, and Bashore and Peters at University Center in Sioux Falls.

Program

The Department of Visual Arts curricula present art and design studio and lecture experiences to all SDSU and University Center students, regardless of their major. Students pursue careers as artists, art educators, or graphic designers. The Department offers both the B.S. and B.A. degrees with majors in Studio Arts or Graphic Design at our Brookings campus. Within the Studio Arts major a student has the option to take the Art Education specialization. There are six certificates within Studio Arts: animation, ceramics, history of modern and contemporary art, painting, printmaking, and sculpture. We now offer the Graphic Design major at University Center in Sioux Falls, and the full range of all courses at the Brookings campus of SDSU. In Brookings, the Department operates seven specialized studios as well as two multi-purpose studios, located in Grove Hall and the Industrial Arts Building for drawing, printmaking, painting, graphic design, computer graphics, moving image courses, ceramics, and sculpture.

All Department of Visual Arts students must maintain at least a major GPA of 2.6 on a 4.0 scale for the duration of the program. The Department Reviews Required of All Majors to complete their degree. All majors enroll in three courses, an assessment program of three reviews that considers her/his development: the First Review, the Portfolio Review Jury on Student Progress and the Senior Review.

The First Review (ART 110) introduces the major to the department curricula, faculty, service programs, and extracurricular opportunities and assesses basic art knowledge through a test.

After the major has completed 15 credit hours of Visual Arts Studio Core courses and ARTH 100, he/she must enroll in the Portfolio Review Jury on Student Progress (ART 200) to continue in the department; this review involves the submission of a portfolio of studio work to a Jury of two faculty who evaluate the student's progress. This review must be passed in order to continue at the Junior level in the major.

The Senior Review (ART 400) consists of a public exhibition of the student's art or design works; for students entering after Fall 2006, Seniors also must pass the art knowledge test taken earlier in ART 110. The entire faculty acts as a jury of the whole in the evaluation of each degree candidate.

The Studio Arts Major (B.S. or B.A.)

Studio Arts in Art Education (B.S. or B.A.)

For the Art Education specialization, the student completes the Department's Visual Arts Core of studio courses (ART 111, 112, 121, 122, 123, 211), the Department Reviews (ART 110, 200, 400) and art history courses (ARTH 100, 211, 212, and ARTH Advanced Writing Requirement); the System Requirements (SGRs-30 credit hours) and Institutional Requirements (IGRs-8-9 credit hours); Teacher Education coursework (32 credit hours); and 15 credit hours in art (ceramics and sculpture), including coursework in discipline-based methods. You can pursue either a B.S. or a B.A. degree. The faculty strongly recommend a double major or certificate, in order to strengthen the student's artistic or design capacities.

Studio Arts (B.S. or B.A.)

For the Studio Arts degree, students complete the Department's Core studio courses (ART 111, 112, 121, 122 and 123), the Department Reviews (ART 110, 200, and 400) and art history courses (ARTH 100, 211, 212, and ARTH Advanced Writing Requirement), the System Requirements (SGRs-30 credit hours) and Institutional Requirements (IGRs-8-9 credit hours). Students are required to complete a minimum of one certificate designation for the degree. A certificate is achieved by completing 12 hours in one studio area (art history, animation, ceramics,

painting, printmaking or sculpture) in addition to the prerequisite. Students may earn more than one certificate. An additional 18 hours of electives taken from Art, ArtD, ArtE or ArTH are required to complete the degree.

Certificates:

- Animation (ArtD 203, 303, 403 and Art 492 Animation Topics)
- Art History (ArTH 212, 31, 320, and 490)
- Ceramics (Art 251, 351, 352 and 451)
- Painting (Art 231, 331, 332 and 431)
- Printmaking (Art 281, 381, 382 and 481)
- Sculpture (Art 241, 341, 342 and 441)

Studio Art students are encouraged to pursue multiple certificates to achieve breadth and depth in the degree.

Visual Arts Field Trips

Visual Arts' commitment to concrete and intensifying experiences is realized through regularly scheduled field trips to art centers in the state and region, as well as student trips to art galleries and museums in national and international centers. Recent department-sponsored trips have included Italy, Beijing China, Copenhagen, Denmark, Turkey, New York, and numerous trips to regional art and design centers such as Minneapolis or Kansas City.

The Graphic Design Major (B.S. or B.A.)

The Department of Visual Arts offers a major in Graphic Design that is comprised of design studio, lecture, and practical applications. You can pursue either a B.S. or a B.A. degree. Graphic Design majors study visual communications theory and practice in digital, print, time-based, on-line, and interactive media. Areas of study may include, but are not limited to, classical and computer animation, logos, computer graphics, publication and Web page design, illustration, advertising, posters, and multi-media. The program aims to develop a knowledge base for careers that can relate to professional practice, and students prepare a graphic design portfolio for use after graduation to seek positions in business and industry as well as nonprofit organizations.

Students complete the System Requirements (SGRs-30 credit hours), Institutional Requirements (IGRs-8-9 credit hours), and the Department's Visual Arts Core of studio courses (ART 111, 112, 121, 122, 123, and ARTD 202), Department Reviews (ART 110, 200, 400), and art history courses (ARTH 100, 211, 212, and ARTH Advanced Writing Requirement); an associated 21 credit hours of graphic design courses that consist of design theory, visual communications, computer graphics, design media, photography or time-based media; and several credit hours of Art and Graphic Design electives with Art (ART), Art History (ARTH), Graphic Design (ARTD), or Art Education (ARTE) prefixes. The Graphic Design Major (B.S. or B.A.)

The Department of Visual Arts offers a major in Graphic Design that is comprised of design studio, lecture, and practical applications. You can pursue either a B.S. or a B.A. degree. Graphic Design majors study visual communications theory and practice in digital, print, time-based, on-line, and interactive media. Areas of study may include, but are not limited to, classical and computer animation, logos, computer graphics, publication and Web page design, illustration, advertising, posters, and multi-media. The program aims to develop a knowledge base for careers that can relate to professional practice, and students prepare a graphic design portfolio for use after graduation to seek positions in business and industry as well as nonprofit organizations.

Students complete the System Requirements (SGRs-30 credit hours), Institutional Requirements (IGRs-8-9 credit hours), and the Department's Visual Arts Core of studio courses (ART 111, 112, 121, 122, 123, and ARTD 202), Department Reviews (ART 110, 200, 400), and art history courses (ARTH 100, 211, 212, and ARTH Advanced

Writing Requirement); an associated 21 credit hours of graphic design courses that consist of design theory, visual communications, computer graphics, design media, photography or time-based media; and several credit hours of Art and Graphic Design electives with Art (ART), Art History (ARTH), Graphic Design (ARTD), or Art Education (ARTE) prefixes.

Graphic Design Internships, Field Trips and the MacIntosh Lap-top Requirement

- The program’s distinctive interest in practical experiences is realized through internships, regularly scheduled field trips to graphic design, corporate studios, public relations, and advertising offices and studios in the region, as well as student trips to design conferences and art galleries and museums. Annually, trips are made to Minneapolis, Omaha, and Sioux Falls. Special professional trips have included Germany, Los Angeles, Japan, Chicago, Copenhagen, Denver, Dallas, and New York.
- Graphic Design has a MacIntosh laptop computer recommendation: MacBook Pro; suggest minimum of 2 gigabytes RAM.

The Transfer Review

The Transfer Review will be scheduled for the first Friday afternoon of each semester. (1) Transfer studio credits are assessed by these criteria: must meet the Department Standard of 2 contact hours per hour of semester credit as well as meet course syllabus content and expectations. (2) Credit cannot be given for duplication of courses. (3) Students may be advised to repeat a course of study for no credit, if the jury deems it appropriate, in order to meet program’s expectations and standards. However, the student is not required to repeat that course, if, (a) it was completed at a SD Board of Regents university and (b) listed as a common course in the numbering system of the SDBOR. (4) The Department Head may ask that ART 200 be conducted at the same time of Transfer Review. If so, this will require adding ART 200 to the student’s semester schedule.

The Ritz Gallery, the South Dakota Art Museum, and University Archives

Located in Grove Hall, The Ritz Gallery program of public exhibitions presents works of students, faculty, alumni, and visiting

artists/designers throughout the year. Ritz exhibitions offer visual art enrichment for the campus, community, and the state of South Dakota, as well as the public scrutiny of the Department programs in all of their variety. The annual schedule of 20 exhibitions also functions heavily in the curriculum.

The South Dakota Art Museum, the state’s official art museum, is not far from Grove Hall. Its “smart” auditorium is the site for the art history courses. Our majors participate in the museum’s rich program of exhibitions; these include works from its permanent collections, as well as visiting artists and international exhibitions. The museum also sponsors a series of artists’ talks, films, and workshops. Visit their Web site: <http://www3.sdstate.edu/Administration/SouthDakotaArtMuseum/>

Located in the Hilton M. Briggs Library, the University Archives contain an important growing collection of graphic design, fine books, the complete volume of original William Hogarth prints, and cuneiform tablets from ancient Sumeria. The archives offers a valuable resource to the material culture study that is essential in art and design history.

Studio Art (ART) Major

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.

Requirements for Studio Art Major, Bachelor of Arts in Arts and Sciences

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, and	
ENGL 201	6

Goal #2 Oral Communication:

SPCM 101*	3
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Goal #3 Social Sciences/Diversity

Goal #4 Arts and Humanities/Diversity

Goal #5 Mathematics

Goal #6 Natural Sciences.....

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources

Goal #2 Personal Wellness.....

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....

College Requirements: 16

Modern Language

Social Sciences.....

Major Requirements: 31.5

Art History Advanced Writing Course

ART 110, First Review.....

ART 111, Drawing I * ** (COM).....

ART 112, Drawing II * ** (COM)

ART 121, Design I 2D * ** (COM).....

ART 122, Design II Color (COM).....

ART 123, Three Dimensional Design * ** (COM).....

ART 200, Portfolio Review Jury on Student Progress

ART 211, Drawing III-Figurative ** (COM)

ART 400, Senior Review

ARTH 100, Art Appreciation * ** (COM) (G)

ARTH 211, History of World Art I * ** (COM) (G)

ARTH 212, History of World Art II * ** (COM) (G).....

Electives: 41.5-42.5

Choose a certificate or the general art emphasis below:

General Art emphasis:

ARTD/ART-Area of Specialization ¹	9
Art Electives.....	15

Total Required Credits: 128

Art Education Specialization Requirements: 49

ART 241, Sculpture I ** (COM)

ART 251, Ceramics I ** (COM)

SEED 420, 5-12 Teaching Methods.....

EDFN 427-527, Middle School: Philosophy and Application

EDFN 365, Computer-Based Technology and Learning (COM).....(2)

ANTH 421-521, Indians of North America **

or HIST 368, History and Culture of the American Indian ** (COM)	3
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Professional Semester I: 5

EDFN 338, Foundations of American Education (COM)

EDFN 475, Human Relations (COM)

Professional Semester II: 6

EPSY 302, Educational Psychology (COM)

Professional Semester III: 14

SEED 400, Curriculum and Instruction in Middle and Secondary Schools.....

SEED 410, Social Foundations, Management and Law

SEED 488, 7-12 Student Teaching (COM).....(2-16)

ELED 488, K-8 Student Teaching (COM).....(2-16)

Note: 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 (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Requirements for Studio Art Major, Bachelor of Sciences in Arts and Sciences

System General Education Requirements*: 30

Goal #1 Written Communication:

ENGL 101, **and**

ENGL 2016

Goal #2 Oral Communication:

SPCM 101*3

Goal #3 Social Sciences/Diversity6

Goal #4 Arts and Humanities/Diversity6

Goal #5 Mathematics3

Goal #6 Natural Sciences6

Institutional Graduation Requirements**: 8-9

Goal #1 Land and Natural Resources3

Goal #2 Personal Wellness2-3

Goal #3 Social Responsibility/Cultural and Aesthetic Awareness3

College Requirements: 8

Natural Science8

Major Requirements: 31.5

Art History Advanced Writing Course3

ART 110, First Review0.5

ART 111, Drawing I * ** (COM)3

ART 112, Drawing II * ** (COM)3

ART 121, Design I 2D * ** (COM)3

ART 122, Design II Color (COM)3

ART 123, Three Dimensional Design * ** (COM)3

ART 200, Portfolio Review Jury on Student Progress0.5

ART 211, Drawing III-Figurative ** (COM)3

ART 400, Senior Review0.5

ARTH 100, Art Appreciation * ** (COM) (G)3

ARTH 211, History of World Art I * ** (COM) (G)3

ARTH 212, History of World Art II * ** (COM) (G)3

Electives: 49.5-50.5

Choose a certificate or the general art emphasis below:

General Art emphasis:

ARTD/ART-Area of Specialization¹9

Art Electives15

Total Required 128

Art Education Specialization Requirements: 49

SEED 420, 5-12 Teaching Methods 2

ARTE 414, K-12 Art Methods (COM)(2-3)

EDFN 427-527, Middle School: Philosophy and Application2

ARTE 491-591, Independent Study(1-3)

EDFN 365, Computer-Based Technology and Learning (COM)(2)

ANTH 421-521, Indians of North America **3

or HIST 368, History and Culture of the American

Indian ** (COM)3

Professional Semester I: 5

EDFN 338, Foundations of American Education (COM)(1-2)

EDFN 475, Human Relations (COM)3

Professional Semester II: 6

EPSY 302, Educational Psychology (COM)3

SEED 450, 7-12 Reading and Content Literacy (COM)2

SEED 314, Supervised Clinical/Field Experience1

Professional Semester III: 14

SEED 400, Curriculum and Instruction in Middle and

Secondary Schools4

SEED 410, Social Foundations, Management and Law2

SEED 488, 7-12 Student Teaching (COM)(2-16)

ELED 488, K-8 Student Teaching (COM)(2-16)

Note: 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 (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Certificates

Animation Certificate

Certificate Requirements: 12

ARTD 203, Introduction to Classical Animation I3

ARTD 303, Introduction to Classical Animation II3

ARTD 403, Intermediate Animation3

ART 492, Topics (COM)(1-9)

Ceramics Certificate

Certificate Requirements: 12

ART 251, Ceramics I ** (COM)3

ART 351, Ceramics II (COM)3

ART 352, Ceramics-Intermediate Level3

ART 451, Ceramics-Advanced(3-9)

History Of Modern And Contemporary Art Certificate

Certificate Requirements: 15

ARTH 100, Art Appreciation * ** (COM) (G)3

ARTH 212, History of World Art II * ** (COM) (G)3

ARTH 310, History of United States Art and Architecture (AW)3

ARTH 320, Modern Art and Architecture Survey (AW)3

ARTH 490, Seminar (COM) (AW)(1-3)

Painting Certificate

Certificate Requirements: 12

ART 231, Painting I ** (COM)3

ART 331, Painting II (COM)3

ART 332, Painting-Intermediate Level3

ART 431, Painting III (COM)3

Printmaking Certificate

Certificate Requirements: 12

ART 281, Printmaking I ** (COM)3

ART 381, Printmaking II (COM)3

ART 382, Printmaking-Intermediate Level3

ART 481, Printmaking-Advanced(3-9)

Sculpture Certificate

Certificate Requirements: 12

ART 241, Sculpture I ** (COM).....	3
ART 341, Sculpture II (COM).....	3
ART 342, Sculpture III (COM).....	3
ART 441, Sculpture-Advanced.....	(3-9)

Studio Arts (ART) Minor

Requirements for Studio Arts Minor: 24 credits

To include six credit hours in art history.

Graphic Design (ARTD) Major

Requirements for Graphic Design Major, Bachelor of Arts in Arts and Sciences

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201.....	6
Goal #2 Oral Communication:	
SPCM 101*.....	3
Goal #3 Social Sciences/Diversity.....	6
Goal #4 Arts and Humanities/Diversity.....	6
Goal #5 Mathematics.....	3
Goal #6 Natural Sciences.....	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship.....	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 16

Modern Language.....	14
Social Sciences.....	2

Major Requirements: 63.5-64.5

Art History Advanced Writing Course.....	3
Art Electives.....	7
ART 110, First Review.....	0.5
ART 111, Drawing I * ** (COM).....	3
ART 112, Drawing II * ** (COM).....	3
ART 121, Design I 2D * ** (COM).....	3
ART 122, Design II Color (COM).....	3
ART 123, Three Dimensional Design * ** (COM).....	3
ART 200, Portfolio Review Jury on Student Progress.....	0.5
ARTD 202, Computer Graphics I.....	3
ART 211, Drawing III-Figurative ** (COM).....	3
ART 400, Senior Review.....	0.5
ARTH 100, Art Appreciation * ** (COM) (G).....	3
ARTH 211, History of World Art I * ** (COM) (G).....	3
ARTH 212, History of World Art II * ** (COM) (G).....	3
ARTD 201, Graphic Design I.....	3
ARTD 301, Graphic Design II.....	3
ARTD 302, Computer Graphics II.....	3
ARTD 351, Visual Communication I.....	3
ARTD 352, Design Media I.....	3
ARTD 451, Visual Communication II: Senior Portfolio.....	3
ARTD 452, Design Media II.....	3
MCOM 265-265L, Basic Photography and Studio (COM).....	(2-3)

Electives: 8.5-10.5

Total Required Credits: 128

Requirements for Graphic Design Major, Bachelor of Science in Arts and Sciences:

System General Education Requirements*: 30

Goal #1 Written Communication:	
ENGL 101, and	
ENGL 201.....	6
Goal #2 Oral Communication:	
SPCM 101*.....	3
Goal #3 Social Sciences/Diversity.....	6
Goal #4 Arts and Humanities/Diversity.....	6
Goal #5 Mathematics.....	3
Goal #6 Natural Sciences.....	6

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship.....	3
Goal #2 Personal Wellness.....	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness.....	3

College Requirements: 8

Natural Science.....	8
----------------------	---

Major Requirements: 63.5-64.5

Art History Advanced Writing Course.....	3
Art Electives.....	7
ART 110, First Review.....	0.5
ART 111, Drawing I * ** (COM).....	3
ART 112, Drawing II * ** (COM).....	3
ART 121, Design I 2D * ** (COM).....	3
ART 122, Design II Color (COM).....	3
ART 123, Three Dimensional Design * ** (COM).....	3
ART 200, Portfolio Review Jury on Student Progress.....	0.5
ARTD 202, Computer Graphics I.....	3
ART 211, Drawing III-Figurative ** (COM).....	3
ART 400, Senior Review.....	0.5
ARTH 100, Art Appreciation * ** (COM) (G).....	3
ARTH 211, History of World Art I * ** (COM) (G).....	3
ARTH 212, History of World Art II * ** (COM) (G).....	3
ARTD 201, Graphic Design I.....	3
ARTD 301, Graphic Design II.....	3
ARTD 302, Computer Graphics II.....	3
ARTD 351, Visual Communication I.....	3
ARTD 352, Design Media I.....	3
ARTD 451, Visual Communication II: Senior Portfolio.....	3
ARTD 452, Design Media II.....	3
MCOM 265-265L, Basic Photography and Studio (COM).....	(2-3)

Electives: 16.5-18.5

Total Required Credits: 128

Note: By written request to the Department Head, Graphic Design majors may substitute ARTD animation or a video production course for the MCOM photography requirement.

* The 30 credit Board of Regents System **General Education Requirements (SGRs)** must be completed as part of a student's first 64 credits. (See pages 40-42 for details.)

** South Dakota State University has an 8-9 credit **Institutional Graduation Requirement (IGRs)**. (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.

Wildlife and Fisheries Sciences (WL) Department

David Willis, Head
Department of Wildlife and Fisheries Sciences
Northern Plains Biostress Laboratory 138C
605-688-6121
e-mail: david.willis@sdstate.edu
www.sdstate.edu/wfs/

Faculty

Distinguished Professor Willis, Head; Distinguished Professor Emeritus Flake; Distinguished Professor Jenks; Professors Emeritus Berry, Higgins, Scalet; Professors Brown, Chipps, Hubbard; Associate Professors Jensen, Stafford, Wimberly; Assistant Professors Bertrand, Graeb, Rupp, Wuellner; Adjunct Professors Barnes, Bowyer, Fredrickson, Leslie, Wahl; Adjunct Associate Professors, Blackwell, DePerno, Euliss, Klaver, Klumb, Naugle, Sutton, Uresk, Waits; Adjunct Assistant Professors Adams, Austin, Bakker, Gigliotti, Granfors, Holland, Isermann, Jacques, Johnson, Lehman, Pegg, Rumble, Schmitz, Sovada, Switzer.

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 undergraduate 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 catalog.

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, criminal justice, 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. Our goal is 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.

Wildlife and Fisheries Sciences Major (Ph.D.)

This degree is intended to educate students for upper-level management, research 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 obtain from bachelor's and master's degree work, we endeavor to raise them to a higher intellectual plateau. While coursework is involved, this educational experience is primarily based on research and mentoring. This degree requires original thought and research contributions, synthesis and development of information, and contributions to the world and its natural resources. We strive to help these students become more operationally and conceptually creative.

Wildlife and Fisheries Sciences (WL) Major

Requirements for Wildlife and Fisheries Sciences Major, Bachelor of Science in Biological Science:

System General Education Requirements*: 30-34

Goal #1 Written Communication:	
ENGL 101 and	
ENGL 201	6
Goal #2 Oral Communication:	
SPCM 101*	3
Goal #3 Social Sciences/Diversity	6
Goal #4 Arts and Humanities/Diversity	6
Goal #5 Mathematics	3-5
Goal #6 Natural Sciences:	
BIOL 101-101L or	
BIOL 151-151L and	
BIOL 103-103L or	
BIOL 153-153L	6-8

Institutional Graduation Requirements: 8-9**

Goal #1 Land and Natural Resource Stewardship	3
Goal #2 Personal Wellness	2-3
Goal #3 Social Responsibility/Cultural and Aesthetic Awareness	3

Major Requirements:70-78

ENGL 379, Technical Communication (AW)	3
STAT 281, Introduction to Statistics (COM)	3
CHEM 112-112L, General Chemistry I and Lab* (COM).....(3, 1)	
and either CHEM 120-120L, Elementary Organic Chemistry and	
Lab*	(3, 1)
or CHEM 326-326L, Organic Chemistry I and Lab(COM)	(3, 1)
or CHEM 106-106L, Chemistry Survey and Lab* (COM)	(3,1)
and CHEM 108-108L, Organic and Biochemistry and	
Lab* (COM)	(4, 1)
PHYS 101-101L, Survey of Physics * (COM) and Lab	4
or PHYS 111-111L, Introduction to Physics I and Lab* (COM)	4
CEE 333, Hydrology	3
or CHEM 328-328L, Organic Chemistry II and Lab(COM).....(3, 1)	
or PS 213-213L, Soils and Lab * * *	2
or PS 243, Principles of Geology* * *	3
BIOL 311, Principles of Ecology ** (COM)	3
BIOL 371, Genetics (COM)	3
WL 220, Introduction to Wildlife and Fisheries Management	3
WL 230, Wildlife and Fisheries Techniques	3
WL 190, Seminar: Opportunities	1
WL 490, Seminar	1
Take one of the following: 3	
SPCM 201, Interpersonal Communication (COM)	3
SPCM 215, Public Speaking (COM) *	3
SPCM 222, Argumentation and Debate (COM) *	3
SPCM 434, Small Group Communication (COM)	3

Women's Studies (WMST)

Meredith Redlin, Program Coordinator

College of Arts and Sciences

Scobey Hall 206

605-688-4084

e-mail: meredith.redlin@sdstate.edu

Program

An interdisciplinary program (minor) enabling the student to select courses dealing directly or indirectly with women and their changing roles in history, the family, the labor force, politics, literature and other venues. 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.

Requirements for Women's Studies Minor: 18 cr

WMST 101, Introduction to Women's Studies3

WMST 491, Independent Study1-4

Choose one course from the following:

SOC 383, Sociology of Sex Roles

HIST 349, Women in American History3

HIST 350, Women in World History3

POLS 305, Women and Politics.....3

PSYC 367, Psychological Gender Issues **3

SOC 483, Sociology of Gender Roles (COM) (G)3

WMST 305, Women and Politics3

WMST 349, Women in American History3

WMST 350, Women in World History3

WMST 367, Psychological Gender Issues **3

WMST 383, Sociology of Gender Roles.....3

Choose one course from the following:

Appropriate courses in the Humanities and Arts may be substituted with the approval of the Program Coordinator.

ENGL 248, Women in Literature * * *3

WMST 248, Women in Literature3

Electives

Elective Courses6

Courses can be selected from the required list above and from the following:

AM 453, Socio-Psychological Aspects of Dress3

CA 340, Work Family Interface (AW).....3

HDFS 250, Development of Human Sexuality3

MCOM 419-519, Women in Media.....3

REL 331, Women and Religion3

SOC 325, Domestic and Intimate Violence.....3

WMST 250, Development of Human Sexuality3

WMST 325, Domestic and Intimate Violence.....3

WMST 331, Women and Religion3

WMST 419-519, Women in Media3

WMST 453, Socio-Psychological Aspects of Dress3

WMST 492-592, Topics.....3

Note: 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)

(Biology and Microbiology)

Take one of the following: 3-4

BOT 201-201L, General Botany and Lab* (COM)3

BOT 301-301L, Plant Systematics (COM)4

BOT 303-303L, Forest Ecology and Management and Lab.....3

BOT 405-405L/505-505L, Grasses and Grasslike

Plants and Lab3

BOT 415-415L/515-515L, Aquatic Plants and Lab3

BOT 419-419L, Plant Ecology and Lab(COM) (G).....4

Take three of the following: 10-11

WL 363-363L, Ornithology and Lab(COM).....4

WL 367-367L, Ichthyology and Lab3

WL 427-427L/527-527L, Limnology of Lakes & Streams

and Lab4

ZOOL 355-355L, Mammalogy and Lab(COM).....3

Take three of the following: 8-10

WL 400-400L, Habitat Conservation and Restoration and Lab.....3

WL 411-411L, Principles of Wildlife Management and Lab.....4

WL 412-412L, Principles of Fisheries Management and Lab3

WL 429-429L/529-529L, Fish Ecology and Lab2

Take two of the following: 4-6

WL 413-413L/513-513L, Fisheries Ecology and Management

and Lab3

WL 415-415L/515-515L, Upland Game Ecology and

Management and Lab3

WL 417-417L/517-517L, Large Mammal Ecology and

Management and Lab3

WL 419-419L/519-519L, Waterfowl Ecology and

Management and Lab3

WL 421-421L/521-521L, Grassland Fire Ecology and Lab3

WL 425-425L/525-525L, Wildlife Nutrition and Disease

and Lab3

WL 431-431L/531-531L, Fisheries Management in Small

Waters and Lab2

WL 440-440L, Fisheries and Wildlife Biometrics and Lab2

Take two human dimensions courses: 7

WL 430-430L, Human Dimensions in Wildlife and Fisheries

and Lab** (G).....4

Select one of the following for a second human dimensions course:

ABS 475-475L, Integrated Natural Resource Management and

Lab (AW).....3

ECON 372, Introduction to Resource and Environmental

Economics3

ECON 472-572, Resource and Environmental

Economics **(COM) 3

ENVM 275, Introduction to Environmental Science ** (G).....3

GEOG 365, Land Use Planning3

HIST 379, Environmental History of the U.S. (COM)3

PHIL 454-554, Environmental Ethics ** (COM)3

POLS 430, Constitutional Law (COM).....3

PR 301-301L, Park Interpretation and Lab3

REL 332, Environmental Ethics **3

WL 420-420L, Wildlife Law and Enforcement.....3

Electives: 7-20

Total Required Credits: 128

* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits.

** South Dakota State University has an 8-9 credit Institutional Graduation Requirement (IGRs). (See pages 43-45 for details.)

(G) Globalization Requirement. (See page 46 for details.)

(AW) Advanced Writing Requirement. (See page 47 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.



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Curriculum Entries

Course Descriptions

1	2	3	4	6	5
BIOL 101	Biology Survey I	(COM)	3	

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, remedial
 - 1 Freshman
 - 2 Sophomore
 - 3 Junior
 - 4 Senior
3. Name of the course.
4. Common Course within the Regental System.
5. Number of credits assigned to the course. One credit is usually interpreted as one hour of class work per week or as two to four hours of lab work per week.
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)
Also 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 postdoctoral level (doctoral and postdoctoral students only)

Experimental Courses

A course at the 100-600 levels ending in 99 is experimental and may be offered no more than twice within two academic years before it must be submitted as a New Course Request.



Colleges, Departments and Program Abbreviations

A&S , Arts and Sciences	EDER , Education Evaluation and Research	MATH , Mathematics
ABE , Agricultural and Biosystems Engineering	EDFN , Educational Foundations	MCOM , Mass Communication
ABS , Agriculture and Biological Sciences	EE , Electrical Engineering	ME , Mechanical Engineering
ACCT , Accounting	EET , Electronics Engineering Technology	MEPR , Media Production
AGEC , Agricultural and Resource Economics	EHS , Education and Human Sciences	MGMT , Management
AGED , Agricultural Education	ELED , Elementary Education	MICR , Microbiology
AHED , Adult Higher Education	EM , Engineering Mechanics	MFL , Modern Foreign Languages
AIR , Aerospace Studies	ENGL , English	MLED , Middle Level Education
AIS , American Indian Studies	ENT , Entomology	MLS , Medical and Laboratory Science
AM , Apparel Merchandising	ENTR , Entrepreneurial Studies	MNET , Manufacturing Engineering Technology
ANAT , Anatomy	ENVM , Environmental Management	MRCH , Merchandising
ANTH , Anthropology	EPSY , Educational Psychology	MSL , Military Science Leadership
ARAB , Arabic	ETM , Engineering Technology and Management	MUAP , Music Applied
ART , Art	EURS , European Studies	MUEN , Music Ensemble
ARTD , Art Design	FBME , Food and Biomaterials Engineering	MUS , Music
ARTE , Art Education	FCS , Family and Consumer Sciences	NACC , Nursing Accelerated
ARTH , Art History	FCSE , Family and Consumer Sciences Education	NFSH , Nutrition, Food Science and Hospitality
AS , Animal Science	FREN , French	NFS , Nutrition, Food Science and Hospitality
AST , Agricultural Systems Technology	GCOM , General Communication	NURS , Nursing
AT , Athletic Training	GE , General Engineering	PE , Physical Education
AVIA , Aviation	GEOG , Geography	PHA , Pharmacy
BADM , Business Administration	GER , German	PHIL , Philosophy
BIOL , Biology	GERO , Gerontology	PHST , Physics Topics for Educators
BIOS , Biological Sciences	GIS , Geographic Information Sciences	PHTH , Physical Therapy
BIOT , Biotechnology	GLST , Global Studies	PHYS , Physics
BOT , Botany	GS , General Studies	PLAN , Planning
CA , Consumer Affairs	HD , Human Development	POLS , Political Science
CD , Community Development	HDFS , Human Development and Family Studies	PR , Park Management
CEE , Civil and Environmental Engineering	HFM , Hotel and Foodservice Management	PRM , Park and Recreation Management
CEX , Center of Excellence	HIST , History	PS , Plant Science
CHEM , Chemistry	HLTH , Health	PSYC , Psychology
CHIN , Chinese	HO , Horticulture	RANG , Range Science
CHRD , Counseling and Human Resource Development	HON , Honors	RECR , Recreation
CJUS , Criminal Justice	HPER , Health, Physical Education and Recreation	REL , Religion
CM , Construction Management	HSC , Health Science	SE , Software Engineering
CSC , Computer Science	ID , Interior Design	SEED , Secondary Education
CSCA , Computer Science Applications	IM , Industrial Management	SM , Safety Management
CST , Communication Studies and Theatre	JAPN , Japanese	SOC , Sociology
CTE , Career and Technical Education	LA , Landscape Design	SPAN , Spanish
DANC , Dance	LAS , Latin American Studies	SPCM , Speech Communication
DCOM , Communication Disorders	LAKL , Lakota	STAT , Statistics
DMCS , Design, Merchandising and Consumer Sciences	LEAD , Leadership	THEA , Theatre
DS , Dairy Science	LING , Linguistics	VET , Veterinary Science
ECE , Early Childhood Education	LMNO , Leadership and Management of Nonprofit Organizations	WEL , Wellness
ECON , Economics		WL , Wildlife and Fisheries Sciences
EDAD , Educational Administration		WMST , Women's Studies
		ZOOL , Zoology

Miscellaneous Abbreviations

admin , administration	cr , credit	L , or lab, laboratory
adv , advanced	CRN , 5 digit course reference number	P , prerequisite
Ag , Agriculture	dev , development	R , recitation (lecture)
Am , American	econ , economics	S , spring semester
AV , Audio-Visual	ed , educational	Schd , Schedule Type
AY , alternate years	F , fall semester	Sec , Section
& , and	fr , freshman	S.D., or SD , South Dakota
CAI , Computer Assisted Instruction	fund , fundamentals	soph , sophomore
chem , chemistry	gen , general	sr , senior
CITO , Chief Information Technology Office	Hum , Humanities	Su , summer term
COM , Common Course	intro , introduction	TBA , time and/or credit to be arranged
comp , composition	jr , junior	U.S., or US , United States
conc , Concurrent	prin , principles	

Course Types/Instructional Methods

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. Instructional Method: G.

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. Instructional Method: C.

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. Instructional Method: B.

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. Instructional Method: J.

Discussion/Recitation

A course, or a section of a larger course, designed for group discussion or student recitation. Instructional Method: D.

Ensemble

Large group musical performance courses, meaning group of more than 10 performers. Includes: orchestra, bands, and choruses. Instructional Method: H.

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. Instructional Method: T.

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. Instructional Method: I.

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. Instructional Method: S.

Laboratory

Courses meeting in a defined physical setting (i.e. laboratory) for the purpose of the application of methods and principles of a discipline. Instructional Method: L.

Lecture

Faculty members give oral presentations of facts, principles, context, or interpretation. Instruction takes place in a traditional classroom setting. Instructional Method: R.

Modified Physical Education Activity

A course type limited to accommodate students with physical disabilities where numbers are very limited. Instructional Method: O.

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. Instructional Method: P.

Private Instruction

The courses involve individual instruction. One-to-one demonstration, performance critique, music, fine arts or performing arts, or flight instruction are examples. Instructional Method: M.

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. Instructional Method: E.

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. Instructional Method: A.

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. Instructional Method: U.

Tracking Courses

This course type is used to track students for zero credit hours. Instructional Method: Q.

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. Instructional Method: T.

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. Instructional Method: W.

Other Important Definitions

Advanced Writing

A BOR Requirement, courses chosen by departments to meet this requirement are tagged with (AW).

Common Course Numbering

The South Dakota Regental institutions utilize common course numbering, meaning that a course designated as a common course (COM) is automatically transferable between institutions. Any courses on the following pages without the COM designation are considered to be unique to SDSU.

Crosslisted Courses

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.

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.

Globalization

A BOR Requirement, courses chosen by departments to meet this requirement are tagged with (G).



x9x Common Course Descriptions

The following middle digit 9 course numbering scheme is used in the South Dakota public university system. These courses may have **multiple sections**. A section's title may or may not reflect the material covered in that section. See the academic department for section information, e.g., description, prerequisites such as instructor or department consent, GPA required, junior or senior standing, etc.

x90	Seminar
x91	Independent Study
x92	Topics
x93	Workshop
x94	Internship
x95	Practicum
x96	Field Experience
x97	Cooperative Education
498	Undergraduate Research/Scholarship

In addition, the following 700 and 800 level course numbers are also used in common:

788	Master's Research Problems/Projects
789	Master's Research Problems/ Projects Sustaining
798/898S/898D*	Thesis/Dissertation
799/899S/899D*	Thesis Sustaining/ Dissertation Sustaining

*As appropriate, an S or D should be appended to a course number to distinguish between courses for specialist and doctoral degree seekers.



x9x Common Course Descriptions

Definitions:

x90 Seminar

A highly focused, and topical course. The format includes student presentations and discussions of reports based on literature, practices, problems, and research. Seminars may be conducted over electronic media such as Internet and are at the upper division or graduate levels. Enrollment is generally limited to fewer than 20 students. Instructional method: E.

x91 Independent Study

Includes Directed Study, Problems, Readings, Directed Readings, Special Problems, and Special Projects. Students complete individualized plans of study which include significant one-on-one student-teacher involvement. The faculty member and students negotiate the details of the study plans. Enrollments are usually 10 or fewer students. Meeting depending upon the requirements of the topic. Instructional method: I.

x92 Topics

Includes Current Topics, Advanced Topics and 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. Enrollments are usually of 10 or fewer students with significant one-on-one student/teacher involvement.

x93 Workshop

Special, intense sessions in specific topic areas. Approximately 45 hours of work is required for each hour of credit. Workshops may vary in time range but typically use a compressed time period for delivery. They may include lectures, conferences, committee work, and group activity. Instructional method: W.

x94 Internship

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. A higher level of supervision is provided by the instructor in these courses than is the case with Field Experience courses. Instructional method: S.

x95 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. A higher level of supervision is provided by the instructor in these courses than is the case with Field Experience courses. Instructional method: S.

x96 Field Experience

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 established between the student, instructor and field experience supervisor. Due to the presence of a field experience supervisor, a lower level of supervision is provided by the instructor in these courses than is the case with an Internship or Practicum course. Instructional method: S.

x97 Cooperative Education

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 established between the student, instructor and field experience supervisor. Due to the presence of a field experience supervisor, a lower level of supervision is provided by the instructor in these courses than is the case with an Internship or Practicum course. Instructional method: S.

498 Undergraduate Research/Scholarship

Includes Senior Project, and Capstone Experience. Independent research problems/projects or scholarship activities. The plan of study is negotiated by the faculty member and the student. Contact between the two may be extensive and intensive. Does not include research courses which are theoretical. Instructional method: J.

788 Master's Research Problems/Projects

Independent research problems/projects that lead to a research or design paper but not to a thesis. The plan of study is negotiated by the faculty member and the candidate. Contact between the two may be extensive and intensive. Does not include research courses which are theoretical. Instructional method: J.

789 Master's Research Problems/Projects Sustaining

This is a zero credit hour schedule type used to track students who are not currently working with faculty on thesis or doctoral activities. Universities may require students to register under this schedule type to remain active degree candidates. Instructional method: U.

798/898S/898D Thesis/Dissertation

A formal treatise presenting the results of study submitted in partial fulfillment of the requirements for the applicable 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 other members of the committee. Instructional method: T.

799/899S/899D Thesis Sustaining/Dissertation Sustaining

This is a zero credit hour schedule 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 schedule type to remain active degree candidates. Instructional method: U.

A&S (Arts and Science)

A&S 482-582 - Travel Studies(1-5)

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 of 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.

ABE (Agricultural and Biosystems Engineering)

ABE 122 - Introduction to Agricultural and Biological Engineering.....1

An introduction to applications of engineering to agricultural and biological systems. Emphasis is on engineering as a career and engineering of plant, animal, soil based and biological materials systems.

ABE 132 - Engineering Tools for Agricultural and Biological Engineers1

Familiarization with the equipment and systems common to agricultural and biological engineering. Introduction to measurement and analysis of parameters affecting engineered components and systems, including tolerance accumulation and external factors. Use of electronic spreadsheets will be developed as an engineering tool for programming and analysis of engineering data from natural resource, bio-processing, and equipment design.

ABE 222 - Project Development for Agricultural and Biological Engineers1

Introduction to project development. A project oriented experience including problem definition, literature review, development of the state of the art, identification of knowledge or utility gaps, and valuation of the problem. Project objectives are developed and narrowed to performance criteria. Development of a budget to fill the gap identified, as is a project timeline in the form of a Gant Chart to reach the identified objectives. A formal written and oral presentation of the project proposal is required.

ABE 225 - Principles of Environmental Science and Engineering **3

Introduction to the basic principles of environmental management, environmental science and engineering, and natural resources engineering. The class will be team taught by faculty from environmental management, civil and environmental engineering, agricultural and biosystems engineering, and agricultural systems technology programs. The course will teach the fundamental physical, biological, and chemical principles of environmental processes. The course will also explore the impact of humans and human activity on ecosystems in the environment. Prerequisites: CHEM 106 or CHEM 112. Notes: ** Course meets IGR #1.

ABE 314-314L - Ag Power and Machines and Lab4

Analysis and design of off-road vehicles and field machines. Includes engines, transmissions, traction, hitches, and hydraulic systems, as well as equipment for liquid and dry material applications. Prerequisites: EM 215. Corequisites: ABE 314L-314.

ABE 324-324L - Ag Structures and Indoor Environment and Lab.....4

Course is divided into two parts emphasizing design of wood structures and environmental control in animal housing. Loads, structural analysis (statically determinate and indeterminate systems), and wood and wood panel properties are introduced. Design of beams, columns, beam-columns, trusses, sheathing, and diaphragms are emphasized with mechanical fasteners. Desired animal production space (thermal environment and indoor air quality) for production, health, and welfare are discussed. Heating and

cooling loads are emphasized along with sizing equipment, fans, inlets, heat exchangers, controls, etc.) to maintain the desired animal production space. Prerequisites: ME 314, EM 331 or concurrent. Corequisites: ABE 324L-324.

ABE 330 - Entrepreneurship Opportunities in Agricultural and Biosystems Engineering1

Introduction to entrepreneurship, including types of innovations, the nature and characteristics of entrepreneurs, the traditions and potential roles of Agricultural and Biological Engineers as entrepreneurs. Networking, teamwork, sources of finance, business practices, regulations, intellectual property, ethics, marketing and advertising, cost of production versus pricing, leadership and management. Group development and presentation (oral and written) of an entrepreneurial innovation is required.

ABE 343-343L - Engineering Properties of Biological Materials and Lab3

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. Corequisites: ABE 343L-343.

ABE 350-350L - Hydraulic Systems and Lab3

Fluid properties, pumps, actuators, valves and their selection and performance in hydraulic circuits. Open center, closed center, load sensing and pressure compensated circuits. Proportional electro-hydraulic values and closed-loop control in hydraulic circuits. Corequisites: ABE350L-350. Prerequisites: ME 314 or consent.

ABE 390 - Seminar1

ABE 411 - Design Project III2

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. Notes: Senior standing.

ABE 422 - Design Project IV (AW).....2

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. Notes: Senior standing.

ABE 434-434L - Natural Resources Engineering and Lab4

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. Prerequisites: EM 331. Corequisites: ABE 434L-434.

ABE 444-444L/544-544L - Unit Operations of Biological Materials Processing and Lab.....4

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.

Prerequisites: Senior standing or consent. Corequisites: ABE 444L-444/544L-544.

ABE 455-455L/555-555L - Principles of Biological Separation Processing and Lab.....3

Biological separation principle and process development for isolation of value added products from renewable agricultural based materials. The mass and heat transfer as well as engineering scale up will be applied to chromatography separation (gel filtration, ion exchange, affinity,

hydrophobic interaction and affinity), membrane separation (microfiltration, ultrafiltration and diafiltration) and liquid-liquid extraction (aqueous two phase, micelle extraction and solvent extraction). Hands on laboratory experiments will be an integral part of this course. Students will be expected to complete comprehensive laboratory reports which include scale up computations. Corequisites: ABE 455L-ABE455/ABE 555L-ABE 555

ABE 463-463L - Instrumentation for Agricultural and Biological Systems and Lab.....3
 Measurement systems for strain, flow, pressure, displacement, and temperature as related to measurements for physical and biological systems are introduced with error analysis. The dynamic characteristics of the measurand and measurement system explored and the interaction of the dynamic characteristics of the measurand with the measurement system is discussed. Filters, amplifiers, logic circuits, and in put circuitry analysis and use are emphasized. Signal conditioning required for digital data acquisition is introduced. Prerequisites: EE 300. Corequisites: ABE 463L-463.

ABE 464-464L - Monitoring and Controlling Agriculture and Biological Systems and Lab.....2
 Data acquisition, processing, and analysis for agriculture and biological applications using a computer based system. Application of electronic instrumentation, LabView software programming. Introduction to CAN bus technology, proportional-integral-derivative (PID) controllers, and programmable logical controllers . Prerequisites: ABE 463. Corequisites: ABE 464L-464.

ABE 490 Seminar (AW)..... 1
ABE 491 Independent Study(1-3)
ABE 492/592 Topics(1-4)
ABE 494 Internship.....(1-6)
ABE 496 Field Experience..... (1-6)
ABE 497 Cooperative Education(1-6)
ABE 498 Undergraduate Research/Scholarship.....(1-3)
ABE 503 Energy and Environment3
ABE 512 Advanced Agricultural Tractors and Machines.....2
ABE 522 Bio-Environmental Engineering2
ABE 533-533L Advanced Irrigation Engineering and Lab.....3
ABE 551 Fundamentals of Conversion.....3
ABE 590 Sustainability Seminar.....1
ABE 592 Topics.....1-3
ABE 632 Environmental and Ecological Risk Assessment3
ABE 662 Life Cycle Assessment.....3
ABE 732 Advanced Hydrology in Agriculture2
ABE 733 Ground Water Engineering in Agriculture3
ABE 748 Bioseparations3
ABE 752 Theoretical Micro-Climatology2
ABE 754-754L Advanced Unit Operations of Food/Biomaterials Processing and Lab.....3
ABE 763-763L Instrumentation.....3
ABE 765 Advanced Biomass Thermochemical Conversion.....3
ABE 771 Graduate Seminar1

ABE 772-772L Similitude2
ABE 773-773L Programming Agricultural System.....3
ABE 787 Research(1-9)
ABE 788 Research Report/Design Paper(1-2)
ABE 791 Independent Study(1-3)
ABE 792 Topics(1-3)
ABE 792L Topics Lab0
ABE 798 Thesis(1-7)
ABE 898D Dissertation PhD(1-12)

ABS (Agriculture and Biological Sciences)

ABS 100 Exploring Ag and the Food System1
 An introduction for students pursuing the 2 and 4 year General Agriculture majors, this course will provide an overview of issues, opportunities, academic and career possibilities for students interested in agriculture.

ABS 203 Global Food Systems ** (G).....3
 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. Notes: ** Course meets IGR #1.

ABS 205 Biotechnology in Agriculture and Medicine.....2
 This course will provide a means for students in various majors to gain an understanding of the rapidly emerging, multidisciplinary research and applications in biotechnology, and to learn of potential career directions and training opportunities in biotechnology-related fields. Course materials and lectures will change each year to keep up with the changing technology. Guest lecturers will provide the best expertise available. Internet assistance is necessary to provide resource materials and new publications. Course will be open to all students.

ABS 210 Introduction to Biorenewable Products and Processing 3
 A survey of biorenewable resources, technologies, and industries. Topics include sources and production of biomass; processing of biomass into fuels and other products; environmental impact; and economic analysis. Cross-Listed: AST 210 Introduction to Biorenewable Products and Processing

ABS 310 Leadership for Families and the Food System **3
 Principles of leadership within the unique contexts of agriculture, biological sciences, family and consumer sciences. Topics covered include definitions and approaches to the study of leadership, leadership styles, gender and ethnic diversity, leadership in groups, ethical issues, mission statements, and emerging leadership issues. Cross-Listed: FCS 310. Notes: ** Course meets IGR #3.

ABS 381 Multicultural Agriculture/Biological Science Experience(2-4)
 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 U.S. 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 482). ABS203 is recommended.

ABS 475-475L Integrated Natural Resource Management and Lab (AW)..... 3

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. Prerequisites: Dependent on major (for Agronomy majors – PS 390). Corequisites: ABS 475L-475.

ABS 482-582 International Experience **(G).....(2-4)

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 482). ABS 203 is recommended. Notes: ** Course meets IGR #1.

ABS 492-592 Topics(1-4)

ABS 704 Plant Systems.....(1-10)

ABS 705 Research Methodology(1-10)
 Prerequisites: Instructor Consent.

ABS 792 Topics.....(1-6)

ACCT (Accounting)

ACCT 210 Principles of Accounting I (COM)3

A study of fundamental accounting principles and procedures such as journalizing, posting, preparation of financial statements, and other selected topics. Accounting is emphasized as a service activity designed to provide the information about economic entities that is necessary for making sound decisions.

ACCT 211 Principles of Accounting II (COM).....3

A continuation of ACCT-210 with emphasis on partnership and corporate structures, management decision-making, cost control, and other selected topics. Prerequisites: ACCT 210.

ACCT 310 Intermediate Accounting I (COM)3

Involves the intensive study of financial accounting standards, both in theory and practice, as they relate to the preparation and analysis of financial statements. Accounting problems and their impact on the financial statements are addressed in regard to current assets, fixed assets, intangible assets, liabilities, and other selected topics. Prerequisites: ACCT 211.

ACCT 311 Intermediate Accounting II (COM)..... 3

Provides an intensive study of accounting standards, both in theory and practice, as they relate to the preparation and analysis of financial statements. Accounting problems and their impact on the financial statements are addressed in regard to liabilities, investments, stockholders' equity, leases, pensions, tax allocation and other selected topics. Prerequisites: ACCT 310 or consent of instructor.

ACCT 320 Cost Accounting (COM).....3

The study of principles and techniques for accumulating, reporting, and analyzing cost information for decision-making and external reporting. The use of cost accounting systems for planning and controlling cost responsibility centers is emphasized. Consideration is given to the appropriate use of various cost accounting methods such as activity-based

costing, target costing, and just in time management techniques in service and manufacturing industries. Prerequisites: ACCT 211.

ACCT 406-506 Accounting for Entrepreneurs (COM)3

Accounting concepts and practices for entrepreneurs/small business owners. Emphasis given to the use of accounting tools to solve small business problems.

ACCT 430 Income Tax Accounting (COM).....3

Involves the study of Federal Income Tax law as it affects individuals, as well as other selected topics. Prerequisites: ACCT 211.

ACCT 450 Auditing (COM)3

Studies both theory and practice. Topics include audit planning, internal control, audit procedures, audit reports and opinions, materiality, audit risk, evidential matter, as required by generally accepted auditing standards (GAAS), professional ethics, legal responsibilities, and other selected topics. Prerequisites: ACCT 311 or consent of instructor.

ACCT 490 Seminar (COM)3

ACCT 491 Independent Study (COM)..... (1-4)

ACCT 492 Topics (COM).....(1-4)

ACCT 493 Workshop (COM)(1-4)

ACCT 494 Internship (COM).....(1-12)

ACCT 506 Accounting for Entrepreneurs3
 Crosslisted: ACCT 406

ACCT 592 Topics(1-4)

AGEC (Agricultural and Resource Economics)

AGEC 271-271L Farm and Ranch Management and Lab4

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 Prerequisites: One course from MATH except 021, 101, 100T. Corequisites: AGECE 271L-AGEC 271.

AGEC 292 Topics(1-4)

AGEC 352 Agricultural Law.....3

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. Prerequisites: BADM 350, junior standing.

AGEC 354 Agricultural Marketing and Prices.....3

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. Prerequisites: ECON 201 or 202

AGEC 364 Introduction to Cooperatives.....3

This course will address the concepts and business principles of the cooperative form of business. Cooperatives differ from other businesses because they are member-owned and operate for the benefit of members, not investors. The course is designed to provide students an understanding of cooperatives that is legally consistent and realistic.

AGEC 371 Agricultural Business Management.....3
 The course will address the structural, organizational, and functional components of businesses that operate in direct support of commodity production.

AGEC 372 Introduction to Resource and Environmental Economics.....3
 Introduction to environmental economics. The course surveys environmental issues such as pollution and carbon emissions. Cost-benefit analysis of the cleanup of environmental problems is introduced as are net present value metrics. Prerequisites: Econ 101 or Econ 201 or permission. Cross-Listed: ECON 372.

AGEC 421-521 Farming and Food Systems Economics **3
 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. Prerequisites: Senior standing, AGECE 271 or ECON 201. Notes: ** Course meets IGR #1.

AGEC 430/530 Advanced Agricultural Marketing and Prices..... 3
 Economic theory and quantitative techniques used in analysis of agricultural market problems, construction of economic models, statistical estimates of supply and demand, and price forecasting. Prerequisites: AGECE 354 and STAT 281 or consent.

AGEC 454 Economics of Grain and Livestock Marketing.....3
 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. Prerequisites: AGECE 354.

AGEC 471-571 Advanced Farm & Ranch Management.....3
 Leasing arrangements, capital investment, computerized accounting and budgeting. Linear programming as a tool for planning and organizing the farm business. Prerequisites: Senior standing, 271, Econ 301, or consent. Cross-Listed: AGECE 471

AGEC 473-473L Rural Real Estate Appraisal and Lab3
 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. Prerequisites: AGECE 271-271L or PS 213-213L. Corequisites: AGECE 473L-AGECE 473. Cross-Listed: PS 473.

AGEC 478-478L Agricultural Finance and Lab.....3
 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. Prerequisites: AGECE 271, ECON 201, ACCT 210 Corequisites: AGECE 478L-AGECE 478.

AGEC 479 Agricultural Policy (AW) (G)..... 3
 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 agribusiness. Implication of agricultural policy alternatives on people living in rural and urban areas. Prerequisites: ECON 201 and ECON 202.

AGEC 484 Trading in Agricultural Futures and Options.....3
 The course utilizes fundamental and technical analysis techniques to analyze agricultural futures and options. This is a hands-on commodity futures and options trading class. Students are expected to use analysis to generate trades in selected agricultural futures and options. Prerequisites: AGECE 354.

AGEC 491 Independent Study(1-3)

AGEC 492 Topics(1-4)

AGEC 493 Workshop.....(1-3)

AGEC 494 Internship.....1-6

AGEC 498 Undergraduate Research/Scholarship.....(1-4)
 Dual Listed Courses

AGEC 521 Farming & Food Systems Economics3
 Cross-Listed: AGECE 421

AGEC 591 Independent Study(1-3)

AGEC 592 Topics(1-4)

AGEC 593 Workshop.....(1-3)

AGEC 672 Bioenergy and Resource Economics.....3
 Cross-Listed: ECON 672.

AGEC 691 Independent Study(1-3)

AGED (Agricultural Education)

AGED 404 Program Plan in Agricultural Education (AW).....4
 FFA, Adult Education, and supervised occupational experience programs; policy development.

AGED 434 Special Methods in Agricultural Education.....3
 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. Prerequisites: PSII-Professional Semester II; CTE 295, CTE 405, EPSY 302, EDFN 475, SEED 314, SEED 450, AGED 404.

AGED 454-454L Teaching Ag Systems Technology Labs and Lab2
 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. Offered first six weeks of semester. Prerequisites: Senior in Agricultural Education; CTE 295, CTE 405, EPSY 302, EDFN 475, SEED 314, SEED 450, AGED 404 Corequisites: AGED 454L-454.

AGED 475 Supervised Teaching Internship8
 Assigned in the individual student's major, or inappropriate, 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. Prerequisites: Professional Semester I courses, Professional Semester II courses, acceptance and admittance into the Teaching Internship Program; CTE 295, CTE 405, EPSY 302, EDFN 475, SEED 314, SEED 450, AGED 404

AGED 491 Independent Study(1-3)

AGED 494 Internship.....(1-12)

AGED 496 Field Experience.....(1-12)

AGED 497 Cooperative Education(1-12)

AGED 591 Independent Study(1-3)

AGED 690 Seminar(1-2)

AGED 788 Research Problems in Agricultural Education1-2

AHED (Adult Higher Education)

AHED 490 Seminar for Residential Assistants	1-3
To develop and provide the necessary skills for Resident Assistants to handle a variety of diverse responsibilities. RAs assist residents in developing and maintaining an active, cooperative, and student-conducive atmosphere in the residence halls. Resident Assistants also serve as campus resource links between students and other University services.	
AHED 496 Field Experience	(2-5)
AHED 691 Independent Study	(1-3)
AHED 693 Workshop	(1-3)
AHED 711 Assessment and Program Design	3
AHED 720 Principles of Post Secondary Education	3
AHED 755 Principles of College Teaching	3
AHED 772 Administration and Leadership in Student Affairs	3
AHED 788 Research Problems in Adult Education	(1-2)
AHED 790 Seminar	(1-3)
AHED 794 Internship	(1-6)

AIR (Aerospace Studies)

AIR 101-101L The Foundations of the US Air Force and Lab	1
Professional appearance, customs and courtesies, officership/core values, basic communication, officer opportunities/benefits, and Air Force installations. Corequisites: AIR 101L-AIR 101.	
AIR 102-102L The Foundations of the US Air Force and Lab	1
Interpersonal communication, macro U.S. military history, Air Force organizations/chain of command, cadet/officer candidate/officer, oral communication, and group leadership problems. Corequisites: AIR 102L-AIR 102.	
AIR 201-201L The Evolution of USAF Air and Space Power and Lab	1
Air Power from balloons and dirigibles through 1947; Air Force mission, concepts, doctrine and use of air power. Corequisites: AIR 201L-AIR 201.	
AIR 202-202L The Evolution of USAF Air and Space Power and Lab	1
History of air power from 1947 to present. Air Force relief missions and civic action programs in the late 1960's Corequisites: AIR 202L-AIR 202.	
AIR 301-301L Air Force Leadership Studies and Lab	3
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. Corequisites: AIR 301L-AIR 301.	
AIR 302-302L Air Force Leadership Studies and Lab	3
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. Corequisites: AIR 302L-AIR 302.	
AIR 401-401L National Security Affairs/Preparation for Active Duty and Lab	3
The complex interaction between military and civilian society. Theory and workings of National Defense policy. Roles and mission of the Air Force.	

Commissioned military service as a profession. Corequisites: AIR 401L-AIR 401.

AIR 402-402L National Security Affairs/Preparation for Active Duty and Lab	3
Evolution of defense strategy and the methods of managing conflict. Analysis of the system of Military Justice and current issues affecting military professionalism. Corequisites: AIR 402L-AIR 402.	

AIS (American Indian Studies)

AIS 100 Introduction to American Indian Studies	3
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
An introduction to the Lakota language with emphasis on conversation, language structure, and vocabulary. Notes: * Course meets SGR #3 or ** IGR #3.	
AIS 102 Introductory Lakota II * **	4
A continued introduction to the Lakota language with emphasis on basic conversation, language structure, and vocabulary. Prerequisites: AIS 101 or LAKL 101. Notes: * Course meets SGR #3 or ** IGR #3.	
AIS 201 Intermediate Lakota I	3
A continuation of the first-year course, with emphasis on reading, composition, and vocabulary building. Prerequisites: AIS 101 and 102 or LAKL 101 and 102.	
AIS 202 Intermediate Lakota II	3
A continuation of intermediate Lakota with emphasis on reading, composition, vocabulary building and the oral tradition. Prerequisites: AIS 101 and 102 or LAKL 101 and 102.	
AIS 238 Native American Religions	3
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. Cross-Listed: REL 238.	
AIS 256 Literature of American West	3
A study of the literature produced in our region, centered on the Great Plains, including that of Native Americans, both oral and written; of pioneers, immigrants; and farmers; Western literature, and current writers. Prerequisites: ENGL 101.	
AIS 368 History and Culture of the American Indian	3
Presents history and culture of North American Indians from before white contact to the present, emphasizing regional Dakota cultures. Cross-Listed: HIST 368.	
AIS 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. Cross-Listed: ANTH 410.	
AIS 417 American Indian Government and Politics	3
An in-depth investigation of federal, state, and tribal laws, and the historical development and status of treaties, legislation, court decisions, and tribal governments.	

AIS 421 Indians of North America3
 Provides prospective teachers and those interested in Indian people with a basic knowledge of Indian heritage and culture. Emphasis on the Dakota Indians. (Fulfills Teacher Ed. requirement.) Cross-Listed: ANTH 421/521.

AIS 445 American Indian Literature3
 Concentration of myths and legends of major language groups, particularly the Siouan. Cross-Listed: ENGL 351.

AIS 447 American Indian Literature of Present3
 Twentieth-century autobiography, fiction, and poetry by Native American authors. Cross-Listed: ENGL 352.

AIS 467 Geography of the American Indian
 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. Cross-Listed: GEOG 467.

AIS 491 Independent Study1-3

AIS 492 Topics 3

AIS 496 Field Experience1-12

AM (Apparel Merchandising)

AM 172 Introduction to Apparel Merchandising2
 Introduction to basic concepts for success as an apparel merchandising major. Topics include mass media, research, teams, and careers in apparel merchandising.

AM 231-231L Ready-To-Wear Analysis and Lab3
 Analysis of construction, fabric, fit, defects, and pricing of ready-to-wear. Product knowledge, including garment classifications. Examination of consumer attitudes toward product quality. Corequisites: AM 231L-AM 231.

AM 242-242L Textiles I and Lab.....3
 An investigation of fiber, yarn, fabrication, finishes and their interrelationship to specific end use and consumer satisfaction. Prerequisites: Sophomore standing. Corequisites: AM 242L-AM 242

AM 274-274L Fashion Promotion and Lab.....3
 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 special events. Corequisites: AM 274L-AM 274.

AM 292 Topics.....(1-3)

AM 315-315L Apparel Design and Lab3
 Course develops aesthetic judgment and design literacy of students. Fashion design for various levels of the industry including protective and functional clothing markets are studied. Prerequisites: AM 172. Corequisites: AM 315L-AM 315.

AM 331-331L Aesthetics of Dress and Lab3
 Students apply elements and principles of design to the study of dress in order to understand its aesthetic qualities across various cultures. Professional relevance is addressed and applications to the design, manufacture, and merchandising of apparel products are included. Corequisites: AM 331L-AM 331.

AM 352 History of Dress in the Western World.....3
 Development of styles of dress from ancient times; social significance, symbolic meaning, and functions are investigated. The Snellman Hsia Collection serves as primary source material.

AM 372 Trending and Buying3
 Analysis of trends for the purpose of forecasting merchandise procurement. Development of merchandise lines within the forecast model. Study the buying process.

AM 381 Professional Behavior at Work.....3
 Social skills and professional conduct in a global workplace. Emphasis will be on interpersonal communication and cross-cultural interactions appropriate in the work environment.

AM 453 Socio-Psychological Aspects of Dress3
 Examination of clothing behavior from sociological, psychological and cultural perspectives. Cross-Listed: WMST 453.

AM 462 Retail Management.....3
 Examine and analyze the development and strategies of the continually changing structures within the retail community considering career opportunities, consumer demand and the competitive nature of retailing within the global economy.

AM 472-472L Merchandising and Lab3
 Analysis of merchandising and marketing strategies for business profitability, sustainability and success. Emphasis on long term forecasting and planning; exploration of computer applications. Corequisites: AM 472L-AM 472.

AM 473 Global Sourcing.....3
 Examine the process of globalization within the fiber, textile, apparel and retail (FTAR) complex. Analyze size, scope and components. Consider the role politics and social responsibilities have within global trading regions and the FTAR complex.

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. Prerequisites: Consent of department.

AM 482 Trends Analysis (AW).....3
 Study of broad societal trends as they relate to retailing and their relationship and effect on social, political, economic and lifestyle patterns. Experience with trend analysis. Prerequisites: Junior or Senior standing.

AM 487 Workplace Strategies..... 2
 Discussion of professional practices and issues. Experience in goal setting, reporting and evaluation, and research. Organization and preparation of professional documents. Prerequisites: AM 462

AM 490 Seminar3
 Prerequisites: AM 495.

AM 491 Independent Study(1-3)

AM 492 Topics(1-3)
 AM 495 Practicum (1-7)
 Prerequisites: AM 487.

AM 498 Undergraduate Research/Scholarship.....(1-3)

ANAT (Anatomy)

ANAT 142 Anatomy3
 An introductory study of the structure of the human body. This course is designed for students interested in health related careers.

ANTH (Anthropology)

- ANTH 210 Cultural Anthropology * ** (COM).....3**
 Introduces the nature of human culture as an adaptive ecological and evolutionary system, emphasizing basic anthropological concepts, principles and problems. Draws data from both traditional and industrial cultures to cover such concepts as values and beliefs, social organization, economic and political order, science, technology, and aesthetic expression. Notes: * Course meets SGR #3 or ** IGR #3.
- ANTH 220 Physical Anthropology * ** (COM).....3**
 Focuses upon the interactive process between human biology and human culture, drawing relationships among such concepts as human evolution, human heredity, human biological diversity, and biological micro-adaptations. Notes: * Course meets SGR #3 or ** IGR #3
- 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 Cross-Listed: AIS 421 and INED 411. Notes: ** Course meets IGR #3.
- ANTH 491-591 Independent Study (COM)(1-3)**
- ANTH 492-592 Topics(1-3)**
- ANTH 494 Internship(1-12)**
- ANTH 496 Field Experience(1-12)**

ARAB (Arabic)

- ARAB 101 Introductory Arabic I * ** (COM) (G)4**
 Introduces the fundamental elements of Arabic writing and vocabulary and Muslim culture. Emphasizes sound/symbol relationships. Class work may be supplemented with required aural/oral practice outside of class. Notes: * Course meets SGR #4 or ** IGR #3
- ARAB 102 Introductory Arabic II * ** (COM) (G)4**
 Continues with the introduction of the fundamental elements of Arabic writing and vocabulary and Muslim culture. Emphasizes sound/symbol relationships. Class work may be supplemented with required aural/oral practice outside of class. Prerequisites: ARAB 101. Notes: * Course meets SGR #4 or ** IGR #3

ARCH (Architecture)

- ARCH 101 Introduction to Architecture3**
 An introduction to the architecture profession, architectural education and training, with an emphasis on current issues impacting architecture.

ART (Art)

- ART 110 First Review.....0.5**
 An orientation course and an assessment of basic knowledge of Visual Arts terminology and theory, including visual elements and design principles. Required of all students entering into Visual Arts or Graphic Design majors in their first semester. Students must register, attend, and complete the First Review. Completion of the course will be a satisfactory (S) or unsatisfactory (U) which is not calculated into the student's GPA. If the work is

unsatisfactory, ART 110 must be repeated before taking ART 200 Portfolio Review Jury on Student Progress. Notes: The course will be offered every semester.

- ART 110 First Review0.5**
 U) which is not calculated into the student's GPA. If the work is unsatisfactory, ART 110 must be repeated before taking ART 200 Portfolio Review Jury on Student Progress.
- ART 111 Drawing I * ** (COM).....3**
 Introduces various drawing concepts, media, and processes developing perceptual and technical skills related to accurate observing and drawing. Notes: * Course meets SGR #4 or ** IGR #3
- ART 112 Drawing II * ** (COM).....3**
 Emphasizes the continuing development of essential drawing skills and perceptual abilities as drawing concepts, compositional complexity, and creativity gain importance. Prerequisites: ART 111. Notes: * Course meets SGR #4 or ** IGR #3
- ART 121 Design I 2D * ** (COM).....3**
 Emphasizes the organization of visual elements and principles while exploring creative thought processes through art theory, concepts, material, and techniques. Notes: * Course meets SGR #4 or ** IGR #3
- ART 122 Design II Color (COM)3**
 Introduction to color theory as it applies to basic 2D and 3D design principles. Prerequisites: ART 121 or consent of instructor.
- ART 123 Three Dimensional Design * ** (COM).....3**
 3-D visual problems solved through the organization of design elements, utilizing three dimensional design language revealed through its history, theory, aesthetics and materials. Notes: * Course meets SGR #4 or ** IGR #3
- ART 200 Portfolio Review Jury on Student Progress0.5**
 The faculty jury will assess how the student meets the standard of progress in the department, awarding a satisfactory (S) or unsatisfactory (U), which is not calculated into a student's GPA. The student must register in the course after completing 15 hours of coursework in the Visual Arts Core (ART 111, ART 112, ART 121, ART 122, ART 123, and ARTH 100). This course for sophomore-level majors must be completed before advancing to the Junior level of coursework in the student's major. The course will be offered every semester. Prerequisites: ART 110.
- ART 211 Drawing III-Figurative ** (COM).....3**
 Figurative drawing studied, emphasizing the development of individual ideas and approaches to various drawing media, including the use of multimedia. Prerequisites: ART 111 or consent of instructor. Notes: ** Course meets IGR #3.
- ART 231 Painting I ** (COM).....3**
 Initial approach to painting, employing history, materials, techniques and process in various media as student work with concepts, objects or models Prerequisites: ART 111 or consent of instructor. Notes: ** Course meets IGR #3.
- ART 241 Sculpture I ** (COM).....3**
 Introduces the development of sculptural concepts and objects through history, techniques and processes using basic three-dimensional materials, including clay, plaster, stone, metals, wood, and synthetic media. Prerequisites: ART 123 Notes: ** Course meets IGR #3.
- ART 251 Ceramics I ** (COM).....3**
 Introduces ceramic art through its history and basic methods of forming, decorating, glazing, and firing pottery forms, including glaze chemistry and kiln construction. Notes: ** Course meets IGR #3.

ART 281 Printmaking I ** (COM).....3
 Introduces the history and techniques of relief and intaglio processes, lithography (section 1) and screen printing (section 2) as a primary means of expression. Notes: ** Course meets IGR #3.

ART 311 Figurative Drawing-Advanced3
 The studio course develops and expands live figure drawing practices using traditional methods and mixed media applications, and requires the creation of a portfolio of outside works that complements class-time assignments. Prerequisites: ART 112 Drawing II, ART 122 Color, and ART 211 Drawing III--Figurative. Notes: Course can be repeated for additional credit.

ART 331 Painting II (COM).....3
 Emphasizes painting based on complex combinations of concepts, materials, techniques and processes using objects, models, and individual creativity. Prerequisites: ART 231.

ART 332 Painting-Intermediate Level.....3
 Continuation of Painting II. Emphasis on composition and expression. Prerequisites: ART 331.

ART 341 Sculpture II (COM)3
 Continues Sculpture I as students explore individual concepts through various techniques and materials. Prerequisites: ART 241.

ART 342 Sculpture III (COM).....3
 Continues Sculpture II as students further explore individual concepts through various techniques and materials. Prerequisites: ART 341.

ART 351 Ceramics II (COM).....3
 Continues Ceramics I as students explore clay through individually creative application of concepts, techniques and glazing and firing methods. Prerequisites: ART 251.

ART 352 Ceramics-Intermediate Level3
 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. Prerequisites: ART 351 (minimum grade of “C”, or consent of instructor).

ART 381 Printmaking II (COM)3
 Continues Printmaking I as students further individualized their application of printing processes and media Prerequisites: ART 281 or consent of instructor.

ART 382 Printmaking-Intermediate Level3
 Continuation of Printmaking II. Creative use of advanced printmaking techniques and processes in relief, intaglio, and serigraphy. Prerequisites: ART 381.

ART 391 Independent Study(1-3)

ART 400 Senior Review0.5
 A course for seniors in the department. Students must register, attend, and complete the Senior Review in order to graduate with a degree in Visual Arts or Graphic Design. The faculty will assess how the student’s portfolio or exhibition meets the standards of the department major; and they will award either a satisfactory (S) or unsatisfactory (U) which is not calculated into the student’s GPA. The review must be repeated until it is satisfactorily completed before graduation in the department major. Prerequisites: Art 200 and senior standing in the major.

ART 431 Painting III (COM).....3
 Continues Painting II emphasizing concepts in art history, art criticism, and issues in contemporary art as students are encouraged to use self-directed and experimental approaches in developing subject matter and content. Prerequisites: ART 331 or consent of instructor.

ART 441 Sculpture-Advanced.....(3-9)
 Continuation of Sculpture III. Advanced exploration of sculpture concepts. Prerequisites: ART 342. Repeatable up to 9 hours.

ART 451 Ceramics-Advanced.....(3-9)
 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. Prerequisites: ART 352, minimum grade of “C” in ART 352, or consent of instructor. Notes: Repeatable up to 9 hours.

ART 481 Printmaking-Advanced.....(3-9)
 A continuation of Printmaking III. Prerequisites: ART 382. Repeatable up to 9 hours.

ART 482 Travel Studies.....(1-5)
 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 of other institutions. Students will participate in hand-on activities, and design educational activities for presentation at selected locations. Includes pre-travel orientation, post-travel self-evaluation and a written report and/or exhibition or portfolio of art/design work.

ART 491 Independent Study (COM).....(1-12)

ART 492 Topics (COM)(1-9)

ART 494 Internship (COM)(1-16)

ART 592 Topics.....1-9

ARTD (Art Design)

ARTD 201 Graphic Design I.....3
 An introduction to graphic design stressing theory and creative development.

ARTD 202 Computer Graphics I3
 A non-programming introduction to drawing, photo-imaging and page layout design software emphasizing computer-generated design projects.

ARTD 203 Introduction to Classical Animation I3
 This studio course focuses on: classical studio practices in cel animation and traditional hand-drawn techniques, drawing the human figure in motion, and a wide range of time-based theory and contemporary applications using both analog and digital methods of image capture and editing. Prerequisites: ART 111 Drawing I or concurrent.

ARTD 301 Graphic Design II3
 An introduction to typographic theory and practice for graphic designers. Emphasis on historical and contemporary typographic usage; hand and computer-generated projects. Recommend concurrent enrollment in ARTD 302. Prerequisites: ARTD 201.

ARTD 302 Computer Graphics II.....3
 A non-programming intermediate computer graphics course focusing on digital-imaging and page-layout applications for graphic designers. Recommend concurrent enrollment in ARTD301. Prerequisites: ARTD 201, ARTD 202.

ARTD 303 Introduction to Classical Animation II.....3
 This studio course expands classical studio practices in cel animation, in both traditionally and digitally drawn techniques, and studies the human figure in motion, and a wide range of time-based theory and contemporary applications using digital methods of image creation and capture, compositing and editing. Prerequisites: ARTD 203 or equivalent, ART 112 Drawing II or concurrent enrollment.

ARTD 351 Visual Communication I.....3
 An intermediate Visual Communication course emphasizing theory and practice that explores graphic design and digital prepress. Prerequisites: ARTD 301, ARTD 302. Corequisites: ARTD 352.

ARTD 352 Design Media I.....3
 Introduction to animation and web applications. Prerequisites: ARTD 301, ARTD 302 Corequisites: ARTD 351.

ARTD 403 Intermediate Animation.....3
 The studio course develops and expands practices in cel-style animation, stressing digitally drawn techniques and increases the study of time-based theory and contemporary applications. Using digital methods of image creation and capture, compositing and editing, students produce an original short animation from concept to completion. Prerequisites: ARTD 303 Classical Animation II or equivalent, ART 112 Drawing II, ART 122 Color, and ART 211 Drawing III--Figurative. Notes: Course can be repeated for additional credit.

ARTD 451 Visual Communication II: Senior Portfolio.....3
 An advanced Visual Communication course emphasizing portfolio preparation and corporate identity study. Prerequisites: ARTD 351, ARTD 352 Corequisites: ARTD 452.

ARTD 452 Design Media II.....3
 A continuation of Design Media I with emphasis on completed multimedia and web page projects as portfolio works. Prerequisites: ARTD 351, ARTD 352. Corequisites: ARTD 451.

ARTE (Art Education)

ARTE 414 K-12 Art Methods (COM).....(2-3)
 Students develop an understanding of the tools of inquiry of K-12 art; the ability to design, deliver and evaluate a variety of instructional strategies and processes that incorporate learning resources, materials, technologies, and state and national curriculum standards appropriate to K-12 art; the ability to assess student learning in K-12 art; and to apply this knowledge, skills, and attitudes to real life situations and experiences.

ARTE 491-591 Independent Study.....(1-3)

ARTH (Art History)

ARTH 100 Art Appreciation * ** (COM) (G).....3
 Explores the nature of art in various aesthetic, formal, and psychological dimensions, involving analysis of art objects for understanding, enjoyment, and life enhancement. Notes: * Course meets SGR #4 or ** IGR #3

ARTH 211 History of World Art I * ** (COM) (G).....3
 Art and architecture in the historical and contextual development of the role of visual arts including crafts, drawing, painting, sculptures and architecture, in the historical and cultural development of world civilizations from prehistory through the 14th century. Prerequisites: ARTH 100. Notes: * Course meets SGR #4 or ** IGR #3 .

ARTH 212 History of World Art II * ** (COM) (G).....3
 Art and architecture in the historical and contextual development. The role of visual art; including crafts, drawing, painting, sculpture, and architecture; in the historical and cultural development of world civilization from the renaissance through the 20th century. Prerequisites: ARTH 100. Notes: * Course meets SGR #4 or ** IGR #3

ARTH 310 History of United States Art and Architecture (AW)3
 From colonial times to present. Prerequisites: ARTH 212

ARTH 320 Modern Art and Architecture Survey (AW)3
 Survey of Modern Art and Architecture from its beginnings in the 19th century. Emphasis on international studies and cultural diversity. Prerequisites: ARTH 212.

ARTH 490 Seminar (COM) (AW)(1-3)

ARTH 492 Topics (COM)(1-6)

AS (Animal Science)

AS 100 Opportunities in Animal and Range Sciences.....1
 An overview of careers and opportunities in the Animal and Range Sciences. Cross-Listed: RANG 100.

AS 101-101L Introduction to Animal Science and Lab3
 Adaptation, breeding, feeding, marketing, behavior, classification, growth, genetics, reproduction and animal health as they apply to farm animals. Corequisites: AS 101L-AS 101.

AS 104-104L Introduction to Horse Management and Lab.....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.

Laboratory sessions will include involvement with the SDSU Horse Unit's activities and field trips to nearby facilities.

Corequisites: AS 104L-AS 104.

AS 105-105L Western Horsemanship and Lab1
 Breeds of horses, gaits, grooming, equipment, diets; basic instruction with suitable equipment. Corequisites: AS 105L-AS 105

AS 106-106L English Horsemanship and Lab.....1
 Breeds of horses, gaits, grooming, equipment, diets; basic instruction with suitable equipment. Corequisites: AS 106L-AS 106

AS 110 Equine Yearling Halter Training1
 Practicum in techniques and strategies for handling and training a yearling horse. Students will learn the behavior of young horses and the appropriate steps necessary to teach a young horse to accept a halter and grooming, to lead properly, stand to be tied, load into a trailer and begin ground training for the future saddle-breaking process. Prerequisites: AS 104.

AS 161 Companion Animals2
 Introduction to the nutrition, health, care and management of companion animals. Feeding and care of dogs and cats will be the primary focus.

AS 200 Introduction to Meat Judging.....1-2
 Identifying, judging and grading of carcasses and wholesale cuts; training in writing reasons. Prerequisites: Must have completed 12 credits.

AS 201 Introduction to Livestock Judging.....1-2
 Livestock selection criteria and terminology for beef, sheep, swine, and horse; performance selection parameters and EPD's will be discussed. Prerequisites: AS 101 and sophomore standing.

AS 210 Equine Two-Year-Old Saddle Training2
 Practicum on proper progression and safety of teaching a horse to accept a saddle, rider, bridle restraint and reining principles. Prerequisites: AS 104 and AS 110.

AS 213-213L Equine Health and Diseases and Lab.....3
 Study of equine vital signs, first aid, and wound care, as well as the function of the integument and immune systems. Communicable and common diseases and their prevention will be discussed, with emphasis on colic and laminitis. Corequisites: AS 213L-AS 213.

AS 220 Equine Nutrition.....3
 Basic principles in equine nutrition focusing on how to best feed the horse to meet its nutritional needs. Topics include the gastrointestinal tract, nutrient requirements, common feedstuffs, diet selection and evaluation, assessment of nutritional status, nutritional imbalances and toxicities. Prerequisites: AS 104.

AS 233-233L Applied Animal Nutrition and Lab.....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. Prerequisites: AS 101 or DS 130 Corequisites: AS 233L-AS 233.

AS 241-241L Introduction to Meat Science and Lab.....3
 Survey of meat science and industry. Meat as a food, structure of muscle, conversion of muscle to meat, food safety, meat quality, color, cooking, grading, inspection, curing, and processing. Hands-on carcass fabrication and meat processing. Corequisites: AS 241L-AS 241.

AS 285-285L Livestock Evaluation and Marketing and Lab.....4
 Live and carcass evaluation of market animals. Methods of marketing and pricing livestock and carcasses. Prerequisites: AS 101. Corequisites: AS 285L-AS 285.

AS 291 Independent Study.....(1-12)

AS 322 Advanced Livestock Evaluation.....2
 Advanced study of live and carcass evaluation of market animals. Type studies and selection for improvement in beef, sheep, and swine. Prerequisites: AS 200, AS 285.

AS 323 Advanced Animal Nutrition.....3
 Functions of various nutrients; digestion and metabolism of nutrients by different animal species. Prerequisites: AS 233.

AS 332 Livestock Breeding and Genetics.....4
 Application of genetics to improvement of farm animals. Emphasis on occurrence, origin, use and control of variation in economically important traits of farm livestock. Prerequisites: AS 101; and either BIOL 103 or BIOL 153.

AS 345-345L Value-Added Meat Products and Lab.....3
 Study the science, art, and economics of processed meats. Investigate methods to add value to meat and meat products, including hands-on processing, new product development, and industry tours. Prerequisites: AS 241. Corequisites: AS 345L-AS 345.

AS 350 Meat Product Safety and HACCP.....3
 Study of meat-borne pathogens and methods of control. Science and practical aspects of food safety in meat production. Seven principles of HACCP will be investigated and each student will receive HACCP Certification from the International HACCP Alliance.

AS 365-365L Horse Production and Lab.....3
 Feeding, breeding and management principles for horses. Prerequisites: AS 101 or AS 104. Corequisites: AS 365L-AS 365.

AS 370 Stable Management.....2
 This course will address skills needed to manage an equine facility for training, boarding, or reproductive purposes. Topics to include basic business

concepts, such as advertising, contracts, and liability, facility design and maintenance, and practical equine skills pertaining to this type of enterprise Prerequisites: AS 104 and AS 105.

AS 400 Judging Team.....1-2
 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. Prerequisites: 205 or 215 or consent of instructor.

AS 420-420L Equine Reproductive Management and Lab.....3
 Study of the reproductive systems of the mare and stallion, including detailed anatomy and physiology, and behavior of each gender. Practicums at the SDSU Horse Unit include foaling procedures, stallion handling and semen evaluation, mare handling, breeding preparation, cycle monitoring and other advanced reproductive techniques. Prerequisites: AS 220 or AS 365. Corequisites: AS 420L-AS 420.

AS 433-433L Livestock Reproduction and Lab.....3
 Basic physiological processes of reproduction in domestic animals, factors affecting and methods of improving reproductive efficiency. Prerequisites: VET 223 Corequisites: AS 433L-AS 433.

AS 441 Advanced Meat Science and Lab.....3
 In-depth study of muscle anatomy and physiology, postmortem metabolism, rigor mortis, meat proteins, meat quality, and meat tenderness. Prerequisites: AS 241.

AS 449-549 Equine Issues and Leadership.....3
 Students will be faced with professional development, service, and tackling major issues within the equine industry. A heavy emphasis on detail, fact finding, writing, and public speaking will prepare these students to serve as future leaders in our industry.

AS 463-563 Agricultural Waste Management.....3
 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 Prerequisites: Instructor consent. Cross-Listed: AST 463-563.

AS 474-474L Cow/Calf Management and Lab.....3
 Feeding, breeding and management principles of beef cattle production under farm and ranch conditions Prerequisites: AS 101, AS 233. Corequisites: AS 474L-AS 474.

AS 475 Feedlot Operations and Management.....3
 Management principles of feedlot productions. Student participation in management techniques of feedlot operations. Feeding, health and personnel management issues will be discussed. Prerequisites: AS 233.

AS 477-477L Sheep and Wool Production and Lab.....3
 Feeding, breeding and management principles for maximum production of meat and wool in farm and range flocks. Prerequisites: AS 101, AS 233. Corequisites: AS 477L-AS 477.

AS 478-478L Swine Production and Lab.....3
 Feeding, breeding and management principles for swine production. Breeds, production trends and equipment. Student participation in management techniques. Prerequisites: AS 101, AS 233. Corequisites: AS 478L-AS 478.

AS 489 Current Issues in Animal and Range Sciences (AW).....2
 Senior capstone course requiring students to conduct independent research of the scientific literature on a current issue in the animal and/or range

science field, formulate a position based upon the current science, and communicate this position via written and oral presentations. Cross-Listed: RANG 489.

AS 491-591 Independent Study(1-3)
AS 492-592 Topics1-6
AS 494 Internship(1-12)
AS 497 Cooperative Education.....(1-12)
AS 541 Advanced Meat Science and Lab3
 Prerequisites: AS 241.
AS 563 Agricultural Waste Management.....3
 Cross-Listed: AS 463
AS 591 Independent Study1-3
 Cross-Listed: AS 491
AS 592 Topics1-6
 Cross-Listed: AS 492
AS 640 Metabolism3
AS 711 Ruminology3
AS 712 Ruminant Nutrition.....3
AS 730 Endocrinology3
AS 732 Advanced Physiology of Reproduction3
AS 733 Vitamins and Minerals3
AS 734 Protein and Energy Nutrition.....3
AS 736 Monogastric Nutrition.....3
AS 750 Animal Growth and Development.....3
AS 753 Research Topics in Meat Science.....3
 Prerequisites: AS 241.
AS 790 Seminar.....1
AS 798 Thesis.....(1-7)
AS 898D Dissertation-PhD.....(1-12)

The class will be team taught by faculty from environmental management, civil and environmental engineering, agricultural and biosystems engineering, and agricultural systems technology programs. The course will teach the fundamental physical, biological, and chemical principles of environmental processes. The course will also explore the impact of humans and human activity on ecosystems in the environment. Prerequisites: CHEM 106 or CHEM 112.

AST 273-273L Microcomputer Applications in Agriculture and Lab3
 Application of microcomputers for solving production agriculture problems. Development and application of agricultural software, data management for production agriculture applications and processes. Corequisites: AST 273L-273.

AST 298 Undergraduate Research/Scholarship(1-3)

AST 303-303L Design Management Experience and Lab.....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. Prerequisites: GE 121, GE 123. Corequisites: AST 303L-303.

AST 313-313L Farm Machinery Systems Management and Lab.....3
 Farm machine selection and operation (including power requirements) tillage, spraying, planting, harvesting, storage, and ergonomics. Prerequisites: PHYS 101 or PHYS 111 Corequisites: AST 313L-313.

AST 333-333L Soil and Water Mechanics ** and Lab3
 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. Corequisites: AST 333L-333. Notes: ** Course meets IGR #1.

AST 342-342L Applied Electricity and Lab3
 Basic wiring, electrical circuits, controls, lighting, electric motor selection and operation. National Electric Code covering residential, farm and light industrial applications. Corequisites: AST 342L-342.

AST 353-353L Physical Climatology and Meteorology ** and Lab..... 3
 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. Corequisites: ABE 353L-353. Notes: ** Course meets IGR #1.

AST 390 Seminar1

AST 412-412L/512-512L Fluid Power Technology and Lab3
 Basic fluid mechanics, pneumatic, hydraulics, control systems and common industrial circuits. Corequisites: AST 412L-412/512L-512. Cross-Listed: MNET 350 Fluid Power Technology.

AST 422-422L/522-522L Environmental Control in Structures and Lab.....2
 Study of heat and moisture balance, gases, dust, and odors. Selection and design of fans, ducts, diffusers and efficient ventilation patterns. Corequisites: AST 422L-422/522L-522.

AST 423-423L Rural Structures and Lab3
 Stud-frame and post-frame design specifications and techniques. Snow and wind loads, truss and header design, mechanical properties of lumber and composite wood materials, and concrete reinforcement. Insulation, energy use, psychometrics and environmental control systems. Planning beef, dairy and swine livestock systems. Corequisites: AST 423L-423.

AST (Agricultural Systems Technology)

AST 202-202L Construction Technology and Materials and Lab2
 Wood and concrete building materials; efficient construction procedures; hand tools, portable and stationary power tools; safe working practices. Corequisites: AST 202L-202.

AST 210 Introduction to Biorenewable Products and Processing3
 A survey of biorenewable resources, technologies, and industries. Topics include sources and production of biomass; processing of biomass into fuels and other products; environmental impact; and economic analysis. Cross-Listed: ABS 210 Introduction to Biorenewable Products and Processing

AST 213-213L Ag, Industrial and Outdoor Power and Lab.....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. Corequisites: AST 213L-213.

AST 225 Principles of Environmental Science and Engineering3
 Introduction to the basic principles of environmental management, environmental science and engineering, and natural resources engineering.

AST 426-426L Emerging Technologies in Agriculture and Lab3
 Application of recently introduced technology to agricultural production. The Global Positioning System, plus sensors for yield, quality, soil and crop properties as applied to crop production. GIS and remote sensing fundamentals for use in agriculture. Controls for variable rate application and automatic control, with communications networks for off-road equipment.

AST 434-434L Landscape Irrigation and Lab.....3
 Design and management of landscape, turf, and golf irrigation systems. Characteristics of uniform and efficient irrigation systems. Estimating cost of installation and operation. Responsible resource utilization, conservation, and protection. Prerequisites: MATH 102 or 115 or 121 or 123 Corequisites: AST 434L-434.

AST 443-443L Food Processing and Engineering Fundamentals and Lab3
 Mechanics, refrigeration, heat transfer, instrumentation, and equipment operation as applied to materials, handling, storing, preserving, packaging and processing agricultural products. Corequisites: AST 443L-443.

AST 452-452L Teaching Agricultural Systems Technology Labs and Lab2
 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. Prerequisites: AST 202. Corequisites: AST 452L-452.

AST 463/563 Agricultural Waste Management ** (AW).....3
 Understand agricultural or biological wastes. Develop an understanding of regulatory requirements and best management practices that advocate responsible environmental stewardship. Topics include production, collection, handling, treating, and reusing agricultural and biological wastes. Course will emphasize written and oral reports. Prerequisites: PS 213, PHYS 101 or 111, or Instructor consent. Cross-Listed: AS 463-563. Notes: ** Course meets IGR #1.

AST 491 Independent Study(1-3)

AST 492 Topics.....(1-4)

AST 492L Topics Lab0

AST 494 Internship.....(1-12)

AST 496 Field Experience.....(1-12)

AST 497 Cooperative Education(1-12)

AST 498 Undergraduate Research/Scholarship(1-3)
 Dual Listed Courses

AST 791 Independent Study(1-3)

AST 792 Topics.....(1-4)

AT (Athletic Training)

AAT 164 Introduction to Athletic Training (COM).....2
 A basic introductory course designed to acquaint students interested in athletic training with all aspects of the profession.

AT 371 Athletic Training Clinical Experience I.....2
 Clinical application of course presented in AT 454-554. This course will enable the athletic training student to achieve an appropriate level of skill competency related to each area taught in AT 454-554 and according to the

requirements established by the National Athletic Trainers' Association. Prerequisites: Permission.

AT 372 Athletic Training Clinical Experience II2
 Clinical application of course content presented in AT 456-556. This course will enable the athletic training student 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. Instructor's consent required.

AT 373 Athletic Training Clinical Experience III.....2
 Clinical application of course content presented in AT 474-574. This course will enable the athletic training student to achieve an appropriate level of skill competency related to athletic rehabilitation according to the requirements established by the National Athletic Trainers' Association. Instructor's consent required. Prerequisites: Permission.

AT 374 Athletic Training Clinical Experience IV2
 Clinical application of course content presented in AT 464-564. This course will enable the athletic training student to achieve an appropriate level of skill competency related to therapeutic modalities and according to the requirements established by the National Athletic Trainers' Association.

AT 441-541 Athletic Training Techniques I3
 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 441-541 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) Prerequisites: Permission.

AT 442-542 Athletic Training Techniques II.....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. Prerequisites: Permission.

AT 443-543 Athletic Training Techniques III.....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 443-543 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. Prerequisites: AT 442, permission.

AT 444-544 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. Prerequisites: Permission.

AT 454-554 Athletic Injury Assessment-Lower Extremity2
 This course is designed to have the athletic training student 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 456-556 Athletic Injury Assessment-Upper Extremity2
This course is designed to have the athletic training student 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 464-564 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 Clinical Experience.....1
This course is designed to meet the clinical experience competencies required during fall 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 S/U. Prerequisites: Senior status and consent.

AT 474-574 Rehabilitation of Athletic Injuries (AW)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. Prerequisites: Permission.

AT 490 Seminar2

AVIA (Aviation Education)

AVIA 101 Introduction to General Aviation.....1
Overview of the general aviation industry. This course provides an awareness of the magnitude of aviation activity not involved in commercial air carrier operations. The student will discover a multitude of career opportunities and recognize the role general aviation holds in support of the nation's commerce and air transportation. The student will study the evolution of the industry and recognize general economic, social and political factors affecting the future of aviation activity.

AVIA 150-150L Introduction to Aviation Meteorology and Lab3
This course is an introduction to Meteorology and forecasting. The major focus of this course is to understand public and aviation weather observations and forecasts. Topics covered include understanding the global energy balance and structure of the atmosphere as a background to explain seasons and weather. Air masses and frontal systems, and weather phenomena such as thunderstorms, icing, tornadoes, and tropical systems are related to forecasting. Corequisites: AVIA 150L-150.

AVIA 189 Airframe & Powerplant Course1-40
The Airframe & Powerplant Course is a block of up to 40 credits awarded to students enrolling in the Aviation Maintenance Management specialization who have completed a Federal Aviation Administration (FAA) approved airframe & powerplant program. Students will be required to produce a FAA airframe & powerplant certificate as proof of successful completion. Notes: These credits will only apply to the aviation maintenance management specialization.

AVIA 200 Aviation Safety.....3
This course will introduce aviation safety principles as important aspects of air transportation. Topics will include regulatory issues, means of measuring air transportation safety, risk assessment, safety data analysis, use of technology in aviation safety, accident investigation, National Transportation Safety Board oversight of aviation safety, and other appropriate issues as arise.

AVIA 201 Aviation Weather3
This course is a study of the basic components of the earth's atmosphere and provides a basic foundation in the meteorological and environmental factors that influence the formation of the various weather patterns found in near and upper atmospheric levels over the continental United States and the Northern Hemisphere. Included in the course will be discussion on how weather influences the basic aerodynamics of an aircraft in-flight and the basic pilot-static instrument system. This course is intended for students who plan a career as professional pilots or a career in aviation operations or for an elective. Prerequisites: AVIA 150.

AVIA 250 Advanced Flight Principles3
This course will provide students with a background in the technical aspects of flying large complex aircraft. Topics will include advanced aerodynamics, advanced weight and balance, and advanced aircraft system operation.

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.

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, Stage 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. Corequisites: AVIA 270.

AVIA 273 Private Pilot Flight II3
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. Prerequisites: AVIA 270, AVIA 272.

AVIA 295 Practicum1
Prerequisites: AVIA 370.

AVIA 300 Human Factors in Aviation3
This course will cover a basic, broad overview of human factors as they affect pilot and passenger safety. Topics will include pilot physiological and psychological issues as they relate to aviation safety, and the impact of the external environment upon these issues. The course will introduce the topic of crew resource management (CRM) and the importance of CRM to aviation safety, as well as a field trip to participate in altitude chamber training provided by the U.S. Air Force and Federal Aviation Administration. Prerequisites: AVIA 200.

AVIA 302 Aviation Law.....2
This course will cover a basic overview of the aviation legal system. Many policies, procedures, laws and past and current cases that establish legal precedent in landmark court cases will be studied.

AVIA 305 Introduction to Aviation Administration3
This course is designed to familiarize the student with the organization and conduct of aviation operations involving the use of general aviation aircraft and services. The course will cover aspects of management involved in fixed base operations, corporate flight operations, and similar operations utilizing

general aviation aircraft. Flight line operations, administrative considerations, aircraft maintenance operations, and decision-making will be covered during the course. Technological advances pertaining to general aviation operations will be discussed throughout the course. Prerequisites: AVIA 200, ACCT 210.

AVIA 350 Tail-wheel Transition1
 This course teaches the fundamental and advanced techniques of airmanship utilizing a conventional gear aircraft. The aircraft used for this course will help students to manipulate and master airmanship while building on advanced flight principles. In this course, students will learn how to safely and effectively operate a conventional aircraft. Prerequisites: Departmental authorization

AVIA 371 Instrument Pilot Theory3
 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. Prerequisites: Instructor consent.

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. Prerequisites: Instructor consent.

AVIA 375 Commercial Pilot Theory.....4
 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 US air transportation system. Student will successfully complete the FAA Commercial Pilot Certificate written examination as a requirement of course completion. Prerequisites: Instructor consent.

AVIA 376 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. Prerequisites: Instructor consent.

AVIA 377 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. Prerequisites: Instructor consent.

AVIA 392 Special Topics in Aviation.....(1-3)

AVIA 400 Air Transportation System.....3
 Advanced study of U.S. aviation issues to include: a historical perspective of the industry, regulatory aspects of the industry, general aviation, military aviation, commercial aviation, manufacturing, and other issues of interest to the air transportation industry. This will include local, state, national, and international aspects of the industry. Discussion of the services and challenges faced by the air transportation system will also be covered in this course. Prerequisites: Instructor consent.

AVIA 470 Flight Instructor Theory/Flight3
 Defines the responsibilities and role of the professional flight instructor in the process of flight training and general aviation development. The student will study the market of new aspiring pilots and learn how to attract and retain flight students as permanent general aviation customers. This course focuses on the practical aspects of teaching adults to fly. Students completing this course are prepared to challenge the FAA Fundamentals of Instruction knowledge exam Prerequisites: Instructor consent.

AVIA 472 Certified Flight Instructor Instrument1
 This course prepares the flight instructor to teach students in an instrument flight environment Prerequisites: Instructor consent.

AVIA 473 Certified Flight Instructor Multi-Engine.....1
 This course prepares the flight instructor to teach students in an aircraft with two or more engines. Prerequisites: Instructor consent.

AVIA 488 Student Flight Instruction3
 Supervised flight instruction in a post-secondary setting. Prerequisites: Instructor consent.

AVIA 494 Internship3
 Prerequisites: Department approval required.

BADM (Business Administration)

BADM 260 Principles of Production and Operations Management3
 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. Prerequisites: One Math course except 021, 101, 100T. Cross-Listed: MNET 260

BADM 280 Personal Finance (COM)3
 This course is a survey of individual investment opportunities. Topics include common and preferred stocks and corporate bonds, auto, life, and health insurance, home ownership, and will and estate planning.

BADM 291 Independent Study (COM)(1-4)

BADM 292 Topics (COM)(1-3)

BADM 293 Workshop (COM)(1-3)

BADM 310 Business Finance (COM)3
 Business finance is an overview of financial theory including the time value of money, capital budgeting, capital structure theory, dividend policies, asset pricing, risk and return, the efficient markets hypothesis, bond and stock valuation, business performance evaluation and other financial topics. Cross-Listed: MGMT 310

BADM 334 Small Business Management (COM).....3
 This course applies business policies and procedures to the small business environment. As such, it is designed for students contemplating management or ownership of a small business. Topics include the nature of the entrepreneur, financing and ownership options, marketing, government regulations, taxation, inventory control and other relevant business functions

BADM 336 Entrepreneurship I (COM).....3
 This course is an introduction to the concepts, terminology, and process of new venture creation, operations and growth, as well as the introduction of entrepreneurial management practices into existing businesses. This course will assist in the identification of entrepreneurial opportunities and strategies

and the role of personal factors (including creativity). Legal, ethical, and social responsibilities are emphasized Cross-Listed: ENTR 366

BADM 350 Legal Environment of Business (COM).....3
 This is a study of legal topics as they apply to the business environment. Topics include an introduction to the law, the U.S. Court system, legal process, government regulation, and criminal, tort, and contract issues.

BADM 351 Business Law (COM).....3
 This course involves a thorough study of the law of contracts, sales, product liability, agency, corporations and other selected topics. Prerequisites: BADM 350. Cross-Listed: MGMT 360

BADM 360 Organization and Management (COM).....3
 This course is a study of management, including the planning, direction, controlling and coordinating of the various activities involved in operating a business enterprise.

BADM 370 Marketing (COM).....3
 This course introduces the student to the basic concepts and practices of modern marketing. Topics include marketing and its linkages to business, consumer behavior, marketing research, strategy and planning, product and pricing decisions, distributions and promotion decisions, marketing management, and evaluation and control aspects for both consumer and industrial goods. Prerequisites: ECON 201 or ECON 202. Cross-Listed: ECON 370.

BADM 406-506 Accounting for Entrepreneurs (COM).....3
 Accounting concepts and practices for entrepreneurs/small business owners. Emphasis given to the use of accounting tools to solve small business problems. Cross-Listed: ACCT 406-506 and ENTR 406-506.

BADM 411 Investments (COM)3
 This course is a thorough study of the equity market including fundamental valuation techniques, asset allocation, the efficient markets hypothesis and its implications, portfolio theory, risk and return, the primary and secondary market mechanisms, security market indicators, and international investing. An overview of the bond market including bond valuation, duration, and bond portfolio management, and an introduction to options, futures, and forward contracts are provided. The vital roles of computer technology and electronic trading are also explored.

BADM 412 Security Analysis (COM)(2-3)
 Security Analysis is a thorough study of portfolio management for individual as well as institutional investors and includes both equity and fixed income analysis. Security valuation and analysis are discussed as well as the topics of asset allocation, efficient diversification, portfolio theory and construction, investment policy, and performance evaluation. The vital roles of computer technology and electronic trading are also explored.

BADM 416 Commercial Bank Management (COM).....3
 This course is an in-depth study of banking institutions, with special emphasis on commercial banks and their connection to the federal reserve system and other financial institutions. A risk management perspective is adopted, and the fast changing global regulatory and financial environments are discussed. Prerequisites: ECON 330; BADM 360 or AGECE 478.

BADM 424 Operations Research (COM).....3
 This course looks at 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 will be studied. Prerequisites: ECON 301, STAT 281.

BADM 438-538 Entrepreneurship II (COM).....3
 This course focuses on the process of screening an opportunity, drafting a personal entrepreneurial strategy, and understanding the business plan

writing process. Building the entrepreneurial team and the acquisition and management of financial resources are emphasized along with venture growth, harvest strategies, and valuation. Prerequisites: BADM/ENTR 336. Cross-Listed: ENTR 438-538.

BADM 460 Human Resource Management (COM).....3
 This course provides a survey of managerial practices with respect to the management of the human resource function and an introduction to the topic of human resource management as an occupational choice. Major areas of inquiry include recruitment and selection, training and development, compensation and benefits administration and work force integration and maintenance. Cross-Listed: MGMT 460

BADM 474 Personal Selling (COM)3
 This course is a study of the skills needed to develop and manage long-term relationships with customers and suppliers. Emphasis is placed on relationship selling, presentation, prospecting, handling objectives and closing techniques with consideration given to differences in the global marketplace

BADM 476-576 Marketing Research (COM)3
 This course provides an in-depth study of the primary methodologies of marketing research. Emphasis is placed on collecting, analyzing, interpreting and presenting information for the purpose of reducing uncertainty surrounding marketing and management decisions. Prerequisites: BADM370 and MATH 281 or STAT 281. Cross-Listed: ECON 476-576.

BADM 482 Business Policy and Strategy (COM).....3
 This course is designed to develop an understanding of strategy formulation, implementation, and evaluation. It involves integrating all functional areas of business, analyzing the environment in which the firm operates, and choosing strategies that enable the firm to meet its objectives. Prerequisites: BADM 310, BADM 350, BADM 360, BADM 370, and senior standing.

BADM 483 Small Business Consulting (COM)(1-3)
 This course is a consulting program whereby students, working under faculty guidance, assist businesses by researching and developing possible solutions to specific problems involved in business start-up and expansion. Prerequisites: Senior standing. Cross-Listed: ENTR 483

BADM 489 Business Plan Writing and Competition (COM).....1
 Students will write a business plan and present it to a panel of faculty and business community members. The top three business plan presenters will move on to a statewide competition. Crosslisted with ENTR 489.

BADM 490 Seminar (COM)3

BADM 491 Independent Study (COM)(1-4)

BADM 492 Topics (COM)(1-4)

BADM 493-593 Workshop (COM)(1-3)

BADM 494 Internship (COM)1-12
 Corequisites: ENTR 494

BADM 498 Undergraduate Research/Scholarship (COM)(1-4)

BADM 592 Topics(1-3)

BIOL (Biology)

BIOL 101-101L Biology Survey I and Lab ** (COM).....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.

Laboratory experience that accompanies BIOL 101. Corequisites: BIOL 101L-BIOL 101. Notes: ** Course meets IGR #1.

BIOL 103-103L Biology Survey II and Lab* (COM)3
 Study of energetics; plant growth; development and reproduction; animal structure and function. Intended for those not majoring in biology. Duplicate credit for BIOL 103 and BIOL 153 not allowed.

Laboratory experience that accompanies Prerequisites: Biol 101. Corequisites: BIOL 103L-BIOL 103. Notes: * Course meets SGR #6.

BIOL 105 Human Biology **3
 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. Duplicate credit for BIOL 105 and BIOL 101 or BIOL 151 not allowed. Notes: ** Course meets IGR #2.

BIOL 142 Anatomy (COM)3
 An elementary study of the gross structure of the human body.

BIOL 151-151L General Biology I and Lab* (COM).....4
 The introductory course for those majoring in biology and microbiology. Presents the concepts of cell biology, evolution, heredity, molecular genetics and ecology.

Laboratory experience that accompanies Corequisites: BIOL 151L-BIOL 151. Notes: *Course meets SGR #6.

BIOL 153-153L General Biology II and Lab*4
 A continuation of BIOL 151, the introductory course for those majoring in biology and microbiology. Presents the concepts of animal and plant structure and function, energetics, and reproduction.

Laboratory experience that accompanies BIOL 153 Prerequisites: BIOL 151. Corequisites: BIOL 153L-BIOL 153. Duplicate credit for BIOL 103 and 153 not allowed. Notes: *Course meets SGR #6.

BIOL 190 Seminar2

BIOL 200-200L Animal Diversity and Lab*4
 Investigate all members of the animal kingdom comprising the living world focusing on diversity, systematics, reproductive patterns, principles of structure and function, ecology, and environmental relationships

Laboratory experience that accompanies BIOL 200. Prerequisites: BIOL 101 or BIOL 151. Corequisites: BIOL 200L-BIOL 200. Notes: * Course meets SGR #5.

BIOL 202-202L Genetics and Organismal Biology and Lab4

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; extra nuclear genes; chromosomal mutations; epistasis, alleles and the environment; gene function; genetic mapping; population genetics; quantitative genetics; evolution and natural selection.

Laboratory experience that accompanies BIOL 202. Prerequisites: BIOL 153 or BIOL 103; CHEM 114-114L Corequisites: BIOL 202L-BIOL202.

BIOL 204 Genetics and Cellular Biology3

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. One

semester of Organic Chemistry is highly recommended. Prerequisites: BIOL 202. Corequisites: BIOL 204L.

BIOL 204L Genetics and Cellular Lab1
 Laboratory experience that accompanies BIOL 204 Corequisites: BIOL 204.

BIOL 210 Human Physiology for Allied Health Professionals4
 Lectures, laboratory work and demonstrations of human physiological processes both normal and abnormal.

BIOL 210L Human Physiology for Allied Health Professionals Lab0
 Laboratory experience that accompanies BIOL 210.

BIOL 221-221L Human Anatomy and Lab(COM).....4
 Structures of various systems in the human body are presented as a structural basis for physiology.

Laboratory experience that accompanies BIOL 221. Corequisites: BIOL 221L-BIOL 221.

BIOL 290 Seminar1

BIOL 291 Independent Study (COM)(1-4)

BIOL 311 Principles of Ecology **(COM).....3
 Basic principles of ecology including the sub disciplines of physiological ecology, population ecology, community ecology, evolutionary ecology, and ecosystems ecology from both a theoretical and applied aspect. Notes: ** Course meets IGR #1.

BIOL 311L Principles of Ecology Lab.....1
 Laboratory experience that accompanies Biol 311. Corequisites: BIOL 311

BIOL 325-325L Physiology and Lab (COM)4
 Basic cell physiology, neural, hormonal and neuroendocrine control systems. Coordinated body functions.

Laboratory experience that accompanies BIOL 325. Prerequisites: BIOL 221. Corequisites: BIOL 325L-BIOL 325.

BIOL 371 Genetics (COM)3
 Principles governing the nature, transmission and function of hereditary material with application to plants, animals, humans, and microorganisms.

BIOL 373 Evolution (COM)3
 Surveys evidence for biological evolution and the historical development of evolutionary theory, and examines genetic and other mechanisms responsible for life's diversity. Prerequisites: BIOL 151.

BIOL 383 Bioethics ** (G).....4
 Ethical, social and policy dilemmas in medicine and biology. Crosslisted with PHIL 383. Prerequisites: BIOL 101 or BIOL 151. Notes: ** Course meets IGR #1 or IGR #3.

BIOL 415-415L/515-515L Mycology and Lab(COM).....4
 Comprehensive taxonomic survey of the kingdom Fungi; reproductive biology, physiology, genetics, and ecology of fungal organisms; relationship to fungi to human affairs.

Laboratory experience that accompanies BIOL 415. Prerequisites: BIOL 151. Corequisites: BIOL 415L-BIOL 415/BIOL 515L-BIOL 515 Cross-Listed: PS 415-515.

BIOL 439-539 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. Prerequisites: BIOL 325, physiology course.

BIOL 440 Restoration Ecology4
 Scientific principles involved in restoration of natural ecosystems on degraded and disturbed lands. An understanding of ecological principles is

recommended prior to enrollment. Crosslisted with LA 440. Corequisites: BIOL 440L.

BIOL 440L Restoration Ecology Lab0
 Corequisites: BIOL 440.

BIOL 453-553 Advanced Genetics.....3
 Procedures in genetic studies as they relate to molecular and classical genetic applications. Cross-Listed: PS 453-553. P, BIOL 371.

BIOL 457-557 Ecological Modeling3
 An introduction to ecological modeling. Topics will include modeling methodology, auto-ecological models, population models, biotic communities, ecosystem level models, global modeling. Prerequisites: MATH 121 or 123.

BIOL 459-559 Bioinformatics.....3
 This course is an introduction to bioinformatics for students in mathematics and physical sciences. This course will include a brief introduction to cellular and molecular biology, and will cover topics such as sequence alignment, phylogenetic trees and gene recognition. Existing computational tools for nucleotide and protein sequence analysis, protein functional analysis and gene expression studies will be discussed and used. Prerequisites: STAT 281 or 381.

BIOL 464-564 Ecosystem Ecology3
 Study of energy and material flows through the living (plants, animals, microbes) and non-living (soils, atmosphere) components of ecological systems. Discussion of the major element cycles and patterns of energy flow through ecosystems, including how those fluxes and their controls differ for different ecosystems. Linkages between ecosystem structure and function will be emphasized. Prerequisites: BIOL 311.

BIOL 466-566 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.

BIOL 467-467L/567-567L Parasitology and Lab.....3
 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
 Laboratory experience that accompanies BIOL 467. Prerequisites: BIOL 101 or 151. Corequisites: BIOL 467L-BIOL 467L/BIOL 567L-BIOL 567L. Cross-Listed: ZOO 467.

BIOL 483-483L Developmental Biology and Lab.....4
 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.
 Laboratory experience that accompanies BIOL 483. Prerequisites: BIOL 151.

BIOL 490 Seminar (COM) (AW)1

BIOL 491 Independent Study (COM)(1-4)

BIOL 492L-592L Topics Lab0

BIOL 494 Internship (COM).....(1-12)

BIOL 496 Field Experience (COM).....(1-12)

BIOL 497 Cooperative Education (COM)(1-12)

BIOL 498 Undergraduate Research/Scholarship (COM).....(1-6)

BIOL 560 Landscape Ecology4

BIOL 560L Landscape Ecology Lab.....0

BIOL 567-567L Parasitology and Lab.....3
 Cross-Listed: BIOL 467

BIOL 645L Microimaging Techniques Lab1-3

BIOL 782 Epidemiology.....3
 The course introduces concepts and methodologies for the study of health and disease in human populations. Different study designs and their methods of analysis will be discussed, as well as sources, handling, and interpretation of epidemiologic data. Cross-Listed: HCS/NFS 782.

BIOL 788 Biological Research Problem(1-3)

BIOL 790 Seminar1

BIOL 791 Independent Study.....(1-4)

BIOL 792 Topics.....(1-6)

BIOS (Biological Sciences)

BIOS 662 Advanced Molecular and Cellular Biology6

BIOS 663 Advanced Concepts in Infectious Disease6

BIOS 664 Molecular Plant Physiology.....6
 Cross-Listed: BOT/PS

BIOS 788 Master's Research Problems(1-3)

BIOS 790 Seminar1

BIOS 792 Topics(1-6)

BIOS 798 Thesis(1-10)

BIOS 890 Seminar1

BIOS 898D Dissertation PhD.....(1-7)

BIOT (Biotechnology)

BIOT 399-399L Biotechnology and Lab

Molecular basis of biological processes; theory and practice of recombinant DNA and molecular biology techniques; biochemical and molecular genetic approaches to study current biological problems; amplification of nucleic acids with the polymerase chain reaction; agricultural, medical, and industrial applications of biotechniques.

Laboratory experience to accompany lecture course BIOT 399. Prerequisites: BIOL 204. Corequisites: BIOT 399L.

BIOT 494 Internship1-6

BIOT 498 Undergraduate Research1-6

BIST (Biology Topics)

BIST 692 Topics for Biology Educators(1-12)

BOT (Botany)

BOT 127 Ethnobotany	3
This course is designed to provide an overview of the traditional and current uses of plants native to the Great Plains The course will help students: (1) Become familiar with standard field keys and to become competent with identification of plants of the region. (2) Learn to find and recognize 40-50 plant species of special significance to the indigenous peoples of the region. (This includes sight identification, knowledge of common plant habitats, preparation of herbarium collections, methods of propagation and modern horticultural practices.) (3) Participate in hands-on demonstrations of traditional and modern methods for the preparation and utilization of native plants (e.g. cooking, dye making) (4) Discover and share with the class in-depth information on one native plant species, not covered in the formal portion of the class.	
BOT 201-201L General Botany and Lab* (COM)	3
A phylogenetic approach to the study of plant diversity and evolutionary relationships emphasizing structure and function of plant systems. Laboratory experience that accompanies BOT 201 Prerequisites: BIOL 101 or BIOL 151. Corequisites: BOT 201L-BOT 201. Notes: SGR #5.	
BOT 301-301L Plant Systematics (COM)	4
Principles of phylogeny, classification, nomenclature, evolution; demonstrations, field study and laboratory practice in collection, preserving, and identifying plants. Prerequisites: BIOL 103 or BIOL 153. Corequisites: BOT 301L.	
BOT 303-303L Forest Ecology and Management and Lab	3
The basics of environmental factors which control the growth of trees and forests and how forests in North America are managed. Corequisites: BOT 303L-BOT 303. Cross-Listed: PR 303.	
BOT 327-327L Plant Physiology and Lab (COM)	4
Chemical and physical principles of plant function including water relations and energy metabolism; genetic, environmental and hormonal regulation of plant growth and development; and plant responses to stress. Laboratory experience the accompanies BOT 327. Corequisites: BOT 327L-BOT 327.	
BOT 405-405L/505-505L Grasses and Grasslike Plants and Lab	3
A systematic survey of grasses and grasslike plant of the northern Great Plains; field and lab practice in collection and identification of graminoid plants; discussion of unique biological aspects of grasses and grasslike plants that make them economically and ecologically significant. Laboratory experience that accompanies BOT 405-505. Prerequisites: BIOL 103 or BIOL 153. Corequisites: BOT 405L-BOT405/BOT 505L-BOT 505.	
BOT 415-415L/515-515L Aquatic Plants and Lab	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. Laboratory to accompany BOT 415-515. Prerequisites: BOT 301 Corequisites: BOT 415L-BOT 415/BOT 515L-BOT 515.	
BOT 419-419L Plant Ecology and Lab(COM) (G)	4
Description of plant communities, their dynamics and instruction. Environmental factors and their relationship with plants. Field trips. Laboratory experience that accompanies BOT 419 Prerequisites: BIOL 103 and BOT 201, or BIOL 153. Corequisites: BOT 419L-BOT 419.	
BOT 491 Independent Study	(1-4)
BOT 492-592 Topics	(1-5)
BOT 494 Internship	(1-12)

BOT 496 Field Experience	1-12)
BOT 498 Undergraduate Research/Scholarship	(1-4)
BOT 664 Molecular Plant Physiology	6
Cross-Listed: BIOS/PS	
BOT 715-715L Advanced Plant Ecology and Lab	4
BOT 788 Research Problems	(1-3)
BOT 791 Independent Study	(1-4)
BOT 792 Topics	(1-5)

CA (Consumer Affairs)

CA 110 Individual Financial Literacy	1
Introduction to personal financial management. Topics covered include banking; budgeting; and financial statements.	
CA 111 Individual Financial Management	1
Introduction to personal financial management. Topics covered include leasing and buying; credit cards and credit management; and time value of money.	
CA 150 Introduction to Consumer Affairs	2
Survey of the history of consumerism, the consumer movement, the consumer purchase environment and family resource management. Explore roles of consumer affairs professionals in business, public service, and government. Analyze professional traits, personal skills, and the type of knowledge needed to attain a position in the desired area of consumer affairs. Overview of courses and sequencing.	
CA 230 Consumer Behavior	3
Understanding cultural, economic, social, and psychological conditions that influence the consumer purchase process. Study of diverse types of consumer subcultures.	
CA 289 Consumers in the Market	3
Welfare of the consumer in relation to government regulation, policies, laws, consumer rights and responsibilities, and the economic system.	
CA 291 Independent Study	(1-3)
CA 292 Topics	(1-3)
CA 340 Work Family Interface (AW)	3
Introduction to resource management theories, processes and principles as applied to efficient use of human, time, social, and material resources in promotion of individual and family wellbeing. Balancing work and family is addressed as an application of family resource management. Prerequisites: ENGL 201.	
CA 345 Foundations in Financial Management	3
Financial resource management related to the economic aspects of family financial planning. Specifically addresses major financial planning issues and problems that individuals and families encounter including goal setting, saving, borrowing, risk management, basic tax structure, investment diversification, and basic considerations for retirement and estate planning. Emphasis will be given to application of time value of money across the content.	
CA 350 Family Financial Management: Theory and Practice	3
Principles and practice related to family financial planning. Topics covered include insurance adequacy and selection, investment strategies to realize financial goals, income tax planning, retirement preparation, and estate planning. Prerequisites: CA 345.	

CA 412 Emerging Issues in Consumer Affairs	2
Study of current and emerging consumer issues facing individuals, families, and the global community. Prerequisites: CA150, CA230, CA289, CA340, CA345. Notes: Registration restriction: Senior standing.	
CA 442 Family Resource Management Lab	3
Application of resource management concepts to improve individual and family economic well-being. The course emphasis is placed on managerial activities of families with limited resources. Management involves facing opportunities and solving the practical problems of everyday life, coordinating the activities of family members and making and implementing decisions. A requiredservice learning experience (20 hours) will provide an opportunity for direct application of resource management concepts to the problem solving process. Must be junior or senior standing following completion of all 100/200 level required courses.	
CA 450 Family Financial Management: Applications	3
Case studies using principles and techniques related to family financial planning. Prerequisites: CA 350.	
CA 480 Travel Studies	(1-5)
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 of 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.	
CA 487 Transition to the Professional World	3
Prepares students for acquiring personal and professional skills needed to be successful in the work place. Prerequisites: CA 150, CA 230, CA 289, CA 340, CA 345.	
CA 491 Independent Study	(1-3)
CA 492-592 Topics	(1-3)
CA 494 Internship	5
Prerequisites: CA 487.	
CA 595 Practicum	(3-6)
Prerequisites: 24 credit hours in the CA Masters Program (or concurrent enrollment).	
CA 604 Family Systems	3
CA 612 Financial Counseling	3
CA 620 Family Economics	3
CA 640 Fundamentals of Family Financial Planning	3
CA 660 Invest for Family's Future	3
CA 680 Insurance Planning for Families	3
CA 704 Estate Planning for Families	3
CA 715 Housing and Real Estate in FFP	3
CA 725 Family, Employee Benefits and Retirement Planning	3
CA 735 Personal Income Taxation	3
CA 745 Professional Practices in Financial Planning	3
CA 755 Financial Planning Case Study	3
CA 791 Independent Study	(1-3)
CA 792 Topics	(1-3)

CD (Community Development)

CD 600 Orientation to Community Development Study	1
CD 601 Organizing for Community Change	3
CD 602 Community and Regional Economic Policy and Analysis	3
CD 603 Community Natural Resource Management	3
CD 604 Community Analysis	3
CD 605 Principles & Strategies of Community Change	3
CD 611 Impact Analysis	1
CD 612 Housing and Development	3
CD 613 Introduction to Native Community Development	3
CD 616 Public and Nonprofit Budgeting	3
CD 617 Role of Tribal colleges in Economic Development	1
CD 622 Local Economic Analysis	1
CD 623 Ecological Economics	3
CD 624 Building Native Community and Economic Capacity	3
CD 625 Land Development Planning	3
CD 626 Economic Development Strategies	3
CD 631 Evaluation of Organizations and Programs	3
CD 633 Introduction to Environmental Law	3
CD 634 Native American Natural Resource Management	3
CD 635 Sustainable Communities	3
CD 636 Policy and Politics of Coastal Areas	3
CD 637 Immigration and Communities	3
CD 638 Community and Regional Economic Analysis II	3
CD 640 Ethics for Public and Nonprofit Administrators	3
CD 641 Leadership for Change	3
CD 642 Grant Writing	3
CD 643 Nonprofit Management	3

CEE (Civil and Environmental Engineering)

CEE 106-106L Elementary Surveying and Lab	4
Care and operation of instruments, concepts of horizontal and vertical control; measurement of horizontal distances, vertical angles and elevation differences. Coverage includes the definition and analysis of errors of measurement. Additional topics include: horizontal curves, traverse work and construction surveying. The course includes an introduction to the concepts and applications of GPS and GIS to surveying practice. Prerequisites: MATH 120 or MATH 115. Corequisites: CEE 106L-106.	
CEE 208-208L Engineering Surveys and Lab	3
Principles of topographic surveys and mapping, CAD applications for the conversion of topographic field data to site mapping, subdivision surveys, additional applications beyond those in CEE 106 to construction and route surveys. Prerequisites: CEE 106. Corequisites: CEE 208L-208.	

<p>CEE 216-216L Materials and Lab3 Basic structure of materials and its effect on material properties. Laboratory tests on materials, principles of concrete mixes. Prerequisites: CHEM 112. Corequisites: CEE 216L-216.</p> <p>CEE 225 Principles of Environmental Science and Engineering.....3 Introduction to the basic principles of environmental management, environmental science and engineering, and natural resources engineering. The class will be team taught by faculty from environmental management, civil and environmental engineering, agricultural and biosystems engineering, and agricultural systems technology programs. The course will teach the fundamental physical, biological, and chemical principles of environmental processes. The course will also explore the impact of humans and human activity on ecosystems in the environment. Prerequisites: CHEM 106 or CHEM 112.</p> <p>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. Prerequisites: CEE 106.</p> <p>CEE 306-306L Photo Interpretation and Photogrammetry and Lab3 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. Prerequisites: CEE 208. Corequisites: CEE 306L-306.</p> <p>CEE 311 Structural Materials Lab.....1 Laboratory tests on structural materials and elements, and interpretation of test results. Careful laboratory techniques are emphasized. Prerequisites: CEE 216. Corequisites: EM 321.</p> <p>CEE 323-323L Water Supply and Wastewater Engineering and Lab3 Analysis of water and wastewater quality, water demands and wastewater flows; water and wastewater treatment process concepts; preliminary design of unit processes for municipal water and wastewater treatment systems, impacts of regulations on system design. Prerequisites: CEE 225. Corequisites: CEE 323L-323.</p> <p>CEE 331 Fluid Mechanics Lab.....1 Measurement of properties of common fluids, and tests on fluids in motion. Corequisites: EM 331.</p> <p>CEE 333 Hydrology3 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. Prerequisites: STAT 281 or STAT 381.</p> <p>CEE 340-340L Engineering Geology and Lab.....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. Prerequisites: CEE 216. Corequisites: CEE 340L-340.</p> <p>CEE 346-346L Geotechnical Engineering (COM) and Lab.....4 Composition, structure, index, and engineering properties of soils, soil classification systems, introduction to soil engineering problems involving stability, settlement, seepage, consolidation, and compaction; and laboratory work on the determination of index and engineering properties of soils. Computer-aided graphics and word processing are required for lab reports. Prerequisites: EM 321 and CEE 340. Corequisites: CEE 346L-346. Cross-Listed: MINE 346-346L.</p>	<p>CEE 353 Structural Theory (COM).....3 Basic concepts in structural analysis of beams, trusses, and frames. Determination of governing load conditions for moving loads by use of influence lines. Development of basic virtual work concept to obtain deflections for beams, trusses, and frames. Introduction to slope deflection equations and the moment-distribution for analysis of indeterminate structure. Prerequisites: EM 321/CEE 284 or EM 215/MATH 321 or EM 215/MATH 321/ME 311.</p> <p>CEE 363 Highway and Traffic Engineering.....3 Highway administration, traffic characteristics, highway standards, drainage, geometric design, construction methods. Prerequisites: CEE 106.</p> <p>CEE 390 Seminar.....1</p> <p>CEE 411-411L/511-511L Bituminous Materials and Lab3 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. Prerequisites: CEE 216. Corequisites: CEE 411L-411/511L-511L.</p> <p>CEE 422-422L/522-522L Environmental Engineering Instrumentation and Lab3 Analysis of water and waste water samples, using environmental laboratory instrumentation. Design of treatment facility process instrumentation and controls. Prerequisites: CEE 323 or consent. Corequisites: CEE 422L-422/522L-522.</p> <p>CEE 423/523 Municipal Water Distribution and Collection System Design3 Design of municipal water distribution and collection systems utilizing modern design tools including the utilization of software to simulate system behavior in response to environmental changes. Prerequisites: CEE 323 and EM 331.</p> <p>CEE 424/524 Industrial Waste Treatment3 Characteristics and composition of industrial wastes, sampling and methods of analysis of these wastes and remedial measures for treatment and disposal. Prerequisites: CEE 323.</p> <p>CEE 429-429L/529-529L Solid Waste Engineering and Management and Lab3 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. Prerequisites: CEE 346. Corequisites: CEE 429L-429/529L-529.</p> <p>CEE 432 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. Prerequisites: EM 331.</p> <p>CEE 435/535 Water Resources Engineering3 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. Prerequisites: CEE 225.</p> <p>CEE 443/543 Matrix Analysis of Structures3 Theory and application of matrix methods in structural analysis. Prerequisites: CEE 353.</p>
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CEE 444/544 Precast Concrete Structures3	CEE 472/572 Geosynthetics3
Advantages of precast concrete. Structural and architectural precast elements. Building systems. Design concepts and structural design. Connections, specifications, and detailing. Prerequisites: CEE 456.	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, filtration and reinforcement applications. Students enrolling in CEE 572 will be held to a higher standard than those enrolling in CEE 472. Prerequisites: CEE 346.
CEE 446/546 Advanced Geotechnical Engineering3	CEE 482 Engineering Administration3
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. Students enrolling in CEE 546 will be held to a higher standard than those enrolling in CEE 446. Prerequisites: CEE 346.	Law of contracts, agency, and other legal aspects of engineering. Preparation of specifications. Economic aspects of engineering. Prerequisites: Senior standing. Equivalent to CM 475.
CEE 452/552 Prestressed Concrete3	CEE 483-483L Municipal Engineering and Lab3
Theory and design of prestressed concrete including pre-tensioning and post-tensioning. Prerequisites: CEE 456.	Design/construction of municipal facilities including subdivisions, drainage, streets, water and wastewater systems, and solid waste disposal. Duties and responsibilities of city engineer. Prerequisites: CEE 208. Corequisites: CEE 483L-483.
CEE 455-455L Steel Design and Lab3	CEE 490 Seminar (COM)(1-3)
Limited states in design and the probabilistic nature of loads and resistance. Design of members subjected to tension, axial compression, bending and combined forces. Elementary concepts of frame design with an introduction to secondary effects. The importance of structural stability in design is stressed. Design of basic bolted and welded connections. Prerequisites: CEE 353. Corequisites: CEE 455L-455.	CEE 491 Independent Study (COM)(1-3)
CEE 456 Concrete Theory and Design (COM)3	CEE 492/592 Topics (COM)(1-3)
Properties and behavior of concrete and reinforcing steel. Analysis and design of structural slabs, beams, girders, columns, and footings with use of strength methods. Deflection of flexural members. Development of reinforcement. Prerequisites: CEE 353.	CEE 494 Internship(1-6)
CEE 457-457L Indeterminant Structures (COM) and Lab3	CEE 496 Field Experience(1-6)
Analysis of indeterminate structures by classical and matrix methods. The classical methods are the force method, the slope-deflection equations and the moment-distribution method. The classical methods also are used to determine influence lines for indeterminate structures. Stiffness matrices for truss and beam elements are derived and used to analyze trusses, beams and frames. Prerequisites: CEE 353. Corequisites: CEE 457L-457.	CEE 497 Cooperative Education(1-6)
CEE 458/558 Design of Timber Structures3	CEE 620-620L Water Treatment Plant Design and Lab3
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. Prerequisites: CEE 353.	CEE 623 Advanced Sanitary Engineering3
CEE 459-459L/559-559L Advanced Structural Mechanics and Lab3	CEE 624 Biological Principles of Environmental Engineering3
Review of principal moments of inertia; relationship of plane 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. Prerequisites: CEE 353. Corequisites: CEE 459L-459/559L-559.	CEE 626-626L Physical/Chemical Principles of Environmental Engineering and Lab3
CEE 464 Civil Engineering Capstone Design I (COM)1	CEE 629 Waste Water Treatment Plant Design3
Content will include major engineering design experience integrating fundamental concepts of mathematics, basic science, engineering science, engineering design, communication skills, humanities, and social science. Prerequisites: Senior standing.	CEE 632 Advanced Foundation Engineering3
CEE 465 Civil Engineering Capstone Design II (COM) (AW)2	CEE 633 Open Channel Hydraulics3
Content will include major engineering design experience integrating fundamental concepts of mathematics, basic science, engineering science, engineering design, communications skills, humanities, and social science. Prerequisites: CEE 464.	CEE 639-639L Geotechnical Testing and Lab3
CEE 467/567 Transportation Engineering3	CEE 654 Advanced Design of Steel Structures3
Engineering principles in various common modes of transportation. Prerequisites: CEE 363.	CEE 656 Advanced Reinforced Concrete Design3
	CEE 664 Highway Capacity Analysis3
	CEE 690 Seminar0
	CEE 692 Topics(1-3)
	CEE 702 Advanced Civil and Environmental Engineering(1-13)
	CEE 702L Advanced Civil and Environmental Engineering Lab0
	CEE 721 Environmental Engineering3
	CEE 722-722L Hazardous/Toxic Waste Disposal3
	CEE 724-724L Land Treatment of Wastes3
	CEE 733 Water Resources Engineering3
	CEE 734 Surface Water Quality Model3
	CEE 737 Hydraulic Design3
	CEE 738-738L Advanced Hydraulics3
	CEE 749 Structural Dynamics3
	CEE 756 Reinforced Masonry Design3

CEE 762-762L Pavement Management and Rehabilitation	3
CEE 765 Pavement Design	3
CEE 769 Design Steel and Concrete Bridges	3
CEE 787 Research	(1-9)
CEE 788 Engineering Research or Design Paper	(1-3)
CEE 790 Seminar	1
CEE 791 Independent Study	(1-3)
CEE 792 Topics	(1-3)
CEE 792L Topics Lab	0
CEE 798 Thesis	(1-7)

CEX (Center of Excellence)

CEX 491 Independent Study (COM)	(1-4)
CEX 494 Internship (COM)	1-8

CHEM (Chemistry)

CHEM 106-106L Chemistry Survey and Lab* (COM)	(3,1)
A one-semester survey of chemistry. Not intended for those needing an extensive chemistry background. Introduction to the properties of matter, atomic structure, bonding, stoichiometry, kinetics, equilibrium, states of matter, solutions, and acid-base concepts. Laboratory designed to accompany CHEM 106. Prerequisites: MATH 101 or higher (102, 115, 120, 121, 123, 125, 281, or placement). Corequisites: CHEM 106L-CHEM 106. Notes: *Course meets SGR #6.	
CHEM 108-108L Organic and Biochemistry and Lab* (COM)	(4, 1)
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. Laboratory designed to accompany CHEM 108. Prerequisites: CHEM 106. Corequisites: CHEM 108L-CHEM 108. Notes: * Course meets SGR #6.	
CHEM 112-112L General Chemistry I and Lab* (COM)	(3, 1)
An introduction to the basic principles of chemistry for students needing an extensive background in chemistry (including chemistry majors, science majors, and pre-professional students). Completion of a high school course in chemistry is recommended. Laboratory designed to accompany CHEM 112. Corequisites: CHEM 112L-CHEM 112 and MATH 102. Notes: * Course meets SGR #6.	
CHEM 114-114L General Chemistry II and Lab * (COM)	(3, 1)
A continuation of CHEM 112. An introduction to the basic principles of chemistry for students needing an extensive background in chemistry. Laboratory designed to accompany CHEM 114. Prerequisites: CHEM 112, MATH 102 or higher (115, 120, 121, 123, 125, 281) Corequisites: CHEM 114L-CHEM 114. Notes: * Course meets SGR #6.	
CHEM 115-115L Atomic and Molecular Structure and Lab	(3, 1)
This is the first course in a four-course sequence that serves as an advanced introduction to the principles of general chemistry relevant to preparation for organic chemistry. Topics covered include atomic structure, theories of bonding, molecular structure, inter- and intra-molecular forces, the structure-activity relationship, and qualitative thermochemistry. This course is intended for students majoring in chemistry or biochemistry, or those who	

have been admitted to the honors college. Completion of a high school course in chemistry is required. AP credit will not be acknowledged as equivalent to CHEM 115. CHEM 112/CHEM 112L may not be substituted for CHEM 115/CHEM 115L unless explicitly allowed by the department head.

Laboratory course to accompany CHEM 115. Corequisites: CHEM 115L-CHEM 115 and MATH 102.

CHEM 120-120L Elementary Organic Chemistry and Lab* (3, 1)
Compounds of carbon with emphasis on those of interest to students of Agriculture, Family and Consumer Sciences. Not a prerequisite for any 200 level and above course. Prerequisites: CHEM 106 or CHEM 112. Corequisites: CHEM 120L-CHEM 120. Notes: * Course meets SGR #6.

CHEM 127-127L Structure and Function of Organic Molecules and Lab (3, 1)
A continuation of CHEM 115 which introduces the chemistry of carbon containing compounds. It is the second course in a four-course sequence. Topics covered include: nomenclature, functional group analysis, stereochemistry, acid/base chemistry, organic chemistry reactions, mechanistic explanation of electron movement, and thermochemistry of organic reactions. Chemistry, Biochemistry, and Honors College students only. CHEM 326 may not be substituted for CHEM 127 unless explicitly allowed by the department head.

Laboratory designed to accompany CHEM 127. Prerequisites: CHEM 115. Corequisites: CHEM 127L-CHEM 127.

CHEM 229-229L Transformations of Organic Molecules and Lab (3, 1)
A continuation of CHEM 127 which focuses on instrumentation related to analytical organic chemistry, as well as advanced reactions, synthesis and retrosynthetic analysis, and an introduction to biochemistry. It is the third course in a four-course sequence. Credit may not be substituted for CHEM 328 and CHEM 328L.

Laboratory designed to accompany CHEM 229. Prerequisites: CHEM 127. Corequisites: CHEM 229L-CHEM 229.

CHEM 237 Intermediate Laboratory Investigations 2
This laboratory based course builds upon previous training to include problem based learning in research contexts. Students will design and implement experiments related to departmental research, evaluate data, and report outcomes of their experimentation. It is the fourth course in a four-course sequence.

CHEM 242-242L Chemical Equilibrium and Thermodynamics and Lab (4, 1)
This course is the foundational course in physical chemistry. Topics include coverage of the first and second laws of thermodynamics, and equilibrium of chemical systems.
Laboratory accompanies CHEM 242.

CHEM 320-320L Intermediate Organic Chemistry and Lab 2, 2
This course builds upon concepts learned in previous organic chemistry courses, and will include topics on contemporary synthetic methodology; organometallic chemistry; pericyclic reactions; and advanced thermodynamic/kinetic applications in organic chemistry reactions.
Laboratory to accompany CHEM 320.
Prerequisites: CHEM 229-229L or CHEM 328-328L. Corequisites: CHEM 320L-320.

CHEM 326-326L Organic Chemistry I and Lab(COM) (3, 1)
A systematic treatment of the chemistry of carbon compounds, including nomenclature, structure-reactivity relationships, reaction mechanisms, synthesis, and spectroscopy.
Laboratory designed to accompany CHEM 326. Prerequisites: CHEM114, minimum 4 credits. Corequisites: CHEM 326L-CHEM 326.

- CHEM 328-328L Organic Chemistry II and Lab(COM)(3, 1)**
A continuation of CHEM 326. A systematic treatment of the chemistry of carbon compounds, including nomenclature, structure-reactivity relationships, reaction mechanisms, synthesis, and spectroscopy.
Laboratory designed to accompany CHEM 328. Prerequisites: CHEM 326.
Corequisites: CHEM 328L-CHEM 328.
- CHEM 332-332L Analytical Chemistry and Lab (COM).....(3, 1)**
Fundamental concepts and principles of quantitative chemical analysis including quantitative chemical equilibrium calculations and error analysis applied to the evaluation of experimental measurements and data.
Laboratory to accompany CHEM 332. Also, laboratory to accompany CHEM 230 at SDSMT. Prerequisites: CHEM 114, minimum 4 credits.
Corequisites: CHEM 332L-CHEM 332.
- CHEM 342-342L Physical Chemistry I and Lab (COM) (AW).....(3, 1)**
A study of the fundamental principles governing the behavior of chemical systems. Topics covered in the two-semester sequence include thermodynamics, chemical kinetics, quantum mechanics, and statistical mechanics.
Laboratory designed to accompany CHEM 342. Prerequisites: CHEM 332 and MATH 125. Corequisites: CHEM 342L-CHEM 342.
- CHEM 344-344L Physical Chemistry II and Lab (COM)(3, 1)**
A continuation of Physical Chemistry I. A study of the fundamental principles governing the behavior of chemical systems. Prerequisites: CHEM 342. Corequisites: CHEM 344L-CHEM 344.
- CHEM 345 Quantum Mechanics of Chemical Systems2**
Applications of quantum mechanics to chemical systems. Topics include comparative study of classical and quantum mechanics, the foundations of quantum mechanics, problems with exact solutions, and molecular spectroscopy. Prerequisites: CHEM 242.
- CHEM 347 Chemical Kinetics.....2**
Course devoted to the study of reaction rates. Topics include the kinetic molecular theory of gases, transport processes, reaction kinetics, and theories of reaction rates. Prerequisites: CHEM 242.
- CHEM 348-348L Biophysical Chemistry and Lab(3, 1)**
A study of the fundamental principles governing the physical chemistry of biological systems. Topics covered include the forces governing protein and nucleic acid stability, the thermodynamics of protein folding and protein-ligand interactions, bioenergetics, kinetics of biochemical reactions, biological membranes and membrane transport. The physical basis of protein purification, probing protein-ligand interactions, and the determination of macromolecular structure is also discussed. CHEM 342-342L and 344-344L may be taken as electives but may not be substituted for CHEM 348-348L.
Fundamental physical chemistry principles and techniques of physical chemistry used in studying biomacromolecules and biological systems. Prerequisites: MATH 123, PHYS 211-211L, CHEM 464-464L, CHEM 466.
Corequisites: CHEM 348L-CHEM 348.
- CHEM 381 Techniques in Clinical Laboratory Technology3**
- CHEM 382-382L Techniques in Clinical Laboratory Technology I and Lab(2, 1)**
Introduction to techniques used in the clinical laboratory including urinalysis, hematology and clinical chemistry. Corequisites: CHEM 382L-CHEM 382.
- CHEM 383 Techniques in Clinical Laboratory Technology II (AW)3**
Continuation of 382. Prerequisites: CHEM 382-382L.
- CHEM 432 Analytical Chemistry II2**
Theory and applications of electrochemistry, atomic spectroscopy, X-rays, surface characterization, thermal methods, and radiochemistry applied to chemical analysis. Prerequisites: CHEM 332.
- CHEM 433 Bioanalytical Chemistry2**
Introduction to the principles and methods of analytical techniques applied to biochemical systems, including method validation, separations, microscopy, and related techniques. Prerequisites: CHEM 332 and CHEM 464.
- CHEM 434-434L Instrumental Analysis and Lab(COM)(3, 1)**
Theory and application of modern instrumental methods to chemical analysis.
Laboratory designed to accompany CHEM 434. Prerequisites: CHEM 328, CHEM 332, CHEM 344. Corequisites: CHEM 434L-CHEM 434.
- CHEM 452-452L Inorganic Chemistry and Lab(COM).....(3, 1)**
Theoretical and periodic aspects of inorganic chemistry.
Synthesis and characterization of inorganic compounds. Prerequisites: CHEM 332 Corequisites: CHEM 452L-CHEM 452.
- CHEM 464 Biochemistry I (COM)3**
A study of the fundamental principles governing the behavior of biochemical systems. Topics covered in the two semester sequence include the study of proteins, lipids and carbohydrates, metabolic processes, biological oxidation and reduction processes, molecular aspects of DNA replication and repair pathways, transcription and RNA processing, and protein translation. Prerequisites: CHEM 328.
- CHEM 465 Biochemistry II (COM).....3**
A continuation of CHEM 464. Prerequisites: CHEM 464.
- CHEM 466 Laboratory Methods- Biochemistry.....1**
A study of fundamental biochemistry laboratory skills, including, protein isolation and analysis by electrophoresis, enzyme kinetics and spectroscopic analysis of biomolecules. Prerequisites: CHEM 464.
- CHEM 482 Environmental Chemistry (COM).....(3-4)**
Examination of the chemistry and chemical processes of the environment, including the role of chemistry in current environmental issues. Prerequisites: CHEM 326
- CHEM 484 Chemical Toxicology.....3**
Understanding of the principles of toxicity, including the molecular basis for toxicity and the environmental fate and transport of chemicals in the environment. Prerequisites: CHEM 242 (or CHEM 328); CHEM 464.
- CHEM 491 Independent Study (COM).....(1-9)**
- CHEM 492 Topics (COM).....(1-4)**
- CHEM 494 Internship (COM)(AW)(1-4)**
- CHEM 498 Undergraduate Research/Scholarship (COM) (AW).....(3-6)**
- CHEM 610 Atomic Theory & Bonding3**
Prerequisites: Instructor's consent.
- CHEM 611 Intermolecular Interactions & Phases of Matter3**
Prerequisites: Instructor's consent.
- CHEM 612 Thermodynamics3**
Prerequisites: Instructor's consent.
- CHEM 613 Equilibria & Acid-Base Chemistry.....3**
Prerequisites: Instructor's consent.
- CHEM 614 Kinetics, Nuclear, & Electrochemistry3**
Prerequisites: Instructor's consent.

CHEM 615 Organic & Biochemistry3	Prerequisites: Instructor's consent.
CHEM 616 Laboratory Development3	Prerequisites: Instructor's consent.
CHEM 617 Action Research in the Secondary Classroom2	Prerequisites: Instructor's consent.
CHEM 618 Chemistry Teaching Strategies3	Prerequisites: Instructor's consent.
CHEM 622 Advanced Organic Chemistry I3	
CHEM 632 Advanced Analytical Chemistry3	
CHEM 642 Advanced Physical Chemistry3	
CHEM 654 Advanced Inorganic Chemistry3	
CHEM 662 Principles of Biochemistry(2-5)	
CHEM 691 Independent Study(1-4)	
CHEM 710 Philosophy of Science2	
CHEM 711 Chemical Education Research2	
CHEM 713 Qualitative Research Methods2	
CHEM 714 Quantitative Research Methods2	
CHEM 715 Chemistry Instruction in Higher Education2	
CHEM 722 Synthesis of Natural Products3	
CHEM 724-724L Structural Determination of Organic Compounds and Lab3	
CHEM 726 Advanced Organic Chemistry II3	
CHEM 728 Bioorganic Chemistry3	
CHEM 731 Advanced Environmental Chemistry3	
CHEM 732 Aquatic Chemistry3	
CHEM 733 Atmospheric Chemistry3	
CHEM 734 Environmental Surface Chemistry3	
CHEM 735 Analytical Spectroscopy 3	
CHEM 736 Chromatography and Separation3	
CHEM 738 Electroanalytical Chemistry3	
CHEM 741 Quantum Chemistry I3	
CHEM 742 Quantum Chemistry II3	
CHEM 744 Chemical Thermodynamics3	
CHEM 745 Statistical Thermodynamics3	
CHEM 748 Chemical Kinetics3	
CHEM 753 Organometallic Chemistry3	
CHEM 764 Biochemistry I3	
CHEM 766 Biochemistry II3	
CHEM 767 Biophysical Chemistry3	
CHEM 781 Bioinorganic Chemistry3	
CHEM 788 Research Problems in the Chemistry Classroom1-2	Prerequisites: Instructor's consent and CHEM 616.
CHEM 790 Seminar1	

CHEM 792 Topics(1-6)
CHEM 798 Thesis(1-7)
CHEM 898D Dissertation PhD(1-12)

CHRD (Counseling and Human Resource Development)

CHRD 301 Introduction to Rehabilitation3	The purpose of this course is to provide introductory level information regarding the counseling profession. Students will be exposed to the history, traditions, methods, and purposes of professional counseling, as well as the legal and ethical requirements that apply to clinical practice. The course will provide overview of the counseling field and provide students with a basis for development of a beginning professional identity.
CHRD 351 Medical and Vocational Case Management3	The purpose of this course is to provide students with experience in the day to day requirements and skills needed to manage casework and provide services for consumers in actual human services agencies.
CHRD 352 Counseling Special Populations3	This course will familiarize students with the history, needs, and cultural characteristics of consumers of counseling services that have disabilities. Ethnic and religious aspects will be considered as they relate to professional counseling.
CHRD 353 Ethics and the Helping Professions3	The purpose of this course is to provide ethical and legal standards as related to critical professional issues. The relationship and integration of values for the counselor's role in practice, training, and consultation will be explored.
CHRD 451 Individual and Group Counseling3	This course will introduce students to fundamental perspectives on professional counseling. Change processes and strategies will be examined from differing viewpoints. Students will be familiarized with group dynamics, structure, and power.
CHRD 452 Addictions Rehabilitation3	The purpose of this course is to introduce students to practice and policy aspects of addictions counseling. From a strengths perspective, biological, psychological, social, and spiritual factors will be considered as they relate to substance abuse issues.
CHRD 453 Family Therapy3	Family structure, systems, and communication will be examined. Perspectives on family dynamics and therapeutic change will be explored.
CHRD 471-571 Gerontology Issues in Counseling3	
CHRD 601 Introduction to Professional Issues & Ethics1	
CHRD 602 Research and Evaluation in Counseling3	
CHRD 610 Developmental Issues in Counseling3	
CHRD 661 Theories of Counseling3	
CHRD 690 Seminar(1-3)	
CHRD 691 Independent Study(1-3)	
CHRD 692 Topics(1-3)	
CHRD 693 Workshop(1-3)	
CHRD 701 Professional Issues & Ethics II1	

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 731 Multicultural Counseling and Human Relations	3
CHRD 736 Appraisal of the Individual	3
CHRD 742 Career Counseling and Planning	3
CHRD 751 Overview of Rehabilitation & Mental Health Counseling	3
CHRD 752 Medical and Psychological Aspects of Disability	3
CHRD 753 Case Management Principles and Plan Development	3
CHRD 755 Clinical Diagnosis and Treatment Planning	4
CHRD 756 Counseling the Addictive Client	3
CHRD 757 Advanced Testing: Intellectual Assessment	3
CHRD 759 Advanced Testing: 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 788 Research Problems in Counseling and Guidance	(1-3)
CHRD 791 Independent Study	(1-3)
CHRD 794 Internship	(2-6)
CHRD 798 Thesis	(1-6)

CHST (Chemistry Topics)

CHST 601 Chemistry Topics for Educators	(1-12)
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CJUS (Criminal Justice)

CJUS 201 Introduction to Criminal Justice * ** (COM).....3
 Overviews the criminal justice institutions involved in the operations of criminal law including the police, the attorney, the bail system, the trial, the guilty plea, sentencing, corrections and an analysis of criminal law in terms of why certain kinds of conduct are criminal in our society. Notes: * Course meets SGR #3 or ** IGR #3.

CJUS 203 Policing in a Free Society (COM).....3
 Presents the role of law enforcement within the criminal justice system, including law enforcement organizations and functions of separate operational units. Also examines the role of the police in a democratic society, covering concepts such as police services, crime deterrence, discretion and enforcement policies.

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CJUS 331 Civil Rights and Liberties.....3
 Individual First Amendment guarantees, constitutional right of the accused in the criminal process and equal protection of the law as interpreted through U.S. Supreme Court decisions. Cross-Listed: POLS 330.

CJUS 412 Criminal Prosecution and Defense (COM).....3
 Presents a behavioral and legal analysis of criminal case concepts, such as initial appearance, bail, preliminary hearing, grand jury, arraignment, suppression hearings, trial and sentencing, emphasizing bail reform, plea bargaining, screening, diversion, speedy trial, insanity defense, discovery, and the role of the defense attorney, prosecutor, and judge. The court system is examined as a social institution of human actors, exercising discretion within the boundaries of the law.

CJUS 431 Criminal Law (COM).....3
 Examines the substantive criminal law, exploring the larger issues concerning the relationship of the individual to the state through analyzing such topics as the nature of criminal liability and the functions and justifications for criminal punishment, legal limitations upon criminalization, and the general principles of criminal liability, such as the “Act” and “State of Mind” requirements, specific offenses against persons and property, the law of attempt, the law of complexity, and conspiracy.

CJUS 433 Criminal Procedure (COM).....3
 Constitutional analysis of the criminal procedures, focusing primarily on the fourth, fifth, and sixth amendments, respectively, the right to be free from unreasonable search and seizure, the privilege against self-incrimination, and the right to counsel. Examines the need to protect individual defendants from abuse at the hands of the state while enhancing law enforcement efficiency.

CJUS 436 Juvenile Justice (COM).....3
 Examines the separate system created in our society to handle juvenile justice, tracing the historical and philosophical development of the juvenile justice system and inspecting the various stages of the juvenile justice process as well as critical issues currently facing the system.

CJUS 491-591 Independent Study (COM).....(1-3)

CJUS 492-592 Topics (COM).....3

CM (Construction Management)

CM 101 Introduction to Construction.....1
 Introduction to the construction industry and the concept of being a construction management professional as well as the ethics required of a person with influence on the construction industry. A variety of ideas are presented to the students to assist in their career choice.

CM 200 Construction Management Off Campus Orientation.....0
 CM enrollment sustaining

CM 210-210L Construction Surveying and Lab.....3
 The study of construction surveying and layout including topographic surveys and mapping. Land and construction surveys, principles of curve and quantity calculations and other advanced topics in surveying. Prerequisites: GE 121, or ID 122 or LA 120; and MATH 115, MATH 120 or MATH 123. Corequisites: CM 210L-CM 210.

CM 216 Construction Materials.....3
 Source, processing, and applications of construction materials. Prerequisites: MATH 115 or MATH 120 or MATH 121 or MATH 123.

CM 230 Applied Construction.....1-3
 The supervised application of construction principles to the actual building of a whole or part of a structure. Prerequisites: CM 101

CM 232-232L Cost Estimating and Lab.....3
 The study of the basic concepts of construction plan, specification and blueprint reading by requiring the student to do actual quantity takeoff using both traditional hand methods and computer enhanced procedures. Prerequisites: GE 121, CSC 105. Corequisites: CM 232L- CM 232.

CM 291 Independent Study(1-3)

CM 292 Topics.....(1-3)

CM 320-320L Construction Soil Mechanics and Lab.....3
 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. Corequisites: CM 320L-CM 320.

CM 332 Building Construction Methods and Systems3
 The study of the structural and finish systems that make up a building and the related methods of implementation. Prerequisites: Junior standing or instructor approval, CM 232, CM 216.

CM 333 Mechanical, Electrical, Plumbing Systems.....3
 The study of mechanical, electrical, plumbing, and fire protection systems, design considerations, and system components in a modern building. Prerequisites: Junior standing or instructor approval, CM 232, CM 216.

CM 352 Advanced Cost Estimating3
 The study of the procedures and methods required to determine the value of construction projects with associated bidding procedures. Prerequisites: ACCT 211, CM 216, CM 232.

CM 353-353L Construction Structures and Lab.....3
 The study of the structural design process in the built environment. Prerequisites: PHYS 111, and MATH 115, MATH 120, or MATH 123. Corequisites: CM 353L-CM 353.

CM 360 Building Design and Evaluation Concepts3
 The study of the design of buildings and the use of contemporary concepts to regulate and influence the design process. Prerequisites: GE 123, CM 332, and CM 353-353L

CM 374 Heavy Construction Methods and Systems3
 The study of the systems involved in heavy construction and the equipment and methods required to implement them. Prerequisites: CM 210 and CM 216.

CM 400 Risk Management and Construction Safety.....3
 Construction safety and health and effective management of risk.

CM 410 Construction Project Management and Supervision.....3
 The study of the ethical, procedural, and supervisory concepts involved with the execution of a construction project. Prerequisites: Senior standing, CM 332, CM 333, CM 374.

CM 420 Construction Student Competitions1-3
 Participation and related preparation for student competitions hosted by regional, national, and international industry organizations. Prerequisites: Instructor Approval.

CM 421 Commercial Building Inspection and Plan Checking3
 Preparation to become a certified building inspector or building plan checker/reviewer by studying the prevailing building code. Prerequisites: CM 332

CM 430 Building Environmental Certification3
 Preparation for accreditation by a recognized authority in the efficient construction of buildings.

CM 443 Construction Planning and Scheduling3
 Planning and scheduling construction projects. Both manual methods and computer programs will be used to schedule activities, control cost and manage resources. Prerequisites: CM 332, CM 374.

CM 452 Heavy and Highway Estimating.....3
 The study of the procedures and methods required to determine the value of heavy, highway, and site development projects with associated bidding procedures. Prerequisites: ACCT 211, CM 232, CM 374.

CM 455-455L Residential Construction and Lab3
 The study of the residential construction process including design, documentation, and construction. Prerequisites: Prerequisites: GE 123, CM 353. Corequisites: CM 455L, CM 455.

CM 460 Sustainable Building Systems Concepts and Analysis.....3
 The analysis of energy efficient and environmentally responsible building design and construction. Material selection, energy and climate analysis, and practical applications of new technology will be covered. Prerequisites: CM 332

CM 473 Construction Law and Accounting (AW).....3
 The study of the application of legal, contractual, and generally accepted accounting principles to the construction industry. Prerequisites: BADM 350. Notes: Registration Restriction: Senior Standing or instructor approval.

CM 475 Engineering Administration.....3
 Law of contracts, agency, and other legal aspects of engineering. Preparation of specifications. Economic aspects of engineering. Prerequisites: Senior standing. Cross-Listed: CEE 482.

CM 485-485L Site Development and Feasibility Analysis and Lab3
 Tools and techniques used to evaluate the cost of new site development; risk assessment and market feasibility analysis for properties to be acquired for economic development. Corequisites: CM 485L-CM 485.

CM 491 Independent Study(1-3)

CM 492 Topics.....(1-3)

CM 493 Workshop(0-3)

CM 494 Internship.....(1-3)

CM 497 Cooperative Education(1-3)

CSC (Computer Science)

CSC 105 Introduction to Computers (COM).....3
 Overview of computer applications with emphasis on word processing, spreadsheets, database, presentation tools and internet-based applications.

CSC 112 Principles of Internet Applications.....3
 This course provides students with a conceptual and practical understanding in the effective and critical use of the Web and other Internet services through the application of problem-based activities. Includes a general grounding in interacting with the Internet, using e-mail, news and web-resources, basic HTML, as well as social and security issues.

CSC 130 Visual Basic Programming (COM)3
 Fundamentals of programming using Visual Basic. Focus on problem solving, visual design, and programming concepts. Topics include sequence, selection, repetition, procedures, and functions.

<p>CSC 150 Computer Science I (COM).....3 An introduction to computer programming. Focus on problem solving, algorithm development, design, and programming concepts. Topics include sequence, selection, repetition, functions, and arrays.</p> <p>CSC 150L Computer Science I Lab (COM)0 Accompanies CSC 150.</p> <p>CSC 205 Advanced Computer Applications (COM)3 This course covers advanced topics in word processing and spreadsheet applications such as macros, advanced functions, graphics, merging, linking, and transferring data. The course emphasizes the efficient use of software packages. Operating systems/environment topics are also addressed. Prerequisites: CSC 105 or consent.</p> <p>CSC 218 Introduction to C/C++/Unix for Engineers3 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> <p>CSC 250 Computer Science II (COM)3 Problem solving, algorithm design, standards of program style, debugging and testing. Extension of the control structures and data structures of the high-level language introduced in CSC 150. Elementary data structures and basic algorithms that include sorting and searching. Topics include more advanced treatment of functions, data types such as arrays and structures, and files. Prerequisites: CSC 150.</p> <p>CSC 291 Independent Study (COM)(1-3)</p> <p>CSC 292 Topics (COM)(1-3)</p> <p>CSC 294 Internship(1-6)</p> <p>CSC 300 Data Structures (COM).....3 A systematic study of data structures and the accompanying algorithms used in computing problems; structure and use of storage; methods of representing data; techniques for implementing data structures; linear lists; stacks; queue; trees and tree traversal; linked lists; and other structures. Prerequisites: CSC 250.</p> <p>CSC 303 Ethical and Security Issues in Computing (G)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. It also provides students with a fundamental knowledge of computer security including security terminology, software and hardware vulnerabilities, and encryption. Notes: ** Course meets IGR #3.</p> <p>CSC 314 Assembly Language (COM).....3 A thorough introduction to assembly language programming and processor architecture. A study of low-level programming techniques, and the layout of a typical computer. The student will gain insight into the memory layout, registers run-time stack, and global data segment of a running program. Prerequisites: CSC 250.</p> <p>CSC 317 Computer Organization and Architecture (COM).....3 A course in computer organization with emphasis on the hierarchical structure of computer systems. Covers such topics as: components of computer systems and their configuration, design of basic digital circuits, the microprogram level, the conventional machine level, the operating system level, assembly language, address modes, interpreters/translators, computer arithmetic. Prerequisites: EE 245-245L.</p>	<p>CSC 325 Management Information Systems (COM).....3 Introduction to the application of information technology in organizations, roles of managers and staff professionals in developing and using information systems with current and future technology.</p> <p>CSC 330 Cobol I (COM).....3 Introduction to structured COBOL programming: input, output, and reformatting; arithmetic program design; report writing; intrinsic functions; conditional branching; condition-names; iteration; control breaks; program maintenance; validity checking; and interactive programming. Prerequisites: CSC 150 or CSC 213.</p> <p>CSC 331 Cobol II (COM)3 Advanced structured COBOL programming with arrays; table look-ups; subprograms; sequential file processing; sorting and merging; indexed file processing; text manipulations; debugging; and on-line applications. Prerequisites: CSC 330.</p> <p>CSC 346 Object Oriented Programming (COM).....3 The study of object oriented methodologies using a modern language such as C++ or Java. Advanced data structures, I/O and file management will be implemented using polymorphism, inheritance, overloading and encapsulation. Prerequisites: CSC 300.</p> <p>CSC 354 Introduction to Systems Programming3 The study of macros, subroutines, subroutine linkage, conditional assembly, input-output, interrupt processing, assemblers, loaders and linkers. Prerequisites: CSC 300, CSC 314.</p> <p>CSC 391 Independent Study (COM)(1-3)</p> <p>CSC 392 Topics (COM)(1-3)</p> <p>CSC 422 GUI Programming (COM)3 This course is event-driven graphical user interface (GUI) programming will cover topics such as C++ programming for Windows. Prerequisites:</p> <p>CSC 433/533 Computer Graphics (COM)3 Graphical programming concepts. Display media and device characteristics. Point, line, and circle plotting. Coordinating systems and transformations. Polygon clipping and filling. Spline methods, hidden surface elimination, and shading. Prerequisites: CSC 300, MATH 125.</p> <p>CSC 445 Introduction to Theory of Computation (COM)3 Introduction to a series of models for computation and their relationship to formal languages that are useful in the definition of programming languages along with a look at the theoretical limits of computers. Topics include finite and pushdown automata, Turing machines, grammars, decidability and computational complexity. Prerequisites: CSC 250, MATH 253, MATH 316.</p> <p>CSC 446 Compiler Construction.....3 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. Prerequisites: CSC 300, CSC 445.</p> <p>CSC 447/547 Artificial Intelligence (COM)3 Concepts in Artificial intelligence: programming in languages such as Prolog or LISP; knowledge representation; search algorithms. Prerequisites: CSC 250.</p> <p>CSC 450/550 Game Programming3 This course teaches the fundamental concepts of computer game programming using Windows and C/C++. The C/C++ languages are used for this course because they are the standard language used for most commercial games. In this course, students will learn how to design 2D games for Windows, creating a simple game as part of the course.</p>
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CSC 456 Operating Systems (COM)	3
A study of the functions and structures associated with operating systems with respect to process management, memory management, auxiliary storage management, and processor management. Topics include concurrent and distributed computing, deadlock, real and virtual memory, job and processor scheduling, security and protection. Prerequisites: CSC 300, CSC 314.	
CSC 461 Programming Languages (COM)	3
This course consists of two parts. The first part introduces how programming languages are designed, including an introduction to the concepts of parsing and compiling. Issues related to implementation such as type checking, binding, and memory management are discussed. Secondly, the course will survey the spectrum of programming languages paradigms, including traditional imperative, object oriented, functional, and logic languages. Prerequisites: CSC 300.	
CSC 470 Software Engineering (COM)	3
An introduction to the software engineering process, including lifecycle phases, problem analysis, specification, project estimation and resource estimations, design, implementation, testing/maintenance, and project management. In particular, software validation and verification as well as scheduling and schedule assessment techniques will be discussed. Prerequisites: CSC 300.	
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. Prerequisites: CSC 300.	
CSC 480 Methods of Teaching Computer Science	3
The principles, methods and theories in teaching computer science subjects to secondary school students will be studied. Prerequisites: CSC 300.	
CSC 481 Systems Analysis (COM)	3
Systems analysis covers concepts, skills, methodologies, techniques, tools and perspectives essential for systems analysts to successfully design information systems. Topics include requirements specifications, object-oriented analysis and design using the unified modeling language and project management.	
CSC 484 Database Management Systems (COM)	3
The study of formalized database design. This course will focus on relational model design and the use of SQL. Students will use a modern relational database to implement designs and learn the basics of data management. Prerequisites: CSC 300.	
CSC 485 Software Engineering II (AW)	3
The course is designed to illustrate the principles discussed in CSC 470. The students will be team leaders on a project that involves the system analysis, design, integration, testing, and maintenance of a large, real world software system. The students will also document the process of the real world software development. Prerequisites: CSC 470.	
CSC 490 Seminar (COM)	(1-3)
CSC 491 Independent Study (COM)	(1-3)
CSC 492/592 Topics (COM)	(1-3)
CSC 494 Internship (COM)	(1-8)
CSC 496 Field Experience (COM)	(1-3)
CSC 497 Cooperative Education	(1-3)
CSC 498 Undergraduate Research/Scholarship (COM)	(1-6)

CSC 601 Accelerated Computer Science Fundamentals	3
CSC 630 Principles of Data Base System 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 788 Research Report/Design Paper	(1-2)
CSC 790 Seminar	1
CSC 791 Independent Study	(1-3)
CSC 792 Topics	(1-3)
CSC 798 Thesis	(1-7)

CSCA (Computer Science Application)

CSCA 120 Introduction to Microsoft Windows	1
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. Prerequisites: CSCA 100 or permission of instructor.	
CSCA 292 Topics (COM)	(1-5)

CSS (Computational Science and Statistics)

CSS 701 Foundations of Applied Mathematics (COM)	3
CSS 702 Elements of Computational Science (COM)	3
CSS 703 Statistical Modeling and Computing (COM)	3
CSS 704 Computing Paradigms (COM)	3
CSS 890 Seminar in Computational Science and Statistics (COM)	1
CSS 891 Independent Study Computational Science and Statistics (COM)	(1-3)
CSS 892 Topics in Computational Science and Statistics (COM)	(1-3)
CSS 898 Dissertation Research (COM)	(1-36)
CSS 899 Dissertation Sustaining (COM)	0

CTE (Career and Technical Education)

CTE 105 Principles of Career and Technical Education	(1-3)
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 approved 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 passed an occupational competency evaluation, such as: National Occupational Competency Testing Institute (NOCTI) exam for a specific Technical Specialty; and 4. validated military experiences that are related to a technical specialty.

CTE 201 Mentorship/Practicum I.....2
 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 II.....2
 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 I.....(1-3)
 Coordinated work experience in an occupation related to a specific vocational education content area. Prior application is required. Prerequisites: Permission of instructor.

CTE 251 Occupational Analysis.....(1-3)
 An analysis breakdown of a trade or occupation to determine units for instruction.

CTE 295 Practicum.....1

CTE 301 Mentorship/Practicum III.....2
 This class is the third class in a two-year mentorship/practicum program designed for new faculty in their second year in secondary and postsecondary 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 IV.....2
 This course is the fourth class in a two-year mentorship/practicum program designed for new faculty in their second year in secondary and postsecondary 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 II.....(1-3)
 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. Prerequisites: Prior approval of instructor.

CTE 311 Career and Technical Adult Education.....(1-3)
 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 Education.....(1-3)
 Technical education programs are studied in regard to their development, curriculum content, equipment, and staff requirements.

CTE 313 Organization and Coordination of Cooperative Educational Programs.....3

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 Learner.....3
 Introduction to vocational education for learners with special needs. Historical and current issues and trends, including review of existing programs.

CTE 352 Instructional Resources Development.....2
 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 Management.....(1-3)
 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 Training.....(5-6)
 (Registration is initiated by submitting CTE Form No. 149 to the Coordinator of Vocational Technical 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 Education.....2
 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. Prerequisites: Sophomore in education. Notes: For prospective teachers and guidance personnel.

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. Prerequisites: Prior approval of instructor.

CTE 419/519 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 420/520 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 425/525 Development of Career and Technical Education Thought and Practice3

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 430/530 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 Safety2

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 440/540 Curriculum Design in Career and Technical Education (AW).....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 Technology2

Visual aids used in vocational and technical education and their relationship to the various occupational areas.

CTE 463/563 Technical and Industrial Experience.....(1-4)

This course is designed for Career and Technical Educators. The purpose of this course is to aid the educator in staying current with new technologies and methodologies occurring in business and industry. Approval is required from the Coordinator of Career and Technical Education (CTE) at least two weeks prior to the educational experience. To receive graduate credit a student will need to complete a paper reviewing the educational experience. Complete details on receiving undergraduate and graduate credit for the Technical and Industrial Experiences course are included in the application materials. (Appropriate forms and related paperwork can be acquired from the Coordinator of CTE.)

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 Teaching8

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.....(2-3)

CTE 491/591 Independent Study(1-4)

CTE 492/592 Topics(1-3)

CTE 700 Technology in Career Education.....3

CTE 720 Entrepreneurship Career Education3

CTE 731 Administration and Supervision of Career Education3

CTE 788 Research Problems(1-2)

CTE 790 Seminar.....(1-3)

CTE 791 Independent Study.....(1-3)

CTE 792 Topics(1-3)

CTE 794 Internship(1-3)

CTE 798 Thesis5

DANC (Dance)

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. Notes: ** Course meets IGR #3.

DANC 131 Movement 12

The basic principles of human movement as they apply to the individual, the actor, the dancer and the musician.

DANC 132 Movement 22

The advanced principles of human movement as they apply to the individual, actor, dancer and the musician. Prerequisites: DANC 131.

DANC 230 Technique 1.....1

Technical dance training in basic structures of Classical Ballet and Jazz.

DANC 231 Technique 2.....1

Technical dance training in basic structures of Modern and Tap dance.

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. Notes: ** Course meets IGR #3.

DANC 241-241L Creative Movement for Children and Lab.....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. Corequisites: DANC 241L-DANC 241

DANC 330 Technique 3.....1

Technical dance training in intermediate and advanced structures of Classical Ballet and Jazz. Prerequisites: DANC 230 or Instructor Consent.

DANC 331 Technique 41	Technical dance training in intermediate and advanced structures of Modern and Tap Dance. Prerequisites: Technique 2 or Instructor Consent.
DANC 420 Techniques of Teaching Dance2	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. Prerequisites: DANC 130, DANC 240.
DANC 430 Composition and Choreography1	Methods of creating dance choreography. Prerequisites: DANC 230 and 231, or DANC 330 and 331, or Instructor Consent.
DANC 431 Dance for the Musical Theatre1	Dance exploration in many genres of dance for the musical theatre. Prerequisites: DANC 230 and 231, or DANC 330 and 331, or Instructor Consent.
DANC 491 Independent Study(1-3)	Prerequisites: Consent.
DANC 492 Topics(1-5)	

DCOM (Communication Disorders)

DCOM 112 Voice and Articulation3	The study of vocal production and phonology/articulation.
DCOM 131 Introduction to Communication Disorders3	A study of the basic processes of speech, language, and hearing, and the major speech, language and hearing disorders.
DCOM 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.
DCOM 212 Language Development3	Emphasis on the acquisition and development of language, verbal and nonverbal, as children learn to communicate effectively by selecting the most appropriate communication strategies.

DS (Dairy Science)

DS 101 Opportunities in Dairy Science1	An introduction to the diversity of Dairy Science and career opportunities; resume development and goal setting for a profession in Dairy Science. Fall.
DS 130-130L Introduction to Dairy Science and Lab3	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. Fall and Spring. Corequisites: DS 130L-DS 130.
DS 202 Dairy Products Judging1	Quality of milk, cheddar cheese, ice cream, and cottage cheese. Spring.
DS 212 Dairy Cattle Evaluation2	Fundamental aspects of evaluation of dairy cattle for type; type classification of dairy cattle. Spring

DS 231 Dairy Foods3	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. Fall.
DS 301-301L Dairy Microbiology and Lab3	Quality control problems during the production and processing of fluid milk for human use, including role of regulatory agencies and quality standards. Odd Spring. Prerequisites: MICR 231. Corequisites: DS 301L-DS 301.
DS 311 Dairy Cattle Judging1	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. Fall. Prerequisites: DS 212.
DS 313-313L Technical Control of Dairy Products I and Lab3	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. Fall. Prerequisites: DS 130, CHEM 106 or CHEM 112. Corequisites: DS 313L-DS 313.
DS 321-321L Dairy Product Processing I and Lab5	Principles and practices in assembling, receiving, processing, and packaging milk and cream for beverage use, frozen milk and cream, concentrated milks, and ice cream. Sanitation procedures. Odd Fall. Prerequisites: DS 130, DS 313 (or concurrent), and MICR 231, or consent. Corequisites: DS 321L-DS 321.
DS 322-322L Dairy Product Processing II and Lab5	Processing or manufacturing of relatively nonperishable dairy products such as butter, cultured milks, cheese, dried milk, casein, lactose, and anhydrous milk fat. Even Spring. Prerequisites: DS 130, DS 313, and MICR 231, or consent. Corequisites: DS 322L-DS 322.
DS 401 Advanced Dairy Products Judging(1-2)	Quality evaluation of dairy products. Includes participation for alternate team members in the regional collegiate dairy products evaluation contest. Alternate team members take course for 1 credit. Team members who participate in both the regional and national contests take course for 2 credits. Fall. Prerequisites: DS 202 and written consent. Maximum of 3 credits.
DS 411-411L Dairy Breeds and Breeding and Lab3	Origin, genetics, characteristics, and development of major breeds of dairy cattle. Breeding and selection based on pedigrees, production records, type classification, and sire analysis. Odd Fall. Prerequisites: DS 130. Corequisites: DS 411L-DS 411.
DS 412-412L Dairy Farm Management and Lab4	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. Odd Spring. Prerequisites: DS 130 or consent. Corequisites: DS 412L-DS 412.
DS 413-513 Physiology of Lactation3	Anatomy, physiology, and biochemistry of mammary glands. Factors affecting quality and quantity of milk. Even Spring.
DS 421 Dairy Plant Management3	General costs, buildings, equipment, merchandising, personnel, other management factors of dairy processing plants. Even Fall. Prerequisites: Junior standing or consent.
DS 422-422L Technical Control of Dairy Products II and Lab4	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. Spring. Prerequisites: DS 313 and CHEM 108 or 120. Corequisites: DS 422L-DS 422.

DS 432 Dairy Cattle Feeding3
 Practical considerations involved in feeding dairy cattle. Even Fall. Prerequisites: AS 233.

DS 442-542 Dairy Product and Process Development.....3
 Students will work in small groups to design and produce a prototype dairy product. The course will include standards of identity for dairy products, nutritional labeling requirements, least cost formulation, design of manufacturing processes and methods for planning product development. Odd Spring. Prerequisites: DS 313.

DS 490 Seminar (AW).....1
 Fall.

DS 491 Independent Study.....(1-3)

DS 492 Topics(1-4)

DS 494 Internship(3-12)

DS 496 Field Experience(3-12)

DS 497 Cooperative Education.....(3-12)

DS 498 Undergraduate Research/Scholarship.....(1-6)

DS 711 Ruminology3
 Odd Fall.

DS 722-722L Advanced Dairy Microbiology and Lab3
 Even Spring.

DS 731 Lab Techniques in Dairy Science3
 Even Fall.

DS 791 Independent Study.....(1-4)

DS 792 Topics(1-4)

DS 798 Thesis.....(1-7)

DS 898D Dissertation-Ph.D.....(1-12)

ECE (Early Childhood Education)

ECE 150-150L Early Experience and Lab2
 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. Corequisites: ECE 150L-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 standard 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.

ECE 227 Human Development 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. Cross-Listed: HDFS 227.

ECE 228 Guidance with Young Children1
 Observation and guidance in preschool under supervision of professional practitioners. Prerequisites: ECE 150 and ECE 227.

ECE 228L Observation and Participation in Early Childhood Lab (COM)1
 Accompanies ECE 228.

ECE 292 Topics(1-3)

ECE 361-361L Methods and Materials/Early Childhood Education and Lab (AW)4
 Applications for early childhood classrooms will be studied. Inquiry-based, hands-on methods which are both developmentally appropriate and inclusive for all children from ages three to eight. Prerequisites: ECE/HDFS 227, ECE 228. Corequisites: ECE 361L-ECE 361. Notes: Admission to PS II concurrent with 362.

ECE 362-362L Early Childhood Education Curriculum and Lab.....4
 Curriculum 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 ages three to eight, will be discussed. An emphasis will be placed on inquiry-based practices and multicultural perspectives. Prerequisites: Admission to PS II; ECE/HDFS 227, ECE 228; concurrent with 361. Corequisites: ECE 362L-ECE 362.

ECE 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. Cross-Listed: HDFS 364. P, ECE/HDFS 227.

ECE 365-365L Emergent Literacy in Birth to Eight Education and Lab3
 This course will focus on language and emergent literacy development of children from infancy to age 8. Focus will be on providing authentic, developmentally appropriate activities that are integrated across the curriculum. Students will learn to evaluate developmentally appropriate literature for young children (birth to 8). A lab experience will enable students to develop and implement strategies for classroom teaching and for linking classroom learning and home literacy. Prerequisites: ECE 150, ECE 227, completed or currently enrolled in ECE 228. Corequisites: ECE 365L-ECE 365.

ECE 371-371L Infant and Toddler: Developmentally Appropriate Practices and Lab(COM)3
 This course is a study of developmentally appropriate practices for infants/toddlers (aged birth to 3 years). Students will learn developmentally appropriate learning environments and experiences for infants and toddlers that facilitate development and learning in the cognitive, language, physical, social/emotional, and aesthetic domains. The health, safety, and nutritional needs of infants and toddlers will also be studied and applied. Prerequisites: ECE 228-228L, HDFS 227. Corequisites: ECE 371L-ECE 371.

ECE 400 Orientation to Elementary Education Programs0
 This course is designed as an orientation to the cooperative elementary education program at DSU, NSU, USD, or BHSU. Procedures and requirements related to the cooperative program are presented and discussed. Students will be required to enroll in this course the semester immediately preceding their departure to the cooperating institution, as well as each semester they are in residence at DSU, NSU, USD, or BHSU.

<p>ECE 412/512 Kindergarten Education3 Course designed for students and teachers interested in work with kindergarten-age children. Issues, activities, and materials specific to kindergarten will be emphasized.</p> <p>ECE 441 Professional Issues in Child and Family Studies3 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.</p> <p>ECE 455 Administration and Supervision of Early Childhood Setting3 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. Prerequisites: ECE 228, ECE 361, ECE 362.</p> <p>ECE 465 Introduction to Developmental Assessment and Teacher-Research with Young Children2 An introduction to developmental assessment methods and teacher research methods will be explored. Experiences to increase awareness of and knowledge about a variety of assessment procedures, including advantages and limitations of assessment techniques, interpretation of findings, and referral decision-making will be included. Opportunities to assess and use teacher-research with preschool-aged children will occur. Prerequisites: HDFS 227, ECE 228. Corequisites: ECE 488.</p> <p>ECE 468 Early Intervention in Family-Centered Practices3 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. Prerequisites: HDFS 241, ECE 361, ECE 362, ECE 364.</p> <p>ECE 470 Early Childhood Inclusion Strategies3 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. Prerequisites: ECE 228, ECE 361, and ECE 362.</p> <p>ECE 473 Orientation to K-3 Student Teaching2 This course is designed to prepare students for the professional role of teaching in kindergarten through third grade. Students study professional issues related to early childhood and elementary education. Course materials are inclusive of public policy, advocacy, leadership, professional development, ethics, and workplace issues. Corequisites: ECE 488-3.</p> <p>ECE 475 Pedagogy and Guidance in Primary Grade Classrooms2 This course explores the unique aspects of instructional design for the primary grades (kindergarten through grade 3). Content includes organizing the primary classroom for learning, establishing and maintaining a safe and predictable learning environment, developing effective lesson plans and aligning them with state curriculum standards and district curriculum goals, and exploring models of teaching and approaches to learning in the early elementary grades.</p> <p>ECE 478-478L Integrated Curriculum in Birth-to-Age Eight Education and Lab4 This course supports teacher candidates in the semester immediately preceding the K-Grade 3 student teaching semester. Topics of study include</p>	<p>content and methods of instruction for teaching an integrated curriculum in the primary grades with specific emphasis on science, social studies, and language arts. Students will develop and collect applicable resources for teaching in the primary grades. Prerequisites: Senior standing, admission into PS 111, consent of instructor. Corequisites: ECE 488-3, ECE 478L- 478.</p> <p>ECE 480 Travel Studies(1-5) 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 of 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.</p> <p>ECE 487 Orientation to Child and Family Services Practices1 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. Prerequisites: Junior standing, to be taken prior to Practicum course: ECE 495.</p> <p>ECE 488 Student Teaching (COM)(1-12) Students preparing for teaching in the early childhood setting will observe, participate, and teach under the supervision of the regular classroom teacher in an approved early childhood setting. An additional “Mandatory Fee” applies to this course.</p> <p>ECE 491-591 Independent Study(1-3)</p> <p>ECE 492-592 Topics(1-3)</p> <p>ECE 495 Practicum (COM)(1-12)</p> <p>ECE 512 Kindergarten Education3 Cross-Listed: ECE 412</p> <p>ECE 543 Child Inquiry2</p> <p>ECE 591 Independent Study1-3 Cross-Listed: ECE 491</p> <p>ECE 592 Topics1-3</p> <p>ECE 601 Orientation in Graduate Study1</p> <p>ECE 645 Contemporary Perspectives in Early Childhood Education ...3</p> <p>ECE 665 Parent Education: Theory and Issues3</p> <p>ECE 676 Early Childhood Education Administration and Practicum(1-4)</p> <p>ECE 700-700L Research Methods and Lab4</p> <p>ECE 711 Child Development Theory and Application3</p> <p>ECE 788 Individual Research and Study(1-7)</p> <p>ECE 790 Seminar(1-3)</p> <p>ECE 791 Independent Study(1-3)</p> <p>ECE 792 Topics(1-3)</p> <p>ECE 794 Internship(1-7)</p> <p>ECE 798 Thesis(1-7)</p>
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ECON (Economics)

ECON 101 Global Economy * (G)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. (Not a substitute for ECON 201 or ECON 202.) Notes: * Course meets SGR #3.

ECON 201 Principles of Microeconomics * (COM).....3

Principles of Microeconomics studies basic economic concepts as they relate to consumer, worker, and business decisions. Emphasis is given to satisfaction maximizing behavior by individuals and profit maximization by firms. Market structures are thoroughly analyzed regarding their effect on price, output, and competitiveness. Prerequisites: MATH 102 or 115 or 120 or 121 or 123 or 125 or 281. Notes: * Course meets SGR #3

ECON 202 Principles of Macroeconomics * (COM) (G).....3

Principles of Macroeconomics considers the economy as a whole, how its sectors interact, and how monetary and fiscal policy can influence output, inflation, interest rates, unemployment, poverty, debt, and other factors. Prerequisites: MATH 102 or 115 or 120 or 121 or 123 or 125 or 281. Notes: * Course meets SGR #3

ECON 292 Topics(1-4)

ECON 301 Intermediate Microeconomics (COM).....3

Intermediate microeconomics examines more advanced microeconomic theory, then applies it to consumers' and businesses' consumption, pricing, and output decisions in various types of markets. Prerequisites: ECON 201, MATH 121 or MATH 123 or MATH 125.

ECON 302 Intermediate Macroeconomics (COM)3

Intermediate macroeconomics examines more advanced macroeconomic theories, then uses them to understand the determinants of national output, prices, interest rates, and employment under various conditions, and to evaluate effectiveness of monetary and fiscal policies. Prerequisites: ECON 201; ECON 202; MATH 102 or 115 or 120 or 121 or 123 or 125 or 281.

ECON 330 Money and Banking (COM)3

Money and banking examines the historical development of money, the bank system, and the federal reserve in the United States. The course studies interest rate determination and how monetary policy affects rates and the economy. Prerequisites: ECON 201, ECON 202.

ECON 370 Marketing.....3

Marketing; market organization and cooperative marketing functions; pricing; efficiency, and role and management of marketing activities. Prerequisites: ECON 201 or ECON 202 Cross-Listed: BADM 370.

ECON 372 Introduction to Resource and Environmental Economics3

Introduction to environmental economics. The course surveys environmental issues such as pollution and carbon emissions. Cost-benefit analysis of the cleanup of environmental problems is introduced as are net present value metrics. Prerequisites: ECON 101 or ECON 201 or permission. Cross-Listed: AGECE 372

ECON 403-503 History of Economic Thought (COM)3

History of economic thought surveys the historical development of economic theory from ancient to modern times. The writings of Aristotle, Adam Smith, Marx, and Marshall provide part of the diverse menu of economic thought. Prerequisites: ECON 201 or ECON 202.

ECON 405 Comparative Economic Systems (COM)(2-3)

Comparative economic systems studies the characteristics of modern economic systems and the significant thought and experience that have influenced their emergence and development. It uses the U.S. as a benchmark for comparing developed and developing economies in terms of output per capita, social welfare, income distribution, and other conditions. Prerequisites: ECON 201, ECON 202.

ECON 420-520 Economics of the Public Sector3

(offered on demand) 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. Prerequisites: ECON 201 or consent.

ECON 423 Statistics II (COM).....3

Statistics II studies probability, point and interval estimation, test of hypotheses, multiple regression and correlation, chi-square analysis, and analysis of variance. Prerequisites: MATH 121, STAT 281.

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. Prerequisites: ECON 301, ECON 302, MATH 121.

ECON 431-531 Managerial Economics3

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. Prerequisites: ECON 301, STAT 281.

ECON 433 Public Finance (COM) (AW).....3

Public finance focuses on the role of the public sector in the United States economy. It uses economic analysis to examine when government intervention in a market economy might be justified and to evaluate public spending and taxes. Prerequisites: ECON 201, ECON 202.

ECON 440-540 Economics of International Sector3

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. Prerequisites: ECON 201, ECON 202, ECON 330 or consent.

ECON 450-550 Industrial Organization (COM)3

Industrial organization studies how different industry structures influence firm performance and business practices, and how government policies affect competitiveness and the economy. Prerequisites: ECON 201, ECON 202.

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. Prerequisites: STAT 281 and ECON 301.

ECON 460-560 Economic Development (G)3

Developing and developed national economies. Factors impacting economic development. Role of public policies in development. Agricultural and rural development issues emphasized. Prerequisites: ECON 201, ECON 202, or consent.

ECON 467 Labor Law and Economics.....3

History and development of the U.S. labor movement; the labor market in a market economy from firm's and union's viewpoint; collective bargaining;

public policy toward collective bargaining. Prerequisites: ECON 201 or ECON 202, or junior standing.

ECON 472-572 Resource and Environmental Economics ** (COM).....3
 Resource and environmental economics surveys the allocation and conservation of natural resources from a perspective of optimal use and sustainability. Emphasis is placed on environmental economics including the problems of pollution, population, and economic growth. Methods for evaluating projects and programs are considered. Prerequisites: ECON 201. Notes: ** Course meets IGR #1.

ECON 476-576 Marketing Research.....3
 Marketing problems confronting agribusinesses and businesses. Descriptive and analytical techniques in a research methods approach. Marketing research techniques. Prerequisites: ECON 370, STAT 281. Cross-Listed: BADM 476.

ECON 490 Seminar (COM).....(1-3)

ECON 491-591 Independent Study (COM)(1-4)

ECON 492 Topics (COM)(1-4)

ECON 493-593 Workshop(1-3)

ECON 494 Internship (COM)(1-6)

ECON 496 Field Experience(1-3)

ECON 498 Undergraduate Research/Scholarship (COM).....(1-4)

ECON 601 Economics Study in Industrial Management.....3

ECON 610 Financial Management 3

ECON 660 Operations Management3

ECON 662 Bio-Energy Economics and Sustainability.....3

ECON 672 Bioenergy and Resource Economics.....3
 Cross-Listed: AGECE 672.

ECON 691 Independent Study(1-3)

ECON 692 Topics(1-4)

ECON 703 Advanced Macroeconomics3

ECON 704 Advanced Microeconomics3

ECON 705 Econometrics3

ECON 707 Research Methodology in Applied Economics2

ECON 740 Investment Science3

ECON 788 Research Paper(1-3)

ECON 792 Topics(1-4)

ECON 798 Thesis(1-7)

EDAD (Educational Administration)

EDAD 695 Practicum.....1

EDAD 700 Introduction to School Administration.....2

EDAD 707 The Principalship.....2

EDAD 708 Elementary Principalship Practicum1

EDAD 709 Secondary Principalship Practicum1

EDAD 715 Supervision3

EDAD 730 School Finance2

EDAD 735 School Law3

EDAD 741 Community and Public Relations2

EDAD 788 Research Problems in Educational Administration1-2

EDAD 790 Seminar(1-3)

EDAD 791 Independent Study.....(1-3)

EDAD 792 Topics.....(1-3)

EDAD 793 Workshop (1-3)

EDAD 794 Internship(1-6)
 Corequisites: EDAD 707; EDAD 715; EDAD 741 (allowing pre or concurrent enrollment in 741).

EDER (Education Evaluation and Research)

EDER 415 Educational Assessment2
 A study of educational measurements covering both the elementary and secondary fields.

EDER 492-592 Topics.....(1-3)

EDER 691 Independent Study.....(1-3)

EDER 711 Educational Assessment.....3

EDER 761 Informational Literacy.....3

EDER 788 Research Problems in Education(1-2)

EDER 792 Topics.....(1-3)

EDFN (Education Foundations)

EDFN 193 Worksho 1

EDFN 293 Workshop1

EDFN 338 Foundations of American Education (COM).....(1-2)
 A survey of the goals, history, organization, and philosophy of pre-K-12 American education, with emphasis on teaching as a profession; contemporary issues and practices, legal and ethical responsibilities, and attributes of effective teachers.

EDFN 365 Computer-Based Technology and Learning (COM).....(2)
 Prepares students to integrate computers into the curriculum by exploring the evolving uses and expectations of technology as a teaching and learning tool. Course objectives based on ISTE standards.

EDFN 366 Teaching Using Video Conferencing (COM).....1
 This course is an introduction to distance teaching methods, including designing lessons, best practices, and classroom management for distance education classrooms. Emphasis will be placed on videoconferencing classrooms and online learning.

EDFN 393 Workshop (COM).....1

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. Prerequisites: 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 transcendent learner, are examined and utilized in multi-disciplinary team planning projects. Prerequisites: Admitted to teacher education program, junior standing, adolescent developmental/psychology course of 3 credits.

EDFN 452-552 Foundations of Reading3
 Description of normal process of development in reading skills and techniques which may be used in remedying deviations which hinder readers in speed or comprehension. Recommended for graduate students in Language Skills and Communications programs.

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.

EDFN 462-562 Teaching Language Arts for English as 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.

EDFN 466-566 Literacy in Primary Grades3
 This course is designed for individuals interested in teaching literacy in the primary grades. It follows the International Reading Association's (IRA) professional standards and includes scientifically-based reading research regarding instruction and assessment Corequisites: EDFN 466L-566L

EDFN 466L-566L Literacy in Primary Grades Lab0
 Lab to teach reading methods in local elementary primary classrooms. This will be an application of material learned in EDFN 466-566. Corequisites: EDFN 466-566.

EDFN 475 Human Relations (COM)3
 Focuses on characteristics, contributions, and strengths of a pluralistic society; various cultural perspectives and specific information about cultures, the dehumanizing impact of biases and negative stereotypes; and the human relations approach to teaching.

EDFN 489 Professional Issues in Education1

EDFN 492-592 Topics (COM).....(1-3)

EDFN 496 Field Experience.....1

EDFN 528 Middle School Curriculum and Intruaction3

EDFN 590 Seminar (COM)(1-3)

EDFN 592 Topics1-3

EDFN 691 Independent Study(1-3)

EDFN 700 Exceptional Learners.....3

EDFN 725 Education in a Pluralistic Society3

EDFN 727 Group Processes3

EDFN 730 Current Issues in Education3

EDFN 745 Effective Teaching: Theory into Practice.....3

EDFN 747 Curriculum: Theory and Practice.....2

EDFN 750 Technology in Education3

EDFN 751 Teaching Reading Across Disciplines3

EDFN 790 Seminar (COM)(1-3)

EDFN 792 Topics (COM).....(1-3)

EDFN 794 Internship(1-6)

EE (Electrical Engineering)

EE 101 Introduction to Electrical Engineering I.....1
 This course includes an introduction to electrical engineering design and a variety of electrical engineering topics and software tools. Students will build various EE systems and modules as an introduction to various EE topics. Students will also be exposed to a variety of EE topics by faculty and industry personnel.

EE 102 Introduction to Electrical Engineering II1
 Students will learn fundamental design techniques and build a system for entry into the EE design contest (SDSU's showcase engineering event). Students are exposed to systems aspects of electrical engineering through faculty and industry seminars and a variety of presentations.

EE 220-220L Circuits I and Lab (COM).....4
 This course is designed to provide the electrical engineering students with an understanding of the basic concepts of the profession. Topics covered include resistive circuits, transient circuits, and sinusoidal analysis. Students also investigate essential principles by conducting laboratory experiments related to the topics studied in the classroom. P-spice is used to analyze electrical circuits using personal computers. Prerequisites: "C" or better in MATH 125.

EE 221-221L Circuits II and Lab (COM)4
 This course is designed to provide the electrical engineering student with an understanding of the basic concepts of the profession. Topics covered include resistive circuits, transient circuits, and sinusoidal analysis. Students also investigate essential principles by conducting laboratory experiments related to the topics studied in the classroom. P-spice is used to analyze electrical circuits using personal computers. Accompanies EE 221. Prerequisites: MATH 321 and "C" or better in EE 220.

EE 222-222L Circuits and Machines and Lab.....4
 This course is designed to provide the electrical engineering student with an understanding of the basic concepts of the profession. Topics covered include resistive, capacitive and inductive circuits, transient and sinusoidal analysis. Other topics include magnetically coupled devices, such as transformers, DC and AC motors. Students also investigate essential principles by conducting laboratory experiments related to the topics studied in the classroom. Software tools are used to analyze electrical circuits. Prerequisites: P, MATH 321 and "C" or better in EE 220. Corequisites: EE 222L-222.

EE 245-245L Digital Systems and Lab4
 The fundamental concepts of analysis and design of digital circuits including combinational and sequential logic design using TTL, CMOS, PLD's and software tools. Laboratory topics which enhance the design concepts of the lecture course, EE 245. Prerequisites: "C" or better, CSC 150 or CSC 218. Corequisites: EE 245L-245.

EE 260 Electronic Materials3
 Introduction to the materials, processes and designs used for the fabrication of electronic devices and packaging. Prerequisites: CHEM 112, PHYS 213 Corequisites: EE 220.

EE 291 Independent Study.....(1-3)

<p>EE 292 Topics (COM).....(1-3)</p> <p>EE 300-300L Basic Electrical Engineering I and Lab3 Circuit analysis and measurement concepts applicable to dc and sinusoidal ac electrical systems, including Ohm's Law and Kirchhoff's Laws. Non-EE students. 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. 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. Prerequisites: MATH 125, PHYS 213 Corequisites: EE 300L-EE 300.</p> <p>EE 302-302L Basic Electrical Engineering II and Lab.....3 Introduction to analog and digital electronic devices and applications. For non-EE students. Prerequisites: EE 300, EE 300L.</p> <p>EE 310 Probabilistic Methods in Electrical Engineering3 Basic probability and random variables. Applications to system reliability and effect of tolerance specifications. Description of engineering systems and problems using nondeterministic modeling. Prerequisites: EE 316.</p> <p>EE 315 Linear Control Systems3 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. Prerequisites: EE 316.</p> <p>EE 316 Signals and Systems I (COM)3 Description of deterministic signals through use of Fourier Series, Fourier and Laplace transforms. System descriptions and response treated by differential equations and transform theory. Prerequisites: "C" or better in EE 221.</p> <p>EE 317 Signals and Systems II (COM).....3 Study of discrete time signals and systems, including difference equations, discrete Fourier transforms, and Z transform. Applications and methods of digital signal filtering are considered. Prerequisites: EE 316.</p> <p>EE 320-320L Electronics I (COM).....4 Presents concepts of electronic devices and circuits including modeling of semiconductor devices, analysis and design of transistor biasing circuits, and analysis and design of linear amplifiers. Use of computer simulation tools and breadboarding as part of the circuit design process is emphasized. Students are introduced to methods for designing circuits that still meet specifications even when there are statistical variations in the component values. Accompanies EE 320. Prerequisites: "C" or better in EE 221.</p> <p>EE 321-321L Electronics II and Lab4 Design and analysis concepts for linear and digital electronic circuits. Emphasis on integrated circuit design. Experimental design and analysis of electronic circuits Prerequisites: EE 320. Corequisites: EE 321L-EE 321.</p> <p>EE 347-347L Microcontroller Systems Design and Lab.....4 Hardware concepts, organization and design of microcomputer systems, including single-chip microcomputers. Principles of microcomputer programming and operation using machine and assembly language. Laboratory topics which enhance the design concepts of the concurrent lecture course, EE 347. Prerequisites: 'C' or better in EE 245 and either CSC 218 or 250. Corequisites: EE 347L-EE 347.</p>	<p>EE 360 Electronic Devices.....3 Introduction to microelectronic devices, semiconductor and junction theory, semiconductor devices, other solid-state devices. Prerequisites: EE 260. Corequisites: EE 320.</p> <p>EE 385 Electromagnetics.....4 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. Prerequisites: EE 221, MATH 225.</p> <p>EE 420-420L/520-520L Electronics III and Lab.....4 Selected topics in the design of analog and digital electronics. Provides increased understanding of theory, simulation, and application of semiconductor devices. Experimental design and analysis of analog and digital electronic circuits. Prerequisites: EE 321-321L, EE 245. Corequisites: EE 420L-EE 420/EE 520L-EE 520.</p> <p>EE 422 Engineering Economics and Management.....2 Economic aspects of engineering, annual cost and present worth calculations, and decisions among alternatives are treated. Management of life cycle, requirements generation, risk management, project management, and systems engineering are also covered.</p> <p>EE 424-524 RF Electronics3 Performance analysis and design methods for the functional blocks of radio frequency systems operating below the microwave bands. Prerequisites: EE 321, EE 316.</p> <p>EE 430-430L Electromechanical Systems and Lab4 Basic engineering laws and concepts in analysis of electromechanical energy-conversion systems and devices. Includes study of DC and AC machines, and electronic drives. Systems, including electronic drives, electric machines, and mechanical loads, are analyzed in open-loop and closed-loop control for systems under steady-state and transient conditions. Experimental work with electronic drives and electric machines. Prerequisites: EE 385 Corequisites: EE 430L-EE 430.</p> <p>EE 433-533 Computer Analysis Power Systems.....3 Concepts used in formulating load flow and fault study problems and stability analysis of power systems using computer solutions. Prerequisites: EE 434 or consent.</p> <p>EE 434-434L Power Systems and Lab4 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. Computer (PowerWorld Simulator and/or PSCAD) modeling and simulation of power systems. Load-flow and load-flow control, symmetrical and asymmetrical faults, and contingency analysis studies are performed. Prerequisites: EE 385. Corequisites: EE 434L-EE 434</p> <p>EE 436-536 Applied Photovoltaics.....3 Fundamentals of hybrid photovoltaic power systems. Topics may include: an overview of energy and electricity use; solar resource characteristics; load assessment; the fundamentals of solar cells, batteries, power electronics, and generators and other power sources; power system design; the National Electric Code; and energy economics. Prerequisites: EE 321, EE 360.</p> <p>EE 436L-536L Applied Photovoltaics Lab.....1 This lab provides practical experience in the design of hybrid photovoltaic power systems. Prerequisites: EE 436/536.</p>
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EE 438 Power Technology Tour1	EE 470 Communications Engineering3
Approximately 10 tour sites are visited and all companies cooperate with the tours by making special presentations on the site. Central to the theme of the course is to have inspections of electric generation, substation and industrial sites in the four-state area of South Dakota, North Dakota, Minnesota, and Wisconsin, which make a significant contribution to present electric power technology. Typical sites have included hydro, steam, and nuclear generation plants; sunflower and wood, and garbage co-generation plants; lignite coal fields; 400 kV DC transmission line terminals; 500 kV AC substation; energy control centers; coal gasification plant; static VAR generators, taconite mining and paper mills, wind power manufacturers, coal handling facilities, various manufacturing facilities. Prerequisites: Instructor Consent.	Modulation and detection methods including circuit analysis and design for digital and analog communication systems are presented. Prerequisites: EE 316, EE 320.
EE 440-440L/540-540L VLSI Design and Lab (COM)3	EE 471-471L/571-571L Fiber Optic Communications and Lab4
Provides an introduction to the technology and design of VLSI integrated circuits. Topics include MOS transistors, switch and gate logic, scalable design rules, speed and power considerations, floor planning, layout techniques, and design tools. (Design content -two credits) Prerequisites: EE 245 and EE 320 Corequisites: EE 440L-EE 440/EE 540L-EE 540.	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 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. Prerequisites: EE 316 or consent. Corequisites: EE 471L-EE 471/EE 571L-EE 571.
EE 450-550 Biomedical Signal Processing3	EE 475-575 Digital Image Processing3
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. Prerequisites: EE 317.	Introduction to the fundamentals of digital image processing. Topics include image formation, transforms, enhancement, restoration, compression, and analysis. Prerequisites: EE 317 or consent.
EE 454-554 Biomedical Instrumentation and Electrical Safety3	EE 491 Independent Study (COM)(1-3)
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 health care facilities. Prerequisites: EE 321 or consent.	EE 492-592 Topics (COM)(1-3)
EE 460-460L/560-560L Sensor Theory and Design and Lab3	EE 492L-592L Topics in Laboratory Experience1
Introduction to the operation, design, testing and applications of modern sensors in use and under development. Signal conditioning and system integration are also reviewed. Prerequisites: EE 360. Corequisites: EE 460L-EE 460/EE 560L-EE 560.	This course provides opportunities for students to engage in hands-on experience in subject material that does not already have a laboratory component.
EE 462L-562L Electronic Materials Lab1	EE 494 Internship(1-3)
An introduction to microelectronic fabrication techniques including evaporative and sputter deposition, photolithography, mask design, and packaging. Prerequisites: Instructor consent.	EE 497 Cooperative Education(1-3)
EE 464-464L Senior Design I and Lab(COM)2	EE 498 Undergraduate Research/Scholarship(1-3)
This course will focus on the design process and culminate with the EE faculty approval of design projects (including schematics and parts lists) for EE 465. Typical topics included are the development of a product mission statement, identification of the customer and customer needs, development of target specifications, consideration of alternate designs using a decision matrix, project management techniques, legal and ethical issues, FCC verification and certification, uses of probability and statistics for reliable design, interpretation of data sheets, and component selection. Prerequisites: Senior standing and completed EE 315, EE 317, EE 321, EE 321L, EE 347, EE 347L, EE 360, ENGL 277. Corequisites: EE 464L-EE 464.	EE 570 Digital Communication Systems3
EE 465-465L Senior Design II and Lab(COM) (AW)2	EE 615 Linear Systems Theory3
Sequel to EE 464 Senior Design I. Seniors build and test design project in simulated environment incorporating engineering standards and realistic constraints. Requirements include laboratory notebook, progress reports, final oral presentation and written report. Prerequisites: EE 464. Corequisites: EE 465L-EE 465.	EE 620 Advanced Digital Hardware3
	EE 636 Photovoltaics3 Prerequisites: Instructor consent. Corequisites: EE 660.
	EE 637 Organic Photovoltaics3
	EE 660 Electric Properties of Materials3
	EE 670 Information and Signal Processing3
	EE 685 Microwave Theory3
	EE 691 Independent Study(1-3)
	EE 692 Topics(1-3)
	EE 736 Advanced Photovoltaics3 Prerequisites: EE 636.
	EE 760 Advanced Electronic Materials3
	EE 788 Engineering Research or Design Paper(1-2)
	EE 790 Seminar1
	EE 791 Independent Study(1-9)
	EE 792 Topics(1-3)
	EE 798 Thesis(1-7)
	EE 898D DissertationVariable

EET (Electronics Engineering Technology)

EET 100-100L Survey of Electronics and Lab.....4
 Nonmathematical survey of fundamental electronic components and circuits.
 Corequisites: EET 100L-EET 100.

EET 114-114L DC Concepts and Lab4
 Direct Current Circuits. Topics covered are basic laws and theorems directed toward resistive circuits. Kirchhoff's Laws, series and parallel circuits.
 Corequisites: EET 114L-EET 114.

EET 116-116L AC Concepts and Lab.....4
 Alternating Current Circuits. Study of series and parallel circuits, network analysis, capacitance, inductance, and impedance. Prerequisites: EET 114
 Corequisites: EET 116L-EET 116.

EET 118-118L DC and AC Concepts and Lab6
 Direct and alternating current circuit concepts. Study of laws, theorems, and techniques used to predict, analyze, and measure electrical circuits. Basic electrical components, Kirchhoff's Laws, series/parallel circuits, instruments, network analysis, capacitance, inductance, and impedance.
 Corequisites: EET 118L-EET 118.

EET 122-122L Introductory Circuits and Lab.....4
 The course provides a foundation in the theory and operation of semiconductor devices including solid-state diodes, bipolar junction and field effect transistors and other components related to discrete active circuits. Troubleshooting, schematic interpretation, and measurement techniques will be covered. Prerequisites: EET 114 or 118. Corequisites: EET 122L-EET 122.

EET 200 EET-Off Campus Orientation0

EET 220-220L Advanced Circuits and Lab.....4
 A study in the operation of active devices and their applications. Primary focus is on regulators, multivibrators, timers, and microcontrollers. Troubleshooting methods, measurement techniques, introductory circuit board design and soldering fundamentals are also explored Prerequisites: EET 122. Corequisites: EET 220L-EET 220.

EET 222-222L Radio Frequency Systems I and Lab4
 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.
 Prerequisites: EET 220. Corequisites: EET 222L-EET 222.

EET 230-230L Introductory Digital and Lab4
 Binary and hexadecimal number systems, switching theory, Boolean Algebra, logic diagrams, Karnaugh mapping, counter circuits, and pulse circuits. Prerequisites: EET 114 Corequisites: EET 230L-EET 230.

EET 232-232L Advanced Digital and Lab.....4
 More advanced digital theory and circuits coverage. Programmable digital circuits, memory mapping, and basic architecture of Intel microprocessor/microcomputer circuits Prerequisites: EET 230. Corequisites: EET 232L-EET 232.

EET 240 Techniques of Servicing.....2
 The practical aspects of servicing many types of electronic equipment. The latest techniques and equipment will be available for demonstration and laboratory usage Prerequisites: EET 220.

EET 251-251L Electricity and Electronics I and Lab.....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. Prerequisites: 1 course from subject MATH, except courses MATH 021, MATH 101, MATH 100T, or MATH 102. Corequisites: EET 251L-EET 251. Cross-Listed: Crosslisted with MNET 251.

EET 252-252L Electricity and Electronics II and Lab3
 This course is the continuation of EET 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. Prerequisites: EET 251 Corequisites: EET 252-EET 252. Cross-Listed: Crosslisted with MNET 252.

EET 291 Independent Study.....(1-3)

EET 292 Topics.....(1-3)

EET 293 Workshop(0-3)

EET 296 Field Experience(1-3)

EET 320-320L Analog Devices and Lab4
 Detailed overview of operational amplifier circuits, linear and switching power supplies, advanced linear circuit applications, and analog system design considerations Prerequisites: EET 220, MATH 123 or MATH 121. Corequisites: EET 320L-EET 320.

EET 330-330L Microprocessors and Lab.....4
 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. Prerequisites: EET 232-232L. Corequisites: EET 330L-EET 330.

EET 370-370L Computer Systems and Lab4
 A course to familiarize students with hardware/software configurations, installations, usage, and basic troubleshooting techniques of past and current personal computers. Prerequisites: EET 330. Corequisites: EET 370L-EET 370.

EET 380-380L Prototype Techniques and Lab4
 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 Prerequisites: EET 320 Corequisites: EET 380L-EET 380.

EET 426-426L Communication Systems and Lab4
 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. Prerequisites: EET 320. Corequisites: EET 426L-EET 426.

EET 428-428L Advanced Communication Systems and Lab.....4
 Complex radio systems including repeaters, mobile telephone, and paging systems. Systems design and troubleshooting techniques are studied as well as microwave and basic radar. Prerequisites: EET 426. Corequisites: EET 428L-EET 428.

EET 451-451L Industrial Electronics and Control and Lab.....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. Prerequisites: EET 252 or EET 320. Corequisites: EET 451L-EET 451. Cross-Listed: MNET 451.

EET 453-453L Manufacturing Automation and Lab3
 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. Corequisites: EET 453L-EET 453. Cross-Listed: MNET 453.

EET 470-470L Project Management and Lab (AW)2
 Basic theory, application, and techniques of project management applied to technical projects. A team-oriented, collaborative approach to building and testing products, developing and managing processes, and/or conducting applied research. Must take EET 471-471L in spring semester. Prerequisites: Instructor consent Corequisites: EET 470L-EET 470. Cross-Listed: MNET 470.

EET 471-471L Capstone Experience and Lab (AW)1
 Conclusion of technical projects started in EET 470 Project Management. Teams document and present the results of the implemented projects. Prerequisites: EET 470-470L. Corequisites: EET 471L-EET 471

EET 472-472L Networking I and Lab4
 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. Prerequisites: EET 370 Corequisites: EET 472L-EET 472.

EET 474-474L Networking II and Lab4
 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. Prerequisites: EET 472. Corequisites: EET 474L-EET 474.

EET 491 Independent Study(1-3)

EET 492 Topics(1-3)

EET 493 Workshop(0-3)

EET 494 Internship(1-8)

EET 496 Field Experience(1-3)

EET 497 Cooperative Education(1-8)

EHS (Education and Human Sciences)

EHS 140 Enhancing Human Potential2
 This course is designed to empower students as they transition to SDSU, further explore major and minor programs of study available to students and to create a link to the mission of the College of Education and Human Sciences. Emphasis will be placed on exploring issues related to individuals, families, schools and communities and how professionals work within interdisciplinary teams to solve problems and enhance human potential.

EHS 292 Topics(1-3)

EHS 310 Leadership for Families and the Food System **3
 Principles of leadership within the unique contexts of agriculture, biological sciences, family and consumer sciences. Topics covered include definitions and approaches to the study of leadership, leadership styles, gender and ethnic diversity, leadership in groups, ethical issues, mission statements, and emerging leadership issues. Cross-Listed: ABS 310. Notes: ** Course meets IGR #3.

EHS 480/580 International Experience1-4
 This will be a team-mentored class. Students will participate in one-to-four week travel/study abroad experience to another nation(s) to experience and evaluate diverse systems related to the College of Family & Consumer Sciences. Students will work one-on-one or in small groups with professors who have knowledge of the region/culture visited and/or content focus. Notes: For the Bachelor's degree, a maximum of 9 credits is allowed.

EHS 491/591 Independent Study(1-3)

EHS 492/592 Topics(1-3)

EHS 495 Practicum(2-6)

ELED (Elementary Education)

ELED 488 K-8 Student Teaching (COM)(2-16)
 Students preparing for teaching in the elementary school will observe, participate, and teach under the supervision of the regular classroom teacher in an approved elementary school. An additional "Mandatory Fee" applies to this course.

ELED 493/593 Workshop(1-3)

ELED 495 Practicum (COM)(1-12)

ELED 748 Elementary Curriculum Practicum1

EM (Engineering Mechanics)

EM 214 Statics (COM)3
 The study of the effects of external forces acting on stationary rigid bodies in equilibrium. Vector algebra is used to study two and three dimensional systems of forces. Trusses, frames and machines, shear and moment in beams, friction, centroids, moments of inertia, and mass moments of inertia are discussed. Prerequisites: MATH 123.

EM 215 Dynamics (COM)3
 Newton's laws of motion are applied to particles and rigid bodies. Absolute and relative motion; force, mass and acceleration; work and energy; and impulse and momentum. Prerequisites: EM 214.

EM 216 Statics and Dynamics (COM)(3-4)
 Statics: The study of effects of external forces acting on stationary rigid bodies in equilibrium. Frames and machines, friction, centroid and moments of inertia on areas and mass are discussed. Dynamics: Newton's laws of motion are applied to particles and rigid bodies. Topics considered are absolute and relative motion; force, mass, and acceleration (or particles and rigid bodies); work and energy; and impulse and momentum (of particles). Prerequisites: MATH 125, PHYS 211 or consent.

EM 321 Mechanics of Materials (COM)3
 Basic concepts of stress and strain that result from axial, transverse, and torsional loads on bodies loaded within the elastic range. Shear and moment equations and diagrams, combined stresses, Mohr's circle; beam deflections; and column action and equations. Prerequisites: EM 214.

EM 331 Fluid Mechanics (COM)3
 An introduction to the static and dynamic properties of real and ideal fluids, application of continuity, energy, and momentum principles to laminar, turbulent, compressible, and incompressible flows; and laminar and turbulent flow of fluids in closed conduits and around immersed bodies. Prerequisites: EM 215, MATH 321 for CEE majors; EM 215, MATH 321, ME 311 for ME majors Corequisites: CEE 331- CE majors only.

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. Prerequisites: 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. Prerequisites: 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
 Prerequisites: 422522 or consent.

EM 624 Theory of Plates and Shells3

EM 631 Advanced Fluid Mechanics3

EM 641 Finite Element Analysis3

ENGL 125 Introduction to Peace and Conflict Studies3
 Introduction to historical and contemporary debates within the discipline of Peace and Conflict Studies, during which each student is guided to identify her or his own interests within those debates, and then encouraged to evaluate and apply those interests within a coordinated service learning experience. Cross-Listed: GLST 125.

ENGL 151 Introduction to English Studies3
 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 texts. 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
 Study of and practice in writing persuasive prose, with the aim to improve writing skills in all disciplines. Prerequisites: ENGL 101. Notes: * Course meets SGR #1.

ENGL 210 Introduction to Literature * **3
 Readings in fiction, drama, and poetry to acquaint students with literature and aesthetic form. Prerequisites: ENGL 101. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 211 World Literature I * ** (G)3
 Selected works of world literature in translation from ancient times through the Renaissance Prerequisites: ENGL 101. Notes: * Course meets SGR #4

ENGL 212 World Literature II * ** (G).....3
 Selected works of world literature in translation since the Renaissance. ENGL 211 and 212 need not be taken in sequence. Prerequisites: ENGL 101. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 221 British Literature I * ** (G).....3
 A chronological survey of British literature from Old English through the 18th century. Prerequisites: ENGL 101. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 222 British Literature II * ** (G)3
 A chronological survey of British literature from the 19th century to the present. ENGL 221 and 222 need not be taken in sequence. Prerequisites: ENGL 101. Notes: * Course meets SGR #4 or ** IGR #3

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. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 241 American Literature I * **3
 Background to and survey of major works from the beginnings to the Civil War. Prerequisites: ENGL 101. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 242 American Literature II * **3
 Background to and survey of major works from the Civil War to the present. ENGL 241 and 242 need not be taken in sequence. Prerequisites: ENGL 101. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 248 Women in Literature * **3
 Study of literature by and about women from early times to the present. Cross-Listed: WMST 248. P, ENGL 101. Notes: * Course meets SGR #4 or ** IGR #3

ENGL (English)

ENGL 3 English as a Second Language: Grammar Review and Intermediate Composition3
 Conversation, listening, and reading comprehension, vocabulary and idioms, grammar review and intermediate composition.

ENGL 13 English as a Second Language: More Complex Structural Patterns and Advanced Composition3
 Conversation, listening, and reading comprehension, vocabulary and idioms, more complex structural patterns, and advanced composition. Prerequisites: ENGL 003 or placement.

ENGL 23 English as a Second Language: Listening and Reading, Grammar, Comprehension(3-5)
 A multi-skills course preliminary to ENGL 003 and ENGL 013. Reading and listening comprehension, vocabulary building, pronunciation, grammar and sentence structure, and formal and informal written and spoken English. A major focus will be written and oral sources. Prerequisites: Placement or permission of the instructor. May be required instead of or in addition to other English courses.

ENGL 31 Basic Writing I1
 Intensive work in grammar and usage, punctuation, and paragraph development. Does not count toward graduation. (Taught only as needed.)

ENGL 32 Basic Writing II2
 Intensive work in grammar and usage, punctuation, and paragraph development. Does not count toward graduation.

ENGL 33 Basic Writing III3
 Intensive work in grammar and usage, punctuation, and paragraph development. Does not count toward graduation.

ENGL 101 Composition I *3
 Practice in the skills, research, and documentation needed for effective academic writing. Analysis of a variety of academic and non-academic texts, rhetorical structures, critical thinking, and audience will be included. Prerequisites: ENGL 032, 033, or placement. Notes: * Course meets SGR #1.

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. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 250 Science Fiction * **3
 A survey of short stories and novels from the 19th century to the present. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 256 Literature of the American West * **3
 A study of the literature produced in our region, centered on the Great Plains, including that of Native Americans, both oral and written; of pioneers; immigrants; and farmers; Western literature, and current writers. Prerequisites: ENGL 101. Notes: * Course meets SGR #4 or ** IGR #1

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. Prerequisites: ENGL 101. Notes: * Course meets SGR #4 or ** IGR #3

ENGL 277 Technical Writing in Engineering*3
 Study and practice of technical writing in Engineering and related disciplines. Prerequisites: ENGL 101 and GE 101 or consent. Notes: * Course meets SGR #1.

ENGL 283 Creative Writing I *3
 Study and practice in the techniques of writing fiction, poetry and/or drama. Prerequisites: ENGL 101. Notes: * Course meets SGR #1.

ENGL 330 Shakespeare.....3
 Representative comedies, tragedies, and histories of Shakespeare. Prerequisites: ENGL 101

ENGL 334 English Drama:.....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:3
 Content can be any period or type of 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 335 English Novel: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 356 American Poetry:.....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:.....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:.....3
 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 (AW)3
 Study of and practice in writing of a technical nature. Prerequisites: ENGL 201.

ENGL 380 Futuristic Communications3
 Drawing upon the tenets of Futurism, the historical artistic movement begun by Italian poet Filippo's Futurist Manifesto, this intensive writing course will expose students to a wide-ranging set of cultural disruption issues caused by machines, technological innovations, and other rapid changes in modern life. Students will consider both the positive and negative implications caused by these cultural revolutions in a wide variety of literary, artistic, and cinematic texts. They will also think critically about their own role as global citizens. Prerequisites: ENGL 101 and 201. Cross-Listed: GLST 380.

ENGL 383 Creative Writing3
 Study and practice in the techniques of writing fiction, poetry, and/or drama. Prerequisites: ENGL 201 and 12 credits from the subject ENGL.

ENGL 410 Mythology and Literature (AW)3
 Origin and development of myths. Their importance in classical literature and their influence in literature, drama, music, psychology, and art.

ENGL 422-522 Age of Chaucer3
 Literature of the later medieval period, especially the 14th century, with some attention to continental works. Major focus on Geoffrey Chaucer, with reading in middle English.

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 7-12 Language Arts Methods (AW)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.

ENGL 427-527 Advanced Shakespeare.....3
 Selected plays of Shakespeare and significant Shakespearean criticism.

ENGL 428-528 English Renaissance/16th Century Literature3
 Major writers of the 16th and early 17th centuries, excluding Shakespeare.

ENGL 434-534 18th Century English Literature3
 British poetry, prose, drama, fiction, and criticism, 1660-1800.

ENGL 437-537 English Romantic Literature3
 English literature of the Romantic movement (1789-1832).

ENGL 438-538 English Victorian Literature3
 English literature of the Victorian period (1830-1900).

ENGL 439-539 Modern English Literature3
 English literature from 1900 to 1945.

ENGL 440-540 Contemporary English Literature.....3
 English literature since WWII.

ENGL 445 American Indian Literature3
 Traditional oral literature and autobiographies of American Indians. Cross-Listed: AIS 351.

ENGL 447 American Indian Literature of the Present.....3
 Twentieth-century autobiography, fiction, and poetry by Native American authors. Cross-Listed: AIS 352.

ENGL 453-553 American Renaissance3
 An analysis of the major American writers from 1820-1865.

ENGL 454-554 American Realism and Naturalism3
 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 Literature3
 American literature since WWII.

ENGL 470 Capstone in Peace and Conflict Studies.....3
 Student-driven course in which the instructor guides each student through the completion of an experience-based research project of her or his design. The topic of this project will both derive from and expand upon the interests that the student has identified during the Introduction to Peace and Conflict Studies course.

ENGL 479 Capstone Course and Writing in the Discipline: (AW).....3
 An in-depth study of selected major author (s), works(s), or other aspects of literary history; incorporates a review of current methods of literary criticism and an intensive focus on research and writing within the discipline. To be taken in the student's final on-campus Spring semester. Prerequisites: English major.

ENGL 479 Capstone Course and Writing in the Discipline: (AW).....3
 In depth study of selected major author (s), works(s), or other aspects of literary history; incorporates a review of current methods of literary criticism and an intensive focus on research and writing within the discipline. To be taken in the student's final on-campus Spring semester. Prerequisites: English major.

ENGL 481-581 Travel Studies.....(1-5)
 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 of 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.

ENGL 483-583 Advanced Creative Writing3
 Advanced study of the writing process with the emphasis on refining technique and style in a genre of the student's choice, fiction, creative nonfiction, and drama. Prerequisites: ENGL 383.

ENGL 484 Literary Criticism3
 The theory and practice of various critical approaches to literature. Prerequisites: ENGL 101.

ENGL 490 Seminar.....(1-4)

ENGL 491-591 Independent Study(1-5)

ENGL 492-592 Topics(1-5)

ENGL 494 Internship(1-12)

ENGL 704 Introduction to Graduate Studies.....3

ENGL 705 Seminar in Teaching Composition3

ENGL 710 Seminar in Rhetoric3

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 19003

ENGL 729 Seminar in American Literature since 19003

ENGL 742 Seminar in American Indian Literature3

ENGL 755 Seminar in Minority Literature3

ENGL 791 Independent Study(1-3)

ENGL 792 Topics(1-4)

ENGL 798 Thesis(1-7)

ENTR (Entrepreneurship)

ENTR 202 Human Resource Operations in Entrepreneurship1
 Study of human resource issues and regulations and how they impact operations and work flow efficiencies.

ENTR 203 Intellectual Property in Entrepreneurship.....1
 Students will learn of mechanisms for the protection of ideas, products or services from unauthorized use. Students will also understand the relative merits of patents, trademarks, and copyrights and learn of ways to make such mechanism work for them.

ENTR 204 Finance/ Venture Capital in Entrepreneurship.....1
 Study of the various financing options and their requirements that are available to help grow a business including traditional financing, angel investors, venture capital and government programs.

ENTR 205 Legal Issues/Business Structure/Risk Management.....1
 Legal Issues: Legal structure of your business; government regulations dealing with business taxation, employees, consumer protection, commerce, zoning, bankruptcy, and the environment; contract and lease terms and requirements.

ENTR 206 Taxation in Entrepreneurship.....1
 Study of the Internal Revenue Code sections and provisions that apply to individuals conducting business under sole proprietorship, partnership, s-corporation and/or limited liability company form of organization. Sales and Use tax reporting requirements.

ENTR 207 Financial Analysis/Record Keeping/Accounting in Entrepreneurship.....1
 The course will cover financial projections in the context of business planning; general record keeping and accounting practices for existing businesses; and financial analysis to make business decisions.

ENTR 208 E commerce in Entrepreneurship1
 This course provides a basic technical introduction to build "virtual" Internet-based businesses in creating opportunities and marketing plans. It investigates some different facets of electronic commerce and pertinent basic technologies to develop strategies.

ENTR 236 Innovation & Creativity3
 Students will learn about the variables that stimulate and inhibit creativity and innovation in individuals, teams, and organizations. Strong emphasis is placed on thinking outside the structured environment while dealing with real applications. Students will learn the process of generating ideas that lead to innovative outcomes.

ENTR 301 Marketing/Promotion in Entrepreneurship1
 Marketing: Define marketing and market(s); analyze the customer and competition, develop strategies using the 4-P's of marketing—product, price,

promotion, and place; learn the basics of collecting information and conducting market research.

ENTR 302 International & Global Marketing in Entrepreneurship1
 This module will examine opportunities, risk, and reward involved in marketing products and services in the global market as compared to the domestic market as well as an analysis of business types that have the potential for success outside the United States.

ENTR 304 Strategy/Pricing/Location in Entrepreneurship1
 Students will learn concepts and theories in marketing strategies; the techniques used for pricing products based on development costs and market demand, and the affects of location on sales, strategy and development.

ENTR 305 Selling in Entrepreneurship.....1
 Students will learn to identify and develop communication skills to promote products in regards to consumer needs and desires.

ENTR 306 The Harvest in Entrepreneurship1
 Discussion and analysis of various methods for harvesting a business including succession of planning, licensing, franchising, and when to sell a business.

ENTR 320 Principles and Practices of Social Entrepreneurship.....3
 Students will understand principles and practices of social entrepreneurship and be introduced to perspectives and endeavors of thought leaders and entrepreneurs who address social needs through various organizations. Students will identify issues and assess needs for social improvement in a local, national, and global perspective by defining the social good and assessing the role of market forces, philanthropy, and government to create sustained positive social value.

ENTR 336 Entrepreneurship I (COM).....3
 This course is an introduction to the concepts, terminology, and process of new venture creation, operation and growth, as well as the introduction of entrepreneurial management practices into existing businesses. New ventures include public and non-profit institutions as well as for profit businesses. This course will assist in the identification of entrepreneurial opportunities and strategies and the role of personal factors (including creativity). Legal, ethical, and social responsibilities are emphasized Cross-Listed: BADM 336.

ENTR 406-506 Accounting for Entrepreneurs (COM)3
 Accounting concepts and practices for entrepreneurs/small business owners. Emphasis given to the use of accounting tools to solve small business problems. Cross-Listed: ACCT 406-506 and BADM 406-506.

ENTR 410 Financing Innovative Ideas3
 Students will learn various financing options and techniques to acquire funds to start and grow their ventures through traditional financing, angel investors, venture capital, and government programs. Students will produce a financial plan geared at obtaining funding for their concept and learn the tools necessary for the strategic analysis and understanding of financial information. Prerequisites: BADM/ENTR 438/538.

ENTR 438-538 Entrepreneurship II (COM).....3
 This course focuses on the process of screening an opportunity, drafting a personal entrepreneurial strategy, and understanding the business plan writing process. Building the entrepreneurial team and the acquisition and management of financial resources are emphasized along with venture growth, harvest strategies, and valuation. Prerequisites: BADM/ENTR 336. Cross-Listed: BADM 438-538.

ENTR 483 Small Business Consulting3
 This course is a consulting program whereby students, working under faculty guidance, assist businesses by researching and developing possible solutions to specific problems involved in business start-up and expansion.

ENTR 489 Business Plan Writing and Competition (COM).....1
 Students will write a business plan and present it to a panel of faculty and business community members. The top three business plan presenters will move on to a statewide competition. Cross-Listed: BADM 489.

ENTR 494 Internship3
 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. A higher level of supervision is provided by the instructor in these courses than is the case with field experience courses.

ENVM (Environmental Management)

ENVM 225 Principles of Environmental Science and Engineering.....3
 Introduction to the basic principles of environmental management, environmental science and engineering, and natural resources engineering. The class will be team taught by faculty from environmental management, civil and environmental engineering, agricultural and biosystems engineering, and agricultural systems technology programs. The course will teach the fundamental physical, biological, and chemical principles of environmental processes. The course will also explore the impact of humans and human activity on ecosystems in the environment. Prerequisites: CHEM 106 or CHEM 112.

ENVM 275 Introduction to Environmental Science ** (G).....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. Prerequisites: CHEM 112; BIOL 101 or 103, or BIOL 151 or 153. Notes: ** Course meets IGR #1.

ENVM 390 Seminar.....1

ENVM 425-425L/525-525L Disturbance Ecology and Lab4
 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. Prerequisites: BIOL 153, BIOL 311 Corequisites: ENVM 425L-ENVM 425/ENVM 525L-ENVM 525.

ENVM 498 Undergraduate Research/Scholarship(1-4)

ENVM 592 Topics(1-7)

ENVM 692 Topics(1-7)

EPSY (Educational Psychology)

EPSY 302 Educational Psychology (COM).....3
 A comprehensive study of the fundamental psychological facts, principles and theories that apply to the nature of the learner and the learning process.

EPSY 422 Psychology of Adolescence (COM)3
 A study of the behavior and development of middle and secondary level students.

EPSY 526 Psychology of the Early Adolescent Learner3

EPSY 723 Adolescent Psychology.....3

EPSY 740 Advanced Educational Psychology.....3

EURS (European Studies)

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 Society3
 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. Prerequisites: Acceptance for a European exchange program and completion of or concurrent registration in two approved courses in the European Studies Program.

EURS 492 Topics(1-3)

FCSE (Family and Consumer Sciences Education)

FCSE 292 Topics(1-3)

FCSE 331 Work Force Preparation in Family and Consumer Sciences.....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 Family and Consumer Sciences (AW).....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 412-412L Preparation for Student Teaching and Lab5
 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. Prerequisites: Professional Semester II and 2.6 GPA in

professional classes and 2.5 GPA overall; FCSE 411. Corequisites: FCSE 412L-412.

FCSE 421 Adult Education3
 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.....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, 2.6 GPA in professional classes and 2.5 GPA overall, and senior standing in family and consumer sciences; Prerequisites: 2.6 GPA in professional classes and 2.5 GPA overall, and senior standing in family and consumer sciences; FCSE 412.

FCSE 480 Travel Studies(1-5)
 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 of 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.

FCSE 491/591 Independent Study(1-3)

FCSE 492/592 Topics(1-3)

FCSE 496 Field Experience(1-12)

FCSE 595 Practicum(1-3)

FCSE 611 History and Philosophy of Family and Consumer Sciences.....3

FCSE 673 Supervised Student Teaching in Family and Consumer Sciences Education(6-9)

FCSE 721 Occupational Programs in Family and Consumer Sciences.....3

FCSE 741 Supervision of Family and Consumer Sciences Education2

FCSE 751 Curriculum of Family and Consumer Sciences Education3

FCSE 761 Advanced Methods and Assessment in Family and Consumer Sciences Education3

FCSE 788 Action Research Project.....(1-3)

FCSE 791 Independent Study.....(1-3)

FCSE 792 Topics(1-3)

FREN (French)

FREN 101 Introductory French I * ** (COM) (G).....4
 Fundamentals of language structure and introduction to French culture enabling students to converse, read, and write simple French. Class work may be supplemented with required aural/oral practice outside of class. Notes: * Course meets SGR #4 or ** IGR #3.

FREN 102 Introductory French II * ** (COM) (G)4
 Fundamentals of language structure and introduction to French culture enabling students to converse, read, and write simple French. Class work may

be supplemented with required aural/oral practice outside of class.
 Prerequisites: FREN 101. Notes: * Course meets SGR #4 or ** IGR #3.

FREN 201 Intermediate French I (COM).....4
 Goals of the introductory course continued. Emphasis on cultural and intellectual aspects of French life and literature. Class work may be supplemented with required aural/oral practice outside of class.
 Prerequisites: FREN 102.

FREN 202 Intermediate French II (COM)4
 Continues FREN 201. Laboratory as required. Prerequisites: FREN 201.

FREN 211 Intermediate Oral Practice I2-3
 Intensive conversational work to develop interpersonal, interpretive, and presentational modes of communication in French. With instructor's permission, may be taken concurrently with French 201 or with another course above 201. Prerequisites: FREN 102

FREN 212 Intermediate Oral Practice II.....2-3
 Intensive conversational work to develop interpersonal, interpretive, and presentational modes of communication in French. With instructor's permission, may be taken concurrently with French 202 or with another course above 202. Prerequisites: Take FREN 201(329)

FREN 296 Field Experience.....(1-6)

FREN 310 French Language Skills (COM) (AW)3
 A video and computer-assisted, advanced level course designed to strengthen and expand oral comprehension, conversation and composition within the context of contemporary French culture. Prerequisites: FREN 202.

FREN 333 Topics in Francophone Culture (COM).....3
 Overview of the historical events in Francophone civilizations as they relate to contemporary culture. Second semester emphasizes contemporary Francophone culture and civilization Prerequisites: FREN 202.

FREN 350 Business Communications in French (COM).....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 Prerequisites: FREN 202.

FREN 353 Exploring Literature in French (COM).....3
 Study of literary texts from throughout the French-speaking world. Prerequisites: FREN 202.

FREN 385 Travel Study Abroad Francophone (COM) (G)(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 433 French Culture and Civilization.....3
 This class will cover how French culture has developed throughout history, specifically in France, and will explore geography, history, politics and art. Students will investigate the many cultural influences that have impacted present-day France, and they will be required to do extensive independent research and writing. Prerequisites: FREN 310 or instructor's consent.

FREN 491 Independent Study (COM)(1-3)

FREN 492 Topics (COM)(1-3)

FREN 493 Workshop (COM).....(1-6)

FREN 496 Field Experience.....(1-6)

FREN 591 Independent Study.....(1-3)

GE (General Engineering)

GE 101 Introduction to Engineering and Technology.....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 120-120L Engineering Drawing/CAD and Lab.....3
 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. Prerequisites: 1 course from subject MATH, except MATH 021, MATH 101, MATH 100T. Corequisites: GE 120L-GE 120.

GE 121 Engineering Design Graphics I1
 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. Corequisites: One MATH course except for 021, 101, 100T.

GE 122 Engineering Design Graphics II.....1
 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. Prerequisites: GE 121.

GE 123 Computer Aided Drawing1
 A course with Major emphasis on 2-dimensional drafting skills and 3dimensional solid modeling utilizing microcomputer software. All work requires a "hands-on" approach. Prerequisites: GE 121 or ID 150 or LA 120.

GE 200 Engineering-Off Campus Orientation0
 Engineering College Enrollment Sustaining.

GE 225 Survey of Machine Tool Applications.....1
 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 Society.....3
 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 Mechanics3
 Basic Statics, dynamics, and two-dimensional analysis of stress and strain. Laboratory verification of fundamental principles of structural and machine elements. Prerequisites: 1 course from subject MATH, except courses MATH 021, MATH 101, MATH 100T, MATH 102; 1 course from subject PHYS, except courses PHYS 101, PHYS 101L. Cross-Listed: MNET 241.

GE 291 Independent Study(1-3)

GE 292 Topics(1-3)

GE 293 Workshop(0-3)

GE 294 Internship.....(1-3)

GE 296 Field Experience..... (1-6)

GE 410-510 Human Factors in Design.....3
 Prerequisites: MATH 102.

GE 425-525 Occupational Safety and Health Management.....3
 This course covers methods to implement and manage a safe work environment. Study will address OSHA standards and other related governmental regulations, hazard recognition and control, accident cost assessment, ergonomics, and emphasis on a proactive approach to accident prevention. Cross-Listed: MNET 365 and CM 400.

GE 469-469L Project Management and Lab3
 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. Corequisites: GE 469L-GE 469. Cross-Listed: MNET 469 and EET 469.

GE 491-591 Independent Study.....(1-3)

GE 492-592 Topics(1-3)

GE 493-593 Workshop.....(0-3)

GE 494 Internship.....(1-3)

GE 496 Field Experience.....(1-6)

GE 569 Project Management.....(2-3)

GE 603 Designing the Work Place for Production3

GE 650 Manufacturing Systems Management3

GE 660 Operations Management.....3

GE 667 Decision Theory.....3
 Examination and evaluation of modern techniques of decision making. Mathematical models and measurement theory. Certainty, risk, and uncertainty. Cross-Listed: ME 667 Decision Theory

GE 670 Research Methods in Management3

GE 690 Seminar(1-3)

GE 691 Independent Study(1-3)

GE 692 Topics.....(1-3)

GE 693 Workshop(0-3)

GE 696 Field Experience.....(1-6)

GE 788 Research Problems/Projects.....(1-2)

GE 791 Independent Study(1-9)

GE 792 Topics.....(1-3)

GE 798 Thesis.....(1-7)

GEOG (Geography)

GEOG 101 Introduction to Geography * (COM).....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. Notes: * Course meets SGR #3

GEOG 131-131L Physical Geography: Weather and Climate and Lab4
 An introduction to the physical patterns of the Earth focusing on location, Earth-sun relationships, portrayal of the Earth, cartographic analysis, and

weather and climate phenomena. Corequisites: GEOG 131L-GEOG 131. Notes: * Course meets SGR #6.

GEOG 132-132L Physical Geography: Natural Landscapes and Lab ...4
 An introduction to Earth's natural landscapes; focusing on landforms as spatial features and their processes plus consideration of human-environmental interactions. Corequisites: GEOG 132L-GEOG 132. Notes: * Course meets SGR #6.

GEOG 200 Introduction to Human Geography * ** (G)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. Notes: * Course meets SGR #3 or ** IGR #3

GEOG 210 World Regional Geography * ** (COM) (G)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. Notes: * Course meets SGR #3 or ** IGR #3

GEOG 212 Geography of North America * ** (COM).....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 systems, land division, and use of natural resources. Notes: * Course meets SGR #3 or ** IGR #3

GEOG 219 Geography of South Dakota * ** (G)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. Notes: * Course meets SGR #3 or ** IGR #3

GEOG 270 Middle East Survey.....3
 A country-by-country survey of the geography, history, government, economy, society, and religion of the Middle East, including a summary of U.S. relations with each of these countries. Cross-Listed: REL 270.

GEOG 310-310L Soil Geography and Land Use Interpretation and Lab ** (G).....3
 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. Prerequisites: GEOG 132-132L, or PS 213-213L, or consent of instructor. Corequisites: GEOG 310L-GEOG 310. Cross-Listed: PS 310. Notes: ** Course meets IGR #1.

GEOG 320 Regional Geography:.....3
 Geographic description and analysis of selected world regions. Physical and cultural conditions and landscapes, as well as their interrelationships and importance, are emphasized. Course may be repeated under different regional topics. The specific region studied will change each semester.

GEOG 337 Atmospheric Sciences3
 Systematic methodological investigation of the meteorological elements (weather, climate, altitude, etc.) and their effects on geographic features.

GEOG 339 Geomorphology3
 A study of the relationship of landforms and how they are impacted by human activity. Changes in land-use evolution through time and how this has impacted the landscape.

GEOG 343 Environmental Disasters and Human Hazards3
An in-depth examination of various geophysical events (earthquakes, volcanic eruptions, tsunami, 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 Geography3
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 353 Geography of Religion.....3
This course examines the diversity of religious practice and belief from a geographical perspective. Each offering of the course will emphasize a different region of the world, with standard areas of study being North America & Europe, Middle East & Africa, South & Central America, and South & East Asia. The course will examine specific religious traditions (Christianity, Islam, Buddhism, etc.) as they occur in a geographical region, the relationship between religion and place, and how religions change and adapt to new locales. The course may be repeated up to four times. Cross-Listed: REL 353.

GEOG 358 Political Geography.....3
The geographic factors are studied which influence current international relations and the policies of nations and political units with consideration given to aspects of geopolitics, racial and ethnic groupings, religions, and languages, boundaries, and territorial changes.

GEOG 363 Rural Geography3
Character of American countryside as shaped by private and public decision-making processes. Case studies of major U.S. and European rural planning efforts to understand the present landscape and the problems of rural populations.

GEOG 365 Land Use Planning3
Geographical patterns of United States land use and land cover, human occupancy, land tenure, and land division. Emphasis on the origin and consequences of these patterns on the environment, resource use, and land use planning.

GEOG 382 Geographic Research Methods (AW).....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 383-383L Cartography and Lab.....3
History and principles of cartography. Emphasis on field mapping; map projections; cartographic design; map interpretations; and exercises in map making. Corequisites: GEOG 383L-GEOG 383.

GEOG 384-384L Advanced Cartography and Lab3
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. Prerequisites: GEOG 383. Corequisites: GEOG 384L-GEOG 384.

GEOG 400 Cultural Geography (COM)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 405 Historical Geography3
Historical periods portrayed against geographical background.

GEOG 415-515 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 Geography3
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 447 Geography of the Future.....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 U.S.

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. Cross-Listed: AIS 467.

GEOG 472 Introduction to GIS3
This course introduces many of the basic concepts of Geographic Information Systems (GIS) and provides an overview of the functions and capabilities of ArcGIS Desktop GIS software and an introduction to the ArcGIS Spatial Analyst extension. It will be taught primarily as a hands-on-course with supplementary lectures, demos, and discussion.

GEOG 473-573 GIS: Data Creation and Integration.....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 spatial registration. Building on the skills and techniques learned in the introductory GIS course or equivalent, it gives a conceptual base to many methods and techniques associated with vector and raster-based spatial analysis including imagery. It provides an examination of the functions and capabilities of ArcGIS Desktop GIS software (including extensions).

GEOG 474-574 GIS: Vector and Raster Modeling.....3
This course introduces basic concepts of vector and raster modeling in Geographic Information Systems (GIS) with special emphasis is on construction and use of raster digital elevation models (DEMs). Provides in-depth experience with a range of geoprocessing techniques for handling and analyzing GIS data. Topics include vector processing in a model framework, weighted suitability modeling, path finding, modeling viewsheds, constructing surfaces from point samples, and spatial hydrologic modeling.

Builds on the skills and techniques learned in the introductory GIS course or equivalent.

GEOG 475/575 GIS Applications3
 This course explores the latest software and its applications in Geographic Information Sciences.

GEOG 481-581 Field Geography3
 All geographic data are field based. This field-oriented course typically will focus upon various aspects of the physical, historical, and cultural aspects of eastern South Dakota. Emphasis will be on the observation, collection, organization, analysis, and interpretation field derived data to answer geographic questions.

GEOG 482-582 Travel Studies(1-4)
 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 of 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.

GEOG 483-483L Air Photo Interpretation and Lab3
 Development of skills and techniques involved in the interpretation of aerial photographs showing physiography, land use, industrial, commercial and military functions.
 Various computer softwares and other laboratory equipment will be applied to the methods and principles of air photo interpretation. Prerequisites: Consent. Corequisites: GEOG 483L.

GEOG 484-484L Remote Sensing and Lab3
 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.
 Hands-on experience using various software and the application of methods and principles of remote sensing. Prerequisites: Consent. Corequisites: GEOG 484L-GEOG 484.

GEOG 485-485L Quantitative Remote Sensing and Lab3
 This course will concentrate on the digital processing and visualization of various types on remotely sensed imagery. Image sources, characteristics, formats and analysis techniques will be explored as well as the integration of remotely sensed imagery with GIS and GPS datasets. Prerequisites: GEOG 484 Corequisites: GEOG 485L-GEOG 485.

GEOG 490-590 Seminar.....(1-4)

GEOG 491 Independent Study (COM)(1-4)

GEOG 491L Independent Study Lab0

GEOG 492 Topics (COM).....(1-5)

GEOG 494 Internship(1-12)

GEOG 495 GISc-CE Practicum3

GEOG 496 Field Experience(1-12)

GEOG 692 Topics.....(1-4)

GEOG 710 Evolution of Geographic Thought.....3

GEOG 714 Research and Writing.....3

GEOG 732 Geomorphology3

GEOG 734 Climatology3

GEOG 741 Quantitative Remote Sensory Terrestrial Monitoring3

GEOG 742 Cultural Geography.....3

GEOG 743 Geospatial Analysis3

GEOG 760 Advanced Methods in Geospatial Modeling: Topical3

GEOG 765 Advanced Studies in Land Utilization(1-4)

GEOG 766 Advanced Remote Sensing Application.....3

GEOG 767 Fire and Ecosystems3

GEOG 770 Advanced Geographic Techniques.....(1-4)

GEOG 785 Quantitative Methods in Geography.....3

GEOG 786 Geographic Information Systems.....3

GEOG 788 Research Paper in Geography(1-3)

GEOG 790 Seminar.....(1-4)

GEOG 791 Independent Study.....(1-4)

GEOG 792 Topics.....3
 Cross-Listed: GSE 792

GEOG 794 Internship(1-3)

GEOG 798 Thesis.....(1-7)

GER (German)

GER 101 Introductory German I * ** (COM) (G).....4
 Becoming sensitized to authentic listening, speaking, reading, writing and culture skills at the elementary level. Introduction to basic functional grammar and sentence structure. Notes: * Course meets SGR #4 or ** IGR #3.

GER 102 Introductory German II * ** (COM) (G)4
 Continued emphasis on authentic listening, speaking, reading, writing, and culture skills at the elementary level. Prerequisites: GER 101. Notes: * Course meets SGR #4 or ** IGR #3.

GER 201 Intermediate German I (COM).....3
 Develop active listening skills, functional language skills, reading skills related to student learners immediate environment, guided free writing and understanding of interrelationships of language and culture. Prerequisites: GER 101 and GER 102.

GER 202 Intermediate German II (COM)3
 Develop interactive listening and speaking skills toward initiating and responding to simple statements and questions, ability to understand selected descriptive readings to include literature of various types, and continued refinement of language and culture, traditions, customs, folklore, etc. Prerequisites: GER 101, GER 102, GER 201.

GER 296 Field Experience.....(1-6)

GER 310 Practical German Language Skills.....3
 This course is meant for students who have completed the 200-level sequence, either via coursework at SDSU or via an approved placement exam. It will give them a thorough review of important grammatical points and will lead them towards dealing with and understanding German texts. In the process, they will develop and improve their speaking skills. The combination of grammar review, reading, and discussion will give the student a solid foundation for the 311/312 sequence.

GER 311 Composition and Conversation I (COM)2
 Oral and written work. Grammar review and composition; emphasis on German conversation. Maybe taken concurrently with GER 411. Prerequisites: GER 202 or consent.

GER 312 Composition and Conversation II (COM)2
 Oral and written work. Grammar review and composition; emphasis on German conversation. Maybe taken concurrently with GER 412. Prerequisites: GER 202 or consent.

GER 380 Deutschland Heute (COM)3
 An examination of contemporary German society, politics, country and people. Taught in German. Prerequisites: GER 311, GER 312.

GER 396 Field Experience.....(1-6)

GER 411 Advanced Composition and Conversation I (COM).....3
 Conversational work, oral reports, discussion, diction. Maybe taken concurrently with GER 311. Prerequisites: GER 202.

GER 412 Advanced Composition and Conversation II (COM)3
 Conversational work, oral reports, discussion, diction. Maybe taken concurrently with GER 312. Prerequisites: GER 202.

GER 433 German Civilization I (COM) (AW)3
 The culture of the German-speaking countries from beginning to modern times including literary and artistic trends, governmental structures, and the life and customs of the people. Reading and discussions in German. Prerequisites: GER 202.

GER 434 German Civilization II (COM) (AW).....3
 The culture of the German-speaking countries from the beginning to the 18th century and then to modern times including literary and artistic trends, and customs. Reading and discussion in German.

GER 453 Survey of German Literature I (COM)3
 Main currents of German literature from the earliest times to the age of Goethe.

GER 454 Survey of German Literature II (COM).....3
 The main currents of German literature from Romanticism to the present.

GER 491 Independent Study (COM).....(1-3)

GER 492 Topics (COM)2-3

GER 496 Field Experience.....(1-6)

GER 591 Independent Study (COM).....(1-3)

GERO 486/586 Service Learning(1-3)
 Service-Learning in Gerontology, including service planning, interaction with community, and reflection. Prerequisites: Instructor permission required. Cross-Listed: HDFS/LMNO 486-586.

GERO 491/591 Independent Study(1-3)

GERO 492/592 Topics.....(1-3)

GLST (Global Studies)

GLST 125 Introduction to Peace and Conflict Studies.....3
 Introduction to historical and contemporary debates within the discipline of Peace and Conflict Studies, during which each student is guided to identify his or her own interests within those debates, and then encouraged to evaluate and apply those interests within a coordinated service learning experience. Cross-Listed: ENGL 125.

GLST 201 Global Studies I * ** (G).....3
 This introductory course investigates globalization from multiple perspectives. Understanding of worldviews and the development of skills to work effectively in a cross-cultural setting are stressed. Techniques for accessing and analyzing varied sources of information about globalization will be emphasized. No prerequisites or corequisites. Notes: * Course meets SGR #3 or ** IGR #3

GLST 380 Futuristic Communications.....3
 Drawing upon the tenets of Futurism, the historical artistic movement begun by Italian poet Filippo's Futurist Manifesto, this intensive writing course will expose students to a wide-ranging set of cultural disruption issues caused by machines, technological innovations, and other rapid changes in modern life. Students will consider both the positive and negative implications caused by these cultural revolutions in a wide variety of literary, artistic, and cinematic texts. They will also think critically about their own role as global citizens. Prerequisites: ENGL 101 and 201. Cross-Listed: ENGL 380.

GLST 401 Global Studies II (G)3
 Capstone course for the Global Studies major. Explores globalization, global citizenship, and intercultural competence. Students participate in "hands on experiences" and learn to adapt interdisciplinary approaches to research. P, GLST 201, Global Studies 1. (Study abroad prior to enrolling in GLST 401 is recommended.)

GLST 480 Ethics of Globalization3
 A writing intensive, critical, and rigorous examination of the ethical bases and moral philosophical foundations which underpin, support, and justify globalization theory and practice. Cross-Listed: PHIL 480.

GLST 481 Travel Studies (Cross Cultural Experience)3
 This is the 3-credit core component of the Global Studies Major (Cross-Cultural Experience). All Global Studies Majors are required to complete a cross-cultural experience outside the USA that includes at least three credits of coursework. There are at least four distinct ways in which this course can be completed (please see SDSU Bulletin for specifics).

GLST 490 Seminar3

GLST 491 Independent Study.....1-3

GLST 492 Topics.....3

GLST 494 Internship1-6

GERO (Gerontology)

GERO 201 Introduction to Gerontology3
 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 415/515 Intergenerational Issues(1-3)
 Exploration of intergenerational issues (impacting both younger and older generations). Examination of intergenerational practice in the United States and internationally, including naturally occurring intergenerational activities and intentional programming, as a means of addressing intergenerational issues.

GS (General Studies)

GS 100 University Experience1

The primary purpose of this course is to help students transition successfully to the university. The focus of the course will be to familiarize students with campus resources and to facilitate their engagement in the university experience. Through group discussions with a faculty mentor, students will develop critical thinking and social interaction skills to prepare them for the academic environment. Students will become active participants in the university resources, college policies, role of the academic adviser, student support services, and university academic requirements.

GS 101 Academic and Career Exploration1

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 Skills **2

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. Notes: ** Course meets IGR #2.

GS 200 Orientation General Studies Program0

GS 240 International Travel Study.....0-16

Students who participate in international travel study are required to enroll in this course for zero to 16 credits.

GS 262 Foundations of Interdisciplinary Studies3

This course creates the foundation for interdisciplinary thinking, enabling students to study complex issues by integrating insights from a variety of disciplines. The course will also provide a broad historical view and background of interdisciplinary studies. By developing interdisciplinary traits and skills, students will better understand themselves and their major through the multi-step process of self-reflection, self-assessment, and goal setting.

GS 282 Tutoring the College Student0-3

Instruction to train peer tutors on tutoring techniques, roles in the tutoring relationship, and peer leadership. Areas of emphasis include tutor and tutee responsibilities, confidentiality, leading tutoring sessions, communication skills, learning styles, tutoring diverse student populations, study skills, and tutoring skills.

GS 286 Service Learning (COM)(1-12)

Service learning involves the integration of academic learning, relevant service with community partners, purposeful civic engagement and structured reflection for the purpose of enriching the learning experience and increasing student involvement in community service. The academic study may be in any discipline. Open to all majors.

GS 289 Special Problems-National Student Exchange.....16

GS 340 International Travel Study.....0-16

Students who participate in international travel study are required to enroll in this course for zero to 16 credits.

GS 362 Interdisciplinary Inquiry and Integration2

This course builds on the foundational knowledge base of GS 262, Foundations of Interdisciplinary Studies through application and integration of interdisciplinary insights into complex problem-solving. Students will develop critical research and writing skills. P. GS 262 Foundations of Interdisciplinary Studies.

GS 382 Theory and Practice of College Peer Tutoring0-3

Instruction to train peer tutors on advanced tutoring skills and techniques and on practices for facilitating peer helping relationships. Topics will build on those covered in the Level I tutor training course. Areas of emphasis include role modeling; intercultural communication; probing questions; referral skills; and using resources, critical thinking, educational theory, and leadership theory. Requires written consent from the department; student must be employed as a tutor at SDSU. Prerequisites: GS-282

GS 440-540 International Travel Study0-16

Students who participate in international travel study are required to enroll in this course for zero to 16 credits.

GS 479 Interdisciplinary Studies Capstone.....2

The Capstone course will be used as a culminating experience in which students synthesize subject-matter knowledge they have acquired, integrating cross-disciplinary knowledge, and connect theory and application in preparation for entry into a career. The course will be taken last in a sequence of courses in an Interdisciplinary Studies program. The capstone course will require students to integrate the student's plan of study into a final product (paper, portfolio, and presentation) that demonstrates their ability to make connections and apply their knowledge and skills. The nature of interdisciplinary studies will be examined along with emphasis on intellectual abilities such as writing, researching, thinking critically, and speaking.

GS 482 Applied Leadership Training for Tutors.....(0-3)

Instruction to train peer tutors on tutoring techniques, roles in the tutoring relationship, and peer leadership. Areas of emphasis include mentoring new tutors, role modeling, leadership, assertiveness, group dynamics, group management, planning a workshop, and conducting meetings. Prerequisites: Requires department written consent (must be employed as a tutor at SDSU).

GS 486-586 Service Learning (COM).....(1-12)

Service learning involves the integration of academic learning, relevant service with community partners, purposeful civic engagement and structured reflection for the purpose of enriching the learning experience and increasing student involvement in community service. The academic study may be in any discipline. Open to all majors.

GS 489 Transition to Careers.....1

Junior and Senior level students will learn strategies required to make a successful transition from student life to career. The course will include information on job search skills, resume development, professional ethics, lifelong learning, workplace behavior and diversity issues.

GS 491 – Independent Study1-3

GS 492 Topics2

HDFS (Human Development and Family Studies)

HDFS 141 Individual and the Family *3

Patterns of behavior and relationships as influenced by family interaction. Emphasis on social and emotional needs of individual and family within various cultural and family contexts as informed by Systems Theories. Open to students of all majors. Notes: * Course meets SGR #3

HDFS 150-150L Early Experience and Lab.....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. Corequisites: HDFS 150L-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. Notes: * Course meets SGR #3

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. Notes: Crosslisted with 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 Sexuality3
 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. Notes: Crosslisted with WMST 250.

HDFS 292 Topics(1-3)

HDFS 337 Human Development II: Adolescence3
 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 Theories3
 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. Prerequisites: HDFS 150 and HDFS 241 or by permission.

HDFS 347 Human Development III: Adulthood3
 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 355 Program Design, Implementation and Evaluation3
 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. Prerequisites: HDFS 341 or by permission.

HDFS 410/510 Parenting3
 The study of theories, models, research and skills regarding parenting effectiveness and parent-child relations in the context of Western, Native American, and other cultures living in the U. S. Included are comparisons of the relative strengths and weaknesses of various parenting approaches, historical perspective on parenthood and children, and the developmental perspectives of children and parenting. Best practices for individual and community parent education programs will be addressed.

HDFS 441 Professional Issues in Human Development and Family Studies3
 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. Notes: Registration restriction: Senior standing and HDFS majors only, or by permission.

HDFS 480 Travel Studies.....(1-5)
 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 of 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.

HDFS 486-586 Service Learning(1-3)
 Service-Learning in Human Development and Family Studies, including service planning, interaction with community, and reflection. Prerequisites: Instructor permission required. Cross-Listed: GERO/LMNO 486-586.

HDFS 487 Preparation for Practicum1
 Preparation for Practicum will complete the requirements needed to enroll in HDFS 495 Practicum. Students will independently investigate practicum sites using criteria for an approved site. Upon approval, students will meet with the agency supervisor to develop professional goals for the practicum experience and create the practicum contract. This course will be taken the semester prior to enrolling in HDFS 495 Practicum. Prerequisites: HDFS 495 Practicum

HDFS 491/591 Independent Study(1-3)

HDFS 492/592 Topics(1-3)

HDFS 495 Practicum(7-9)
 Prerequisites: Completion of all 300 level HDFS courses HDFS 441: Professional Issues in Human Development; HDFS 487: Preparation for Practicum, and by department consent.

HDFS 601 Orientation in Graduate Study.....1

HDFS 614 Adult Development.....3

HDFS 665 Parent Education: Theory and Issues3

HDFS 700-700L Research Methods and Lab.....4

HDFS 711 Child Development Theory and Application3

HDFS 742 Family Theory and Research3

HDFS 753 Family Public Policy.....3

HDFS 788 Individual Research and Study.....(1-7)

HDFS 790 Seminar (1-3)

HDFS 791 Independent Study(1-3)

HDFS 792 Topics.....(1-3)

HDFS 794 Internship.....(1-7)

HDFS 798 Thesis.....(1-7)

HIST (History)

HIST 111 World Civilizations I * (COM).....3
 A survey of the history, culture, religion and society of the principal civilizations of the world to 1500. Notes: * Course meets SGR #4

HIST 112 World Civilizations II * (COM) (G)3
 A survey of the history, culture, religion and society of the principal civilizations of the world since 1500. Notes: * Course meets SGR #4

<p>HIST 121 Western Civilization I * ** (COM).....3 Surveys the evolution of western civilization from its beginnings into the Reformation and religious wars. Notes: * Course meets SGR #4 or ** IGR #3.</p> <p>HIST 122 Western Civilization II * ** (COM) (G)3 Surveys the development of western civilization from the Reformation era to the present. Notes: * Course meets SGR #4 or ** IGR #3.</p> <p>HIST 151 United States History I * ** (COM).....3 Surveys the background and development of the United States from its colonial origins to the Civil War and Reconstruction Notes: * Course meets SGR #3 or ** IGR #3</p> <p>HIST 152 United States History II * ** (COM).....3 Surveys development of the United States since the Civil War and Reconstruction. Notes: * Course meets SGR #3 or ** IGR #3</p> <p>HIST 280 Writing History3 Study and practice in the major types of historical writing, including research papers, critical book reviews, and essays.</p> <p>HIST 292 Topics (COM)(1-3)</p> <p>HIST 311 Chinese History.....3 A survey of Chinese history to 1840.</p> <p>HIST 312 History of Modern Asia (COM).....3 Focuses on the history of modern Chinese and Japanese civilizations.</p> <p>HIST 313 History of the Middle East (COM).....3 Surveys the history of the Middle East from Muhammad to the present, emphasizing the political development of the last 200 years.</p> <p>HIST 314 History of Modern Japan3 Focuses on the history of modern Japan from 1853 to the present, with emphasis on economic, social, and political changes.</p> <p>HIST 316 Pre-Modern Japan3 This course will cover the history and culture of Japan from ancient times to the coming of the Europeans in 1853.</p> <p>HIST 322 Ancient Greece and Rome (COM).....3 Examines the history, philosophy, and culture of Greece from the Minoan age through the Hellenistic period and the development of the Roman Republic and Empire. Prerequisites: HIST 121.</p> <p>HIST 326 Renaissance and Reformation (COM)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.</p> <p>HIST 329 French Revolution and Napoleon, 1789-1815 (COM).....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.</p> <p>HIST 330 Nineteenth Century European History (COM)3 A study of developments in Western Europe from the Congress of Vienna to the outbreak of the Great War.</p> <p>HIST 331 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.</p>	<p>HIST 341 English History to 1688 (COM).....3 Presents English History from the earliest times through the Glorious Revolution of 1688.</p> <p>HIST 345 History of Russia3 From the earliest times to present. Treats cultural and social as well as political aspects.</p> <p>HIST 346 Canada: History and Geography (COM)3 Examines the impact of the physical geography of Canada upon the nation's exploration, settlement, and development from the earliest inhabitants to modern times, and emphasizes the economic and cultural relations between Canada and the United States.</p> <p>HIST 349 Women in American History3 This course will investigate the role of women in the history of the United States. It will attempt to discover what impact women had on the course of events. Selected women and their careers will be highlighted. Cross-Listed: WMST 349.</p> <p>HIST 350 Women in World History3 This course will investigate the role of women in the history of the world beyond the US. It will attempt to discover what impact women had on the course of events. Selected women and their careers will be highlighted. Cross-Listed: WMST 350.</p> <p>HIST 352 Revolution and Early National United States3 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.</p> <p>HIST 354 Jefferson and Jackson 1800-18403 Early Presidential administrations through the Mexican War of 1846-48.</p> <p>HIST 356 Gilded Age America and American Empire3 Examination of political, economic, social and cultural developments in the US from 1877-1914.</p> <p>HIST 357 America from WWI to the Great Depression: The Perils of Prosperity, 1914-19413 Major political, social, economic, and cultural developments from 1914 to 1941, including WWI, the "Roaring" 20s, the Great Depression, and movement toward WWII.</p> <p>HIST 358 The U.S. Since 1941 (COM).....3 Social, economic, and political change. The consequences, domestic and foreign, of global power and rising affluence.</p> <p>HIST 368 History and Culture of the American Indian * ** (COM)3 Presents history and culture of North American Indians from before white contact to the present, emphasizing regional Dakota cultures. Cross-Listed: AIS 368. Fulfills Teacher Education requirement. Notes: ** Course meets IGR #1.</p> <p>HIST 377 Economic History of U.S. (COM).....3 Examines major United States economic issues from the colonial period to the present, including the rise of big business, territorial expansion, agricultural issues, labor management relations, and finances and banking.</p> <p>HIST 378 Social and Cultural History of the US3 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.</p> <p>HIST 379 Environmental History of the U.S. (COM).....3 Examines the relationship between the natural environment and the historical movements of humans by tracing U.S. environmental changes, beginning</p>
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with the activities of the Native American peoples through the Euro-American presence to the Cold War era.

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. Cross-Listed: REL 401.

HIST 402 History of Western Religious Thought II.....3

This course surveys important issues in western religious thought from the “great medieval synthesis” of the thirteenth century through the Reformation and Counter reformation of the sixteenth century. While both Jewish and Islamic developments are examined, emphasis is placed upon the development of Christian doctrine. Cross-Listed: REL 402.

HIST 415 Women in Antiquity (COM).....3

Survey of archaeological, historical, and literary sources to examine women’s place in ancient civilizations, their social conditions, their gender roles, and their power/authority in these civilizations.

HIST 418 History of Latin America (COM).....3

Examines the political, social, and economic developments in Latin America for the pre-Columbian period to the present.

HIST 420 Contemporary Europe (COM).....3

Presents the history, politics, and culture of Europe from approximately 1890 to the present. Prerequisites: HIST 122.

HIST 425 Medieval Europe (COM).....3

Examines the history of Western Europe from the end of the Roman Empire to the beginning of the Renaissance and emphasizes religious, political, economic, and social developments. Prerequisites: HIST 121.

HIST 441 History of Modern Britain (COM).....3

Examines the chief political, cultural, economic, and social developments of England, Scotland, Wales, and Ireland from 1688 to the present.

HIST 445 Cold War Europe.....3

Examines the political, social and economic history of Europe from the end of the Second World War to the collapse of the Soviet Union.

HIST 447 History of Modern Germany (COM).....3

Examines German history in the nineteenth and twentieth centuries, including the formation of the German nation, Bismarck, development of the German Empire, World War I, rise of Hitler, Nazi Germany and World War II.

HIST 448 Nazi Germany (COM).....3

Presents Germany history from the establishment of the Weimar Republic after World War I through Adolf Hitler’s Third Reich to 1945, including the political, social, economic, cultural, and military aspects of Germany under National Socialist rule.

HIST 450 American Colonial History (COM).....3

Provides an in-depth look at the English colonies in America, emphasizing how and why they were founded, and tracing their growth and development through the revolutionary period. Prerequisites: HIST 151.

HIST 455 American Civil War and Reconstruction (COM).....3

Explores the economic, political, military, and social aspects of the Civil War and Reconstruction era.

HIST 460 American Military History (COM).....3

Examines the origins and development of military institutions, traditions, tactics, and practices in the United States from 1775 to the present, including the relation between the armed forces and other government agencies.

HIST 465 Western Expansion of the U.S. (COM).....3

Examines the role of the West in American history from exploration and colonization to the closing of the frontier about 1900, emphasizing territorial expansion of the U.S. and various frontier developments, e.g. transportation, transformation of the wilderness into statehood, influence of the frontier in shaping the American character and the role of the West in shaping national policies.

HIST 469 American Foreign Relations (COM).....3

Surveys American diplomatic history from colonial times to the present, emphasizing political, social and economic forces affecting diplomatic developments reflected in American foreign policies.

HIST 476 History of South Dakota (COM).....3

Examines the history of South Dakota’s physical environment, Native American presence, European settlement, economic developments, political institutions, and social life.

HIST 480 Historical Methods and Historiography (COM) (AW).....3

Introduces the problems, materials, and techniques of historical writing, explains the larger meaning and directions of history, and examines major schools of historical thought.

HIST 482-582 Travel Studies.....(1-5)

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 of other institutions. Students will participate in hand-on activities, and design educational activities for presentation at selected locations. Includes pre-travel orientation, post-travel self-evaluation, and a written report.

HIST 491-591 Independent Study (COM).....(1-3)

HIST 492-592 Topics (COM).....(1-4)

HIST 494 Internship (COM).....(1-12)

HLTH (Health Education)

HLTH 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. Cross-Listed: HSC 120.

HLTH 200 Complementary and Alternative Health Care.....3

This interdisciplinary course introduces complementary and alternative health care (CAHC) practices. This course is designed to explore complementary methods utilized by health care professional and lay persons to provide culturally congruent care for individuals and families. The role and responsibilities of the health care consumer related to disclosure of CAHC use will be described. The role of the healthcare professional as a consumer advocate will be discussed. This course explores definitions, backgrounds, examples, and on-going research of various therapies including the holistic approach to Mind/Body Medicine, Herbs, Traditional Chinese Medicine, Naturopathy, Homeopathy, Spiritual Healing, Acupuncture, Dietary and Nutritional Supplements, and Ayurvedic Medicine.

HLTH 212 Contemporary Health.....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. Cross-Listed: HSC 212.

HLTH 230 Stress Management for Life3
 Stress management course designed to expose students to a holistic approach to preventing and managing stress. Students learn both healthy cognitive (coping) skills and relaxation techniques with the intention of preventing and/or alleviating the symptoms of stress. Content includes the science of stress, the mind/body connection, stress prevention strategies such as perception, mindfulness, time management, and financial management, and a variety of stress management techniques including guided imagery, progressive muscle relaxation, yoga, meditation, and autogenics. The course has both personal application and professional application for students working in any area of healthcare. No required pre-requisites.

HLTH 250-250L Pre-Professional First Aid and CPR and Lab (COM).....2
 Instruction of those who are frequently in a position to provide first aid/CPR and emergency care. Provides essential knowledge and skills needed to develop the functional first aid/CPR capabilities required by a basic first responders, including nurses, teachers, athletic trainers, and other special interest groups.
 Accompanies HLTH 250.

HLTH 251 First Aid and CPR (COM).....1
 First aid instruction meeting the requirements of the American Red Cross Responding to Emergencies Standard First Aid Course is given. Safety in everyday living is emphasized, with special consideration given to the kindergarten and elementary school levels.

HLTH 298 Allied Health Technical Training20-48
 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. Cross-Listed: HSC 302.

HLTH 315 Human Nutrition3
 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. Prerequisites: CHEM 106 and 108, or CHEM 112 and 114.

HLTH 364-364L Emergency Medical Technician and Lab (COM).....4
 This course develops skills in symptom recognition 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 ambulance services. 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. Corequisites: HLTH 364L-HLTH 364.

HLTH 420/520 K-12 Methods of Health Instruction (COM).....2
 Curriculum content at elementary and secondary levels. Methods of presentation including direct, correlated, and integrated health instruction. Organization of health and safety education.

HLTH 443 Public Health Science (G).....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. Cross-Listed: HSC 443.

HLTH 445 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. Prerequisites: Junior or senior standing or consent of the instructor. Cross-Listed: HSC 445.

HLTH 479-479L Health Promotion Programming and Evaluation and Lab2
 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. Prerequisites: WEL 100 or instructor consent. Corequisites: HLTH 479L-HLTH 479.

HMGT (Hospitality Management)

HMGT 171 Introduction to Hospitality Industry.....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.

HMGT 251 Foodservice Sanitation.....1
 Food sanitation and personal hygiene in a foodservice management setting. Students will receive national sanitation certification upon successful completion of The National Registry of Food Safety Professionals® exam.

HMGT 295 Practicum(1-3)

HMGT 361 Hospitality Industry Law2
 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. Prerequisites: BADM 350.

HMGT 370 Lodging Operations and Purchasing Management.....3
 Functions of management as applied to the lodging industry including organizing, staffing, controlling, planning, purchasing and marketing for the front office, housekeeping, and maintenance departments. Industry terminology and methods of operations will be explored for all levels of service and segments in the lodging industry. Prerequisites: HMGT 171.

HMGT 371-371L Leisure Activities Management and Lab3
 The course will explore management and sales skills required to ensure the success of attractions providing leisure activities in the tourism industry. The lab portion will include planning and conducting industry visits or tours of attractions and the development and practice of professional sales skills for this segment of the hospitality industry. Prerequisites: HMGT 171. Corequisites: HMGT 371L-371.

HMGT 372 Hospitality Facilities Management and Design.....3
 Application of various systems, procedures, and controls associated with the maintenance and engineering departments of lodging and foodservice operations. The course will include the decision-making process used in the planning and designing of hospitality facilities.

HMGT 380 Foodservice Operations and Purchasing Management3
 A managerial and systems approach to foodservice operations and purchasing. Cross-Listed: NFS 380.

HMGT 381-381L Quantity Food Production and Service and Lab3
 Application of foodservice management principles in quantity food production, purchasing, and service. Prerequisites: P, NFS 141-141L, HMGT 251 (or concurrently), HMGT 380. Corequisites: HMGT 381L-381. Cross-Listed: NFS 381-381L.

HMGT 412-412L Fine Dining and Catering Management and Lab.....3
 Application of fine-dining mise en place, meal and beverage preparation, and guest services inclusive of catering management operations. Prerequisites: NFS 141-141L and HMGT 380. Corequisites: HMGT 412L-412.

HMGT 455 Meeting and Convention Management3
 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. Prerequisites: Junior, senior, or consent.

HMGT 465 Cost Controls in Hospitality Industry.....3
 The application of financial systems to control food, beverage and labor costs in hospitality operations. Prerequisites: ACCT 210.

HMGT 480/580 Travel Studies.....(1-5)
 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.

HMGT 481 Food Science, Dietetics, and Hospitality Human Resource Management.....3
 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. Cross-Listed: NFS 481.

HMGT 482 Hospitality Marketing.....3
 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. Prerequisites: Junior standing or consent.

HMGT 491-591 Independent Study1-3
 Graduate course

HMGT 492 Topics(1-3)

HMGT 495 Practicum(1-3)

HMGT 788 Individual Research and Study.....(1-7)

HMGT 791 Independent Study(1-3)

HMGT 792 Topics(1-3)

HMGT 798 Thesis(1-7)

HO (Horticulture)

HO 100 Survey of Horticulture1
 An introductory course exploring the many specialized areas of Horticulture including woody and herbaceous plants, turf, vegetables, and fruits. Coursework includes hands-on activities involving the identification, care, and maintenance of various horticultural crops.

HO 111-111L Biology of Horticulture and Lab.....3
 Structure and function of horticultural crops and their growth processes relating to light, water, temperature, and soil. Nomenclature and plant identification techniques. Corequisites: HO 111L-HO 111.

HO 222-222L Fundamentals of Turf Management and Lab.....3
 Introduction to basic maintenance and culture of turfgrass for utility turf, home lawns, and commercial grounds. Prerequisites: HO 111 or permission of instructor. Corequisites: HO 222L-HO 222.

HO 231 Greenhouse Crop Production.....2
 Fundamentals of greenhouse crop production techniques: primary crops, establishment, irrigation, fertilization, growth management, pest control, and harvest. Lab format will provide students with practical growing experience of herbaceous ornamental horticultural crops.

HO 250-250L Woody Plants: Trees and Lab3
 Nomenclature, identification and classification of hardy coniferous and deciduous trees. Landscape use as affected by inherent ornamental qualities, hardiness, environmental factors, and pests. Prerequisites: HO 111, BIOL 101. Corequisites: HO 250L-HO 250.

HO 260 Woody Plants: Shrubs and Vines.....2
 Nomenclature, identification, and classification of shrubs and vines hardy for the Northern Plains. Prerequisites: HO 250 or consent.

HO 290 Professionalism in Horticulture Seminar.....2
 This course addresses the skills necessary to become a professional in the field of horticulture. Students will develop writing, speaking, presentation and organizational skills pertaining to their success in the industry as well as look at current ethical issues.

HO 311-311L Herbaceous Plants and Lab.....3
 Identification, description, landscape uses, propagation, culture and adaptability of selected non-woody ornamental plants with emphasis on annuals, perennials and indoor plants. Prerequisites: HO 111, BOT 201, or consent. Corequisites: HO 311L-HO 311.

HO 312-312L Plant Propagation and Lab3
 Fundamental anatomical and physiological principles and methods of reproducing herbaceous and woody plants by seeds, cuttings, grafts, layers and division. Prerequisites: HO 111, BOT 201, or consent. Corequisites: HO 312L-HO 312.

HO 322-322L Turfgrass Pests and Lab.....2
 Identification, diagnosis, and control of pathogenic and insect pests common to turfgrasses of the Northern Plains. An integrated pest management approach is emphasized along with an overview of pesticides available to professional turf managers. Prerequisites: PS 223-223L. Corequisites: HO 322L-HO 322.

HO 327-327L Golf Course Design and Management and Lab3
 Principles and practices of golf course design, including site analysis, design process, construction specifications and techniques, and aesthetic/design elements and professional turf management of golf courses and athletic fields, including history, culture, equipment, diagnostics, case studies, and facilities management. Cross-Listed: LA 327-327L.

HO 330 Arboriculture2	The establishment and care of woody plants: vines, shrubs and trees. Prerequisites: BOT 201-201L or BIOL 153-153L.
HO 331 Arboricultural Operations1	The techniques used in the safe and efficient pruning, cabling and removal of woody plants. Prerequisites: HO 330.
HO 350 Environmental Stewardship in Horticulture3	Concepts and principles of stewardship and sustainability relative to realized and potential impacts of horticultural practices on the environment.
HO 383-383L Principles of Crop Improvement and Lab3	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. Prerequisites: Take PS 103/103L or HO 111/HO111L; and take BIOL 103/103L or BIOL 153/153L or BOT 201/201L. Corequisites: HO 383L-HO 383. Cross-Listed: PS 383.
HO 411-511 Fruit Crop Systems(1-3)	Studies in perennial fruit crop production and management systems (1-6 credits). Credit earned will depend on the number of 1 credit modules taken. Course may be repeated as long as the topic module(s) are not repeated. Topic modules could include: tree fruit production systems; small fruit production systems; viticulture; perennial fruit; integrated pest management; native fruit production systems; fruit harvest, quality, and postharvest care; vines and wines; fruit value-added systems; pruning fruit crops; cover crop management, marketing specialty fruit crops.
HO 412-412L Greenhouse Management and Lab3	Greenhouse construction, environmental control, production and scheduling of major greenhouse crops. Trips to commercial greenhouse operations and laboratory work in greenhouse crop production. Prerequisites: HO 231, HO 311 and PS 213 or consent. Corequisites: HO 412L-HO 412L.
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. Prerequisites: HO 111, PS 213.
HO 421 Turfgrass Stress Physiology2	Turfgrass response to environmental stress and traffic.
HO 422 Current Issues in Turfgrass Science1	Presentation of selected topics not covered in other turfgrass management courses.
HO 440-540 Vegetable Crop Systems(1-3)	Studies in vegetable crop production and management systems. Credit earned will depend on the modules taken. Course may be repeated as long as the module(s) are not repeated. Potential topic modules could include: root crop systems; cucurbit production systems; vegetable legumes; herbs; solanaceous crops; heirloom vegetable crops; integrated pest management; market gardening; organic production systems; extended season crop management; leaf and cool season crops; annual crop rotation systems; marketing specialty crops.
HO 464 Senior Project I (AW)1	A capstone course that requires students to develop a comprehensive research project, service project, or case study. Written and oral presentation of project/case study plan and preliminary work, and plans for second semester completion of the project.

HO 465 Senior Project II (AW)2	A capstone course that requires students to complete a comprehensive research project, service project, or case study. Written and oral presentation of completed project or case study. Prerequisites: HO 464
HO 491 Independent Study(1-2)	
HO 492-592 Topics(1-4)	
HO 494 Internship(1-12)	
HO 496 Field Experience(1-12)	
HO 497 Cooperative Education(1-12)	
HO 498 Undergraduate Research/Scholarship(1-3)	
HO 511 Fruit Crop Systems1-6	
HO 540 Vegetable Crop Systems1-6	
HO 746 Plant Breeding	

HON (Honors College)

HON 100 Honors College Orientation1	Opportunities and requirements associated with continued participation in the SDSU Honors College will be emphasized along with general university orientation materials.
HON 301 Honors Colloquium(1-4)	History of ideas. May be repeated once.
HON 302 Honors Colloquium(1-4)	The Arts. May be repeated once.
HON 303 Honors Colloquium(1-4)	The Social Sciences. May be repeated once.
HON 304 Honors Colloquium(1-4)	History and/or Philosophy of Science. May be repeated once.
HON 491 Independent Study (COM)(1-3)	

HPER (Health, Physical Education and Recreation)

HPER 690 Seminar2	
HPER 742 Psychological Aspects of Sport and Exercise3	
HPER 745 Sports Medicine (may be taught on demand)2	
HPER 760 Motor Learning and Development3	
HPER 780 Introduction to Graduate Study and Research1	
HPER 783 Research Methods in HPER3	
HPER 788 Individual Research and Study in HPER(1-3)	
HPER 791 Independent Study(1-3)	
HPER 795 Practicum(1-9)	
HPER 796 Field Experience(1-9)	
HPER 798 Thesis(1-5)	

HSC (Health Science)

HSC 100 First Year Seminar for Health Professionals in the Learning

Community.....1
 Instruction to introduce students to not only the college environment but also health related professions. The course will focus on engagement in the university experience. Topics covered will include setting goals, discovering campus resources, academic advising, academic requirements, community service, and time management. Includes group discussion, participation in tours of healthcare facilities and panel discussions.

HSC 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. Cross-Listed: HLTH 120.

HSC 200 Complementary and Alternative Health Care.....3

This interdisciplinary course introduces complementary and alternative health care (CAHC) practices. This course is designed to explore complementary methods utilized by healthcare professional and lay persons to provide culturally congruent care for individuals and families. This course explores definitions, history, examples, and on-going research of various therapies including holistic approach to Mind/Body Medicine, Herbs, Traditional Chinese Medicine, Naturopathy, Homeopathy, Ayurveda, Spiritual Healing, Acupuncture, Dietary and Nutritional supplements, and additional energy therapies.

HSC 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. Cross-Listed: HLTH 212. Notes: ** Course meets IGR #2.

HSC 230 Stress Management for Life.....3

Stress management course designed to expose students to a holistic approach to preventing and managing stress. Students learn both healthy cognitive (coping) skills and relaxation techniques with the intention of preventing and/or alleviating the symptoms of stress. Content includes the science of stress, the mind/body connection, stress prevention strategies such as perception, mindfulness, time management, and financial management, and a variety of stress management techniques including guided imagery, progressive muscle relaxation, yoga, meditation, and autogenics. The course has both personal application and professional application for students working in any area of healthcare. No required pre-requisites.

HSC 253 Disaster Preparedness2

Basic philosophy, fundamental principles of civil defense; citizen's role in emergency planning for non-military national defense. Open to all students.

HSC 260 Women's Health Issues.....3

This interdisciplinary course critically examines issues in women's health. Biological, socio-cultural, psychological, historical and political processes that shape and define women's health and healthcare experiences are explored. Cross-Listed: WMST 260

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. Cross-Listed: HLTH 302.

HSC 420/520 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. Cross-Listed: HLTH 420.

HSC 433-533 Occupational Health3

Occupational Health is a survey course dealing with health concerns in the workplace and the scope, objectives, and functions of occupational programs. Work related injuries and diseases and the effects of harmful exposure to chemical and physical agents which cause discomfort, stress, inefficiency or disease are examined. Emphasis is placed on preventative measures and early intervention to assure a reasonable, healthful work environment.

HSC 443 Public Health Science (G).....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 is the relationship of public law and policies to the delivery of health care. Cross-Listed: HLTH 443.

HSC 445 Epidemiology.....3

The course provides information on the epidemiological concepts and methods needed to understand the description of the occurrence of health outcomes, and the identification of risk factors for health outcomes in human populations. Prerequisites: Junior or senior standing or consent of instructor. Cross-Listed: HLTH 445.

HSC 490 Seminar (AW).....(1-4)

HSC 492 Topics1-4

HSC 493 Workshop.....(1-4)

HSC 494 Internship (COM).....(1-12)

HSC 496 Field Experience(1-12)

Prerequisites: PE 400, PE 450 and HSC 494.

HSC 497 Cooperative Education.....(1-12)

HSC 631 Biostatistics I.....3

Basic principles of statistics applied to health science. Emphasis is on the role of statistics in evaluation of human health data, and the use of a statistical computing package to input and manipulate datasets, explore, analyze, and interpret data, and present results. Topics include probability distributions, point and interval estimation, hypothesis tests, linear regression, correlation, tests of association for categorical data, and analysis of variance.

HSC 731 Biostatistics II3

Continuation of Biostatistics I. Intermediate principles and methods of statistics applied to health science. Emphasis is on the role of statistics in evaluation of human health data, and the use of a statistical computing package to input and manipulate datasets, explore, analyze, and interpret data, and present results. Topics include introductions to multiple linear regression, logistic regression, survival analysis, selected ANOVA designs, and selected multivariate methods. Prerequisites: HSC 631 Biostatistics I

HSC 782 Epidemiology.....3
 Cross-Listed: NFS/BIOL 782.

ID (Interior Design)

ID 150 Introduction to Interior Design I.....4
 The lecture introduces visual communication, design and color theory, human factors, spatial relationships and organization and the studio introduces design theories and how to represent them in a graphic format using basic hand techniques. Corequisites: ID 150L.

ID 150L Introduction to Interior Design I Studio.....0
 Corequisites: ID 150.

ID 151-151L Introduction to Interior Design II and Lab.....4
 The lecture introduces students to the design process and evidence-based design and the studio encourages and fosters creativity using the design process and by applying evidence-based design. Prerequisites: ID 150. Corequisites: ID 151L-ID 151.

ID 215-215L Materials and Lab.....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. Corequisites: ID 215L-ID 215.

ID 222 Interior Design Studio I.....4
 Introduction to small-scale interior design spaces, appropriate visual skills, and computer software. A direct connection between computer work and studio projects will be made through the design process. Prerequisites: ID 151-151L.

ID 223 Interior Design Studio II.....4
 Exploring interior spaces using the design process. Visual communication and computer software skills will be expanded to be presentation-appropriate for clients and other professionals. Prerequisites: ID 222.

ID 224 History of Interiors.....4
 Historical backgrounds in architecture and interiors: Antiquity to present.

ID 290 Seminar.....1

ID 292 Topics.....(1-3)

ID 317 Professional Practices in Interior Design.....2
 Study of professional practices of interior design firms and review of practicum manual.

ID 319-319L Building Systems I and Lab.....2
 Examination of the methodology of construction to understand how various building systems are organized. Understanding the levels and coordination required of the building trades: structural, mechanical, electrical, and architectural. Corequisites: ID 319L-ID 319.

ID 320-320L Lighting and Acoustics and Lab.....2
 Issues and factors about the effects of lighting and acoustics on interior spaces. Fundamentals of lighting and acoustics are investigated through use of models and study of theory. Preparation of lighting plans and specifications. Corequisites: ID 320L-ID 320.

ID 322 Interior Design Studio III (AW).....4
 Experience in solving residential design problems using the design process and course content taught in previous courses. Prerequisites: ID 223.

ID 323 Interior Design Studio IV.....4
 Experience in solving commercial design problems using the design process and course content taught in previous courses. Prerequisites: ID 322.

ID 329-329L Building Systems II and Lab.....2
 Study and application of disability standards and life safety standards, and how they relate to building systems and technologies. Practice specification writing in response to finishes and material flammability requirements. Prerequisites: ID 319 Corequisites: ID 329L-ID 329.

ID 377-377L Portfolio and Lab.....2
 Preparation of graphics and portfolio materials for internships and job-seeking. Prerequisites: ID 223. Corequisites: ID 377L-ID 377.

ID 422 Interior Design Studio V.....4
 Experience in solving design problems related to socio-economic or cultural issues, and research thesis topic using evidence-based design methods. Prerequisites: ID 323, ID 329-329L, ID 495.

ID 423 Interior Design Studio VI.....4
 Experience in solving design problems of mixed use occupancies that culminate in a thesis project and presentation. Prerequisites: ID 422.

ID 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. Prerequisites: Consent of department.

ID 491-591 Independent Study..... (1-3)

ID 492-592 Topics.....(1-3)

ID 495 Practicum.....(1-7)
 Prerequisites: ID 317, ID 323, 2.2 GPA, 90 credits.

ID 498 Undergraduate Research/Scholarship.....(1-3)

ID 590 Seminar.....(1-3)

INED (Indian Education)

INED 411/511 South Dakota Indian Studies (COM).....3
 A basic knowledge of Indian history with emphasis on the Lakota, Dakota, and Nakota speaking people. Current cultural issues are presented including values, family structures, traditional religion, fine arts, legends, economics, governmental policies, treaties, acts and related areas. Focuses on teaching methods, content and materials to equip students to teach bi-culturally. Cross-Listed: AIS 421 and ANTH 421-521. Fulfills Teacher Education requirement. Equivalent to AIS 368 and HIST 368.

INFO (Informatics)

INFO 101 Introduction to Informatics.....3
 An introduction to informatics and basic computer programming. Other topics include the basic operation of hardware, software, servers, the Internet, intranets, networks, web browsers, and information security.

INFO 102 Social and Ethical Aspects of Informatics.....3
 A study of the social, political, economic and ethical implications of information and informatics on business and society. Other topics include information ownership, intellectual property and the social construction of information.

INFO 201 Applied Informatics3
 An introduction to discipline-specific applications of informatics including basic mathematical/statistical models, algorithms, and problem-solving with software. Students complete an informatics project that is strongly related to their major. Prerequisites: MATH 102, and INFO 101.

LA (Landscape Architecture)

LA 120 Fundamentals of Landscape Graphics2
 Provides the foundation for landscape graphic communication through both technical and conceptual standards. Topics include: the principles of landscape drafting, free hand sketching and visualization, graphic symbol communication, and an introduction to the professional graphic production process.

LA 201 Introduction to Landscape Design3
 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 Computer Applications in Landscape Architecture.....3
 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. Prerequisites: GE 123, LA 314.

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 Landscape Graphics and Theory of Design.....4
 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. Prerequisites: LA 120 or consent.

LA 314 Landscape Design Studio4
 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. Prerequisites: LA 284.

LA 322 Landscape Site Engineering.....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. Prerequisites: LA 364 or CM 210.

LA 323 Landscape Construction.....3
 Design and construction of walks, terraces, fences, walls, pools, and other landscape structures and systems. Prerequisites: LA 314.

LA 324-324L Planning Public Grounds and Lab3
 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. Prerequisites: LA 314. Corequisites: LA 324L-LA 324.

LA 327-327L Golf Course Design and Management and Lab.....3
 Principles and practices of golf course design, including site analysis, design process, construction specifications and techniques, and aesthetic/design elements and professional turf management of golf courses and athletic fields, including history, culture, equipment, diagnostics, case studies, and facilities management. Corequisites: LA 327L-327. Cross-Listed: HO 327-327L.

LA 364 Planting Design and Specifications4
 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. Prerequisites: LA 314; HO 250.

LA 421-421L City Planning and Lab3
 City planning in the United States, planning practice and theory, urban design, and land use planning. Local planning efforts observed. Prerequisites: LA 324. Corequisites: LA 421L-LAB 421.

LA 424-424L Recreational Facilities Design and Lab.....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. Prerequisites: LA 421-421L. Corequisites: LA 424L-LA 424.

LA 440-440L Restoration Ecology and Lab.....4
 Scientific principles involved in restoration of natural ecosystems on degraded and disturbed lands. An understanding of ecological principles is recommended prior to enrollment. Corequisites: LA 440L-LA 440. Cross-Listed: BIOL 440.

LA 464 Landscape Professional Practicum Studio4
 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. Prerequisites: Senior standing.

LA 491 Independent Study(1-2)

LA 492 Topics(1-4)

LA 494 Internship.....(1-12)

LA 497 Cooperative Education(1-12)

LA 498 Undergraduate Research/Scholarship.....(1-3)

LA 560-560L Landscape Ecology and Lab4

LAKL (Lakota)

LAKL 101 Introductory Lakota I * ** (COM).....4
 This course is an introduction to the Lakota language. Emphasis is placed on the basic sounds of the Lakota language, correct pronunciation, and orthography used to represent those sounds. The course includes a focus on male/female speech patterns, kinship terms, other ordinary environmental and cultural contexts, and basic sentence structure. Language tables are used to enhance fluency in conversational Lakota. Cross-Listed: AIS 101. Notes: * Course meets SGR #3 or ** IGR #3.

LAKL 102 Introductory Lakota II * ** (COM).....4
 This course is a continuation of the Lakota language in both written and oral forms. Emphasis is placed on pronunciation, a more extended examination of grammar, expanded vocabulary, and continued practice in reading,

writing, and speaking Lakota. Language tables are used to enhance fluency in conversational Lakota. Cross-Listed: AIS 102. P, AIS 101 OR LAKL 101 or consent of instructor. Notes: * Course meets SGR #3 or ** IGR #3.

LAKL 201 Intermediate Lakota I (COM)3
 This course is an advanced course that builds on the introductory Lakota language courses. Students will learn advanced grammar and Lakota literacy with an emphasis on verb conjugation, composition of sentences, and an analysis of Lakota/Dakota language texts. Language tables are used to enhance fluency in Lakota speaking skills. Cross-Listed: AIS 201. P, AIS 101 and AIS 102 or LAKL 101 and LAKL 102 or consent of instructor.

LAKL 202 Intermediate Lakota II (COM).....3
 This course is a continuation of teaching grammar and Lakota literacy with an emphasis on verb conjugation, composition of sentences, and further in-depth analysis of Lakota/Dakota language texts. Language tables are used to enhance fluency in Lakota speaking skills. Prerequisites: LAKL 101 and LAKL 102, or AIS 101 and AIS 102, or consent of instructor. Cross-Listed: AIS 202

LAS (Latin American Studies)

LAS 301 Latin American Cultures2-3
 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 LAS program. Enrollment limited to 20.

LAS 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 LAS Coordinator.

LAS 491 Independent Study(1-3)

LEAD (Leadership)

LEAD 210 Foundations of Leadership3
 Foundations of Leadership is designed to sharpen fundamental leadership skills, develop core competencies and advance the goals of the University. The goal for the Foundations of Leadership course is to equip students with the knowledge, skills, and networks needed to achieve their goals within the classroom and in relation to their own personal development and future careers.

LEAD 310 Leadership in Context.....3
 Principles of leadership within the unique contexts of agriculture, biological sciences, family and consumer sciences. Topics covered include definitions and approaches to the study of leadership, leadership styles, gender and ethnic diversity, leadership in groups, moral and ethical issues, leadership renewal, mission statements, and contemporary leadership issues facing the agricultural, biological, family, and consumer sciences.

LEAD 410 Leadership: Senior Seminar1
 Senior seminar in leadership. Students will examine contemporary leadership issues through readings, speakers and class discussions, and will develop senior portfolio showcasing their development and capacities as a leader.

LEAD 433 Leadership and Organizations3
 Emphasis is on the emergence of leadership patterns, group dynamics, small groups, and leadership in management. Prerequisites: SOC 100 or 150. Cross-Listed: SOC 433.

LEAD 494 Internship3

LEAD 496 Field Experience: Leadership in Action2
 Students will work independently in a guided 'leadership in action' experience. They will reflect upon and apply principles learned in previous leadership courses to a real world leadership setting (e.g. work setting, student organization, etc.). Students will gather at important intervals throughout the semester, present on their experience, and develop a senior portfolio documenting their development as leaders.

LING (Linguistics)

LING 203 English Grammar3
 Instruction in the theory and practice of traditional grammar including the study of parts of speech, parsing, and practical problems in usage.

LING 420-520 The New English.....3
 Diverse new theories and applications in English linguistics: lexicography, pragmatics, stylistics, socio-semantics, semiotics, and discourse theory.

LING 443-543 Development of the English Language.....3
 Historical survey of phonology, grammar, syntax, and lexicon of English leading to an understanding of the present state of the language and future developments.

LMNO (Leadership and Management of Nonprofit Organizations)

LMNO 201 Introduction to Leadership and Management of Nonprofit Organizations.....3
 The course provides a basic understanding of the nonprofit sector and the role of philanthropy in the United States. It introduces students to the history, philosophy, ethics, and organization of nonprofit and social service agencies, and the roles of a human service professional in the nonprofit field.

LMNO 291 Independent Study(1-3)

LMNO 292 Topics(1-3)

LMNO 486-586 Service Learning(1-3)
 Service Learning in Leadership and Management of Nonprofit Organizations, including service planning, interaction with community, and reflection. Cross-Listed: HDFS/GERO 486-586.

LMNO 491 Independent Study(1-3)

LMNO 492 Topics.....1-3

LMNO 495 Practicum(1-8)

MATH (Mathematics)

MATH 21 Basic Algebra (COM)3
 This course prepares students for college level mathematics. Topics generally include: basic properties of real numbers, exponents and radicals, rectangular coordinate geometry, solutions to linear and quadratic equations, inequalities, polynomials, and factoring. Students may also be introduced to

functions and systems of equations. Note: This is a remedial level course and no credit for MATH 021 will be granted for graduation.

MATH 101 Intermediate Algebra (COM).....3
 Basic properties of real numbers, linear equations and inequalities, quadratic equations, systems of equations, polynomials and factoring, rational expressions and equations, and radical expressions and equations, and an introduction to functions such as polynomial, exponential and logarithmic functions. Credit for MATH 101 will not be granted to anyone who has previously received credit for MATH 102 or MATH 115. Prerequisites: MATH 021 or placement.

MATH 102 College Algebra * (COM).....3
 Equations and inequalities; polynomial functions and graphs, exponents, radicals, binomial theorem, zeros of polynomials; systems of equations; exponential, logarithmic, and inverse functions, applications and graphs. Other topics selected from sequences, series, and complex numbers. P, grade of 'C' or better in MATH 101 or placement. Notes: * Course meets SGR #5.

MATH 103-103L Quantitative Literacy and Lab.....4
 This course is designed to provide the liberal arts student with practical number theory, logical thinking, and mathematical skills to be quantitatively literate. The student will develop critical thinking skills, interpret data, and reason quantitatively to solve authentic problems and increase confidence with mathematics while simultaneously building a cultural appreciation for the relevant and meaningful role that mathematics plays in many areas of life. Students will use information and knowledge from multiple areas to apply mathematics to new situations and dynamic processes. This course does not serve as a prerequisite for courses requiring MATH 102 (College Algebra).

Prerequisites: Grade of 'C' or better in MATH 101 or placement. Notes: * Course meets SGR #5. Corequisites: MATH 103L-103.

MATH 104 Finite Mathematics * (COM).....4
 This course includes: linear systems of equations, matrices, linear programming, mathematics of finance, probability, statistics, and other topics. This course cannot be used as the prerequisite for courses requiring MATH 102. Prerequisites: MATH 101 or placement. Notes: * Course meets SGR #5.

MATH 115 Precalculus * (COM).....5
 A preparatory course for the calculus sequence. Topics include: polynomial, rational, exponential, logarithmic and trigonometric functions and their graphs; systems of equations, inequalities and complex numbers. Prerequisites: Math 102 or Compass Exam Score: College Algebra 53 100, Trigonometry 0 – 39. Notes: * Course meets SGR #5.

MATH 120 Trigonometry * (COM).....3
 Topics include: trigonometric functions, equations, and identities; inverse trigonometric functions; exponential and logarithmic functions, and applications of these functions. Prerequisites: MATH 102 or placement. Notes: * Course meets SGR #5.

MATH 121-121L Survey of Calculus and Lab* (COM).....5
 A survey of calculus including an intuitive approach to limits, continuity, differentiation, and integration with an emphasis on applications of the derivative and the integral as well as topics from multivariable calculus. A lab which supplements Math 121 and provides the opportunity to study applications in more detail. Prerequisites: MATH 102 or MATH 115 or placement. Corequisites: MATH 121L-MATH 121. Notes: * Course meets SGR #5.

MATH 123 Calculus I * (COM).....4
 The study of limits, continuity, derivatives, applications of the derivative, antiderivatives, the definite and indefinite integral, and the fundamental

theorem of calculus. Prerequisites: Placement in Math 123 with required co-requisite Math 123L:

Trig Compass score 40-54 OR Math 115 with grade of C or D
 Placement in Math 123 without required co-requisite Math 123L:
 Trig Compass score 55 or higher OR
 Math 115 with grade of A or B Notes: * Course meets SGR #5.

MATH 123L Calculus I Lab (COM).....1
 A lab which supplements MATH 123 and provides the opportunity to study applications in more detail. Corequisites: MATH 123.

MATH 125 Calculus II * (COM).....4
 A continuation of the study of calculus, including the study of sequences, series, polar coordinates, parametric equations, techniques of integration, applications of integration, indeterminate forms, and improper integrals. Prerequisites: MATH 123. Notes: * Course meets SGR #5.

MATH 141 Survey of Mathematics.....3
 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. Prerequisites: 1 unit of high school algebra. Instructor's consent required.

MATH 198 The Mathematics Profession.....1
 An overview of the SDSU Department of Mathematics and Statistics, the mathematics profession, careers in mathematics, and effective techniques for pursuing such careers. 1 credit, fall semester only, S/U grading, may not be used to satisfy System Goal #5.

MATH 215 Matrix Algebra.....2
 An introduction to systems of linear equations, matrices, and determinants with applications to linear mathematical problems. Prerequisites: MATH 115 or MATH 123 or consent.

MATH 225 Calculus III * (COM).....4
 A continuation of the study of calculus, including an introduction to vectors, vector calculus, partial derivatives, and multiple integrals. Prerequisites: MATH 125. Notes: * Course meets SGR #5.

MATH 253 Logic, Sets, and Proof.....3
 Topics include logical connectives, quantifiers, and arguments; set operations, index sets, relations, functions, cardinality, and proof techniques. These topics will be introduced with a emphasis on using them to read, understand, evaluate, and create Mathematical Proofs. Prerequisites: Math 123 Corequisites: MATH 125.

MATH 261 Geometry for Teachers.....3
 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. Prerequisites: MATH 125 and EDFN 338.

MATH 291 Independent Study.....1-4

MATH 292 Topics (COM).....(1-5)

MATH 315 Linear Algebra (COM).....4
 Course topics include: the theory and applications of systems of linear equations, matrices, determinants, vector spaces, linear transformations and applications. Prerequisites: MATH 215 and MATH 253.

MATH 316 Discrete Mathematics (COM).....3
 Selected topics from Boolean algebra, set theory, logic, functions and relations, difference equations, recurrence relations, application of

algorithms, finite graphs, trees, paths and modeling. Prerequisites: MATH 253.

MATH 321 Differential Equations (COM).....3
 Selected topics from ordinary differential equations including development and applications of first order, higher order linear and systems of linear equations, general solutions and solutions to initial-value problems using matrices. Additional topics may include Laplace transforms and power series solutions. Prerequisites: MATH 125.

MATH 331 Advanced Engineering Mathematics3
 Fourier series, vector analysis, matrices, determinants, and topics selected from: complex variables, partial differential equations, numerical methods. Prerequisites: MATH 321.

MATH 355-355L Methods of Teaching Mathematics and Lab.....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. Prerequisites: MATH 125, MATH 261, EDFN 338. Corequisites: MATH 355L-MATH 355.

MATH 361 Modern Geometry (COM).....3
 In this course topics will be chose from: axiomatic systems, finite geometries, Euclidean plane geometry, transformational geometry, three dimensional geometry, and non-Euclidean geometries. Prerequisites: MATH 125.

MATH 371 Technology for Mathematics Educators.....3
 Students pursuing the BS in Mathematics with Teacher Education Specialization will gain experience with mathematics instructional technology devices commonly used in K12 mathematics classrooms. Prerequisite: permission of instructor.

MATH 373 Introduction to Numerical Analysis (COM)3
 This course is an introduction to numerical methods. Topics include elementary discussion of errors, polynomial interpolation, quadrature, nonlinear equations, and systems of linear equations. The algorithmic approach and efficient use of the computer will be emphasized. Prerequisites: MATH 125, and CSC 150 or CSC 213.

MATH 374 Scientific Computation I.....3
 An introduction to the use of computers for solving mathematical problems originating in scientific application areas. Topics will include a discussion of rounding errors, and practical aspects of writing programs for problems such as solving nonlinear equations, approximating integrals and finding local minima. 3 credits, fall semester only. Prerequisites: CSC 218 or CSC 150 and MATH 125 Corequisites: MATH 215

MATH 392 Topics (COM).....(1-5)

MATH 401 Senior Capstone and Advanced Writing (AW)1
 Two semester course: In the first semester, students will carry out activities which are designed to refresh mathematics skills and develop skills such as research, writing, and presenting which will prepare them for the second semester in which they will write a major paper under faculty supervision and give a presentation based on that paper.

MATH 411/511 Theory of Numbers (COM)3
 Properties of integers, divisibility, primes, congruencies, Diophantine equations, quadratic residues, continued fractions and the distribution of primes. Prerequisites: MATH 125.

MATH 413 Abstract Algebra I (COM)3
 Introduction to the theory and applications of algebraic structures including groups, rings, and fields. Prerequisites: MATH 315.

MATH 414 Abstract Algebra II (COM).....3
 This is a continuation of topics from MATH 413. Prerequisites: MATH 413.

MATH 425 Real Analysis I (COM)3
 Properties of real numbers, sequences, and series of real numbers, limits of functions, uniform continuity, differentiation, sequences and series of functions, uniform convergence, and theories of integration. Extensions of \mathbb{R}^n may be considered. Prerequisites: MATH 125 and MATH 315.

MATH 426 Real Analysis II (COM).....3
 This is continuation of MATH 425. Prerequisites: MATH 425.

MATH 431-531 Partial Differential Equations3
 Series, solutions, total differential equations, simultaneous equations, approximate solutions, parial differential equations of first and second orders, application. Prerequisites: MATH 321 and MATH 225.

MATH 433 Capstone: Mathematics Education3
 In this course, prospective teachers examine high school mathematics topics from an advanced point of view. The topics include, but are not limited to: real and complex numbers, functions, equations, mathematical induction, and trigonometry. Required of majors planning to teach. May not be used for upper division math elective for majors not pursuing Secondary Teaching Option. Prerequisites: MATH 125, 315, EDFN 338.

MATH 435-535 Complex Variables I3
 Algebra of complex numbers, classifications of functions, differentiation, integration, mapping, transformations, infinite series. Prerequisites: MATH 225.

MATH 440 Mathematics of Finance.....3
 An introduction to the fundamental concepts of financial mathematics. Topics include simple and compound interest, annuities, amortization, sinking funds, bonds, stocks, rates of return, term structure of interest rates, cashflow duration and immunization. Prerequisites: MATH 225. Notes: Dual listed with MATH 540.

MATH 441-541 Applied Probability Theory3
 Topics in probability including an introduction to the axiomatic development of probability, random variable and distributions with emphasis on the exponential, binomial and Poisson distributions. Applications to discrete stochastic processes such as Markov chains and queuing theory are covered in some detail. Prerequisites: MATH 381 or consent or STAT 381.

MATH 450 History of Mathematics (COM).....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. Prerequisites: MATH 125.

MATH 457-557 Ecological Modeling.....3
 An introduction to ecological modeling. Topics will include modeling methodology, auto-ecological models, population models, biotic communities, ecosystem level models, global modeling. Prerequisites: MATH 121 or 123.

MATH 461-561 Introduction to Topology (COM).....3
 Introduction to topological and metric spaces with specific emphasis on topology of the real line. Prerequisites: MATH 225.

MATH 471-571 Numerical Analysis I (COM).....3
 Analysis of rounding errors, numerical solutions of nonlinear equations, numerical differentiation, numerical integration, interpolation and approximation, numerical methods for solving linear systems. Prerequisites: MATH 225.

MATH 474/574 Scientific Computation II	3
A continuation of Scientific Computation I. Topics will include computational methods used for mathematical modeling, such as numerical methods for solving linear systems, and methods for solving initial value problems. Numerical methods will be applied to mathematical models. Simulation and validation of models will be discussed. 3 credits, spring semester only. Prerequisites: Differential Equations (COM) and MATH 374	
MATH 490-590 Seminar (COM)	1
MATH 491-591 Independent Study (COM)	(1-4)
MATH 492-592 Topics (COM)	(1-3)
MATH 494 Internship (COM)	(1-3)
MATH 496 Field Experience	(1-3)
MATH 497 Cooperative Education	(1-3)
MATH 498 Undergraduate Research/Scholarship (COM)	(1-3)
MATH 540 Mathematics of Finance	3
Prerequisites: STAT 381. Notes: Dual listed with MATH 440.	
MATH 541 Applied Probability Theory	3
MATH 559 Bioinformatics	3
MATH 624 Advanced Calculus II	3
Prerequisites: MATH 623.	
MATH 635 Complex Variables II	3
MATH 672 Numerical Analysis	3
MATH 673 Numerical Differential Equations	3
Prerequisites: MATH 321 and MATH 571.	
MATH 716 Theory of Algebraic Structures I	3
MATH 717 Theory of Algebraic Structures II	3
MATH 725 Advanced Calculus I	3
Prerequisites: MATH 425 or consent.	
MATH 726 Real Variables I	3
MATH 727 Real Variables II	3
MATH 732 Ordinary Differential Equations	3
MATH 733 Complex Variables I	3
MATH 742 Partial Differential Equations	3
MATH 771 Numerical Analysis II	3
MATH 774 Advanced Scientific Computation	3
MATH 788 Research Paper	(1-2)
MATH 790 Seminar	1
MATH 791 Independent Study	(1-3)
MATH 792 Topics	(1-3)
MATH 798 Thesis	(1-7)

MCOM (Journalism and Mass Communication)

MCOM 144 Media Production Environments I	1
Credit earned by active participation in media production activities. Prerequisites: Consent. – Section I: Radio. – Section II: Television. – Section III: Film.	
MCOM 145 Media Literacy and Ethics	3
Media Literacy is the ability to access, analyze, evaluate and communicate information in a variety of formats. This class explores how the mass media help construct social reality and how media use identifiable techniques to communicate messages. Topics include media theories, ethical principles associated with media programming and the roles of media producers and consumers. A key component for the course is to determine where social responsibility lies in relationship to the mass media.	
MCOM 151 Introduction to Mass Communication * (COM)	3
A comprehensive look at the mass media in the United States and the world. Includes discussions of newspapers, magazines, radio, television, books, movies, recordings, advertising and public relations. Also studies mass media rights and responsibilities, ethics and censorship. Notes: * Course meets SGR #4	
MCOM 155 Information Gathering	2
An introduction to the basics of gathering information ethically and legally from a variety of sources and analyzing and presenting information in a journalistic format.	
MCOM 160 Introduction to Film	3
Film as art; themes and inventions; films and society; introduction to the camera.	
MCOM 161-161L Fundamentals of Desktop Publishing and Lab (COM)	3
Fundamental design principles, techniques, and technology of electronic layout and production. Accompanies MCOM 161.	
MCOM 210-210L Basic Newswriting and Studio (COM)	3
Introduces students to gathering, evaluating and writing news. Accompanies MCOM 210. Prerequisites: ENGL 101.	
MCOM 215 Sportswriting	3
Interviewing, reporting, writing, and editing sports stories combined with an exploration of sportswriting as a career.	
MCOM 220-220L Introduction to Digital Media and Lab	2
An introduction to the basics of digital imagery and design for the news media. Hands-on application of the basics of news media digital communication. Corequisites: MCOM 220L-MCOM 220.	
MCOM 225-225L Introduction to Digital Production and Lab	2
An introduction to the basics of digital audio and video for the news media. Hands-on application of the basics of news media digital audio and video. Corequisites: MCOM 225L-MCOM 225.	
MCOM 243 Public Relations Principles	3
An introduction to the theory and practice of public relations, emphasizing its publics, management function, writing skills, communication processes, tools and professional ethics.	
MCOM 265-265L Basic Photography and Studio (COM)	(2-3)
Beginning camera and darkroom techniques, including processing, printing, and digitizing black and white photographs. Survey of the field of photography and its uses. Accompanies MCOM 265.	

<p>MCOM 266-266L Photojournalism and Studio(COM).....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. Accompanies MCOM 266. Prerequisites: MCOM 265, or MCOM 161 and MCOM 210.</p> <p>MCOM 311-311L News Editing and Editing Lab(COM)3 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. 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. Prerequisites: MCOM 210. Corequisites: MCOM 311.</p> <p>MCOM 313 Publicity Methods.....2 Newswriting, organizing publicity campaigns, press relations. (Cannot be taken for credit by journalism majors.)</p> <p>MCOM 314 Sales, Promotion and Marketing3 Promotion, sales, advertising, circulation, practices and theories of marketing in advertising and graphic arts.</p> <p>MCOM 316 Magazine Writing and Editing3 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</p> <p>MCOM 317 News Gathering.....1-3 Builds on the skills and concepts introduced in Basic Newswriting by providing practical experience in beat coverage, initiating story ideas, news judgment, verifying and developing information, and writing news stories for publication. Prerequisites: MCOM 210</p> <p>MCOM 330-330L Writing for Electronic Media and Lab(COM).....3 Preparation of continuities such as commercials, public service announcements, talks, interviews, drama, documentaries, and educational programs. Accompanies MCOM 330.</p> <p>MCOM 331-331L Video Production and Lab(COM)3 Includes preparation and presentation of talks, interviews, discussion and extension and community services for broadcast. Accompanies MCOM 331.</p> <p>MCOM 332-332L Broadcast Writing and Reporting and Lab.....3 Radio news reporting, writing, editing and producing. Lab practice in writing, audio tape, and delivery. Prerequisites: MCOM 210 for majors; MEPR 330 for others. Corequisites: MCOM 332L-MCOM 332. Cross-Listed: MEPR 332.</p> <p>MCOM 333-333L Television News Reporting and Lab.....3 TV news videography, reporting, writing and video editing. Lab practice with videotape. Prerequisites: Take MCOM 210, MCOM 332. Corequisites: MCOM 333L-MCOM 333.</p> <p>MCOM 340-340L Broadcast Announcing and Performance and Lab...3 Junior-level required course that emphasizes presentations before cameras and microphones. This includes the fundamentals of voice and articulation for effective on-air performance on both radio and television. Other topics addressed are audience perception, delivery styles and on-camera appearance. Junior-level required course where students practice delivery and announcing techniques in a lab setting. Prerequisites: MCOM and MEPR Majors only. Corequisites: MCOM 340L-MCOM 340.</p>	<p>MCOM 344 Media Production Environments II.....1 Credit earned by active participation in media production activities. Prerequisites: Consent. – Section I: Radio – Section II: Television – Section III: Film.</p> <p>MCOM 365-365L Advanced Photography and Studio (COM).....(2-3) Exploration of photojournalism and electronic photojournalism. Emphasis on putting together a professional photojournalism portfolio including black and white and color. Accompanies MCOM 365. Prerequisites: MCOM 265.</p> <p>MCOM 366 Film Narrative3 Myths, values and beliefs as expressed in selected films; forms, styles, and directors.</p> <p>MCOM 370 Advertising Principles (COM).....3 Study of advertising as an institution. Discussion of historical foundations, economics, social consequences, structure, planning, execution and evaluation phases of the advertising process. Discussion of advertising as it relates to other types of marketing communication.</p> <p>MCOM 371-371L Advertising Copy and Layout and Studio(COM) (AW).....3 Discussion of principles and techniques for developing creative campaigns. Laboratory assignments apply thinking, design, and writing skills to creative problems for different media and different targets. Encompasses creative development for all advertising media. Accompanies MCOM 371. Prerequisites: MCOM 370.</p> <p>MCOM 372-372L Advertising Media Strategies and Lab.....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. Hands-on application of advertising media strategies. Prerequisites: MCOM 370 Corequisites: MCOM 372L-MCOM 372</p> <p>MCOM 375-375L Intermediate Media Production and Lab.....3 Concepts, theories and technical skills of digital media production. Corequisites: MCOM 375L-MCOM 375.</p> <p>MCOM 410 Advanced Reporting (COM)3 Political, scientific, and social issues in in-depth reporting for magazines and newspapers.</p> <p>MCOM 411-411L Media Analytics and Studio3 Students will gain an understanding of industry trends, terminology, planning, and measurement models related to traditional, social and emerging media environments. The studio provides hands-on application of media analytic principles. Corequisites: MCOM 411L-411.</p> <p>MCOM 413-513 International Media (COM)3 This course is a survey of international media systems, news and related issues, the role and characteristics of international journalists, and issues facing media around the world.</p> <p>MCOM 415 Opinion Writing3 Opinion function of periodicals; great editorials and editorial writers; writing editorials; shaping policy.</p> <p>MCOM 416 Mass Media in Society (G)3 Rights and responsibilities of the press; relation of the media to individuals and society; role of media in a free society.</p> <p>MCOM 417 History of Journalism (G)3 Development, impact and importance of individual journalists and media in U.S.</p>
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MCOM 419-519 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. Cross-Listed: WMST 419.

MCOM 420-520 International Women's Issues3
 A seminar on how the news media cover (or fails to cover) personal, social, political, and economic issues important to women across the world. Cross-Listed: WMST 420

MCOM 430-530 Media Law (COM).....3
 Study of the sources, processes, content and application of law and regulation in the mass communication context and of the ethics of communications practitioners.

MCOM 431-431L Advanced Media Production and Lab.....3
 Capstone of Media Production specialization. Integrates multiple aspects of media production and online delivery of media content. Prerequisites: MCOM 425. Corequisites: MCOM 431L-MCOM 431.

MCOM 433-433L Advanced TV News Reporting and Lab (AW).....3
 In-depth analysis of television news reporting, writing, videography and video editing techniques. Major emphasis on out of class assignments. Prerequisites: MCOM/MEPR 331 or 332 or 333, or consent. Corequisites: MCOM 433L-MCOM 433.

MCOM 438-438L Public Affairs Reporting and Studio (COM) (AW) ..3
 Covering and writing news on legislation, public policy, and social issues at the local, county, and state level. Includes discussion of freedom of information guidelines. Accompanies MCOM 438. Prerequisites: MCOM 210. Corequisites: MCOM 438.

MCOM 442-442L Integrated Marketing Communication and Campaigns Studio (COM).....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. Hands-on application of integrated marketing communication campaigns. Corequisites: MCOM 442.

MCOM 453 Mass Communication Teaching Methods(1-4)
 Techniques, materials and resources for teaching mass communication in the classroom and supervising student media. For high school or college instructors and publication advisers. Mass Communication teacher education candidates are required to earn at least 3 credits.

MCOM 472 Media Research and Planning (COM).....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 474-574 Media Administration and Management (COM)3
 Business practices, newspaper, magazine, and broadcast management.

MCOM 475-575 Public Relations (COM).....3
 Interpreting institutional and industrial policies and programs to the public.

MCOM 476 International and Ethnic Advertising.....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 482 Travel Studies.....(1-5)
 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 of 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.

MCOM 489 Portfolio Production and Design (COM).....(1-3)
 Planning, creation, and production of portfolios for a variety of purposes.

MCOM 489-489L Portfolio Production and Design and Studio (COM)(1-3)
 Planning, creation, and production of portfolios for a variety of purposes.

MCOM 490 Seminar (COM).....1

MCOM 491 Independent Study (COM).....(1-4)

MCOM 492-592 Topics (COM)(1-5)

MCOM 494 Internship (COM)(1-12)

MCOM 615 Opinion Writing3
 Opinion function of periodicals; great editorials and editorial writers; writing editorials; shaping policy.

MCOM 616 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 617 History of Journalism3
 Development, impact and importance of individual journalists and media in U.S.

MCOM 653 Mass Communication Teaching Methods(1-4)
 Techniques, materials and resources for teaching mass communication in the classroom and supervising student media. For high school or college instructors and publication advisers. Mass Communication teacher education candidates are required to earn at least 3 credits.

MCOM 676 International and Ethnic Advertising.....3

MCOM 682 Travel Studies.....3

MCOM 692 Topics.....1-3

MCOM 693 Workshop(1-4)

MCOM 787 Research Methods in Communications.....3

MCOM 788 Master's Research Problems/Projects(2-3)

MCOM 791 Independent Study (COM).....(1-3)

MCOM 798 Thesis (COM) (1-6)

ME (Mechanical Engineering)

ME 240 Introduction of Mechanical Design3
 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. Prerequisites: EM 214, GE 225, or consent.

ME 241 Engineering Materials3
 Structure of materials, including atoms, perfect and imperfect crystals and phases. Diffusion mechanisms. Mechanical properties, dislocations and strengthening mechanisms. Failure theory. Phase diagrams and phase

transformations in metals, including development of microstructure and alteration of mechanical properties. Applications and processing of metal alloys, ceramics, polymers and composites. Prerequisites: 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. Prerequisites: PHYS 211, MATH 125.

ME 312 Thermodynamics II (COM)3
 Thermodynamic power cycles using vapors and gases. One-dimensional compressible flow. Energy analysis. Refrigeration cycles. Moistures and psychrometry. Maxwell's relations. Combustion and thermochemistry. Prerequisites: ME 311, MATH 321.

ME 314 Thermodynamics3
 Terminal course for non-mechanical engineering students. Fundamental equations of thermodynamics. Properties of gases and vapors. Thermodynamic cycles. Introduction to heat transfer. Prerequisites: PHYS 211, MATH 125.

ME 315 Analytical Thermodynamics3
 Thermodynamic properties and laws, statistical thermo-dynamics, kinetic theory and transport phenomena. Irreversible thermodynamics, applications to direct energy conversion devices. Prerequisites: PHYS 331, MATH 321.

ME 321 Fundamentals of Machine Design3
 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. Prerequisites: EM 215, ME 240.

ME 323 Vibrations3
 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. Prerequisites: EM 215, EM 321, MATH 321.

ME 341-341L Metallurgy and Lab3
 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. Prerequisites: ME 241 and consent. Corequisites: ME 341L-341.

ME 361 Methods of Engineering and Work Measurement2
 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. Prerequisites: ME 362 or consent.

ME 362 Industrial Engineering.....3
 Modern industrial engineering. Planning, organizing and directing industrial enterprises. Quantitative analysis of management problems in production planning and control, quality control, reliability, facility planning, project economics and PERT. Applications and examples from realistic situations. Prerequisites: MATH 381 or consent.

ME 376-376L Measurements and Instrumentation and Lab.....2
 Instruments for measuring pressure, temperature, flow, strain, vibration and sound. Experimental data analysis for accuracy, error and uncertainty. Corequisites: ME 376L-376, EM 321, EM 331.

ME 381 Mechanical Equipment of Buildings3
 Heating, ventilation and air conditioning systems, control and servicing. Refrigeration, plumbing systems and their maintenance. Fire and explosion prevention in buildings. Prerequisites: ME 311 or consent.

ME 410 Principles of HVAC Engineering3
 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. Prerequisites: ME 312 or ME 314, EM 331. Corequisites: ME 415 or consent.

ME 412 Internal Combustion Engines3
 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. Prerequisites: P, ME 312, EM 331.

ME 413 Turbomachinery3
 Theory, design, operation and energy transfer in Turbo-machines. Steam, gas and hydraulic turbines. Pumps, fans and centrifugal and axial flow compressors. Prerequisites: P, ME 312, EM 331.

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. Prerequisites: P,EM 331, ME 312, or consent.

ME 415 Heat Transfer3
 Basic principles of steady and unsteady conduction, convection of heat and mass transfer and thermal radiation. Computational methods of heat transfer. Prerequisites: P, ME 311, EM 331, MATH 321, or consent.

ME 417-417L/517-517L Computer-Aided Engineering and Lab3
 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. Prerequisites: Competence in Fortran programming or consent. Corequisites: ME 417L-417.

ME 418 Design of Thermal Systems3
 Systems approach to design, mathematical modeling, simulation and optimization of systems, with particular emphasis on thermal systems. Prerequisites: ME 312, ME 415, EM 331.

ME 421 Design of Machine Elements3
 Fundamentals of mechanics. Energy methods. Working stresses and failure in materials. Design considerations of basic machine elements – shafts, springs, belts, clutches, brakes, chains, gear, bearings, fasteners and flywheels. Lubrication. Classification of engineering materials. Prerequisites: ME 321, EM 321.

ME 431 Aerodynamics3
 Airfoil characteristics, wing shapes, static and dynamic forces, viscosity phenomena, boundary layer theory, flaps and slots, propellers, stability, control and performance. Prerequisites: EM 331.

ME 437 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. Prerequisites: EM 331, MATH 331

ME 438-438L Machine Design-Case Studies and Lab.....3
 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. Corequisites: ME 438L-438.

ME 439-439L HVAC System Design and Lab.....3
 Analysis of heating, ventilating and air conditioning requirements. Design of heating, ventilating and air conditioning systems. Economic, energy and environmental considerations. Use of computers as design aids. Prerequisites: ME 410 or consent. Corequisites: ME 439L-ME 439.

ME 440/540 Computer-Aided Design3
 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. Prerequisites: Competence in FORTRAN programming and 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. Prerequisites: EE 300, EE 300L, or consent Corequisites: ME 323.

ME 452 Dynamic Systems Lab.....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. Prerequisites: ME 323. Corequisites: ME 451.

ME 461 Analysis and Design of Industrial Systems3
 Problems in product design and development, marketing, forecasting, capacity evaluation, plant layout, materials handling from standpoint of interrelated and integrated systems. Prerequisites: ME 362.

ME 476 Thermo-Fluids Lab1
 Experiments in fluid mechanics, thermodynamics and heat transfer. Single and multi-stage compressors. Heat pumps and air conditioning. Blowers and flow measurements in ducts. Prerequisites: ME 376, ME 312, EM 331, ME 415.

ME 478 Mechanical Systems Design I.....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. Prerequisites: ME 421, MATH 331 or MATH 471.

ME 479-479L Mechanical Systems Design II and Lab (COM) (AW)2
 The second semester continuation of Mechanical Systems Design. Integrates concepts from all areas in Mechanical Engineering into a practical design project. Detailed design and analysis, manufacturing, and assembly will be the focus.
 Accompanies ME 479.

ME 480 Inspection Trip.....0
 Short inspection trips arranged to give students opportunity to observe and evaluate manufacturing and industrial processes, operations and facilities. Prerequisites: Senior standing.

ME 490/590 Seminar	0-2
ME 491 Independent Study	(1-5)
ME 492/592 Topics	(1-5)
ME 493 Workshop.....	(1-3)
ME 494 Internship.....	(1-3)
ME 496 Field Experience	(1-3)
ME 497 Cooperative Education.....	(1-3)
ME 498 Undergraduate Scholarship/Research (COM)	(1-3)
ME 527 Gas Dynamics I.....	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 635-635L Modeling and Simulation and Lab	3
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 Seminar	0
ME 691 Independent Study	(1-5)
ME 692 Topics	(1-3)
ME 787 Research	(1-9)
ME 788 Research or Design Paper.....	(1-2)
ME 790 Seminar	1
ME 791 Independent Study	(1-3)
ME 792 Topics	(1-3)
ME 798 Thesis	(1-7)

MFL (Modern Foreign Languages)

MFL 101 Introduction to Foreign Language and Culture I * ** (COM) (G).....4
 Fundamentals of the language and introduction to the culture where the language is spoken. Class work may be supplemented with required aural/oral practice outside of class. Notes: * Course meets SGR #3 or ** IGR #3.

MFL 102 Introduction to Foreign Language and Culture II * ** (COM) (G)4	
Fundamentals of the language and introduction to the culture where the language is spoken. Class work may be supplemented with required aural/oral practice outside of class. Notes: * Course meets SGR #3 or ** IGR #3.	
MFL 196 Field Experience(1-3)	
MFL 292 Topics(1-5)	
MFL 292L Topics Lab0	
MFL 396 Field Experience (G)(1-12)	
MFL 420 K-12 Foreign Language Methods (COM)3	Methods and materials for teaching modern languages in high school.
MFL 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.
MFL 490 Seminar(1-3)	
MFL 491-591 Independent Study(1-3)	
MFL 492-592 Topics (COM)3	
MFL 494 Internship (COM)(1-12)	
MFL 496-596 Field Experience (G)(1-12)	
MFL 595 Practicum(1-3)	

MGMT (Management)

MGMT 310 Business Finance3	Business finance is an overview of financial theory including the time value of money, capital budgeting, capital structure theory, dividend policies, asset pricing, risk and return, the efficient markets hypothesis, bond and stock valuation, business performance evaluation and other financial topics. Prerequisites: ACCT 211 Cross-Listed: BADM 310
MGMT 360 Organization and Management3	This course is a study of management, including the planning, direction, controlling and coordinating of the various activities involved in operating a business enterprise. Cross-Listed: BADM 360
MGMT 460 Human Resource Management3	This course provides a survey of managerial practices with respect to the management of the human resource function and an introduction to the topic of human resource management as an occupational choice. Major areas of inquiry include recruitment and selection, training and development, compensation and benefits administration and work force integration and maintenance. Cross-Listed: BADM 460

MICR (Microbiology)

MICR 231-231L General Microbiology and Lab (COM)4	Principles of basic and applied microbiology. Laboratory experience that accompanies MICR 231. Prerequisites: CHEM 106 or CHEM 112. Corequisites: MICR 231L-MICR 231.
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MICR 310-310L Environmental Microbiology and Lab4	Microbiology of water, air and surfaces in the environment. Standard methods for detecting and controlling pathogens and non pathogens. Laboratory experience that accompanies MICR 310. Prerequisites: MICR 231. Corequisites: MICR 310L-MICR 310.
MICR 311-311L Food Microbiology and Lab4	Microbiology of fresh and processed meats, dairy products, vegetables and modern convenience foods. Laboratory quality study of food preservation, processing and spoilage. Laboratory experience that accompanies MICR 311. Prerequisites: MICR 231. Corequisites: MICR 311L-MICR 311.
MICR 332 Microbial Physiology2	Cytology, nutrition, metabolism, and growth of microorganisms. Prerequisites: MICR 231.
MICR 332L Microbial Physiology Lab2	Media preparation, sterilization, microscopy, assay of microbial enzymes, DNA purification.
MICR 390 Seminar1	
MICR 414-414L/514-514L Anaerobic Microbiology and Lab3	Anaerobic metabolism and ecology of bacteria, culturing techniques for anaerobic microorganisms. Laboratory experience that accompanies MICR 414-514. Prerequisites: MICR 231. Corequisites: MICR 414L-MICR 414/MICR 514L-MICR 514.
MICR 421-421L/521-521L Soil Microbiology and Lab3	Microbial species of agricultural soils and biochemical changes brought about by these microorganisms. Laboratory experience that accompanies MICR 421-521. Prerequisites: BIOL 151-151L and BIOL 153-153L, or BOT 201-201L. Corequisites: MICR 421L-MICR 421/MICR 521L-MICR 521. Cross-Listed: PS 421-521.
MICR 424-524 Medical and Veterinary Virology3	Basic course discussing the characterization, structure, and replication of viruses and the pathogenesis of viral disease in man and animals. Prerequisites: MICR 433 Cross-Listed: Crosslisted with VET 424-524.
MICR 433-533 Medical Microbiology (COM)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. Prerequisites: MICR 231, CHEM 106 or 112.
MICR 436 Molecular and Microbial Genetics4	A basic course in molecular genetics. Examples to illustrate genetic principles are drawn from all forms of life. Prerequisites: BIOL 204 or BIOL 371.
MICR 439-539 Medical and Veterinary Immunology3	This course covers the theory and mechanisms of immune-responses as they relate to human and veterinary medicine. Prerequisites: MICR 231 and BIOL 204.
MICR 440L Infectious Disease Lab3	This course will involve individualized hands-on training in molecular, cellular, bacteriological, and immunological techniques frequently used in the diagnosis of infectious diseases. Students will be provided with information on principles and fundamentals of various techniques followed by hands-on experience in the lab. Prerequisites: MICR/VET 424 or MICR 433 or MICR 439

MICR 450 Applied Microbiology and Biotechnology	3
The rapid development of biotechnology techniques and their commercial application continues to be a major economic driver in the twenty-first century. Biotechnology uses living cells or their enzymes to produce chemicals, biomaterials, pharmaceuticals, and energy from renewable biomass feedstocks. This interdisciplinary course will examine theoretical and practical aspects of cell metabolism, metabolic engineering, fermentation and fermentor design, product recovery, process control, energy balances, and economics as related to several current bioprocesses. This course will integrate principles from microbiology, biochemistry, and engineering to provide students with the skills needed to fill roles in research, operations and commercialization. Prerequisites: MICR 231.	
MICR 490 Seminar (AW).....	1
MICR 491 Independent Study.....	(1-3)
MICR 492-592 Topics	(1-4)
MICR 492L-592L Topics Lab (COM)	0
MICR 494 Internship	(1-12)
MICR 497 Cooperative Education (COM)	(1-12)
MICR 498 Undergraduate Research/Scholarship	(1-4)
MICR 550 Applied Microbiology and Biotechnology	3
Prerequisites: MICR 231.	
MICR 592 Topics	1-4
MICR 592L Topics Lab.....	1-4
MICR 788 Research Problems	(1-3)
MICR 790 Seminar.....	1
MICR 791 Independent Study.....	(1-4)
MICR 792 Topics	(1-4)
MICR 798 Thesis.....	(1-7)

MLED (Middle Level Education)

MLED 593 Workshop.....	(1-3)
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MLS (Medical Laboratory Sciences)

MLS 301-301L Hematology I and Lab	3
Normal maturation, morphology, and function of blood cells. Application of manual and automated methods/techniques in hematology. Corequisites: MLS 301L-MLS 301.	
MLS 311-311L Clinical Chemistry I and Lab	4
Principles and theory of clinical chemistry, including metabolism of biochemical molecules, metabolic disease/dysfunction, electrolyte balance, and acid-base balance. Methods of analysis in the clinical laboratory, instrumentation, quality control, and quality assurance. Corequisites: MLS 311L-MLS 311.	
MLS 321 Hemostasis	1
Mechanisms of hemostasis and clotting; hereditary and acquired defects of the hemostatic mechanism.	

MLS 341-341L Diagnostic Microbiology I and Lab.....	3
Focuses on the principles and methodologies for the recovery of bacteriological agents from complex biological specimens, biochemical identification, general practices in infection control and the laboratory's role in developing policies and procedures during global events and new threats from emerging pathogens. Supervised laboratory instruction in the principles and methods for the analysis and identification of bacteriological agents from complex biological specimens utilizing various technical applications, instrumentation, and applications in quality control and quality assurance. Prerequisites: MICR 231-231L Corequisites: MLS 341L-MLS 341	
MLS 401 Hematology II.....	2
Advanced study of the hematopoietic system and blood cells, including morphology and disease states, such as leukemias, lymphomas, and myeloproliferative disorders. Prerequisites: MLS 301/301L, MLS 321. Corequisites: MLS 402L.	
MLS 402L Advanced Hematology and Hemostasis Lab	1
Fundamentals of examining blood and bone marrow slides. Laboratory methods for evaluating hemostatic function. Prerequisites: MLS 301/301L, MLS 321. Corequisites: MLS 401.	
MLS 403 Diagnostic Immunology	2
Discussion of the principles for immunologic mechanisms and serological concepts to the theory of laboratory procedures for the diagnosis of disorders of infectious and immunologic origin, including analysis and evaluation of advanced immunopathology. Prerequisites: MICR 439-539	
MLS 411 Clinical Chemistry II	2
The principle and theory of clinical chemistry including clinical endocrinology, clinical toxicology, therapeutic drug monitoring, and assessment of metabolic disease/dysfunction using clinical analysis. Prerequisites: MLS 311-311L.	
MLS 411L Clinical Chemistry II Laboratory.....	1
Methods of analysis in the clinical laboratory; instrumentation, quality control and quality assurance. Corequisites: MLS 411	
MLS 412L Laboratory Methods	1
Anatomy and physiology of vascular system; and techniques for obtaining blood specimens (phlebotomy), specimen processing and immunohematology. Prerequisites: MLS 451 Corequisites: MLS 431	
MLS 431 Principles of Immunohematology.....	2
The study of red blood cell antigens and their antibodies, including blood grouping and typing, antibody detection and compatibility testing, blood donor screening and component preparation, immunologically related diseases, transplantation, and principles of antigen-antibody based tests. Prerequisites: MLS 403 Corequisites: MLS 431L	
MLS 441-441L Diagnostic Microbiology II and Lab	3
Focuses on the principles and methodologies for the recovery of fungal, parasitic and viral agents from complex biological specimens, biochemical identification, and advanced principles in clinical sensitivity and specificity to determine the predictive values for technical methodologies. Supervised laboratory instruction in the principles and methods for the analysis and identification of fungal, parasitic and viral agents from complex biological specimens utilizing various technical applications, instrumentation and applications in quality control and quality assurance. Prerequisites: MLS 341-341L. Corequisites: MLS 441L-MLS 441.	
MLS 451 Urine and Body Fluid Analysis	1
Physical, chemical, and microscopic properties of urine and other body fluids.	

MLS 461 Introduction to Management and Education.....2
Basic concepts in laboratory management and education. Building critical thinking, problem solving, and professional skills.

MLS 468 Advanced Supervised Clinical Experience I.....(1-5)
Off campus supervised clinical experiences administered in conjunction with clinical faculty in SDSU affiliated health care institutions. Emphasis will be on advanced hematology, hemostasis, phlebotomy and immunology. Prerequisites: Acceptance into the MLS upward mobility program or instructors permission.

MLS 469 Advanced Supervised Clinical Experience II(1-5)
Off campus supervised clinical experiences administered in conjunction with clinical faculty in SDSU affiliated health care institutions. Emphasis will be on advanced chemistry, urinalysis, body fluids, diagnostic microbiology and molecular diagnostics. Prerequisites: Acceptance into the MLS Upward Mobility program or permission of the instructor.

MLS 471 Molecular Diagnostics2
In depth discussion of the genomic alterations interrogated in molecular diagnostics assays including the techniques, instrumentation, verification/validation strategies and operational principles of a molecular diagnostic laboratory. Technical applications included are complex genetic testing, infectious disease, bioterrorism, pharmacogenetics, and the use of molecular diagnostics for therapeutic and monitoring purposes as applied to personalized medical practice. Prerequisites: MLS 341-341L, MLS 403.

MLS 480 Molecular Diagnostics Clinical Practice.....2
Supervised clinical practice in molecular diagnostics to include nucleic acid purifications, amplifications and interpretation of clinical results. Acceptance into clinical practicum.

MLS 481 Clinical Chemistry Practice4
Supervised clinical practice in a clinical chemistry laboratory. Prerequisites: MLS 411.

MLS 482 Hematology Clinical Practice.....4
Supervised clinical practice in the hematology laboratory. Prerequisites: MLS 401/402L.

MLS 483 Clinical Immunology Clinical Practice1
Supervised clinical practice in the hematology and coagulation laboratory. Prerequisites: MICR 439. Notes: MLS Majors only.

MLS 484 Clinical Immunohematology Clinical Practice4
Supervised clinical practice in the blood bank. Prerequisites: MLS 431.

MLS 485 Diagnostic Microbiology Clinical Practice6
Supervised clinical practice in the clinical microbiology laboratory. Prerequisites: MICR 433.

MLS 486 Coagulation Clinical Practice1
Supervised clinical practice in the coagulation laboratory. Prerequisites: MLS 321, 402L.

MLS 487 Elective Clinical Practice.....1
Supervised clinical experience in an area outside a large clinical laboratory (rural laboratory, research laboratory, or clinic laboratory).

MLS 488 Urinalysis and Clinical Microscopy Clinical Practice2
Supervised clinical practice in the analysis of urine and biological fluids. Prerequisites: MLS 411.

MLS 489 Phlebotomy Clinical Practice.....1
Supervised clinical practice in phlebotomy.

MLS 494 Internship.....(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.

MNET (Manufacturing Engineering Technology)

MNET 131-131L Machining Technology and Lab3
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. Corequisites: MNET 131L-MNET 131.

MNET 200 MNET Off Campus Orientation0
MNET enrollment sustaining. Prerequisites: Instructor's consent required.

MNET 231-231L Manufacturing Processes I and Lab3
The topics in this course cover the fundamentals of traditional and nontraditional 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. Corequisites: MNET 231L-MNET 231.

MNET 232-232L Manufacturing Processes II and Lab3
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. Prerequisites: MNET 231. Corequisites: MNET 232L and Lab.

MNET 241 Applied Mechanics.....3
 Basic statics, dynamics, and two-dimensional analysis of stress and strain. Fundamental principles of structural and machine elements. Prerequisites: 1 course from subject MATH, except courses MATH 021, MATH 101, MATH 100T, MATH 102; physics course except 101-101L. Cross-Listed: GE 241.

MNET 243-243L Introduction to Materials Science and Lab3
 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. Prerequisites: CHEM 106. Corequisites: MNET 243L-MNET 243.

MNET 251-251L Electricity and Electronics I and Lab.....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. Prerequisites: 1 course from subject MATH, except courses MATH 021, MATH 101, MATH 100T, MATH 102. Corequisite course MNET 251L. Corequisites: MNET 251L-MNET 251 Cross-Listed: EET 251.

MNET 252-252L Electricity and Electronics II and Lab3
 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. Prerequisites: MNET 251. Corequisites: MNET 252L-MNET 252. Cross-Listed: EET 252.

MNET 260 Principles of 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 specialty 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. Prerequisites: 1 course from subject MATH, except courses MATH 021, MATH 101, MATH 100T. Cross-Listed: BADM 260.

MNET 291 Independent Study.....(1-3)

MNET 292 Topics.....(1-3)

MNET 292L Topics Lab.....0

MNET 293 Workshop.....0-3

MNET 296 Field Experience(1-3)

MNET 320-320L Computer Aided Design/Drawing and Lab.....3
 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. Prerequisites: GE 120 or GE 123. Corequisites: MNET 320L-MNET 320.

MNET 334-334L CAM/CNC and Lab3
 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. Corequisites: MNET 334L-MNET 334 Cross-Listed: 334L.

MNET 338-338L Industrial Plastics and Lab.....3
 Study of plastic materials and processes including characteristics and properties and various manufacturing processes used for production of plastic products. Prerequisites: MNET 231, MNET 243. Corequisites: MNET 338L-MNET 338.

MNET 343-343L Properties of Materials and Lab3
 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. Prerequisites: MNET 243. Corequisites: MNET 343L-MNET 343.

MNET 350-350L Fluid Power Technology and Lab3
 Basic fluid mechanics, pneumatics, hydraulics, control systems and common industrial circuits. Prerequisites: PHYS 113 or PHYS 213, MATH 123 or MATH 121. Corequisites: MNET 350L-MNET 350.

MNET 365 Occupational Safety and Health3
 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. Cross-Listed: GE 425 and CM 400.

MNET 365 Occupational Safety and Health3
 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 367-367L Plant Layout and Material Handling and Lab.....3
 Analysis and design of facilities and material handling systems for efficient and economical production. Prerequisites: GE 120 or GE 123, MNET 260. Corequisites: MNET 367L, 367.

MNET 436-436L Production Tooling Methods and Measurement and Lab.....3
 An overview of machine tool design, application, manufacture and general measurement techniques. Subject includes jigs, fixtures, molds, tools and dies in various production settings. Also included are material selection, precision machining, related manufacturing processes, manufacturing inspection equipment and techniques, dimensional metrology and geometric conformance, and surface texture and integrity. Prerequisites: MNET 334, MNET 320. Corequisites: MNET 436L-MNET 436.

MNET 451-451L Industrial Electronics and Control and Lab.....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. Prerequisites: MNET 252 or EET 320, MATH 121 or MATH 123. Corequisites: MNET 451L-MNET 451. Cross-Listed: EET 451.

MNET 453-453L Manufacturing Automation and Lab.....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. Prerequisites: MNET 451. Corequisites: MNET 453L-MNET 453. Cross-Listed: EET 453.

MNET 460 Manufacturing Cost Analysis3
 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. Prerequisites: MNET 231, MNET 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. Prerequisites: 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. Prerequisites: MNET 231, MNET 260.

MNET 468 Manufacturing Plant Management.....3
 A case-oriented capstone course designed to integrate the technical, managerial, analytical, and communication skills which have been acquired. Prerequisites: MNET 367, MNET 463.

MNET 470-470L Project Management and Lab(AW)2
 Basic theory, application, and techniques of project management applied to technical projects. A team-oriented, collaborative approach to building and testing products, developing and managing processes, and/or conducting applied research. Must take MNET 471-471L in spring semester. Prerequisites: Instructor approval. Corequisites: MNET 470L-MNET 470. Cross-Listed: EET 470.

MNET 471-471L Capstone Experience and Lab (AW)1
 Conclusion of technical projects started in MNET 470 Project Management. Teams document and present the results of the implemented projects. Prerequisites: MNET 470-470L. Corequisites: MNET 471L-MNET 471

MNET 491 Independent Study.....(1-3)

MNET 492 Topics.....(1-3)

MNET 492L Topics Lab.....0

MNET 493 Workshop.....0-3

MNET 494 Internship (AW)(1-3)

MNET 496 Field Experience(1-3)

MNET 497 Cooperative Education(1-3)

MRCH (Merchandising)

MRCH 510 Consumer Behavior in Merchandising3

MRCH 520 Professional Advancement in Merchandising.....3

MRCH 530 Product Design, Development, and Evaluation3

MRCH 540 Promotional Strategies in Merchandising3

MRCH 550 Retail Theory and Current Practice.....3

MRCH 580 Travel Studies.....(1-5)

MRCH 591 Independent Study(1-3)

MRCH 592 Topics(1-3)

MRCH 610 Historical and Contemporary Issues in Trade3

MRCH 620 International Merchandise Management3

MRCH 630 Research Methods in Merchandising.....3

MRCH 640 Financial Merchandising Implications3

MRCH 650 Strategic Planning in Merchandising.....3

MRCH 690 Seminar(1-2)

MRCH 695 Practicum.....(1-3)

MRCH 788 Master's Research Problems/Projects(1-3)

MRCH 798 Thesis(1-3)

MSL (Military Science Leadership)

MSL 101 Leadership and Personal Development (COM).....1
 Make your first peer group at college one committed to performing well and enjoying the experience. Increase self-confidence through team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations and basic marksmanship. Learn fundamental concepts of leadership in a profession in both classroom and outdoor laboratory environments.

MSL 102 Introduction to Tactical Leadership (COM)1
 Learn and apply principles of effective leadership. Reinforce self-confidence through participation in physically and mentally challenging exercise with upper-division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader.

MSL 201 Innovative Team Leadership (COM).....2
 Learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. Develop skills in oral presentations, writing concisely, planning events, coordination of group efforts, advanced first aid, land navigation, and basic military tactics. Learn fundamentals of ROTC's leadership assessment program.

MSL 202 Foundation of Tactical Leadership (COM)2
 Introduction to individual and team aspects of military tactics in small unit operations. Includes use of radio communications, making safety assessments, movement techniques, planning for team safety/security and methods of pre-execution checks. Practical exercises with upper-division ROTC students. Learn techniques for training others as an aspect of continued leadership development.

MSL 294 ROTC Summer Leadership Internship (COM).....4

MSL 301-301L Adaptive Team Leadership and Lab(COM)3
 Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead again in situations of increasing complexity. Uses small unit tactics and opportunities to plan and conduct training for lower division students both to develop such skills and as vehicles for practicing leadership. Provides the student with practical experience to supplement and reinforce classroom instruction. Subjects include drill and ceremonies, physical training instruction techniques and leadership, which will complement the student's preparation for camp. Corequisites: MSL 301L-MSL 301.

MSL 302-302L Leadership in Changing Environment and Lab (COM).....3
 Continues methodology of MSL 301. Analyze tasks; prepare written or oral guidance for team members to accomplish tasks. Delegate tasks and supervise. Plan for and adapt to the unexpected in organizations under stress. Examine and apply lessons from leadership case studies. Examine importance of ethical decision making in setting a positive climate that enhances team performance. Accompanies MSL 302. Corequisites: MSL 302L-MSL 302.

MSL 401-401L Developing Adaptive Leaders and Lab(COM)4	
Introduces formal management skills including problem analysis, planning techniques, and the delegation and control of activities, providing an understanding of the command and staff organization used in the modern army and creating a forum for discussing professional and ethical decisions faced by commissioned officers. Designed to accompany MSL 401. Corequisites: MSL 401L-MSL 401.	
MSL 402-402L Leadership in a Complex World and Lab(COM)4	
Provides information for transition to active or reserve commissioned service, developing administrative controls essential in managing a military organization, introducing the management of financial and personal affairs, and allowing time for discussion and analysis of the ethical decision-making process. Designed to accompany MSL 402. Corequisites: MSL 402L-MSL 402.	
MSL 492 Topics(1-3)	
MSL 494 Leader Development and Assessment Course (COM)4	
MSL 495 ROTC Nurse Summer Training Program3	

MUAP (Applied Music)

MUAP 100-101 Applied Music- Voice **1	
All levels of MUAP 100s, 200s, 300s, and 400s may be used to satisfy IGR Goal 3-option 2, Cultural and Aesthetic Awareness. Notes: ** Course meets IGR #3.	
MUAP 102 Class Instruction- Voice1	
MUAP 110-111 Applied Music- Keyboard1	
MUAP 115-116 Class Instruction- Keyboard1	
MUAP 120-121 Applied Music- Woodwinds1	
MUAP 130-131 Applied Music- Brass1	
MUAP 140-141 Applied Music- Percussion1	
MUAP 150-151 Applied Music- Strings1	
MUAP 181 Piano Accompanying (COM)1	
MUAP 200-201 Applied Music- Voice **1	
All levels of MUAP 100s, 200s, 300s, and 400s may be used to satisfy IGR Goal 3-option 2, Cultural and Aesthetic Awareness. Notes: ** Course meets IGR #3.	
MUAP 210-211 Applied Music- Keyboard1	
MUAP 220-221 Applied Music- Woodwinds1	
MUAP 230-231 Applied Music- Brass1	
MUAP 240-241 Applied Music- Percussion1	
MUAP 250-251 Applied Music- Strings1	
MUAP 300-301 Applied Music- Voice **2	
All levels of MUAP 100s, 200s, 300s, and 400s may be used to satisfy IGR Goal 3-option 2, Cultural and Aesthetic Awareness. Notes: ** Course meets IGR #3.	
MUAP 310-311 Applied Music- Keyboard2	
MUAP 320-321 Applied Music- Woodwinds2	
MUAP 330-331 Applied Music- Brass2	
MUAP 340-341 Applied Music- Percussion2	

MUAP 350-351 Applied Music- Strings2	
MUAP 355 Class Instruction in Strings2	
MUAP 400-401 Applied Music- Voice **2	
All levels of MUAP 100s, 200s, 300s, and 400s may be used to satisfy IGR Goal 3-option 2, Cultural and Aesthetic Awareness. Notes: ** Course meets IGR #3.	
MUAP 410-411 Applied Music- Keyboard2	
MUAP 420-421 Applied Music- Woodwinds2	
MUAP 430-431 Applied Music- Brass2	
MUAP 440-441 Applied Music- Percussion2	
MUAP 450-451 Applied Music- Strings2	
MUAP 483 Public Recital (COM)0	

MUEN (Music Ensembles)

MUEN 100-300 Concert Choir ** (COM)(1-2)	
Notes: ** Course meets IGR #3.	
MUEN 102-302 Men's Choir (COM)1	
MUEN 103-303 Women's Choir (COM)1	
MUEN 107-307 Opera Workshop (COM)(1-2)	
MUEN 110-310 Orchestra (COM)1	
MUEN 120-320 Marching Band (COM)1	
MUEN 121-321 Symphonic Band (COM)1	
MUEN 122-322 Concert Band (COM)1	
MUEN 140-340 String Ensemble1	
MUEN 150-350 Woodwind Ensemble1	
MUEN 160-360 Brass Ensemble1	
MUEN 170-370 Percussion Ensemble1	
MUEN 180-380 Jazz Ensemble1	

MUS (Music)

MUS 100 Music Appreciation * ** (COM)3	
A non-technical discussion designed to increase the enjoyment and appreciation of music. Fulfills the music requirement in the general education program. Notes: * Course meets SGR #4 or ** IGR #3.	
MUS 110 Basic Music Theory I (COM)4	
An integrated study and application of tonality, melody, harmony, texture and form, from music notation through modulation. Includes sight singing, ear training and dictation. Introduction to composition and arranging, i.e. instrument ranges, transposition, tessitura and preliminary score analysis.	
MUS 110L Basic Music Theory I Lab (COM)0	
Students will be taught sight singing and dictation skills that will prepare them to “see with their ears and hear with their eyes.” Students will learn simple to advanced applications of writing down music from aural performance, and learn to quickly analyze melodies by singing them at sight.	

MUS 111 Basic Music Theory II (COM).....4
 An integrated study and application of tonality, melody, harmony, texture and form, from music notation through modulation. Includes sight singing, ear training and dictation. Introduction to composition and arranging, i.e. instrument ranges, transposition, tessitura and preliminary score analysis. Prerequisites: MUS 110.

MUS 111L Basic Music Theory II Lab (COM)0
 Students will be taught singing and diction skills that will prepare them to “see with their ears and hear with their eyes.” Students will learn simple to advanced applications of writing down music from aural performance, and learn to quickly analyze melodies by singing them at sight.

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. Notes: * Course meets SGR #4 or ** IGR #3.

MUS 131 Music Literature and History II * **3
 Ancient through Baroque music literature – analysis of style, form and context, study of historical development and significance, comparison to similar works in other periods of music history. Emphasis on listening and score study. Notes: * Course meets SGR #4 or ** IGR #3.

MUS 185 Recital Attendance (COM).....0
 Designed to expose students to a large and varied body of music through attendance at recitals, forums, solo classes, concerts, and other performances. Required of all music majors each semester they are enrolled in applied music. Student teaching semesters and internships excepted. S/U grade.

MUS 201 History of Country Music * **3
 An in-depth exploration of Country Music, beginning with Scotch-Irish folk music of the late1600’s, through the “New Traditionalists” of the 1990’s. Notes: * Course meets SGR #4 or ** IGR #3.

MUS 202 The Music Industry3
 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.

MUS 203 Blues, Jazz, and Rock * **3
 This course examines the origins and developments of three uniquely American musics and their cultural impact upon, and within, American society. Notes: * Course meets SGR #4 or ** IGR #3.

MUS 210 Advanced Music Theory I (COM).....4
 A more advanced continuation of MUS 110, 111 with similar objectives and organization. A continuation of vocal/instrumental arranging and composition. Prerequisites: MUS 111.

MUS 210L Advanced Music Theory I Lab (COM)0
 Students will be taught sight singing and diction skills that will prepare them to “see with their ears and hear with their eyes.” Students will learn simple to advanced applications of writing down music from aural performance, and learn to quickly analyze melodies by singing them at sight.

MUS 211 Advanced Music Theory II (COM)4
 A more advanced continuation of MUS 110, 111 with similar objectives and organization. A continuation of vocal/instrumental arranging and composition. Prerequisites: MUS 210.

MUS 211L Advanced Music Theory Lab II (COM).....0
 Students will be taught sight singing and diction skills that will prepare them to “see with their ears and hear with their eyes.” Students will learn simple to advanced applications of writing down music from aural performance, and learn to quickly analyze melodies by singing them at sight.

MUS 270 Pedagogy I.....(1-2)
 Pedagogical considerations in teaching music. Methods and concepts in specialized areas: Section 1: Voice; Section 2: Strings; Section 3: Keyboard; Section 4: Clarinet and Flute; Section 5: Double Reeds and Saxophone; Section 6: High Brass; Section 7: Low Brass; Section 8: Percussion; Section 9: General Instrument for Vocal Majors; Section 10: General Voice for Instrument Majors. Section 1 offered even years only; Section 3 offered odd years only; Section 9 and 10 offered on demand.

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 280 Explore Music in Western Europe.....3
 An intensive three-week period of rehearsals, performances, lectures, attendance at plays and concerts, educational touring, and travel in a mix of West European countries.

MUS 280L Explore Music in Western Europe Ensemble0
 Corequisites: MUS 280.

MUS 292 Topics (COM)(1-5)

MUS 302 Introduction to Recording Industry.....2
 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 311 Counterpoint (COM).....3
 Analysis and composition in contrapuntal techniques, with a concentration on the music of J.S. Bach. Prerequisites: MUS 211.

MUS 313 Form and Analysis (COM).....3
 Analysis of music in the student’s major performance area. The course is normally completed under the direction of the student’s major applied teacher. Prerequisites: MUS 210 or 211.

MUS 351 Elementary School Music Methods (COM).....(2-3)
 This course provides methods and materials for guiding elementary students’ musical growth.

MUS 355 Computer Based Technology and Learning for Music Educators2
 This course prepares music students to integrate computers into the curriculum by exploring the evolving uses and expectations of technology and learning tools. Course objectives are based on ISTE standards and the requirements of the discipline.

MUS 360 Conducting (COM).....2
 General conducting focuses on the basic fundamentals of instrumental and choral conducting. The techniques of interpretation, score reading, rehearsal techniques, and the art of developing basic conducting techniques are addressed in the course. Prerequisites: MUS 111.

MUS 360L Conducting (COM)0
 Accompanies MUS 360.

MUS 361-361L Music Education II: Conducting and Lab2
 Section 1: Instrumental music methods and materials. Emphasis on rehearsal
 Prerequisites: 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. Corequisites:
 MUS 361L-MUS 361.

MUS 362-362L Music Education III: Methods and Materials2
 Section 1: Instrumental Music Methods and Materials. Emphasis on lesson,
 solo and ensemble materials and pedagogy for the school instrumental music
 teacher. Teaching techniques for individual, class, small and large
 instrumental music ensembles are offered. Students participate in supervised
 on-site teaching experiences at the elementary instrumental music and
 general music class levels. Section 2: Vocal Music Methods and Materials.
 Emphasis on choral teaching materials and teaching concepts and techniques
 for individual, class and ensembles for the school vocal teacher. Students
 participate in supervised on-site teaching experiences in choral music and
 general music classes. Corequisites: MUS 362L-MUS 362.

**MUS 365-365L Music Education IV: Supervision and Administration
 of School Music and Lab2**
 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. Corequisites: MUS
 365L-MUS 365.

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 Independent Study.....(1-3)

MUS 420 Orchestration and Arranging (COM).....3
 A study of instruments alone and in combinations. Orchestration and
 arranging for instrumental and vocal ensembles. Preparation of parts and
 participation in the conducting and performing of works scored.

MUS 433 Music Literature and History III.....3
 Classical, Romantic, and Modern music literature – analysis of style, form,
 and context; study of historical development and significance, comparison to
 similar works in other periods of music history. Emphasis on listening, score
 study, and research methods in the field of music.

MUS 465 Music Education V: Practical Applications2
 Emphasis on in-depth development of skills required for teaching music in
 the secondary schools. Section I: Advanced rehearsal skills for leading
 bands, specific techniques for marching bands, jazz ensemble rehearsal and
 organization, and instrument repair. Section II: Advanced rehearsal skills for
 leading choirs, specific techniques for vocal ensembles other than choirs,
 and literature selection.

MUS 491-591 Independent Study.....(1-3)

MUS 492-592 Topics (COM).....(1-5)

MUS 494 Internship(3-12)
 Prerequisites: Consent of department program coordinator.

NACC (Nursing Accelerated)

NACC 113 Orientation Nursing Accelerated Option0

NACC 215 Professional Nursing.....2
 Introduction to the profession of nursing within the context of a changing
 healthcare system. The professional nursing values of human dignity,
 altruism, integrity, autonomy, and social justice are explained with emphasis
 on human dignity. The professional nursing roles of provider of care,
 designer/manager/coordinator of care and member of the profession are
 described. Corequisites: NACC 265-265L, 280-280L, 323.

NACC 265-265L Health Assessment and Interventions and Lab4
 Introduces health assessment skills and selected nursing interventions at the
 novice nursing student level. Emphasis is on the role of nurse as provider of
 care and a member of the profession. Prerequisites: MICR 231, BIOL 325,
 NFS 321, HDFS 210; 3 credits from SOC 100, 240, 250, or 440.
 Corequisites: NACC 265L-NACC 265, 215, 280-280L, 323.

NACC 280-280L Professional Communication and Lab3
 Focus is on communication skills essential to the profession of nursing.
 Emphasis is placed on professional communication of the nurse with clients
 and colleagues. Prerequisites: PSYC 101. Corequisites: NACC 280L-NACC
 280, 215, 265265L, 323.

**NACC 310-310L Introduction to Public Health and Population-Based
 Nursing and Lab.....4**
 Focuses on an introduction to public health and population-based nursing
 care. Public health principles are applied to the health promotion, risk
 reduction and disease prevention needs of clients. Clinical application occurs
 with children and adults in community settings. Prerequisites: NACC 215,
 265-265L, 280-280L,323. Corequisites: NACC 310L-NACC 310, 325-325L,
 PHA 321.

NACC 323 Introduction to Pathophysiology3
 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. Prerequisites: 3rd year Pharmacy standing or Nursing
 major, BIOL 325.

**NACC 325-325L Beginning Care of the Client with Health Problems
 and Lab6**
 Focuses on nursing core knowledge and core competencies to provide
 beginning nursing care to clients with health problems. Clinical application
 occurs with clients across the life span experiencing health problems.
 Emphasis will be on the nursing care of the adult client. P. NACC 215,
 265265L, 280-280L, 323. Corequisites: NACC 310-NACC 310L, NACC
 325L-NACC 325, PHA 321.

NACC 355 Research: Appraisal and Utilization2
 Terminology and steps in the research process are reviewed and the role of
 theory and ethical issues involved in the conduct of research is explored.
 Research as a basis for evaluation of nursing and healthcare outcomes is
 appraised and research utilization related to essential knowledge for the
 practice of professional nursing is analyzed. Prerequisites: NURS 310-310L,
 325-325L. Corequisites: NURS 365-365L, 380-380L.

NACC 365-365L Nursing Care of the Client with Health Problems and Lab6

Focuses on the application of nursing core knowledge and core competencies to provide nursing care to clients with health problems. Clinical application occurs with clients across the life span experiencing health problems. Emphasis will be on the nursing care of the pediatric client. Prerequisites: NACC 310-310L, 325-325L, PHA 321. Corequisites: NACC 365L-NACC 365, 380-380L.

NACC 380-380L Nursing Care of the Childbearing Family and Lab5

Focuses on the application nursing knowledge and competencies to provide nursing care to the childbearing woman and family. Clinical application occurs with childbearing women and families. Prerequisites: NACC 310-310L, 325325L, PHA 321. Corequisites: NACC 355, NACC 365-NACC 365L, NACC 380L-NACC 380.

NACC 410-410L Advanced Nursing Care of the Client with Health Problems and Lab6

Expands on previous knowledge and skills to provide advanced nursing care to clients with complex health problems. Prerequisites: NACC 355, 365-365L, 380380L. Corequisites: NACC 410L-NACC 410, NACC 420-NACC 420L, HSC 445 or STAT 281.

NACC 420-420L Nursing Care of the Client with Mental Health Problems and Lab5

Focuses on the application of nursing knowledge and competencies to provide nursing care to clients experiencing mental health problems. Prerequisites: NACC 355, 365-365L, 380-380L. Corequisites: NACC 410-NACC 410L, NACC 420L-NACC 420, HSC 445 or STAT 281.

NACC 425 Nursing Leadership3

Emphasizes professional role synthesis through development of leadership and management skills. The professional value of social justice is integrated with leadership development. Prerequisites: NACC 410-410L, 420-420L, STAT 281 or HSC 445. Corequisites: NACC 495, 480-480L.

NACC 460 Preparation for RN Licensure1

This course is designed to assist nursing students with preparation for the National Council Licensure Examination for Registered Nurses (NCLEXRN) 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.

NACC 480-480L Advanced Population-Based Nursing Practice and Lab4

Apply multi-faceted, evidenced based, interdisciplinary systems thinking to solve public health problems in a variety of arenas. Prerequisites: NACC 410-410L, 420-420L, STAT 281 or HSC 445. Corequisites: NACC 425, NACC 495, NACC 480L-NACC 480.

NACC 495-495L Practicum and Lab6

Prerequisites: NACC 410-410L, 420-420L, STAT 281 or HSC 445. Corequisites: NACC 495L-NACC 495.

NFS (Nutrition & Food Science)

NFS 111 Food, People and the Environment **3

The survey of global food cultures, their stewardship of natural resources, and their impacts on the environment. It will also explore the ethical issues of choices in post-harvest food processing and their interactions with the environment. The course will also cover topics related with the Land-Grant philosophy. Notes: ** Course meets IGR #1.

NFS 141-141L Foods Principles and Lab4

Scientific investigation of basic foods used to maintain optimum nutrition. Corequisites: NFS 141L-141.

NFS 151 Food Safety and Technology3

Fundamentals of food safety and the technology of conversion of agricultural raw material into finished food products suitable for food consumption. World and domestic food needs, chemical additives and current food safety issues will be discussed.

NFS 220 Health, Safety and Nutrition of Young Child3

Exploration of school health, safety, first aid/CPR, disease control and nutrition; development of health and nutrition policies and standard 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.

NFS 221 Survey of Nutrition3

Fundamentals of nourishing the body properly and the role that food plays in meeting the nutritional requirements of individuals. Designed for the student who lacks a science background but wishes to study human nutrition in some detail.

NFS 291 Independent Study(1-3)

NFS 292 Topics3

NFS 295 Practicum(1-3)

NFS 298 Undergraduate Research/Scholarship.....(1-3)

NFS 315 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. Prerequisites: CHEM 106 and 108, or CHEM 112 and 114.

NFS 322-322L Assessment Skills in Nutrition and Lab3

Study of the nutritional assessment, cultural and therapeutic dietary modifications, interviewing and counseling, documentation in the medical record, and quality assurance. Review of principles of dietetics and the role of the professional dietitian. Prerequisites: NFS 321 or consent. Corequisites: NFS 322L-322.

NFS 323 Nutrition Across the Life Cycle3

In depth study of the nutritional needs throughout the lifecycle from embryo to old age. Physiological and biochemical principles and current research are used to build a foundation for exploration of nutrition across the stages of reproduction, growth and development, and maturation and aging. Prerequisites: NFS 321 or instructor consent.

NFS 341-341L Food Science and Lab4

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. Prerequisites: NFS 141, CHEM 120. Corequisites: NFS 341L-341.

NFS 351-351L Principles of Food Processing and Lab3

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. Prerequisites: NFS 151, CHEM 106 or 114, or consent. Corequisites: NFS 351L-351.

NFS 360-360L Food Chemistry and Lab.....4

The study of chemical properties of basic food constituents and chemical changes occurring during storage and processing. Prerequisites: CHEM 120 or consent. Corequisites: NFS 360L-360.

NFS 380 Foodservice Operations and Purchasing Management3
 A managerial and systems approach to foodservice operations and purchasing. Cross-Listed: HMG 380.

NFS 381-381L Quantity Food Production and Service and Lab3
 Application of foodservice management principles in quantity food production, purchasing, and service. Prerequisites: NFS 141-141L, HMG 251(or concurrently), HMG 380. Corequisites: NFS 381L-NFS 381. Cross-Listed: HMG 381-381L.

NFS 422-522 Advanced Human Nutrition4
 Principles of physiological chemistry and physiology applied to nutrition. Prerequisites: NFS 321, BIOL 221 and BIOL 325, CHEM 108 or 464 or consent.

NFS 423-423L/523-523L Medical Nutrition Therapy I and Lab3
 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. Prerequisites: NFS 422. Corequisites: NFS 423L-423/523L-523.

NFS 424-424L/524-524L Community Nutrition and Lab.....3
 Application of learning principles, teaching methods and knowledge of nutrition in community nutrition education programs and out-patient nutrition counseling. Prerequisites: NFS 321 and NFS 323. Corequisites: NFS 424L-424/524L-524.

NFS 425-425L/525-525L Medical Nutrition Therapy II and Lab.....3
 Continuation of NFS 423-523. Prerequisites: NFS 423/523 Corequisites: NFS 425L-425/525L-525.

NFS 450-450L/550-550L Food Analysis and Lab.....4
 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. Prerequisites: NFS 360, CHEM 120, or consent. Corequisites: NFS 450L-450/550L-550.

NFS 451-451L/551-551L New Food Product Development and Lab4
 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. Prerequisites: NFS 351, MICR 311 or consent. Corequisites: NFS 451L-451L/551L-551.

NFS 480/580 Travel Studies.....(1-5)
 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.

NFS 481 Food Science, Dietetics, and Hospitality Human Resources Management.....3
 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. Cross-Listed: HMG 481.

NFS 487 Transition to 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. Prerequisites: Senior standing or consent. Cross-Listed: CA 487.

NFS 490/590 Seminar (AW)2

NFS 491/591 Independent Study1-6

NFS 492/592 Topics(1-3)

NFS 493/593 Workshop(1-3)

NFS 494 Internship.....(1-7)

NFS 495 Practicum2

NFS 498 Undergraduate Research/Scholarship.....(1-3)

NFS 601 Orientation in Graduate Study1

NFS 634 Techniques in Food and Nutrition Research3

NFS 634L Techniques in Food and Nutrition Research Lab.....0

NFS 660 Maternal and Child Nutrition.....3

NFS 662 Sociocultural Aspects of Nutrition.....2

NFS 702 Macronutrients in Human Nutrition.....3
 Prerequisites: NFS 422/522 or consent of instructor.

NFS 704 Phytochemicals3

NFS 706 Nutrition and Immunology3

NFS 725 Nutrition and Human Performance3

NFS 726 Nutrition and Wellness.....3

NFS 760 Vitamins and Minerals in Human Nutrition3

NFS 761 Nutrition of the Aged3

NFS 782 Epidemiology3
 The course introduces concepts and methodologies for the study of health and disease in human populations. Different study designs and their methods of analysis will be discussed, as well as sources, handling, and interpretation of epidemiologic data. Cross-Listed: HSC/BIOL 782.

NFS 788 Individual Research and Study.....(1-7)

NFS 790 Seminar1

NFS 791 Independent Study(1-3)

NFS 792 Topics(1-3)

NFS 794 Internship.....(1-7)

NFS 798 Thesis(1-7)

NFS 890 Seminar Ph.D.....1

NFS 898D Dissertation- Ph.D.(1-12)

NURS (Nursing)

NURS 111 Orientation Basic Nursing Student0
 Basic nursing student orientation.

NURS 112 Orientation to RN Upward Mobility Program0

NURS 201 Medical Terminology1 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.	215, 265-265L, 280-280L, 323. Corequisites: NURS 310-NURS 310L, NURS 325L-NURS 325, PHA 321.
NURS 215 Professional Nursing2 Introduction to the profession of nursing within the context of a changing healthcare system. The professional nursing values of human dignity, altruism, integrity, autonomy, and social justice are explained with emphasis on human dignity. The professional nursing roles of provider of care, designer/manager/coordinator of care and member of the profession are described. Corequisites: NURS 265-265L, 280-280L, 323.	NURS 355 Research: Appraisal and Utilization2 Terminology and steps in the research process are reviewed and the role of theory and ethical issues involved in the conduct of research is explored. Research as a basis for evaluation of nursing and healthcare outcomes is appraised and research utilization related to essential knowledge for the practice of professional nursing is analyzed. Prerequisites: NURS 310-310L, 325-325L. Corequisites: NURS 365-365L, 380-380L.
NURS 222 Transition to BS in Nursing1 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 as well as an overview of The Essentials of Baccalaureate Education for Professional Nursing Practice document with related values and concepts. Includes an introduction to nursing informatics as a tool for lifelong learning.	NURS 365-365L Nursing Care of the Client with Health Problems and Lab6 Focuses on the application of nursing core knowledge and core competencies to provide nursing care to clients with health problems. Clinical application occurs with clients across the life span experiencing health problems. Emphasis will be on the nursing care of the pediatric client. Prerequisites: NURS 310-310L, 325-325L, PHA 321. Corequisites: NURS 365L-NURS 365, NURS 380-NURS 380L.
NURS 265-265L Health Assessment and Interventions and Lab4 Introduces health assessment skills and selected nursing interventions at the novice nursing student level. Emphasis is on the role of nurse as provider of care and a member of the profession. Prerequisites: MICR 231, BIOL 325, NFS 321, HDFS 210; 3 credits from SOC 100, 150, 240, 250 or 440. Corequisites: NURS 265L-NURS 265, NURS 215, NURS 280-NURS 280L, NURS 323.	NURS 380-380L Nursing Care of the Childbearing Family and Lab5 Focuses on the application of nursing knowledge and competencies regarding childbearing and family health to provide nursing care to individuals and families. Prerequisites: NURS 264, 265-265L, 280-280L, 282, 323. Corequisites: NURS 320L-NURS 320, NURS 304, NURS 330, and PHA 321.
NURS 280-280L Professional Communication and Lab3 Focus is on communication skills essential to the profession of nursing. Emphasis is placed on professional communication of the nurse with clients and colleagues. Prerequisites: PSYC 101. Corequisites: NURS 280L-NURS 280, NURS 215, NURS 265-NURS 265L, NURS 323.	NURS 381 Family and Communication3 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. Prerequisites: NURS 222. Corequisites: NURS 222
NURS 293 Workshop(1-3)	NURS 385 Health Assessment, Clinical Decision-Making and Nursing Interventions5 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. Prerequisites: NURS 222, NURS 381, RN License.
NURS 310-310L Introduction to Public Health and Population-based Nursing and Lab4 Focuses on an introduction to public health and population-based nursing care. Public health principles are applied to the health promotion, risk reduction and disease prevention needs of clients. Clinical application occurs with children and adults in community settings. Prerequisites: NURS 215, 265-265L, 280-280L, 323. Corequisites: NURS 310L-NURS 310, NURS 325-NURS 325L, PHA 321.	NURS 410-410L Advanced Nursing Care of the Client with Health Problems and Lab6 Expands on previous knowledge and skills to provide advanced nursing care to clients with complex health problems. Prerequisites: NURS 355, 365-365L, 380-380L. Corequisites: NURS 410L-NURS 410, NURS 420-NURS 420L, HSC 445 or STAT 281.
NURS 323 Introduction to Pathophysiology3 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. Prerequisites: 3rd year Pharmacy standing or Nursing major; BIOL 325	NURS 416 Community Health Nursing (AW)5 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. Prerequisites: NURS 222, NURS 381, NURS 385, RN License.
NURS 325-325L Beginning Nursing Care of the Client with Health Problems and Lab6 Focuses on nursing core knowledge and core competencies to provide beginning nursing care to clients with health problems. Clinical application occurs with clients across the life span experiencing health problems. Emphasis will be on the nursing care of the adult client. Prerequisites: NURS	

NURS 420-420L Nursing Care of the Client with Mental Health Problems and Lab	5	NURS 660 Introduction to the Clinical Academic Partner Role	3
Focuses on the application of nursing knowledge and competencies to provide nursing care to clients experiencing mental health problems. Prerequisites: NURS 355, 365-365L, 380-380L. Corequisites: NURS 410-NURS 410L, NURS 420L-NURS 420, HSC 445 or STAT 281.		NURS 670 Health Policy, Legislation, Economics and Ethics	3
NURS 425 Nursing Leadership	3	NURS 675 Cultural Competence in Health Care	3
Emphasizes professional role synthesis through development of leadership and management skills. The professional value of social justice is integrated with leadership development. Prerequisites: NURS 410-410L, 420-420L, STAT 281 or HSC 445. Corequisites: NURS 495, 480-480L.		NURS 690 Seminar	(1-4)
NURS 454 Leadership and Management	3	NURS 691-691L Independent Study and Clinical	(1-3)
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. Prerequisites: NURS 222, NURS 381.		NURS 692 Topics	(1-3)
NURS 460 Preparation for RN Licensure	1	NURS 710 Curriculum Development and Instruction in Nursing	3
This course is designed to assist nursing students with preparation for the National Council Licensure Examination for Registered Nurses (NCLEXRN) 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 720 Technology-Based Instruction for Nurse Educators	3
NURS 474 Nursing Research and Nursing Theory	3	NURS 750 Transformational Leadership	3
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. Prerequisites: NURS 222, NURS 381, Stat 281 OR HSc 445		NURS 760-760L Advanced Concepts in Health Promotion and Disease Prevention and Lab	3
NURS 480-480L Advanced Population based Nursing Practice and Lab	4	NURS 765 Family Nursing Practitioner: Practicum I	6
Apply multi-faceted, evidenced based, interdisciplinary systems thinking to solve public health problems in a variety of arenas. Prerequisites: NURS 410-410L, 420420L, STAT 281 or HSC 445. Corequisites: NURS 425, NURS 495, NURS 480L-NURS 480.		NURS 771 Family Nursing Practitioner: Practicum II	7
NURS 491 Independent Study	(1-3)	NURS 774-774L Nurse Administrator: Practicum and Lab	6
NURS 492 Topics	(1-4)	NURS 776 Family Nursing Practitioner III: Small Group Instruction ..	3
NURS 495-495L Practicum and Clinical Lab(AW)	6	NURS 777 Family Nursing Practitioner III: Internship	(3-9)
NURS 497 Cooperative Education	(1-4)	NURS 778-778L Nursing Education: Practicum and Lab	6
NURS 615 Advanced Nursing Practice: Introduction to Roles and Issues	3	NURS 788 Problems in Nursing Research	(1-2)
NURS 623 Pathophysiology Applied to Advanced Practice Nursing	4	NURS 790 Seminar	(1-3)
NURS 626 Research Methods for Advanced Practice Nursing	3	NURS 795 Practicum in Advanced Health Concepts for Nurse Educators	3
NURS 631-631L Advanced Assessment: Lifespan and Lab	(3-4)	NURS 798 Thesis	(1-7)
NURS 635 Dying, Death and Bereavement	(2-3)	NURS 810 Doctoral Seminar	1
NURS 641 Application of Leadership Principles in Clinical Settings	3	NURS 815 Philosophical Basis for Nursing	3
NURS 642 Application of Advanced Concepts of Nursing Care	3	NURS 820 Theory Development in Nursing	3
NURS 643 Clinical Nurse Leader I	3	NURS 825 Qualitative Research Methods in Nursing	3
NURS 644 Clinical Nurse Leader II	5	NURS 830 Quantitative Methods in Nursing Research	3
		NURS 835 Ethical Issues Influencing Practice and Research in Health Disciplines	3
		NURS 840 Health Promotion Theory and Research in Underserved Populations	3
		NURS 845 Instrument Construction and Evaluation with Underserved Populations	3
		NURS 850 Philosophical and Theoretical Foundations for Evidence-Based Care	3
		NURS 860 Health Operations and Financial Management for Nurse Managers	3
		NURS 865 DNP Capstone	6
		NURS 870 DNP Innovation Project	4
		NURS 890 Research Problems	(1-3)
		NURS 898 Dissertation Research	1-24

PE (Physical Education)

PE 100 Activity Courses (COM)0.5-1

Activities stressing individual physical fitness and lifetime activities according to student needs and interest.

PE 170 Fundamental Movement (COM).....1

Defining, analyzing, and evaluating fundamental locomotor, non-locomotor (axial) and manipulative skills progressions in skill development.

PE 180 Foundations of HPER/A (COM).....2

A survey of the historical background, sociological implications, and philosophical basis and professional opportunities of HPER/A professions. This course includes a review of the modern principles and related concepts which are applicable to physical activity.

PE 192 Topics5-1.5

PE 200 Professional Preparation: Fitness (COM).....1

Knowledge and skills necessary to enable students to lead, analyze, and prescribe improvements for skills and activities which are part of lifetime fitness development.

PE 201 Professional Preparation: Gymnastics (COM).....1

Knowledge and skills necessary to enable students to lead, analyze, and prescribe improvements for skills and activities which are part of gymnastic and tumbling activities.

PE 202 Professional Preparation: Individual and Dual Activities

(COM)(1-2)

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 appropriate for school settings, leading to personal skill development.

PE 203 Professional Preparation: Team Activities (COM).....1

Knowledge and skills necessary to enable students to lead, analyze, and prescribe improvements for skills and activities associated with participating in team sports and game activities. Focus will be placed on activities appropriate for school settings, leading to person skill development.

PE 204 Professional Preparation: Rhythm and Dance (COM).....1

Knowledge and skills necessary to enable students to lead, analyze, and prescribe improvements for skills and activities associated with participating in rhythm and lifetime dance activities. Focus will be placed on activities appropriate for school settings which contribute to personal development.

PE 252-252L Fundamentals of Motor Learning and Development and Lab (COM).....2

Course content deals with characteristic motor development patterns in children with concentration on fundamental locomotor, non-locomotor, and manipulative skills and perceptual-motor development and practical applications of research and knowledge to physical education classroom teaching.

Accompanies PE 252. Corequisites: PE 252.

PE 320-320L Lifeguard Training and Lab (COM)1-2

The course focuses on skills and knowledge to properly assume responsibilities of lifeguards at swimming pools and non-surf beaches. Corequisites: PE 322 Lifeguard Instructor

PE 320.

PE 321-321L Water Safety Instructor and Lab(COM).....(1-2)

Method of instruction and evaluation of water safety techniques. Successful students may earn American Red Cross water safety instructor certification. Corequisites: PE 321L-PE 321

PE 322 Lifeguard Instructor (COM).....1

Certification as a lifeguard instructor will qualify an individual to teach basic water safety, emergency water safety and the lifeguard training course. Prerequisites: PE 320, consent of instructor.

PE 335 Assisting Teaching.....1

Application of movement analysis, prescription knowledge and skills to an activity setting in a basic physical activity course. Prerequisites: Consent, admission to PETE program.

PE 341 Curriculum Development and Evaluation (COM).....2

Philosophy, theory, and application of current curriculum foundations in K-12 physical education, including curriculum theory, organization, design, and assessment. Prerequisites: PE 180.

PE 350 Exercise Physiology (COM)(2-3)

Study of physiological responses and adaptations to exercise related to human performance limitations, training effects, and health-related benefits. Prerequisites: BIOL 221, BIOL 325.

PE 352 Adapted Physical Education (COM).....2

Students are exposed to those impairments addressed in IDEA as they relate to physical education. Assessments, IEP development, and other elements necessary to successful inclusion are addressed. In addition, physical activities for special populations outside the school setting are also addressed.

PE 354-354L Prevention and Care of Athletic Injuries and Lab(COM).....2

Course teaches general and emergency treatment of athletic injuries, competitive or noncompetitive. Emphasis is placed on practical preventive and rehabilitative exercises and taping/bandaging/wrapping.

Accompanies PE 354. Corequisites: PE 354.

PE 360-360L K-8 Physical Education Methods and Lab (COM).....2

In this course, students develop an understanding of the tools of inquiry of K-8 physical education; the ability to design, deliver, and evaluate a variety of instructional strategies and processes that incorporate learning resources, materials, technologies, and state and national curriculum standards appropriate to K-8 physical education; the ability to assess student learning in K-8 physical education; and to apply these knowledge, skills, and attitudes to real life situations and experiences.

Accompanies PE 360.

PE 367 Health and Human Performance3

This course is designed to apply the concepts of exercise physiology for health, fitness and athletic performance. The course will give special emphasis to principles specific to resistance training and program design using a variety of methods for various populations. PreRequisites: PE 350 and Instructor Permission Prerequisites: PE 350.

PE 395 Practicum (COM).....3

PE 400-400L Exercise Test and Prescription and Lab (COM)3

This course is designed to provide the student with the knowledge, skills, and abilities to assess different areas of physical fitness and prescribe individual exercise programs based on these objective measures.

This course will provide hands-on experience in the laboratory to supplement the theoretical classroom discussion in PE 400 and will prepare the student to take entry-level certification such as the American College of Sports Medicine Health and Fitness Instructor Certification. Prerequisites: PE 350. Corequisites: PE 400.

PE 440 Organization and Administration of HPER/Athletics (COM)...2

Administrative policies and procedures of physical education and athletics, including intramural and interscholastic activity and athletics. Consideration

is given to programming, leadership, budget, facilities, public relations, and related matters.

PE 450/550 Clinical Exercise Physiology3

This course is designed to provide the clinical exercise physiology student with assessment and prescription techniques appropriate to special populations. Prerequisites: PE 350, NURS 323, and consent.

PE 451-451L Tests and Measurements and Lab (COM)2

This course will include use of various tests and instruments used for measuring progress in physical education and how statistical concepts apply to testing in physical education. Development of the knowledge and ability to utilize both formative and summative assessments for psychomotor, cognitive, and affective domains. Additionally, techniques to evaluate one's own teaching performance and make adjustments to enhance subsequent teaching and program effectiveness will be discussed.

Accompanies PE 451. Prerequisites: MATH 102 or 115 or 120, or 121 or 123 or 125 or 281. Corequisites: PE 451.

PE 453 Sport Psychology (COM).....(2-3)

This course examines the effects of psychological factors, such as personality, motivation, group dynamics, psychomotor activity, and other psychological aspects of sports on participation and performance, as well as examining the effects of participation on the psychological make-up of the individual. Notes: (May be taught on demand.)

PE 454 Biomechanics (COM)3

This course emphasizes the mechanical principles of human movement (including muscular and skeletal principles) during physical education, wellness, and sport. Prerequisites: PE 250/250L and 353, or PE 345 and 346, or BIOL 221.

PE 455/555 ECG and Clinical Stress Testing3

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. Prerequisites: PE 350 and PE 400.

PE 467-467L Coaching Swimming and Lab(COM).....2

Theory and practice of individual fundamentals and team strategies. Organization and management procedures specific to swimming. (May be taught on demand.)

Accompanies PE 467. Corequisites: PE 467.

PE 469-469L Coaching Baseball/Softball and Lab: Officiating (COM).....2

Course studies the theory and practice of individual skill fundamentals, team strategies, organization, and management principles. The students conduct an intensive analysis of game strategies and will execute playing skills.

This laboratory experience accompanies PE 469 and focuses on the knowledge, skills, and techniques (including positioning, responsibilities, and rules) necessary to accurately, fairly, and effectively officiate baseball/softball competition. Corequisites: PE 469.

PE 470-470L Coaching Basketball and Lab (COM).....2

Fundamental techniques and strategies with emphasis on offensive and defensive skills, developing and using player personnel for basketball.

Focuses on the knowledge, skills, and techniques (including positioning, responsibilities, and rules) necessary to accurately, fairly, and effectively officiate basketball competition. Corequisites: PE 470.

PE 471-471L Coaching Football and Lab: Officiating (COM).....2

Fundamental techniques and strategies with emphasis on offensive and defensive skills, developing and using player personnel for football.

This laboratory experience accompanies PE 471 and focuses on the knowledge, skills, and techniques (including positioning, responsibilities, and rules) necessary to accurately, fairly, and effectively officiate football competition. Corequisites: PE 471.

PE 472-472L Coaching Golf and Lab (COM)2

The teaching of fundamental skills and rules in competitive golf.

Accompanies PE 472. Corequisites: PE 472.

PE 473-473L Coaching Track and Field/Cross Country and Officiating Country (COM).....2

Study of the techniques of teaching fundamentals of track and field/cross country skills, scientific training methods, rules, and event techniques.

This laboratory experience accompanies PE 473 and focuses on the knowledge, skills, and techniques (including positioning, responsibilities, and rules) necessary to accurately, fairly, and effectively officiate track and field and cross country competitions. Corequisites: PE 473.

PE 474-474L Coaching Wrestling and Officiating(COM).....2

The teaching of fundamental skills in competitive wrestling. Skills, fundamentals, and basic moves will be discussed and demonstrated with class participation. Strategy for individual wrestler on the mat and for team situations will be included.

This laboratory experience accompanies PE 474 and focuses on the knowledge, skills, and techniques (including positioning, responsibilities, and rules) necessary to accurately, fairly, and effectively officiate wrestling competition. Corequisites: PE 474.

PE 475-475L Coaching Volleyball and Officiating(COM).....2

Fundamental techniques and strategy with emphasis on offensive and defensive skills, developing and using player personnel for volleyball.

This laboratory experience accompanies PE 475 and focuses on the knowledge, skills, and techniques (including positioning, responsibilities, and rules) necessary to accurately, fairly, and effectively officiate volleyball competition.

PE 476-476L Coaching Gymnastics and Officiating (COM)2

The teaching of fundamental skills in competitive gymnastics. Teaching and spotting of advanced skills needed for competition. Review of high school, national, and international rules.

This laboratory experience accompanies PE 476 and focuses on the knowledge, skills, and techniques (including positioning, responsibilities, and rules) necessary to accurately, fairly, and effectively officiate gymnastics competition. Corequisites: PE 476.

PE 480-480L K-12 Methods of Teaching PE and Lab(COM).....3

In this course, students develop an understanding of the tools of inquiry of K-12 education, the ability to design, deliver, and evaluate a variety of instructional strategies and processes that incorporate learning resources, materials, technologies, and state and national curriculum standards appropriate to K-12 physical education; the ability to assess student learning in K-12 physical education; and to apply these knowledge, skills, and attitudes to real life situations and experiences.

Accompanies PE 480. Prerequisites: Consent. Corequisites: PE 480.

PE 485/585 Travel Studies(1-5)

This travel 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 of SDSU or other institutions. Students will participate in hands-on activities and design educational activities for presentations at selected locations. Includes pre-travel orientation, post-travel exit interview, and a written report.

PE 490 Seminar (AW)(1-3) Prerequisites: Consent.
PE 491 Independent Study (COM)(1-4)
PE 492 Topics (COM)(1-3)
PE 493/593 Workshop (COM)(1-3)
PE 496 Field Experience (COM).....(1-12)
PE 730 Physical Education Teacher Education3
PE 732 Analysis and Strategies of Teaching and Supervising Physical Education and Sports.....3
PE 750 Advanced Exercise Physiology 3
PE 751-751L Lab Techniques in Exercise Physiology and Lab.....2
PE 755 Applied Exercise Physiology3
PE 770 Advanced Administration of Interscholastic Athletics3
PE 771 Curriculum Trends in HPER and Athletics3
PE 772 Financial Aspects of Sports Management3

PHA (Pharmacy)

PHA 101 Introduction to Pharmacy1
 Introduction to pharmacy and the role of the pharmacist within the contemporary health care team. Also includes introductory material relating to U.S. Health Care and medical terminology.

PHA 201 Medications and Wellness **2
 Principles of drug action, examination of medical and legal aspects of use and misuse of prescription, non-prescription and illicit drugs. Notes: ** Course meets IGR #2.

PHA 310 Introductory Practice Experience I.....3
 Students apply the academic and theoretical knowledge they have acquired in didactic courses to practical situations within a pharmacy setting. Drug distribution activities of the pharmacist will be an emphasis of the course.

PHA 320 Introduction to Pathophysiology3
 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. Prerequisites: P1 year Pharmacy standing or Nursing major, and BIOL 325.

PHA 321 Pharmacology3
 Basics of pharmacology and therapeutics for nurses and others. Prerequisites: CHEM 108 or CHEM 114, BIOL 325, NURS 323.

PHA 323 Pharmaceutical Biochemistry4
 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. Prerequisites: P1 year standing.

PHA 324 Biomedical Science I4
 Properties, activities, mechanism of action and therapeutic use of biologics (e.g., monoclonal antibodies, vaccines, therapeutic proteins) and technologies involved in their production. Prerequisites: P1 year standing, PHA 323.

PHA 331 Pharmaceutics I.....3
 Theory, preparation and application of pharmaceutical dosage forms and drug delivery systems. Prerequisites: P1 year standing.

PHA 332-332L Pharmaceutics II and Lab.....4
 Theory, preparation and application of pharmaceutical dosage forms and drug delivery systems. Corequisites: PHA 332L-PHA 332.

PHA 340-340L Medicinal Chemistry I and Lab.....4
 Principles of medicinal chemistry leading to the clear understanding of pharmacotherapy Prerequisites: P1 year standing. Corequisites: PHA 340L-PHA 340.

PHA 341-341L Medicinal Chemistry II and Lab.....4
 Principles of medicinal chemistry leading to the clear understanding of pharmacotherapy. Corequisites: PHA 341L-PHA 341.

PHA 367-367L Pharmacy Practice I and Lab2
 The fundamental concepts of pharmacy practice are introduced. Pharmaceutical calculations, principles of pharmaceutical care and professional communication skills are introduced. Prerequisites: P1 standing. Corequisites: PHA 367L-PHA 367.

PHA 368-368L Pharmacy Practice II and Lab.....3
 This is a continuation of Pharmacy Practice I. The fundamental concepts of pharmacy practice are further taught and developed. Pharmaceutical calculations, principles of pharmaceutical care and professional communication skills are expanded and reinforced. Drug information topics of effective retrieval, evaluation and dissemination of medication information are introduced. Prerequisites: P1 standing. Corequisites: PHA 368L-PHA 368.

PHA 415 Biopharmaceutics and Pharmacokinetics.....4
 The study of physicochemical properties of drug formulations in relation to the bioavailability of drugs. Principles and application of various approaches to estimate pharmacokinetic parameters for designing drug dosage regimens. Prerequisites: P2 year standing.

PHA 425 Biomedical Science II.....3
 Continuation of Biomedical Science I involving properties, activities, mechanism of action and therapeutic use of biologics (e.g. antibodies, vaccines, therapeutic proteins) and technologies involved in their production. Pathophysiology of microbial infections. Prerequisites: P2 year Standing, PHA 324.

PHA 430 Pharmacy Practice Law.....3
 State and federal laws and regulations. Prerequisites: P2 year standing.

PHA 442 Pharmacology I.....5
 Principles of pharmacology leading to the clear understanding of pharmacotherapy. Prerequisites: P2 year standing.

PHA 443 Pharmacology II.....4
 Principles of pharmacology leading to the clear understanding of pharmacotherapy. Prerequisites: PHA 442.

PHA 444 Toxicology2
 Basic principles of the understanding of poisoning and its prevention and treatment. Prerequisites: P2 year Standing, PHA 442. Corequisites: PHA 443.

PHA 445 Pharmacotherapeutics I.....2
 Discussion of pharmacotherapeutic principles for the development of patient specific drug regimens in patients with acute and chronic disease states and conditions.

PHA 446 Pharmacotherapeutics II3	PHA 715 First Steps in Pharmacy Care Practice Experience4
This course is the continuation of PHA 445, Pharmacotherapeutics I, with an emphasis on the discussion of pharmacotherapeutic principles for the development of patient specific drug regimens in patients with acute and chronic disease states and conditions. Notes: (Begins Spring 09.)	PHA 716 Hospital/Institutional Pharmacy Practice Experience5
PHA 467-467L Pharmacy Practice III and Lab(AW)3	PHA 717 Community Health and Patient Monitoring Practice Experience5
This is a continuation of Pharmacy Practice II. The fundamental concepts of pharmacy practice are further taught and developed. Practice skills developed in Pharmacy Practice I and II are expanded and reinforced. Drug information topics of effective retrieval, evaluation and dissemination of medication information are expanded and concepts of formulary management, monitoring and prevention of adverse drug effects are introduced. Topics including critical assessment of the medical literature, and elements of clinical research design are introduced. The principles of provision of pharmacy services in institutional and community settings are taught. Prerequisites: P2 standing. Corequisites: PHA 467L-PHA 467.	PHA 720 Advanced Medicinal Chemistry3
PHA 468-468L Pharmacy Practice IV and Lab3	PHA 723 Ethics in Healthcare Practice2
This is a continuation of Pharmacy Practice III. The concepts of pharmacy practice are further taught and developed. Practice skills developed in Pharmacy Practice I-III are expanded and reinforced. Topics in drug information evaluation and retrieval, as well as clinical research design and evaluation are further developed and reinforced. The principles of provision of pharmacy services in institutional and community settings are continued from Pharmacy Practice III. Prerequisites: P2 standing. Corequisites: PHA 468L-PHA 468. (Begins Spring 09.)	PHA 725 Topics in Medicinal Chemistry3
PHA 487 Research Problems(1-3)	PHA 727 Professional Resource Management3
Students may elect research problems in one of the pharmaceutical sciences, biopharmaceutics, pharmaceutics, pharmaceutical chemistry, or pharmacology; or in an appropriate area of pharmacy practice. Prerequisites: Consent.	Professional, economic, and social considerations influencing the organization and management of the delivery of pharmaceutical services.
PHA 491 Independent Study(1-3)	PHA 729 Advanced Pharmacy Marketing and Management2
PHA 492 Topics(1-3)	PHA 741-741L Patient Assessment and Self Care I and Lab2
PHA 610 Introductory Practice Experience II3	PHA 742-742L Patient Assessment and Self Care II2
PHA 645 Pharmacotherapeutics: Application to Advanced Practice(2-4)	PHA 744 End of Life Care1
PHA 647 Pharmacological Issues in Mental Health Counseling3	PHA 746 Professional Pharmacy Leadership Skills1
PHA 700 Directed Studies Practice Experience(4-5)	PHA 747 Advanced Clinical Nutrition1
PHA 701 Home Health/Hospice Practice Experience5	PHA 748 Topics in Neonatal and Pediatric Pharmacotherapy1
PHA 702 Indian Health Services Practice Experience5	PHA 749 Care of the Geriatric Patient1
PHA 703 Pharmacy Administration Practice Experience5	PHA 750 Critical Care Therapeutics2
PHA 704 Nutrition Support Practice Experience5	PHA 752 Drugs of Abuse and Addiction2
PHA 705 Clinical Research Practice Experience5	PHA 753 Women and Children's Health2
PHA 706 Critical Care Practice Experience5	PHA 754 Complementary and Alternative Medicine1
PHA 707 Infectious Disease Practice Experience5	PHA 755 Forensic Pharmacology2
PHA 708 Surgery Practice Experience5	PHA 756 Pharmacotherapeutics III4
PHA 709 Nephrology Practice Experience5	PHA 757 Pharmacotherapeutics IV4
PHA 710 Pharmacokinetics Practice Experience5	PHA 761 Pharmacotherapeutics V5
PHA 711 Oncology Practice Experience5	PHA 762 Pharmacotherapeutics VI5
PHA 712 Nuclear Pharmacy Practice Experience5	PHA 765 Topics in Pharmaceutics3
PHA 713 Managed Care Practice Experience5	PHA 767-767L Pharmacy Practice V and Lab3
PHA 714 Community Pharmacy Practice Experience 5	PHA 768-768L Pharmacy Practice VI and Lab3
	PHA 770 Pediatrics Practice Experience5
	PHA 771 Geriatrics Practice Experience5
	PHA 772 Internal Medicine I Practice Experience 5
	PHA 773 Internal Medicine II Practice Experience5
	PHA 774 Ambulatory Care Practice Experience5
	PHA 775 Psychiatry Practice Experience5
	PHA 780 International Pharmacy Practice Experience5
	PHA 784 Seminar I1
	PHA 790 Seminar1
	PHA 791 Independent Study(1-3)
	PHA 792 Topics(1-3)
	PHA 798 Thesis(1-7)
	PHA 820 Advanced Concepts in Medicinal Chemistry3

PHA 825 Topics in Advanced Medicinal Chemistry.....3
PHA 840 Advanced Concepts in Pharmacology3
PHA 845 Topics in Advanced Pharmacology3
PHA 846 Techniques in Pharmaceutical Research.....3
PHA 847 Grantsmanship and Academic Development.....3
PHA 859 Advanced Concepts in Pharmaceutics.....3
PHA 865 Topics in Advanced Pharmaceutics.....3
PHA 890 Seminar1
PHA 898 Dissertation.....1-10

PHIL (Philosophy)

PHIL 100 Introduction to Philosophy * ** (COM)..... 3
 Introduces competing philosophical views of reality, perception, learning, and values, emphasizing their relevance to the contemporary world. Notes: * Course meets SGR #3 or ** IGR #3.
PHIL 200 Introduction to Logic * (COM)3
 Introduces the formal study of argumentation, including forms of logic, inductive and deductive reasoning, proofs, refutations, and fallacies. Notes: * Course meets SGR #4
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. Notes: * Course meets SGR #3 or ** IGR #3.
PHIL 220 Introduction to Ethics * ** (COM).....3
 Examines the major currents and components of ethical theory from classical times to the present, investigating problems arising from specific theories, as well as critically analyzing the validity of these theories for current ethical concerns. Notes: * Course meets SGR #3 or ** IGR #3.
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). Notes: ** Course meets IGR #3.
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. Notes: ** Course meets IGR #3.
PHIL 383 Bioethics (G)4
 Cross-Listed: BIOL 383. Notes: ** Course meets IGR #1.
PHIL 423 Political Philosophy3
 Cross-Listed: POLS 461.

PHIL 424 Modern Political Philosophy (AW).....3
 Cross-Listed: POLS 462.
PHIL 454-554 Environmental Ethics ** (COM)3
 Presents humanity’s relationship to the environment, its responsibility to nature, and its obligations to future generations, attending to both theory and applications, including the debate over causes of environmental crisis, the value of endangered species, the wilderness, and natural objects; the seriousness of the growing global population and obligations to feed the poor, the feasibility of sustaining an ecological responsible society. Cross-Listed: REL 332. Notes: ** Course meets IGR #1.
PHIL 470-570 Philosophy of Religion ** (COM).....3
 Presents critical inquiry concerning the concept of faith and its relation to reason and belief, the nature of religious experience, concepts of the sacred and the divine, and problems of cross-cultural understanding. Notes: ** Course meets IGR #3.
PHIL 480 Ethics of Globalization3
 A writing intensive, critical, and rigorous examination of the ethical bases and moral philosophical foundations which underpin, support, and justify globalization theory and practice. Cross-Listed: GLST 480.
PHIL 491-591 Independent Study (COM).....(1-4)
PHIL 492 Topics (COM)(1-5)
PHIL 494 Internship.....(1-12)
PHIL 570 Philosophy of Religion3
 Cross-Listed: PHIL 470
PHIL 592 Topics.....3

PHST (Physics Topics)

PHST 692 Topics for Physics Educators (0-12)

PHTH (Physical Therapy)

PHTH 142 Introduction to Physical and Occupational Therapy.....1
 Introduces students to the professions of physical and occupational therapy.
PHTH 491 Independent Study(1-3)
PHTH 494 Internship.....(1-12)
PHTH 496 Field Experience (COM).....(1-12)

PHYS (Physics)

PHYS 101-101L Survey of Physics * (COM) and Lab.....4
 This is a one-semester conceptual course, designed to cover a broad range of physics topics. Critical thinking skills are developed as students apply topics to various problem situations. Students are encouraged to relate concepts learned to personal areas of interest. Topics include mechanics, states of matter, wave motion, sound and electricity magnetism. Credit will not be allowed in both PHYS 101 and PHYS 111-113 or PHYS 211-213. Corequisites: PHYS 101L-101. Notes: * Course meets SGR #6.
PHYS 111-111L Introduction to Physics I and Lab* (COM)4
 This is the first course in a two semester algebra-level sequence, covering fundamental concepts of physics. The sequence is appropriate for

preprofessional majors requiring two semesters of physics. Topics include classical mechanics, thermodynamics, and waves. Prerequisites: Take one of the following: MATH 102, 115, 120, 121, 123, 125, 281, or consent. Corequisites: PHYS 111L-PHYS 111. Notes: * Course meets SGR #6.

PHYS 113-113L Introduction to Physics II and Lab* (COM).....4
 This course is the second course in a two semester algebra-level sequence, covering fundamental concepts of physics. Topics include electricity and magnetism, sound, light, optics, and some modern physics concepts. Prerequisites: PHYS 111. Corequisites: PHYS 113L-PHYS 113. Notes: * Course meets SGR #6.

PHYS 185-185L Introduction to Astronomy I and Lab* (COM)3
 This is a descriptive course that introduces students to solar system astronomy. Emphasis is placed on the development of astronomy, optical instruments and techniques, and solar system objects. Corequisites: PHYS 185L-PHYS 185. Notes: * Course meets SGR #6.

PHYS 187-187L Introduction to Astronomy II and Lab* (COM).....3
 This course is a descriptive course that introduces stellar astronomy. Emphasis will be placed on stars, nebulae, galaxies, and cosmology. Corequisites: PHYS 187L-PHYS 187. Notes: * Course meets SGR #6.

PHYS 211-211L University Physics I and Lab* (COM).....4
 This is the first course in a two semester calculus-level sequence, covering fundamental concepts of physics. This is the preferred sequence for students majoring in physical science or engineering. Topics include classical mechanics and thermodynamics. Prerequisites: MATH 123 or MATH 125. Corequisites: PHYS 211L-PHYS 211. Notes: * Course meets SGR #6.

PHYS 213-213L University Physics II and Lab * (COM).....4
 This course is the second course in a two semester calculus-level sequence, covering fundamental concepts of physics. This is the preferred sequence for students majoring in physical science or engineering. Topics include electricity and magnetism, sound, light, and optics. Prerequisites: PHYS 211. Corequisites: PHYS 213L-PHYS 213. Notes: * Course meets SGR #6.

PHYS 291 Independent Study (COM).....(1-3)

PHYS 292 Topics (COM)(1-3)

PHYS 316-316L Measurement Theory and Experiment Design and Lab (AW).....2
 This course looks at accuracy, precision and uncertainty and how these quantities propagate as experimental laboratory measurements are converted to experimental results. Prerequisites: PHYS 213 or PHYS 113. Corequisites: PHYS 316L-PHYS 316.

PHYS 318 Advanced Laboratory I.....1
 Students perform selected experiments in classical and modern physics which illustrate principles and the development of physics, and emphasize experiment design and data analysis. Prerequisites: PHYS 316 and PHYS 331 or consent.

PHYS 331 Introduction to Modern Physics (COM).....3
 This course concentrates on observations and theories of the 20th Century that carried the physicists' world-view beyond the classical. Prerequisites: PHYS 213 or PHYS 113 or consent.

PHYS 337 Foundations of Health Physics.....3
 Health Physics studies the risk to health from radiation and the measures to assess and reduce that risk. This course is an introduction to several aspects of health physics including radiation quantities, limits and risk assessment, external and internal dosimetry, biological effects of radiation, interactions of radiation with matter, radioactive decay, radiation detection, and various applications of radiation. Prerequisites: MATH 123 or MATH 121-121L And PHYS 113-113L or PHYS 213-213L

PHYS 341 Thermodynamics (COM).....2
 This course is an intermediate level thermodynamics course dealing with systems from a macroscopic perspective. Topics include the first and second laws of thermodynamics, phase diagrams, and equilibria. Prerequisites: PHYS 213 and MATH 225.

PHYS 343 Statistical Physics (COM).....2
 This course provides a systematic introduction to the use of statistical principles applied to the study of thermodynamic systems. Prerequisites: PHYS 331, PHYS 341, and MATH 321 or consent.

PHYS 361 Optics (COM).....3
 This is an intermediate level study of geometrical and physical optics. Topics include analysis of refraction phenomena, thick lenses, wave nature of light, interference, diffraction, and polarization. Prerequisites: PHYS 213 or PHYS 113 and MATH 225.

PHYS 418 Advanced Lab II.....1
 Students perform selected experiments in modern physics: gamma ray spectroscopy, half life, beta decay, positron annihilation, neutron capture, bubble chamber events, nuclear statistics, etc. Prerequisites: PHYS 316 or consent.

PHYS 421-521 Electromagnetism (COM).....4
 This is a course in the principles of electricity and magnetism, with applications to dielectric and magnetic materials. Topics include the development of Maxwell's equations, and applications. Prerequisites: PHYS 213 and MATH 321.

PHYS 433-533 Nuclear and Elementary Particle Physics (COM).....3
 This course covers fundamental topics in nuclear physics and elementary particles. Topics include radioactivity, nuclear spectra and structure, nuclear models, elementary particle theories and high energy physics. Prerequisites: PHYS 331 or 471.

PHYS 435 Introduction to Nuclear Engineering.....3
 This course considers the 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. Prerequisites: PHYS 331 or consent.

PHYS 439-539 Solid State Physics (COM).....4
 This course looks at solid materials from a microscopic level. Topics include basic crystal structure; mechanical and thermal properties; and electronic processes with reference to electrical properties of metals, semiconductors, and insulators. Prerequisites: PHYS 331 and MATH 321.

PHYS 451-551 Classical Mechanics (COM)4
 This is a systematic introduction to classical mechanics emphasizing motion in three dimensions. Topics include central forces, harmonic oscillations, non-inertial reference frames, rigid body motion, and Lagrangian and Hamiltonian Mechanics. Prerequisites: MATH 321.

PHYS 464 Senior Design I.....1
 This is the first course of the departmental capstone senior design sequence. 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. Prerequisites: Senior standing in the Physics Department.

PHYS 465-465L Senior Design II and Lab.....2
 This course completes the departmental capstone senior design project. The student will construct, assemble, and test the project that they designed in PHYS 464.
 This is the laboratory portion of PHYS 465 where the design developed in PHYS 464 is built, tested, and made to work. Prerequisites: PHYS 464. Corequisites: PHYS 465L-PHYS 465.

PHYS 469-569 Photonics	3
PHYS 471-571 Quantum Mechanics (COM)	4
This is a systematic introduction to quantum mechanics, emphasizing the Schrodinger equation. Topics include simple soluble problems, the hydrogen atom, approximation methods and other aspects of quantum theory. Prerequisites: PHYS 331, MATH 321 or consent.	
PHYS 481 Mathematical Physics (COM)	4
This course looks at mathematical methods used to formulate and solve problems in various fields of physics. Topics are chosen from: series solutions, special functions, computational methods, complex variables, multi-variate methods, transform methods, and other areas of mathematical applications to physics. Prerequisites: MATH 321.	
PHYS 485 Introduction to Astrophysics	3
This course entails 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. Prerequisites: PHYS 185, PHYS 331, MATH 321.	
PHYS 490-590 Seminar (COM)	(1-3)
PHYS 491-591 Independent Study (COM)	(1-4)
PHYS 492-592 Topics (COM)	(1-4)
PHYS 494 Internship (COM)	(1-4)
PHYS 496 Field Experience (COM)	(1-4)
PHYS 497 Cooperative Education (COM)	(1-4)
PHYS 498 Undergraduate Research/Scholarship (COM)	1-3
PHYS 683 MATHEMATICAL PHYSICS II	3
PHYS 691 Independent Study	(1-3)
PHYS 692 Topics	(1-3)
PHYS 721 Electrodynamics I	3
PHYS 723 Electrodynamics II	3
PHYS 739 CONDENSED MATTER PHYSICS I	3
PHYS 743 Statistical Mechanics	3
PHYS 749 CONDENSED MATTER PHYSICS II3	
PHYS 751 Theoretical Mechanics	3
PHYS 771 Quantum Physics I	3
PHYS 773 Quantum Physics II	3
PHYS 775 Tensors and General Relativity	3
PHYS 779 Group Theory in Quantum Mechanics	3
PHYS 781 NUCLEAR AND PARTICLE PHYSICS	3
PHYS 783 QUANTUM FIELD THEORY	3
PHYS 785 ASTROPHYSICS AND COSMOLOGY	3
PHYS 787 Research	(1-9)
PHYS 788 Research or Design Paper	(1-2)
PHYS 791 Independent Study	(1-3)
PHYS 792 Topics	(1-3)
PHYS 798 Thesis	(1-7)

PLAN (Planning)

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. Prerequisites: the Master's level or consent.

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. Prerequisites: Enrollment within a minor in planning at the Master's level or consent.

PLAN 472-572 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. Prerequisites: PLAN 471-571.

POLS (Political Science)

POLS 100 American Government * ** (COM).....3
 A study of the basic principles of the American system of government with emphasis on problems relating to governmental structure and policies. Notes: * Course meets SGR #3 or ** IGR #3

POLS 102 American Political Issues * ** (COM).....3
 Provides an in-depth exploration of a particular problem or issue, such as environmental control, minorities or poverty. Students learn the basic skills needed to succeed as a political science major. Notes: * Course meets SGR #3 or ** IGR #3

POLS 165 Political Ideologies * **.....3
 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. Notes: * Course meets SGR #3 or ** IGR #3

POLS 210 State and Local Government * ** (COM).....3
 An analysis of the legal status, powers and functions, intergovernmental relations and political problems of state and local governments. Notes: * Course meets SGR #3 or ** IGR #3

POLS 253 Current World Problems * ** (G).....3
 An examination of several current world problems with a focus on creating world order. Course content varies to accommodate current issues. Notes: * Course meets SGR #3 or ** IGR #3

POLS 280 Political Inquiry.....3
 An investigation into the basic concepts, principles, and techniques employed to study politics.

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. Cross-Listed: WMST 305.

POLS 316 South Dakota Legislative Issues (COM)(1-3)
 An analysis of the issues confronting the state legislature, with attention to political, economic, and sociological dimensions, emphasizing the role of party leaders, interest groups, and communication media.

POLS 320 Public Administration (COM).....3
 This course uses simulations and public management cases, as well as contemporary public administration literature, to introduce students to the theory and practice of public administration. Students work in teams to resolve issues and problems common to the public service environment.

POLS 330 Civil Rights and Liberties3
 Individual First Amendment guarantees, constitutional rights of the accused in the criminal process and equal protection of the law as interpreted through U.S. Supreme Court decisions. Cross-Listed: CJUS 331.

POLS 341 Europe Democratic Government (COM).....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 Politics3
 Study of government, politics, and some aspects of society in Russia and the region; emphasis on current politics.

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 Relations (COM).....3
 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 Union. 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 391 Independent Study (COM).....(1-3)

POLS 417 American Indian Government and Politics.....3
 An in-depth investigation of Federal, State and tribal laws, and the historical development and status of treaties, legislation, court decisions, and tribal governments.

POLS 430 Constitutional Law (COM)3
 A study of the interpretation of the federal Constitution through leading decisions of the supreme court.

POLS 435 Political Parties and Campaigns (COM).....3
 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 454 International Law and Organization (COM)3
 This course examines the development and application of the rules and norms that govern the relations between countries. Special attention will be paid to international law on the use of force, the law of the sea, and jurisdiction. The course will also look at international tribunals beginning with Nuremberg and concluding with the International Criminal Court.

POLS 461 Early Political Philosophy (COM) (AW)3
 Focus on classical Greek and Roman political thought. Basis on which these theories rest and the explanatory power of the various thought structures. Includes Plato, Aristotle. Cross-Listed: PHIL 423.

POLS 462 Modern Political Philosophy (COM) (AW).....3
 Focus on political theory since the Renaissance. Includes Locke Rousseau, and others. Cross-Listed: PHIL 424.

POLS 482-582 Travel Studies.....(1-5)
 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 of 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.

POLS 490 Seminar (COM).....(1-3)

POLS 491-591 Independent Study (COM)(1-3)

POLS 492-592 Topics (COM)(1-5)

POLS 494 Internship(1-12)

PR (Park Management)

PR 301-301L Park Interpretation3
 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. Prerequisites: PRM 101, PRM 202 or by consent.

PR 303-303L Forest Ecology and Management and Lab3
 The basics of environmental factors which control the growth of trees and forests and how forests in North America are managed. Corequisites: PR 303L-PR 303. Cross-Listed: BOT 303.

PR 401-401L Advanced Park Management and Lab3
 Current philosophies, advanced techniques, and synthesis of park management principles. Prerequisites: PRM 101, PRM 202, PRM 300 and PR 301 or by consent. Corequisites: PR 401L-PR 401.

PRM (Park and Recreation Management)

PRM 100 Introduction to Park and Recreation.....1
 Introduction to the discipline and exploration of professional careers, historical development of the profession, expectations and opportunities in park and recreation services.

PRM 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.

PRM 202-202L Outdoor Recreation Resource Management and Lab3
 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. Prerequisites: PRM 101 or consent. Corequisites: PRM 202L-PRM 202.

PRM 300-300L Park and Recreation Facility Management and Lab3
 Principles and practices of park and recreation 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 indoor and outdoor facilities. Students will gain experience and demonstrate proficiency in written, oral and interpersonal communication. Prerequisites: PRM 101, PRM 202 or consent. Corequisites: PRM 300L-PRM 300.

PRM 302 Commercial Recreation and Tourism.....3
 Exploration of the commercial recreation and tourism aspects which have become the world's number one industry. Areas of examination include the history, trends, supply, demand, relationships to tourism, management, development and technical assistance in this rapidly expanding industry. Prerequisites: PRM 101, PRM 202 or by consent.

PRM 360 Recreation and Outdoor Programming3
 Development of the various methods, fundamentals, and materials using modern techniques needed for planning, developing, implementing, and evaluating recreation and outdoor programs for diverse populations in representative service areas.

PRM 491 Independent Study.....(1-2)

PRM 492 Topics(1-4)

PRM 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. Asupervised on-the-job practical experience program. P, junior standing and must have completed 2 years of the Park and Recreation Management curriculum, or consent of adviser. 3-12 credits per semester.

PRM 496 Field Experience(1-12)

PRM 497 Cooperative Education.....(1-12)

PRM 498 Undergraduate Research/Scholarship.....(1-3)

PS (Plant Science)

PS 101 Opportunities in Plant Science1
 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 103-103L Crop Production and Lab3
 Practices and principles; crop distribution; growth processes; response to environment. Grain and forage crops, including their distribution, use, improvement, growth, harvesting, and marketing. Corequisites: PS 103L-PS 103.

PS 200-200L Introduction to Weed Management and Lab2
 An introduction to common weeds of the upper Midwest in crop, lawn, range, and pasture settings. The use of cultural, biological, chemical, and physical methods of weed management will be discussed. Sprayer calibration and safe and effective use of herbicides in the environment. Weed identification, sprayer calibration, herbicide mixing techniques, and other lab related activities will be handled in the laboratory. Corequisites: PS 200L-PS 200.

PS 213-213L Soils and Lab * **3
 Development and classification of soils; physical, biological, and chemical properties; management aspects, including water, fertility, and erosion; soils in the environment. Prerequisites: CHEM 106-106L or CHEM 112-112L. Corequisites: PS 213L-PS 213. Notes: * Course meets SGR #6 or ** IGR #1.

PS 223-223L Principles of Plant Pathology and Lab3
 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. Prerequisites: BIOL 103-103L or BIOL 153-153L or BOT 201-201L. Corequisites: PS 223L-PS 223.

PS 243 Principles of Geology* **3
 The earth's land and natural resources, their characteristics and economic uses together with the water and energy resources contained in them are examined under the principle of stewardship. A fundamental emphasis using information derived from the scientific method to arrive at intelligent stewardship perspectives and practices prevails through the course. Prerequisites: CHEM 106 or CHEM 112 or equivalent. Notes: * Course meets SGR #6 or ** IGR #1.

PS 244 Geological Resources of South Dakota Lab1
 The geology laboratory consists of a field study across South Dakota and back observing how our land and natural resources are being economically and aesthetically utilized and discussing their future from a stewardship perspective. Most of South Dakota's mining and extractive industries together with groundwater utilization and possibilities for contamination will be studied. Prerequisites: PS 243.

PS 303-303L Seed Technology and Lab.....3
 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. Prerequisites: PS 103-103L or HO 111-111L. Corequisites: PS 303L-PS 303.

PS 305-305L Insect Biology and Lab (COM)3
 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. Prerequisites: MATH 102 or higher, and one of following: BIOL 103-103L, BOT 201-201L, or BIOL 153-153L. Corequisites: PS 305L-PS 305. Cross-Listed: ZOO 305.

PS 307-307L Insect Pest Management and Lab3
 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. Prerequisites: BIOL 101-101L, or BIOL 151-151L. Corequisites: PS 307L-PS 307.

PS 308-308L Grain Grading and Lab2
 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. Prerequisites: PS 103-103L. Corequisites: PS 308L-PS 308.

PS 310-310L Soil Geography and Land Use Interpretation and Lab (G)3**
 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. Prerequisites: PS 213-213L or GEOG 132-132L. Corequisites: PS 310L-PS 310. Cross-Listed: GEOG 310. Notes: ** Course meets IGR #1.

PS 312 Grain and Seed Production and Processing3
 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. Prerequisites: PS 103-103L or HO 111-111L.

PS 313 Forage Crop and Pasture Management3
 Grasses and legumes; their establishment, management, and use for hay, pasture, and silage. Prerequisites: BIOL 101 or BIOL 151. Field trips required.

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. PS 103-103L, PS 308-308L.

PS 321 Soil Judging1
 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. Prerequisites: PS 213-213L.

PS 323 Soil Fertility and Plant Nutrient Management3
 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. Prerequisites: PS 213-213L.

PS 333-333L Diseases of Field Crops and Lab3
 Extensive survey of diseases affecting major food, fiber, and oilseed crops of the world. Emphasis is on diagnosis and disease management strategies. Prerequisites: PS 223-223L. Corequisites: PS 333L-PS 333.

PS 334-334L Diseases of Horticultural Crops and Lab3
 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. Prerequisites: PS 223-223L. Corequisites: PS 334L-PS 334.

PS 343-343L Weed Science and Lab3
 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. Prerequisites: Take PS 103/103L or HO 111/HO111L; and take CHEM 108/108L or CHEM 120/120L or CHEM326/326L. Corequisites: PS 343L-PS 343.

PS 362-362L Environmental Soil Management and Lab3**
 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. Prerequisites: PS 213-213L. Corequisites: PS 362L-PS 362. Notes: ** Course meets IGR #1.

PS 383-383L Principles of Crop Improvement and Lab(AW).....3
 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. Prerequisites: Take PS 103/103L or HO 111/HO111L; and take BIOL 103/103L or BIOL 153/153L or BOT 201/201L. Corequisites: PS 383L-PS 383. Cross-Listed: HO 383.

PS 390 Seminar (AW)1

PS 412-512 Environmental Soil Chemistry3
 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. Prerequisites: PS 213-213L and CHEM 108-108L, or CHEM 120-120L.

PS 415-415L/515-515L Mycology and Lab3
 Comprehensive taxonomic survey of the Kingdom Fungi; reproductive biology, physiology, genetics, and ecology of fungal organisms; relationship of fungi to human affairs. Corequisites: PS 415L-PS 415/PS 515L-PS 515. Cross-Listed: BIOL 415-515.

PS 421-421L/521-521L Soil Microbiology and Lab.....3
 Microbial species of agricultural soils, environmental factors affecting their numbers and activity, and biochemical changes brought about by these organisms. Prerequisites: BIOL 151-151L and BIOL 153/153L, or BOT 201-201L. Corequisites: PS 421L-PS 421/PS 521L-PS 521. Cross-Listed: MICR 421.

PS 431-531 Insect Ecology and Biological Control.....3
 This course will examine the ecological relationships between insects and their environment. Topics will include natural history, behavior, population dynamics, interactions between insects and their food plants, predators, and diseases; insect evolutionary ecology, and insect agroecology. These topics will also be explored in the context of the biological control of arthropod and weed pests by natural enemies

PS 440-440L Crop Management with Precision Farming and Lab.....3
 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. Prerequisites: PS 223-223L; PS 305-305L, or PS 307/307L; PS 323; PS 343-343L; and STAT 281. Corequisites: PS 440L-PS 440.

PS 446-546 Agroecology (G).....3
 Agroecology is the study of the ecological principles important in agricultural systems. Topics in this course will include energy flow and nutrient cycling, population and community ecology, weed and insect ecology, and water and nutrient conservation.

PS 450-450L/550-550L Field Study of Plant Disease Diagnosis and Lab	2
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. Prerequisites: Consent. Corequisites: PS 450L-PS 450/PS 550L-PS 550.	
PS 453-553 Advanced Genetics	3
Procedures in genetic studies as they relate to molecular and classical genetic applications. Prerequisites: BIOL 202, 204, 371 or equivalent. Cross-Listed: BIOL 453-553.	
PS 473-473L/573-573L Rural Real Estate Appraisal and Lab	3
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. Prerequisites: PS 213-213L, and AGECE 271-271L. Corequisites: PS 473L-PS 473/PS 573L-PS 573. Cross-Listed: AGECE 473.	
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. Prerequisites: PS 213-213L and MATH 102, or MATH 115, or MATH 123.	
PS 491 Independent Study	(1-5)
PS 492-592 Topics	1-3
PS 492L-592L Topics Lab	0
PS 494 Internship	0.5-2
PS 498 Undergraduate Research/Scholarship	(1-4)
PS 543 Bioenergy Feedstock Production Systems	3
PS 664 Molecular Plant Physiology	6
Cross-Listed: BIOS/BOT	
PS 704-704L Viral and Bacterial Diseases of Plants	2
PS 714-714L Genetics of Disease Resistance and Host-Plant Pathogen Interaction and Lab	4
PS 721 Advanced Integrated Crop Pest Management	3
PS 723 Simulation Models in Research Management and Policy	3
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	
PS 746 Plant Breeding	3
PS 753 Soil Water Quality in Bioenergy Feedstock Production Systems	3
PS 756 Quantitative Genetics	3
PS 761-761L Taxonomy of Insects and Lab	4
PS 763 Crop Physiology	3
PS 781 Plant Science Graduate Seminar	1

PS 785-785L Soil and Plant Analysis and Lab	3
PS 787 Advanced Plant Breeding	3
PS 788 Master's Research Problems	1-3
PS 791 Independent Study	(1-5)
PS 792 Topics	(1-3)
PS 798 Thesis	(1-7)
PS 898D Dissertation-PhD	(1-7)

PSYC (Psychology)

PSYC 101 General Psychology * ** (COM)

3
 This course is an introduction survey of the field of psychology with consideration of the biological bases of behavior, sensory and perceptual processes, learning and memory, human growth and development, social behavior and normal and abnormal behavior. Notes: * Course meets SGR #3 or ** IGR #3

PSYC 202 The Psychology Major

3
 This course is designed to familiarize psychology majors with career activities, writing in psychology, elementary introduction to psychological research methods, and ethics in psychology. Prerequisites: Psychology Major, Psyc 101 (C or better); Engl 101 (C or better)

PSYC 210 Introduction to Biopsychology

3
 This course is an introduction to the scientific study of the biology of behavior and mental processes. It encompasses topics ranging from the origins of movement to the origins of cognitive processes, and descriptions of the basic functions of cells within the nervous system to theorizing about the ways these functions come together to create the human experience. Biopsychology effectively describes aspects of changes within the nervous system that occur during learning, development, psychological disorders, therapies, and virtually every other content area housed within psychology. Prerequisites: PSYC 101.

PSYC 244 Environmental Psychology **

3
 This course surveys the empirical and theoretical work on the influence of the physical environment on human behavior and experience. Topics include the use of space, stressors and esthetics as related to human beings, the optimum design of buildings, homes and institutions, and the effect of humans on the natural environment. Designed for both psychology majors and non-majors. Prerequisites: PSYC 101 or 102. Notes: ** Course meets IGR #1.

PSYC 267 Psychology of Personal Adjustment ** (COM)

3
 This course covers the dynamics of normal human personality and behavior with an emphasis on the mechanisms used to promote effective personal and interpersonal behavior. Notes: ** Course meets IGR #2.

PSYC 287 Controversial Issues 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. Prerequisites: PSYC 101 or 102.

PSYC 289 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. Prerequisites: PSYC 101 or 102

PSYC 301 Sensation and Perception (COM).....3
 This course is a study of the bases of sensation and perception including the physics and physiology of sensory receptor function, central nervous system functions in information processing, and cognitive and attentional factors in perception. Prerequisites: PSYC 101 or 102.

PSYC 305 Learning and Conditioning (COM).....3
 This course covers 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. Prerequisites: PSYC 101 or 102.

PSYC 305L Learning and Conditioning Lab1
 This course provides laboratory experience in the application of methods and principles of learning and conditioning. Prerequisites: PSYC 376. Corequisites: PSYC 305.

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. Prerequisites: PSYC 101 or 102. Notes: ** Course meets IGR #3.

PSYC 327 Child Psychology ** (COM)3
 This course covers the physical, social, emotional and intellectual aspect of child development. Prerequisites: PSYC 101 or 102. Notes: ** Course meets IGR #3.

PSYC 331 Industrial and Organizational Psychology (COM).....3
 This course covers the application of psychological principles to such problems as employee selection, supervision, job satisfaction, and work efficiency. Prerequisites: PSYC 101 or 102.

PSYC 357 Psychological Therapies.....3
 Traditional and contemporary methods of psychotherapy. Interviewing techniques and the professional assistant's role. Prerequisites: PSYC 101 or 102 and PSYC 451 or 461.

PSYC 358 Behavior Modification3
 Principles of learning applied to human behavior modification. Prerequisites: PSYC 101 or 102.

PSYC 364 Cross Cultural Psychology3
 This course provides an overview of cross-cultural psychology which is the comparative study of the effects of culture and diversity on human psychology. Students learn about ways that psychologists may engage in more culturally sensitive and inclusive scholarship, research, and practice. In doing so, students also increase awareness of self and others. Students are introduced to key theories, research methods, scientific findings, and applications of cross cultural psychology while challenged to engage in critical thinking. Prerequisites: PSYC 101.

PSYC 367 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. Prerequisites: PSYC 101 or 102. Cross-Listed: WMST 367. Notes: ** Course meets IGR #3.

PSYC 367L Psychological Gender Issues Laboratory1
 This course provides laboratory experience in the application of methods and principles in the development and impact of gender. Prerequisites: PSYC 376. Corequisites: PSYC 367 .

PSYC 373 Research Methods in Experimental Psychology (COM).....3
 A detailed survey of methods for conducting psychological research, this course covers experimental design, reliability, validity, and the nature of controls. Prerequisites: PSYC 101 or PSYC 102; STAT 281.

PSYC 373L Research Methods in Experimental Psychology Lab OM) 1
 This course provides experience in laboratory techniques. These include: animal care and handling, data collection and analysis and experimental design. Corequisites: PSYC 373.

PSYC 374-374L Experiments in Psychology and Lab4
 Review of representative past research in experimental psychology and execution of class laboratory projects. Prerequisites: PSYC 373 or consent. Corequisites: PSYC 374L-PSYC 374

PSYC 375-375L Research Methods in Psychology and Lab4
 PSYC 375: An introduction to the theory and practice of research methods in psychology with an emphasis on descriptive designs. Topics include logic and philosophy of psychological research, conceptualizing research questions, hypothesis testing, data collection and analysis strategies used by researchers in psychology, and introduction to using statistical software for data analysis.

PSYC 375L: This course provides laboratory experience in application of methods and principles of psychological research and data analysis. Prerequisites: MATH 102 (C or better); PSYC 202 (C or better) Corequisites: PSYC 375L; 375.

PSYC 376-376L Research Methods II and Lab.....4
 PSYC 376: This course provides further exploration of the theory and practice of research methods in psychology with an emphasis on experimental designs and inferential statistical procedures.

PSYC 376L: Laboratory includes performance of experiments, data analysis, and preparation of research reports. Prerequisites: PSYC 375-375L . Corequisites: PSYC 376L-376.

PSYC 390 Seminar1

PSYC 406 Cognitive Psychology ** (COM).....3
 This course is a survey of recent research and theory in cognitive process concerning the representation, storage, retrieval and interactions of units of thought. It considers adaptability, intelligence and knowledge from an experimental point of view. Prerequisites: PSYC 101 or 102. Notes: ** Course meets IGR #3.

PSYC 406L Cognitive Psychology Laboratory1
 This course provides laboratory experience in the application of methods and principles in cognitive psychology. Prerequisites: PSYC 376. Corequisites: PSYC 406 .

PSYC 409 History and Systems of Psychology (COM) (AW) (G)3
 This course is a survey of the origin and development of psychology. Special attention is given to the systems of thought that have emerged since the founding of psychology as an empirical science. Prerequisites: PSYC 375

PSYC 411 Physiological Psychology3
 Role of physiological mechanisms in behavior. Nervous, biochemical and muscular systems that control or modify human and animal adjustment. Prerequisites: PSYC 101 or 102.

PSYC 414 Drugs and Behavior (COM).....3
 The psychobiological bases of the use/abuse of alcohol, drugs and other substances are covered in this course along with current theory, research approaches and findings. Prerequisites: PSYC 101 or 102.

PSYC 417 Health Psychology (COM).....3
 This course is an investigation of the psychological aspects of health and of physical disorders and disease processes. It will explore psychological interventions targeted at prevention as well as those focusing on the resolution or management of disorders. Prerequisites: PSYC 101 or 102.

PSYC 427 Child Psychopathology3
 Child Psychopathology is an introduction to the study of abnormal child psychology viewed from the perspective of psychological science. The course focuses on developing familiarity with specialized topics within the field of child psychopathology. Students will learn to distinguish among categories of mental disorders of childhood according to the DSM-IV-R and will gain knowledge of typical signs, symptoms and associated features of these disorders. Epidemiological findings, contemporary hypothesis regarding etiology and psychological and biological treatment interventions and prevention relevant to each disorder will be examined. The course emphasizes the scientific basis of child psychopathology and examines the research methods used to test hypotheses regarding etiology and treatment/prevention outcomes. Prerequisites: PSYC 101 or PSYC 102, and PSYC 327, and PSYC 451.

PSYC 440-540 Forensic Psychology3
 Forensic Psychology is the application of the science and profession of psychology to questions and issues relating to law and the legal system. This course is a state-of-the-art survey of central topics at the interface of psychology, and the law. The field of forensic psychology encompasses contributions made in a number of different areas – research, clinical practice, public policy, and teaching/training – from a variety of orientations within the field of psychology, such as developmental, social, cognitive, industrial-organizational and clinical. Prerequisites: PSYC 101 or 102.

PSYC 441 Social Psychology ** (COM).....3
 This course covers basic principles of social psychology including concepts and methods utilized in analyzing individual and group interactions. Prerequisites: PSYC 101. Notes: ** Course meets IGR #3.

PSYC 441L Social Psychology Laboratory1
 This course provides laboratory experience in the application of methods and principles in social psychology. Prerequisites: PSYC 376. Corequisites: PSYC 441 .

PSYC 451 Psychology of Abnormal Behavior ** (COM).....3
 This course is a comprehensive survey of abnormal personality and behavior. It includes an examination of the origins, symptoms and treatment of psychological disorders. Prerequisites: PSYC 101. Notes: ** Course meets IGR #3.

PSYC 461 Theories of Personality ** (COM).....3
 Students will learn about the role of philosophy and science and their contributions to the development of personality theory. Students will examine, in depth, the theoretical contributions made in the areas of psychoanalytic, behavioristic, and humanistic personality theories. The students will be able to articulate their own beliefs concerning the development of human personality. Prerequisites: PSYC 101. Notes: ** Course meets IGR #3.

PSYC 477 Psychology Testing and Measurement (COM).....3
 Test theory is covered in this course along with principles of construction and analysis of psychological tests. Prerequisites: PSYC 101, STAT 281.

PSYC 477L Psychology Testing and Measurement Laboratory1
 This course provides laboratory experience in the application of measurement theory and principles of construction and analysis of psychological tests. Prerequisites: PSYC 376 . Corequisites: PSYC 477 .

PSYC 482-582 Travel Studies (G).....(1-4)
 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 of 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.

PSYC 491 Independent Study (COM).....(1-3)

PSYC 492-592 Topics (COM)(1-4)

PSYC 494 Internship (COM)(1-12)

PSYC 496 Field Experience (COM)(1-12)

PSYC 498 Undergraduate Research/Scholarship (COM).....(1-12)

PSYC 591 Independent Study(1-4)

PSYC 592 Topics.....1-4
 Cross-Listed: PSYC 492

RANG (Range Science)

RANG 105-105L Introduction to Range Management and Lab.....3**
 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. Corequisites: RANG 105L-RANG 105. Notes: ** Course meets IGR #1.

RANG 210-210L Range Plant Identification and Lab.....2
 Instruction and practice in the recognition of important native and introduced range plants of North America. Corequisites: RANG 210L-RANG 210.

RANG 215 Introduction to Integrated Ranch Management.....3
 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 Ecosystems3
 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 325-325L Measurement Topics and Lab.....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. This course is taken over a two week period in Western South Dakota near the end of the summer. 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. Prerequisites: 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. Corequisites: RANG 325L-RANG 325.

RANG 400 Judging Teams1
 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. Prerequisites: Consent of instructor.

RANG 415-415L Range Improvements and Grazing Management and Lab4
 Management of rangelands with fire, herbicides, biocontrol agents, mechanical treatment, and livestock grazing. Grazing systems and their impact on vegetation management, weed control, livestock production, wildlife habitat improvement, soil protection and watershed improvement. Laboratory sessions to complement lecture material from RANG 415. Field trips to area range sites will be included. Corequisites: RANG 415L-RANG 415.

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. Prerequisites: Consent. Corequisites: RANG 421L-521L. Cross-Listed: WL 421-521.

RANG 485-485L Advanced Integrated Ranch Management and Lab...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. Prerequisites: RANG 215, senior standing or consent. Corequisites: RANG 485L-RANG 485

RANG 491-591 Independent Study.....(1-3)

RANG 492-592 Topics(1-3)

RANG 494 Internship.....(1-12)

RANG 497 Cooperative Education(1-12)

RANG 510 Grassland Monitoring and Assessment.....2

RANG 520 Watershed Management3

RANG 530 Ecology of Invasive Species.....3

RANG 710 Principles of Forage Quality3

READ (Reading)

READ 41 Reading for College Success.....3
 This course provides students with reading strategies necessary for making the transition to collegiate level reading. The course will present students with multiple strategies to promote comprehension skills, develop vocabulary and enhance metacognition to become strategic readers. This course will be required for students with ACT score in Reading at 17 or below (or a comparable COMPASS score).

RECR (Recreation)

RECR 140 Introduction to Recreation3
 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. Notes: (May be taught on demand.)

RECR 260 Fundamentals of Recreation Leadership3
 Philosophy and interpretations of leadership as it relates to recreational activities.

RECR 330 Therapeutic Recreation (COM)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 Administration (COM).....3
 Organization and administration of intramural sports on elementary, secondary, college, and university levels. Program planning, facilities, equipment and financing of intramural sports program. Notes: (May be taught on demand.)

RECR 350 Recreational Facilities and Area Design (COM)3
 An introduction to the principles and practices of planning, financing, management and maintenance of recreation facilities.

RECR 362 Recreation Across the Lifespan.....3
 Exploration of relevant issues affecting the role of recreation and leisure on human development and its impact on healthy fetal development from conception until death. Examination of the diverse, multicultural perspectives on recreation and leisure, its centrality throughout history and influence on how civilizations define themselves.

RECR 395 Practicum (COM).....(1-3)

RECR 410 Current Issues in Recreation (AW).....3
 Individual reports and group discussions on recent research and management developments in recreation employment opportunities and procedures for employment. Taken before the internship. Prerequisites: RECR 260, consent. Cross-Listed: PE 490.

RECR 415/515 Recreation and Sport Facility Management.....3
 Advanced study of recreation and sport operations and facility management including planning and design, fiscal and personnel management (including fundraising), legal considerations, safety and control, maintenance, and equipment, as these relate to indoor and outdoor recreation/sport facilities. Notes: PRM 300 (for undergraduate)

RECR 440 Administration of Leisure Services (COM)3
 Organization and administration of community recreation, program planning and recreational program areas.

RECR 491 Independent Study (COM).....(1-9)

RECR 494 Internship (COM).....(1-12)

RECR 496 Field Experience (COM).....(1-12)

REL (Religion)

REL 213 Introduction to Religion * **3
 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. Notes: * Course meets SGR #4 or ** IGR #3

REL 224 Old Testament * ** (COM)3
 Surveys the sources and development of the peoples and literature of the Old Testament. Notes: * Course meets SGR #4 or ** IGR #3

REL 225 New Testament * ** (COM)3
 Presents the history, writings, and theological themes of the New Testament. Notes: * Course meets SGR #4 or ** IGR #3

REL 237 Religion in American Culture * **3
 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. Notes: * Course meets SGR #3 or ** IGR #3

REL 238 Native American Religions * **3
 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. Cross-Listed: AIS 238. Notes: * Course meets SGR #4 or ** IGR #3

REL 250 World Religions * ** (COM) (G).....3
 Introduces the major religions of humankind, examining the function and diversity of religious expression in human experience, and the role of these religions in international relations. Notes: * Course meets SGR #4 or ** IGR #3

REL 331 Women and Religion.....3
 The course examines what women have to say about religion and what religions have had to say about women, including 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. Cross-Listed: WMST 331.

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. Cross-Listed: PHIL 454. Notes: ** Course meets IGR #1.

REL 353 Geography of Religion3
 This course examines the diversity of religious practice and belief from a geographical perspective. Each offering of the course will emphasize a different region of the world, with standard areas of study being North America & Europe, Middle East & Africa, South & Central America, and South & East Asia. The course will examine specific religious traditions

(Christianity, Islam, Buddhism, etc.) as they occur in a geographical region, the relationship between religion and place, and how religions change and adapt to new locales. The course may be repeated up to four times. Cross-Listed: GEOG 353.

REL 360 Moral and Ethical Perspectives on Death and Dying3
 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 ** (COM).....3
 Critically studies such issues as the nature and existence of God, the relations of reason to faith and man to the divine, plus non-western theologies. Notes: ** Course meets IGR #3.

REL 401-501 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. Cross-Listed: HIST 401. Notes: ** Course meets IGR #3.

REL 402-502 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 Counter reformation of the sixteenth century. While both Jewish and Islamic developments are examined, emphasis is placed upon the development of Christian doctrine. Cross-Listed: HIST 402. Notes: ** Course meets IGR #3.

REL 491-591 Independent Study (COM).....(1-3)

REL 492-592 Topics.....(1-5)

REL 494 Internship(1-12)

RUSS (Russian)

RUSS 101 Introductory Russian I * (COM)4
 Fundamentals of language, enabling the student to understand, speak, read and write simple Russian. Emphasis on practical usage. Notes: * Course meets SGR #4

RUSS 102 Introductory Russian II * (COM).....4
 Fundamentals of language, enabling the student to understand, speak, read and write simple Russian. Emphasis on practical usage. Prerequisites: RUSS 101. Notes: * Course meets SGR #4

RUSS 201 Intermediate Russian I (COM)3
 Continuation of first year Russian. More intensive drill of both grammar and conversation. Emphasis on conversation, grammar review, and the short story. Prerequisites: RUSS 102.

RUSS 202 Intermediate Russian II (COM).....3
 Continuation of first year Russian. More intensive drill of both grammar and conversation. Emphasis on conversation, grammar review, and the short story. Prerequisites: RUSS 201.

RUSS 393 Workshop (COM)(1-4)
 Special, intense sessions in specific topic areas. Approximately 45 hours of work is required for each hour of credit. Workshops may vary in time range but typically use a compressed time period for delivery. They may include lectures, conferences, committee work, and group activity.

SCST (Science Concepts)

SCST 601 Science in Our World.....	(1-7)
SCST 602 Modeling and Mathematics	2

SE (Software Engineering)

SE 291 Independent Study	(1-5)
SE 292 Topics.....	(1-5)
SE 294 Internship	(1-8)
SE 298 Undergraduate Research/Scholarship	(1-3)

SE 305 Foundation of Software Engineering3
 This course covers the basics of software engineering principles including different software development techniques, requirement analysis, project planning, software design and management. The user interface issues, specification and implementation of components, design quality and basic support tools are also covered. Corequisites: CSC 300.

SE 320 Software Requirements and Formal Specifications (AW)3
 An in-depth coverage of software requirements analysis and formal specification Topics include requirements specification and definition; requirements prototyping; functional requirements specification; nonfunctional requirements specification; and legacy systems. The course also covers formal methods applicable to software development with an emphasis on methods such as transformational techniques, logic-based formalisms, algebraic and model-based specifications. Prerequisites: SE 305 and CSC 300.

SE 330 Human Factors and User Interface (G).....3
 This course covers the major frameworks, methods, and approaches to designing, engineering, implementing, and testing user interfaces. It also covers human-machine interaction, design requirements, task analysis, and implementation of the user-interface. Prerequisites: SE 305.

SE 340 Software Architecture3
 The fundamental building blocks and patterns for construction of software systems are examined. The course covers the fundamental elements of software systems in the context of the design process. The conceptual, module interconnection and execution architecture of software are also discussed. The conceptual architecture describes the system in terms of its major design elements and the relationships among them. Prerequisites: SE 320.

SE 391 Independent Study.....(1-5)

SE 392 Topics.....(1-5)

SE 398 Undergraduate Research/Scholarship(1-3)

SE 410 Software Test and Quality Assurance3
 This course covers the importance of software quality assurance and configuration management. Software process improvement and software reliability are emphasized. Topics include software process metrics and their use in Quality Assurance, testing approaches, methods and techniques. Development of Quality Assurance plans, reviews, inspections and audits, and formal testing will be discussed. Prerequisites: SE 340 and STAT 381.

SE 420 Software Project Management3
 This course focuses on organizational and technical roles in software engineering management. Models of software engineering life cycle, unit development, maintenance, software reuse and metrics are discussed.

Software maturity framework, strategies of implementing software, software process assessment, project planning principles and tools, software configuration management, managing software quality and usability, leadership principles, ethical and legal issues are also covered. Prerequisites: SE 340 and STAT 381.

SE 440 Embedded Systems3
 This course focuses on modern methods, techniques, and tools for specification, design, and implementation of embedded systems. An overview of the platforms, tools, and processes used in developing software for embedded systems. A hands-on approach experimenting with real-time embedded systems programming. Prerequisites: EE 347-347L.

SE 464 Senior Design I.....2
 This is a capstone senior design team project. Students will work as part of a team to develop solutions to problems posed by customers. The project may require considerable software development or evolution and maintenance of existing software products. Students will write the specifications and complete the initial design. Oral and written reports are required. Prerequisites: SE 420.

SE 465 Senior Design II2
 The objective of this course is to produce, test and present the design specified in Senior Design I. Each team will deliver a final working product, formal software development documentation, and give a final presentation on the project. Prerequisites: SE 464.

SE 490 Seminar(1-3)

SE 491 Independent Study.....(1-5)

SE 492 Topics.....(1-5)

SE 494 Internship(1-3)

SE 496 Field Experience.....(1-3)

SE 497 Cooperative Education(1-5)

SE 498 Undergraduate Research/Scholarship(1-3)

SE 591 Independent Study.....(1-3)

SE 592 Topics.....(1-5)

SE 791 Independent Study.....(1-3)

SE 792 Topics.....(1-3)

SE 794 Internship(1-3)

SEED (Secondary Education)

SEED 314 Supervised Clinical/Field Experience.....1
 Supervised students will observe and practice various teaching strategies in lab setting, middle schools, and high schools. Prerequisites: EDFN 338 or SEED 287, EDFN 475. Corequisites: EPSY 302, SEED 450.

SEED 400 Curriculum and Instruction in Middle and Secondary Schools4
 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. Prerequisites: EDFN 338 or SEED 287; EDFN 475, EPSY 302, SEED 450, SEED 314. Corequisites: SEED 410 and 488.

SEED 410 Social Foundations, Management and Law2
 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. Prerequisites: EDFN 338 or SEED 287; EDFN 475, EPSY 302, SEED 450, SEED 314. Corequisites: SEED 400 and 488.

SEED 411 7-12 Speech Methods (COM).....(2-3)
 Students develop and understanding of the tools of inquiry of 7-12 speech; the ability to design, deliver, and evaluate a variety of instructional strategies and processes that incorporate learning resources, materials, technologies, and state and national curriculum standards appropriate to 7-12 speech; the ability to assess student learning in 7-12 speech; and to apply theses knowledge, skills, and attitudes to real life situations and experiences.

SEED 413 7-12 Science Methods (COM).....3
 Students develop an understanding of the tools of inquiry of 7-12 sciences; the ability to design, deliver, and evaluate a variety of instructional strategies and processes that incorporate learning resources, materials, technologies, and state and national curriculum standards appropriate to 7-12 science; the ability to assess student learning in 7-12 science; and to apply theses knowledge, skills, and attitudes to real life situations and experiences.

SEED 415 7-12 Social Science Methods (COM).....3
 Students develop an understanding of the tools of inquiry of 7-12 social science; the ability to design, deliver, and evaluate a variety of instructional strategies and processes that incorporate learning resources, materials, technologies, and state and national curriculum standards appropriate to 7-12 social science; the ability to assess student learning in 7-12 social science; and to apply these knowledge, skills, and attitudes to real life situations and experiences.

SEED 418 7-12 Mathematics Methods (COM).....(2-3)
 Students develop an understanding of the tools of inquiry of 7-12 math; the ability to design, deliver, and evaluate a variety of instructional strategies and processes that incorporate learning resources, materials, technologies, and state and national curriculum standards appropriate to 7-12 math; the ability to assess student learning in 7-12 math; and to apply these knowledge, skills, and attitudes to real life situations and experiences.

SEED 418L 7-12 Mathematics Methods Lab.....0
 Corequisites: SEED 418.

SEED 420 5-12 Teaching Methods.....2
 This course is designed to provide general teaching methods and strategies for effective middle level and secondary education to prepare professionals for the 21st century who are caring, competent, and confident. It prepares prospective teachers to plan and develop instruction respecting learner differences as well as preparing appropriate methods for assessing student achievement. The nature of this course creates opportunities for prospective teachers to individualize the course content and learning activities to be responsive to the different education majors. The learning projects are built around the integration of technology, media, other instructional aids, and various resources relevant to the uniqueness of each content major.

SEED 420L 5-12 Teaching Methods Lab.....0
 This course is designed to provide general teaching methods and strategies for effective middle level and secondary education to prepare professionals for the 21st century who are caring, competent, and confident. It prepares prospective teachers to plan and develop instruction respecting learner differences as well as preparing appropriate methods for assessing student achievement. The nature of this course creates opportunities for prospective teachers to individualize the course content and learning activities to be responsive to the different education majors. The learning projects are built around the integration of technology, media, other instructional aids, and various resources relevant to the uniqueness of each content major.
 Corequisites: SEED 420

SEED 424 7-12 Language Arts Methods (COM).....3
 Students develop an understanding of the tools of inquiry of 7-12 language arts, integrating reading, writing, speaking, and listening; the ability to design, deliver, and evaluate a variety of instructional strategies and processes that incorporate learning resources, materials, technologies, and state and national curriculum standards appropriate to 7-12 language arts; the ability to assess student learning in 7-12 language arts; and to apply theses knowledge, skills, and attitudes to real life situations and experiences.

SEED 450 7-12 Reading and Content Literacy (COM).....2
 This course explores methods for teaching middle and high school students to read, write, think, and learn in ways that allow them to master the subject matter and meaningfully apply their understanding. Participants learn to plan lessons that teach content and nurture greater literacy. Pre-, during-, and post-reading strategies and writing strategies are explored, along with assessment methods that give students a continual view of their literacy progress and achievement. Classroom adaptations for culturally and linguistically diverse populations in the content areas are also addressed.

SEED 488 7-12 Student Teaching (COM).....(2-16)
 Students preparing for teaching in the secondary school will observe, participate, and teach under the supervision of the regular classroom teacher in an approved elementary school. An additional “Mandatory Fee” applies to this course.

SEED 491 Independent Study.....(1-9)

SEED 492/592 Topics (COM).....(1-5)

SEED 493/593 Workshop . 1-3.....

SEED 494 Internship..... (3-12)

SEED 496 Field Experience.....(3-12)

SEED 497 Cooperative Education.....(3-12)

SEED 690 Seminar.....(1-3)

SEED 748 Secondary Curriculum Practicum.....1

SOC (Sociology)

SOC 100 Introduction to Sociology * (COM) (G).....3
 Comprehensive study of society, with analysis of group life, and other forces shaping human behavior. Notes: * Course meets SGR #3

SOC 150 Social Problems * ** (COM) (G).....3
 A study of present day problems in contemporary societies, such as racism, sexism, ageism, alcoholism, drug addiction, physical and mental health, war and environmental issues – their significance and current policies and action. Notes: * Course meets SGR #3 or ** IGR #3

SOC 240 The Sociology of Rural America* ** (COM) (G).....3
 Focus on rural society, rural communities, population composition and trends, social processes, social participation in rural organizations and agencies; American agriculture in a global context; and changing relationship between country and city in contemporary society. Notes: * Course meets SGR #3 or ** IGR #1 or ** IGR #3

SOC 250 Courtship and Marriage * ** (COM).....3
 Courtship and marriage period given special emphasis, as are problems of mate selection, marital adjustments, reproduction, child-parent relations, divorce, and later years of marriage. Notes: * Course meets SGR #3 or ** IGR #3

<p>SOC 270 Introduction to Social Work (COM).....3 A study of social services to children, family, aged, public welfare clients, mentally ill, and the criminal justice system, also includes history of social work methods. Prerequisites: SOC 100 or 150.</p> <p>SOC 271 Social Work Skills and Methods I.....3 Basic concepts and methods common to all social service practice; focus on developing interactional skills. Prerequisites: SOC 270.</p> <p>SOC 286 Service Learning.....(1-3) Opportunity to gain service learning and/or mentoring experience. Credit will not count toward credits for major or minor. (Limit of 4 credit hours.) Prerequisites: Major or minor, minimum GPA of 2.0 to enroll, SOC 100. Graded S/U.</p> <p>SOC 307 Research Methods I.....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> <p>SOC 308 Research Methods II.....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> <p>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. Cross-Listed: WMST 325.</p> <p>SOC 330 Self and Society (COM).....3 A social psychological exploration of the factors linking self and society, with an examination of the social construction of reality. Prerequisites: SOC 100 or 150.</p> <p>SOC 350 Race and Ethnic Relations ** (COM) (G).....3 A survey of contemporary ethnic and racial groups and selected minorities in South Dakota, the United States and other countries; special attention will be given to sociological concepts and theories relevant to intergroup dynamics, social structures, and communication. Prerequisites: SOC 100 or 150. Notes: ** Course meets IGR #3.</p> <p>SOC 351 Criminology (COM).....3 Focuses on theories of crime, juvenile delinquency and justice, laws, systems of criminal behavior, victimization, and corrections. Prerequisites: SOC 100 or 150</p> <p>SOC 353 Sociology of Work (COM).....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. Prerequisites: SOC 100 or 150.</p> <p>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.</p> <p>SOC 382 The Family (COM).....3 Focus is on the development and maintenance of the family as a social institution with emphasis on comparative family systems and the</p>	<p>contemporary American family from the standpoint of social class, ethnic background and family crises. Prerequisites: SOC 100 or 150.</p> <p>SOC 400 Social Policy (COM).....3 A review of social welfare legislation; current trends and issues in, and implementation and administration of, social policy in a variety of practice areas. Prerequisites: SOC 100 or 150 and SOC 270.</p> <p>SOC 402-502 Social Deviance (COM).....3 This course examines the nature of negatively evaluated behaviors and the process by which customs, rules and normative structure of society are constructed. Prerequisites: SOC 100 or 150.</p> <p>SOC 403 Sociological Theory (COM).....3 This is an introduction to the classics in social theory, various schools of social thought, and modern developments in the discipline. It also covers the major ideas of the classical and modern theorists, the social environment in which they wrote, and the implications of their contributions. Prerequisites: SOC 100 or 150.</p> <p>SOC 433-533 Leadership and Organizations (COM).....3 Emphasis is on the emergence of leadership patterns, group dynamics, small groups, and leadership in management. Prerequisites: SOC 100 or 150. Cross-Listed: LEAD 433.</p> <p>SOC 440 Urban Sociology ** (COM) (G).....3 A study of the urban community, focusing on its development, social structures and institutional patterns. Prerequisites: SOC 100 or 150. Notes: ** Course meets IGR #3.</p> <p>SOC 453 Industrial Sociology.....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.</p> <p>SOC 455-555 Juvenile Delinquency (COM).....3 A study of the youthful offender and the causes and consequences of delinquent behavior; preventive and rehabilitation programs are also discussed. Prerequisites: SOC 100 or 150.</p> <p>SOC 456-556 Community Corrections (COM).....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. Prerequisites: SOC 351.</p> <p>SOC 460-560 Advanced Criminology (COM).....3 An extensive examination of major criminological issues and theories including sociological definitions of crime. Prerequisites: SOC 351.</p> <p>SOC 462-562 Population Studies (COM).....3 A study of human populations with respect to size, distribution, and structure, with emphasis on theories of population growth and decline, population policies, and impacts on the environment. Prerequisites: SOC 100 or 150.</p> <p>SOC 483 Sociology of Gender Roles (COM) (G).....3 Female and male roles in relation to one another in a changing world are foci of this course. The nature of gender roles, their origin and maintenance, institutional features, and their variations over time and across cultures are examined. Prerequisites: SOC 100 or 150. Cross-Listed: WMST 383.</p> <p>SOC 490 Seminar (COM).....(1-3)</p> <p>SOC 491 Independent Study (COM).....(1-3)</p>
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SOC 492 Topics (COM)	(1-3)
SOC 494 Internship	(1-12)
SOC 496 Field Experience	(1-12)
SOC 497 Cooperative Education	(1-12)
SOC 620 Social Organization	3
SOC 621 Social Stratification	3
SOC 630 Social Change	3
SOC 640 Rural Community Development	3
SOC 709 Evaluation Research	3
SOC 710 Research Methods	3
SOC 711 Qualitative Research Methods	3
SOC 712 Sociological Theory I	3
SOC 713 Sociological Theory II	3
SOC 714 Race, Class, Gender Intersections	3
SOC 716 Symbolic Interaction	3
SOC 720 Scholarship of Teaching and Learning for Sociologists	3
SOC 762 Applied Demography	3
SOC 764 Modern Demographic Theory	3
SOC 766 World Population Issues	3
SOC 790 Seminar	(1-4)
SOC 791 Independent Study	(1-3)
SOC 792 Topics	1-6
SOC 794 Internship	(1-3)
SOC 798 Thesis	(1-7)
SOC 898D Dissertation-PhD	(1-12)

major or minor in Spanish are encouraged to take 212 concurrently.
 Prerequisites: SPAN 201

SPAN 211 Intermediate Oral Practice I (COM).....2
 Conversational work, oral reports. May be taken concurrently with SPAN 201 or SPAN 202. Prerequisites: SPAN 102.

SPAN 212 Intermediate Oral Practice II (COM).....2
 Conversational work, oral reports. May be taken concurrently with SPAN 202 Prerequisites: SPAN 102.

SPAN 296 Field Experience.....(1-6)

SPAN 308 Spanish for the Health Professions(2-3)
 The course will build on the student's knowledge of the Spanish language with a specific emphasis on the language a health professional will need when communicating with a patient. Medical terminology, anatomy, personal information and expressions of feelings will be at the core of the course. The course will also address related cultural issues. Prerequisites: This course will require two years of college Spanish or written permission from the Department.

SPAN 310 Practical Language Skills.....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.

SPAN 330 Reading and Writing for Communication.....3
 Development of reading and writing proficiency through examination of writings from the Spanish-speaking world. Emphasis on vocabulary needed to read and discuss literary and authentic periodistic readings. Introduction to research methods will also be included. Prerequisites: SPAN 310 or concurrent.

SPAN 340 Phonetics.....3
 Introduces the intermediate/advanced student of Spanish to the sound system of the language. Emphasis on developing the student's ability to understand and to produce sounds unique to the Spanish language. Prerequisites: SPAN 310 or concurrent.

SPAN 350 Spanish for Business Communication (COM).....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. Prerequisites: SPAN 202.

SPAN 353 Introduction to Spanish Literature I (COM).....3
 Introduction to Spanish literature through reading and discussion. Prerequisites: SPAN 202.

SPAN 355 Introduction to Latin-American Literature I (COM).....3
 Introduction to Spanish American literature through readings with discussion in Spanish. Prerequisites: SPAN 202.

SPAN 396 Field Experience.....(1-6)

SPAN 433 Spanish Civilization and Culture (COM) (AW)(3)
 Geography, history, politics, and arts of Spain.

SPAN 435 Latin American Civilization and Culture (AW).....3
 Geography, history, politics, and arts of Latin America. Prerequisites: SPAN 310.

SPAN 443 Linguistics.....3
 An in-depth study of Spanish linguistics; may include advanced phonetics, syntax, aspects of the history of the Spanish language and the varieties of Spanish spoken throughout the world. Prerequisites: SPAN 310.

SPAN (Spanish)

SPAN 101 Introductory Spanish I * ** (COM) (G).....4
 Introduces the fundamental elements of Spanish sentence structure and vocabulary. Promotes speaking, listening and writing within a cultural context. Class work may be supplemented with required aural/oral practice outside of class. Notes: * Course meets SGR #4 or ** IGR #3

SPAN 102 Introductory Spanish II * ** (COM) (G).....4
 Introduces the fundamental elements of Spanish sentence structure and vocabulary. Promotes speaking, listening, and writing within a cultural context. Class work may be supplemented with required aural/oral practice outside of class. Prerequisites: SPAN 101. Notes: * Course meets SGR #4 or ** IGR #3

SPAN 201 Intermediate Spanish I (COM)(3)
 Students use previously learned elements of fundamental Spanish to improve speaking, reading, writing, and listening skills. Authentic materials promote the understanding of Hispanic culture. Prerequisites: SPAN 102.

SPAN 202 Intermediate Spanish II (COM).....3
 Continuation of 201 with more emphasis on using grammar structures in an interactive way. Further study of the Hispanic world. Students planning to

SPAN 444 Introduction to Translation.....3
 An introduction to the principles and practice of translating a variety of text types from Spanish to English and from English to Spanish. Prerequisites: At least one 300-level class.

SPAN 476 19th and 20th Century Spanish Literature3
 Major movements and works. Reading, writing and discussions in Spanish. Topics vary. Prerequisites: SPAN 310, or consent.

SPAN 484 20th Century Spanish American Literature3
 Major movements and works. Reading, writing and discussions in Spanish. Topics vary. Prerequisites: SPAN 310, or consent.

SPAN 491 Independent Study (COM)(1-3)

SPAN 492 Topics (COM)(1-3)

SPAN 496 Field Experience.....(1-6)

SPAN 591 Independent Study (COM)(1-3)

SPAN 592 Topics.....(1-4)

SPCM (Speech Communication)

SPCM 101* Fundamentals of Speech (COM)3
 Introduces the study of speech fundamentals and critical thinking through frequent public speaking practice, including setting, purpose, audience, and subject. Notes: * Course meets SGR #2

SPCM 201 Interpersonal Communication (COM).....3
 Studies modes of interpersonal communication through readings, and experiential discussions of the role of interpersonal communications in common situations within our society.

SPCM 205 Communication Studies3
 An overview of the communication discipline, theory, and practice. Prerequisites: Advanced Placement in Speech or consent.

SPCM 215 Public Speaking (COM) *.....3
 Sharpens students skills in platform speaking events, covering the preparation for and delivery of competitive speaking formats including oral interpretation, persuasive, expository, impromptu, extemporaneous, and after dinner speaking. Notes: * Course meets SGR #2

SPCM 222 Argumentation and Debate (COM) *3
 Explores argument as a communication activity, construction sound arguments in a variety of venues and analyzing the contribution of argument to public dialogue on contemporary issues. Notes: * Course meets SGR #2

SPCM 281 Speech and Debate Activities (COM)(1-4)
 Initiates active participation in competitive public speaking, including debate, oral interpretation, and non-competitive public performances.

SPCM 305 Communication Research (COM) (AW)3
 An exploration of basic theoretical and practical principles of quantitative and qualitative research methods in the study of communication. Students learn to form research questions; work with resources such as academic journals, popular culture, and the internet; use recognized research formats and write research proposals.

SPCM 320 Communication in Interviewing (COM).....3
 Provides an in-depth study of the interviewing process, including information gathering, persuasion, appraisal, and employment interviews, emphasizes theoretical knowledge from the perspectives of both the interviewer and interviewee, as well as skill development in interviewing techniques.

SPCM 340 Oral Interpretation of Literature (COM).....3
 Examines the theory and practice of the performance of texts, the artistic, aesthetic, and carefully considered sharing of our personal understanding of literary selection, involving analysis, planning, rehearsing, and effective sharing of meaning with an audience.

SPCM 405 Theories of Communication (COM).....3
 Examines communication theories and philosophies, emphasizing clarification through theory of daily communication processes, and relating theory to traditional and developing research methods.

SPCM 410-510 Organizational Communication (COM) (AW)2-3
 Explores communication processes in organizational contexts, theories of leadership, decision making and conflict, the application of principles that facilitate communication in organizations, and other selected topics.

SPCM 415 Communication and Gender (COM)3
 A study of gender theories as well as gendered communication practices within the contexts of interpersonal and organizational relationships and social and cultural forces. Cross-Listed: WMST 415

SPCM 416-516 Rhetorical Criticism (COM)3
 Evaluates American speakers from colonial to contemporary times.

SPCM 417 Political Communication (COM)3
 Studies the rhetoric of selected political figures, movements, and campaigns that have changed lives and culture. Students develop an understanding of rhetorical strategies and their cultural impact within public life.

SPCM 434 Small Group Communication (COM).....3
 Explores prominent concepts and theories of human small group interaction, cultivating critical assessments of communication strategies in task, social, and therapeutic groups.

SPCM 460 Family Communication (COM)3
 Studies systems of relational communication in a variety of family contexts, with particular emphasis on stability, continuity and change. The role of family in personal, social, cultural development is studied, as well as changing family dynamics of power, myth, ritual, and connection.

SPCM 465 Capstone Course in Speech Communication.....3
 An in-depth, cumulative study of the theory, research and methods in the Speech Communication discipline. Incorporates intensive reflection, research and writing components to provide the student with an opportunity to demonstrate synthesis and mastery of discipline content, as well as the principles and practices of portfolio and resume building.

SPCM 470 Intercultural Communication (COM) (G).....3
 A study of theoretical dimensions of intercultural communication as well as specific characteristics of intercultural study. Emphasis is placed on complex, mindful, creative and invitational communication, which welcomes diversity and its richness.

SPCM 476 7-12 Speech Methods.....3
 Problems of the speech teacher. Curriculum, instructional materials, and methods.

SPCM 482-582 Travel Studies.....(1-5)
 This travel study course is designed to provide extra-mural educational opportunities, approved and directed by a faculty member in Communication Studies Theatre. It may be in cooperation with faculty and administrators of other institutions. Students will be involved in hands-on activities and design educational activities for presentation at selected locations as well as SDSU. Includes pre-travel orientation, post travel self-evaluation, and a written report.

SPCM 491 Independent Study (COM).....(1-3)
SPCM 492-592 Topics (COM)(1-5)
SPCM 494 Internship (COM).....(1-12)
SPCM 605 Current Approaches to Communication3
SPCM 700 Instructional Methods in Communications (COM).....3
SPCM 787 Research Methods in Speech Communication3
SPCM 791 Independent Study (COM).....(1-2)
SPCM 792 Topics (COM).....(1-3)
SPCM 798 Thesis (COM).....(1-7)

SPED (Special Education)

SPED 300 Students With Exceptionalities (COM).....3
 Characteristics and needs of exceptional individuals including review of special education legislation and special methods focusing on elementary level students with special needs.
SPED 401 Introduction to Educating Secondary Students with Disabilities (COM).....1
 An introduction to the characteristics and needs of exceptional individuals including review of special education legislation and focusing on middle and secondary level students.
SPED 405 Educating Secondary Students with Disabilities2
 An introduction to the entire field of education for children with exceptional needs and is required by all middle school and secondary school majors. Students will identify etiology, classification, and educational programming practices for individuals with any identified disabilities. Students will also determine which local, state, and national administrative and legislative provisions support children with these conditions. Computerized IEP forms and other productivity tools will be reviewed.
SPED 450 Gifted and Talented (COM).....3
 This course focuses on the nature and needs of the gifted child.
SPED 451 Curriculum and Instruction in Gifted (COM)3
 This course focuses on curriculum, development and teaching strategies for the gifted.
SPED 452 Nature of Creativity and Assessment (COM)(2-3)
 This course focuses on the nature of creativity and assessment of creativity.

STAT (Statistics)

STAT 281 Introduction to Statistics (COM).....3
 A study of descriptive statistics including graphs, measures of central tendency and variability and an introduction to probability theory, sampling and techniques of statistical inference with an emphasis on statistical applications. Prerequisites: MATH 102 or 115 or 120 or 121 or 123 or 125.
STAT 284 Biostatistics for the Health Sciences.....3
 Introduction to probability theory, discrete and continuous distributions, sampling distributions and the Central Limit Theorem with general principles for statistical inference and applications of random sampling to hypothesis testing, confidence limits, and regression, all in the context of the health sciences and practice. Prerequisites: MATH 121 and permission of instructor, or MATH 123 and permission of instructor.

STAT 381 Introduction to Probability and Statistics (COM).....3
 Introduction to probability theory, discrete and continuous distributions, sampling distributions and the Central Limit Theorem with general principles for statistical inference and applications of random sampling to hypothesis testing, confidence limits, and regression. Prerequisites: MATH 125.
STAT 410-510 SAS Programming I3
 Base SAS language and procedures for accessing data, manipulating data, creating data structures, managing data, producing graphs, producing reports, and error handling.
STAT 412-512 SAS Programming II.....3
 Accessing data using SQL, macro processing, advanced programming techniques including hash objects and array processing, and data simulation. Prerequisites: STAT 410 or STAT 510.
STAT 436 Bioinformatics3
 This course is an introduction to bioinformatics for students in mathematics and physical sciences. This course will include a brief introduction to cellular and molecular biology, and will cover topics such as sequence alignment, phylogenetic trees and gene recognition. Existing computational tools for nucleotide and protein sequence analysis, protein functional analysis and gene expression studies will be discussed and used. Prerequisites: STAT 281 or 381.
STAT 441-541 Statistical Methods II.....3
 Analysis of variance, various types of regression, and other statistical techniques and distributions. Prerequisites: STAT 281, or MATH/STAT 381
STAT 445-545 Nonparametric Statistics.....3
 Covers many standard nonparametric methods of analysis. Methods will be compared with one another and with parametric methods where applicable. Attention will be given to: (1) analogies with regression and ANOVA; (2) emphasis on construction of tests tailored to specific problems; and (3) logistic analysis. Prerequisites: STAT 281, MATH 381 or STAT 381.
STAT 460-560 Time Series Analysis3
 Statistical methods for analyzing data collected sequentially in time where successive observations are dependent. Includes smoothing techniques, decomposition, trends and seasonal variation, forecasting methods, models for time series: stationarity, autocorrelation, linear filters, ARMA processes, non-stationary processes, model building, forecast errors and confidence intervals. Prerequisites: STAT 482/582.
STAT 482-582 Probability and Statistics II.....3
 Introduction to statistical design, one-way completely randomized design, testing contrasts and multiple comparison procedures, simple and multiple linear regression, factorial designs, fractional factorial designs and mixed models. SAS software is used extensively. Prerequisites: MATH/STAT 381.
STAT 486-586 Design of Surveys (COM)3
 Constructing and analyzing designs for survey investigations; simple random, stratified, cluster, multistage, and multiphase designs; and methods of estimation. Techniques and methods of obtaining and reporting survey information. Prerequisites: STAT 381 or permission of the instructor.
STAT 490-590 Seminar(1-2)
STAT 491-591 Independent Study.....(1-3)
STAT 492-592 Topics (COM)(1-3)
STAT 498 Undergraduate Research/Scholarship(1-3)
STAT 661 Design of Experiments I.....3
STAT 662 Quality Control3

STAT 715 Multivariate Analysis I	3
STAT 742 Spatial Statistics	3
STAT 756 Quantitative Genetics	3
STAT 784 Statistical Inference I	3
STAT 785 Statistical Inference II	3
STAT 786 Regression Analysis I	3
STAT 787 Regression Analysis II	3
STAT 788 Research Paper	1-2
STAT 790 Seminar	1
STAT 791 Independent Study	(1-3)
STAT 792 Topics	(1-3)
STAT 798 Thesis	1-7

THEA (Theatre)

THEA 100 Introduction to Theatre * (COM)	3
Introductory course designed to enhance the student's enjoyment and understanding of the theatrical experience. Play readings, films, and demonstrations acquaint the students with the history and techniques of the theatrical art. Notes: * Course meets SGR #4	
THEA 131 Introduction to Acting * (COM)	3
Designed for the non-major interested in exploring acting as a means of improving communication skills and self-expression. Includes specific process for role development, text analysis, and opportunities to practice the craft and art of acting. Notes: * Course meets SGR #4	
THEA 135 Theatre Activities-Acting	1
Credit earned by active participation in acting roles. May be repeated for a total of 8 credits. Prerequisites: Consent.	
THEA 145 Theatre Activities-Technical	1
Credit earned by backstage and crew work. May be repeated for a total of 8 credits. Prerequisites: Consent.	
THEA 191 Independent Study	1
P, consent of instructor and department chair.	
THEA 240 Stage Costuming (COM)	3
Introduction to the equipment, materials, and techniques of theatrical costuming. Includes practical projects in the use of stitching techniques, pattern making, fabric modification, and costume crafts.	
THEA 241-241L Stagecraft and Lab (COM)	3
Theory and practical experience in theatre production. Lab work on two major theatre productions. Accompanies THEA 241. Corequisites: THEA 241L.	
THEA 243 Make-Up (COM)	3
Principles of theatrical makeup techniques, including character analysis and practical application.	
THEA 250 Play Analysis	3
Study and application of principles of playscript analysis and production conceptualization.	

THEA 351 Directing (COM)	3
Introduction to the techniques and concerns of the stage director, including composition, movement, and tempo-rhythm. Script analysis and scene presentation form the core of the course.	
THEA 355 Children's Theatre (COM)	3
Children's theatre is an art form. Students become proficient in organization, design, and presentation of a children's theatre program.	
THEA 375 Theatre Arts Management	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 410-510 Dramatic Literature (AW)	3
Analysis of important drama through present day.	
THEA 435 History of American Musical Theater (COM)	3
History and development of American musical theatre from 1866 to the present.	
THEA 441 Scene Design (COM)	3
Principles and practices of scenic design, including the scenic image, movement patterns, color, form, and rendering techniques.	
THEA 445-445L Lighting and Lab (COM)	3
Basic principles and practices of lighting design, including basic electricity, script analysis, color, and directionality. Accompanies THEA 445. Corequisites: THEA 445L-THEA 445.	
THEA 455 Advanced Acting (COM)	3
Textual analysis, movement and acting styles for the theatre.	
THEA 460-560 History of Theatre	3
Periods, theatres, and representative dramatic literature from the classical to the present day.	
THEA 470 Portfolio and Resume Building	3
Principles and practices of portfolio and resume building for acting and technical theatre.	
THEA 480 Summer Theatre	(1-5)
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. Prerequisites: Consent.	
THEA 491 Independent Study (COM)	(1-3)
P, consent of instructor and department chair.	
THEA 492-592 Topics (COM)	1-5
THEA 494-594 Internship (COM)	0-12 P, consent.
THEA 592 Topics	1-3
THEA 791 Independent Study	(1-2)

VET (Veterinary Science)

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. Standard grading.	

VET 183 Veterinary Medical Terminology1

This course is a study of the technical language used in Veterinary Medicine and Animal Agriculture with a focus on learning the major components (prefixes, suffixes and combining root terms) of veterinary medical terms and how to put the components together to form useful medical terms. Species-specific terminology, along with organ system-specific terminology, is also presented. Students will be expected to learn and understand the definitions of the veterinary medical terms, and to write and interpret paragraphs containing veterinary medical terms.

VET 223 Anatomy and Physiology of Domestic Animals.....4

This course will familiarize students with the anatomical structures and physiological functions of the organ systems of domestic animals. Similarities in the structure and function of organ systems of various domestic animals will be emphasized. Prerequisites: CHEM 108 or 120 or 326. Corequisites: VET 223L.

VET 223L Anatomy and Physiology of Domestic Animals Lab0

Corequisites: VET 223.

VET 403-503 Animal Diseases 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 how production and management techniques influence the expression of disease in domestic animals and wildlife.

VET 423-523 Advanced Mammalian Physiology4

An advanced study of the physiological mechanisms utilized by mammals to regulate body functions with the nervous and endocrine systems, to acquire and use chemical energy from their environment, and to integrate the functions of the organs' systems to maintain the health of the animal. Emphasis is placed on applying physiological concepts and principles to solve problems. Previous courses in anatomy, physiology, and biochemistry are recommended. Cross-Listed: ZOOL 423/523.

VET 424-524 Medical and Veterinary Virology3

Basic course discussing the characterization, structure, and replication of viruses and the pathogenesis of viral disease in man and animals. Prerequisites: MICR 433 Cross-Listed: MICR 424-524.

VET 491-591 Independent Study(1-3)

VET 492-592 Topics(1-3)

VET 493 Workshop.....(1-4)

VET 494 Internship (COM).....(1-12)

VET 496 Field Experience (COM).....(1-12)

VET 497 Cooperative Education (COM)(1-12)

VET 498 Undergraduate Research/Scholarship.....(1-4)

VET 788 Master's Research Problems(1-3)

VET 791 Independent Study.....(1-4)

VET 792 Topics(1-3)

VET 793 Workshop.....(1-4)

WEL (Wellness)

WEL 100-100L Wellness for Life and Lab **(COM)2

This course introduces the importance and holistic nature of the six dimensions of personal wellness and fitness. 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. Students will have the opportunity to assess their current health status and identify potential risk factors.

This laboratory experience applies wellness concepts taught in WEL 100 lecture. Students will gain a level of understanding about one's personal fitness level as well as learn a variety of skills to enhance personal wellness. Corequisites: WEL 100L-WEL100 Notes: ** Course meets IGR #2.

WEL 192 Topics1

WL (Wildlife and Fisheries Sciences)

WL 110 Environmental Conservation ** (G)3

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. Notes: ** Course meets IGR #1.

WL 190 Seminar: Opportunities.....1

WL 220 Introduction to Wildlife and Fisheries Management.....3

An introduction to the basic principles used in the management of wildlife and fish populations, their habitats, and their human users. The course is directed toward the presentation of general concepts that are integral to understanding the discipline.

WL 230 Wildlife and Fisheries Techniques3

Techniques involved with the collection and analysis of wildlife and fish population and habitat information and data analysis are the primary contents of the course. Prerequisites: WL 220.

WL 291 Independent Study(1-3)

WL 363-363L Ornithology and Lab(COM).....4

Identification of bird species; life histories, ecology, habits, and special structural and physiological adaptations of various groups.

Laboratory experience that accompanies WL 363. Corequisites: WL 363L-WL 363.

WL 367-367L Ichthyology and Lab3

Characteristics and relationships of fishes; adaptations, behavior, ecology, evolution, systematics, and zoogeography of fishes; and, identification and life histories of fishes. Corequisites: WL 367L-WL 367.

WL 400-400L - Habitat Conservation and Restoration and Lab.....3

An introduction to major land-use practices, how these practices and conservation programs influence wildlife production, and alterations or manipulations of habitat to achieve specific wildlife conservation and management goals. Emphasis will be placed on how the management of other resources can be integrated with those of wildlife. Prerequisites: WL 220 and WL 230. Corequisites: WL 400L-WL 400.

WL 411-411L Principles of Wildlife Management and Lab.....4

Application of ecological principles of the management of wild birds, mammals, and herps. History and development of wildlife management as a science; characteristics of, and factors affecting wildlife populations; techniques and theories of management; and, wildlife conservation. Prerequisites: WL 363, ZOOL 355, or department written consent. Corequisites: WL 411L-WL 411.

WL 412-412L Principles of Fisheries Management and Lab.....3

Fisheries management as a science with an emphasis on freshwater fishes and ecosystems. Emphases include biota, habitat, and human management.

Prerequisites: WL 220, WL 230 or department written consent. Corequisites: WL 412L-WL 412.

WL 413-413L/513-513L Fisheries Ecology and Management and Lab3

Principles and techniques of selected practices for lentic and lotic fisheries sampling, assessment, and management. (Prerequisites: Department written consent for WL 413 only. Corequisites: WL 413L-WL 413/WL 513L-WL 513.

WL 415-415L/515-515L Upland Game Ecology and Management and Lab3

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. (Prerequisites: Department written consent for WL 415 only). Corequisites: WL 415L-WL 415L/WL 515L-WL 515.

WL 417-417L/517-517L Large Mammal Ecology and Management and Lab3

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. (Prerequisites: Department written consent for WL 417 only). Corequisites: WL 417L-417/517L-517.

WL 419-419L/519-519L Waterfowl Ecology and Management and Lab3

Analysis of ecological and socio-economic factors affecting waterfowl habitat and populations. State and federal programs affecting wetland drainage and preservation. Field inspection of waterfowl habitat in the north-central states. (Prerequisites: Department written consent for WL 419 only). Corequisites: WL 419L-WL 419/WL 519L-WL 519.

WL 421-421L/521-521L Grassland Fire Ecology and Lab.....3

The course describes the ecological effects of fire on grassland ecosystem components, from soil and vegetation to wildlife and beef cattle. 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. (Prerequisites: Department written consent for WL 421 only). Corequisites: WL 421L-WL 421/WL 521L-WL 521. Cross-Listed: RANG 421-521.

WL 425-425L/525-525L Wildlife Nutrition and Disease and Lab3

Emphasis is placed on nutrient requirements and acquisition, conditions and characteristics of important diseases, and their management implications. Focal areas include the biochemical, physiological, and ecological bases for studying nutrition and disease; nutrition and disease relationships to wildlife and habitat; protein, energy, vitamin, and mineral requirements and their relationships to diseases; and strategies for satisfying nutritional requirements. Prerequisites: (Department Written Consent for WL 425 only.) Corequisites: WL 425L-WL 425/WL 525L-WL 525.

WL 427-427L/527-527L Limnology of Lakes & Streams and Lab.....4

Physical, chemical, and biological characteristics of lentic and lotic freshwater ecosystems. Analysis of and methods for quantifying processes that function in freshwater systems. Prerequisites: Department Written Consent. Corequisites: WL 427L-WL 427/WL 527L-527.

WL 429-429L/529-529L Fish Ecology and Lab2

Study of fish as an organism and the interrelations of fish with other organisms and with the environment. Prerequisites: Department Written Consent. Corequisites: WL 429L-WL429/WL 529L-WL 529.

WL 430-430L Human Dimensions in Wildlife and Fisheries and Lab (G).....4**

Interactions among various stakeholders, resource management agencies, and the wildlife and fisheries resources are studied. Topics such as public attitudes and expectations; agency structure, administration, and policy; tangible and intangible values of fishes, wildlife, and their habitats; the concept of biophilia as motivation for resource use; public relations; the philosophy and ethics of resource use and management; and, wildlife and fisheries law and its enforcement are included. Corequisites: WL 430L-WL 430. Notes: ** Course meets IGR #3.

WL 431-431L/531-531L Fisheries Management in Small Waters and Lab.....2

Management of small, public and private water bodies through manipulation of habitat, organisms, and human users. The course will address water body design and construction, limnology, water quality, biological production, fish management, troubleshooting, and pond opportunities. Prerequisites: Department Written Consent. Corequisites: WL 431L-WL 431/WL 531L-WL 531.

WL 440-440L Fisheries and Wildlife Biometrics and Lab2

Analysis and interpretation of fisheries and wildlife data that relate to assessment of research and management activities. Computer software application will be stressed. Prerequisites: STAT 281, or department written consent. Corequisites: WL 440L-WL 440.

WL 490 Seminar1

WL 491 Independent Study(1-3)

WL 492-492L/592-592L Topics and Lab(1-3)

WL 492-592 Topics.....(1-3)

WL 492L-592L Topics Lab (COM).....0

WL 494 Internship.....(1-12)

WL 496 Field Experience (COM)(1-12)

WL 497 Cooperative Education (COM).....(1-12)

WL 712-712L Wetland Ecology and Management and Lab.....3

WL 713-713L Animal Population Dynamics and Lab3

WL 714-714L Fish Structure and Function and Lab3

WL 715-715L Wildlife Research Design and Lab3

WL 717-717L Aquatic Trophic Ecology and Lab.....3

WL 718-718L Ecology of Aquatic Invertebrates and Lab.....3

WL 719-719L Stream Ecology and Management and Lab3

WL 720-720L Quantitative Fisheries Science and Lab.....3

WL 721-721L Natural Resource Modeling and Lab.....3

WL 722-722L Natural Resource Policy and Administration and Lab ...3

WL 743 Geospatial Analysis3

WL 767 Fire and Ecosystems3

WL 790 Seminar1

WL 791 Independent Study(1-3)

WL 798 Thesis(1-7)

WL 898D Dissertation(1-12)

WMST (Women's Studies)

WMST 101 Introduction to Women's Studies.....3
 Exploration of women's issues in both historical and contemporary contexts, including introduction to feminist theory. Notes: * Course meets SGR #3

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.

WMST 250 Development of Human Sexuality3
 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. Cross-Listed: HDFS 250.

WMST 260 Women's Health Issues3
 This interdisciplinary course critically examines issues in women's health. Biological, socio-cultural, psychological, historical, and political processes that shape and define women's health and healthcare issues are explored.

WMST 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. No prerequisites. Cross-Listed: POLS 305.

WMST 325 Domestic and Intimate Violence3
 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. Cross-Listed: SOC 325.

WMST 331 Women and Religion.....3
 The course examines what women have to say about religion and what religions have had to say about women, including 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 Cross-Listed: REL 331.

WMST 349 Women in American History.....3
 This course will investigate the role of women in the history of the United States. It will attempt to discover what impact women had on the course of events. Selected women and their careers will be highlighted. Cross-Listed: HIST 349.

WMST 350 Women in World History3
 This course will investigate the role of women in the history of the world beyond the US. It will attempt to discover what impact women had on the course of events. Selected women and their careers will be highlighted.

WMST 367 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. Prerequisites: PSYC 101 or 102. Cross-Listed: PSYC 367. Notes: ** Course meets IGR #3.

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. Cross-Listed: SOC 483.

WMST 392 Topics.....3

WMST 415 Communication and Gender.....3
 A study of gender theories as well as gendered communication practices within the contexts of interpersonal and organizational relationships and social and cultural forces.

WMST 419-519 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. Cross-Listed: MCOM 419.

WMST 420 International Women's Issues3
 A seminar on how the news media cover (or fail to cover) personal, social, political, and economic issues important to women across the world.

WMST 453 Socio-Psychological Aspects of Dress3
 Examination of clothing behavior from sociological, psychological and cultural perspectives. Prerequisites: SOC 100, PSYC 101. Cross-Listed: AM 453.

WMST 491 Independent Study.....1-4
 Prerequisites: WMST 101.

WMST 492-592 Topics.....3

ZOOL (Zoology)

ZOOL 302 Animal Behavior (COM)3
 Animal behavior from many aspects, including communication, social organization, orientation, imprinting, courtship and mating, agonistic behavior, control systems, and the evolution of behavioral patterns. Prerequisites: BIOL 101 or BIOL 151.

ZOOL 305-305L Insect Biology and Lab(COM).....3
 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 of 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/livestock health importance. Field trips and a collection are required.

Laboratory experience that accompanies ZOOL 305. Prerequisites: MATH 102 or higher, and one of following: BIOL 103-103L, BOT 201-201L, or BIOL 153-153L. Corequisites: PS 305L-PS 305 or ZOOL 305L-ZOOL 305. Cross-Listed: PS 305-305L.

ZOOL 355-355L Mammalogy and Lab(COM)3
 Identification of game, fur bearing, 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 area. Laboratory experience that accompanies ZOOL 355. Prerequisites: BIOL 101 or BIOL 151. Corequisites: ZOOL 355L-ZOOL 355.

ZOOL 365-365L Vertebrate Zoology and Lab (COM)4
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.
Laboratory experience that accompanies ZOOL 365. Prerequisites: BIOL 151. Corequisites: ZOOL 365L-ZOOL 365.

ZOOL 423-523 Advanced Mammalian Physiology.....4
An advanced study of the physiological mechanisms utilized by mammals to regulate body functions with the nervous and endocrine systems, to acquire and use chemical energy from their environment, and to integrate the functions of the organs' systems to maintain the health of the animal. Emphasis is placed on applying physiological concepts and principles to solve problems. Previous courses in anatomy, physiology, and biochemistry are recommended. Cross-Listed: VET423/523. Notes: Dual Listed: ZOOL 523

ZOOL 467-467L/567-567L Parasitology and Lab (COM)3
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.
Laboratory experience that accompanies ZOOL 467. Prerequisites: BIOL 101 or BIOL 151. Corequisites: ZOOL 467L-ZOOL 467/ZOOL 567L-ZOOL 567. Cross-Listed: BIOL 467-567.

ZOOL 483-483L Developmental Biology and Lab (COM)4
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.
Laboratory experience that accompanies BIOL 483. Prerequisites: BIOL 151. Corequisites: ZOOL 483L-ZOOL 483.

ZOOL 491 Independent Study(1-4)

ZOOL 492-592 Topics.....(1-5)

ZOOL 494 Internship.....(1-12)

ZOOL 496 Field Experience.....(1-12)

ZOOL 498 Undergraduate Research/Scholarship.....(1-4)

ZOOL 788 Research Problem.....(1-3)

ZOOL 791 Independent Study(1-4)

ZOOL 792 Topics(1-5)





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Agricultural Experiment Station (AES)

The Agricultural Experiment Station is one of three activities at SDSU that define the Land-Grant University. The mission of the South Dakota Agricultural Experiment Station (SDAES) is to conduct research to enhance the quality of life in South Dakota through the beneficial use and development of human, economic, and natural resources.

Serving as South Dakota's Land-Grant Institution, SDSU is home to the premier research programs in the state. Research programs in SDAES directly support the teaching programs offered in the College of Agriculture and Biological Sciences and the educational programs delivered by the SD Cooperative Extension Service (SDCES). The SDAES extends the reach of the University through multi-state programs shared with other Land-Grant institutions that bring objective answers home to all South Dakotans. With an enduring mission of practical research, SDAES serves agriculture, enhances our quality of life, and brings economic development to South Dakota.

Research priorities are based in several theme areas relevant to South Dakota agriculture, including: biostress, agricultural production, natural resources and conservation, biotechnology, biobased energy and industries.

SDAES 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 SDAES 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 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, scientific journals, 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 Interim Director, Tom Cheesbrough, Agricultural Experiment Station, SDSU, Box 2207, Brookings, SD 57007-0291, phone 605-688-4149 or e-mail: janean.caughtery@sdstate.edu.

Alumni Association

The purpose of the SDSU Alumni Association, a separate entity from the University, is 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 Alumni Association can be reached at 605-697-5198, e-mail: alumni@statealum.com or Box 515, Brookings, SD. www.statealum.com.

American Indian Education and Cultural Center

The American Indian Education and Cultural Center is a welcoming home for American Indian students and visitors; a hub of innovative cultural, academic, student support and outreach programming; and a repository for American Indian cultural resources. The Center, its people and programs, honor the heritage of the region's tribal people, serve as a catalyst for institutional change, and help fulfill the university's land grant mission. Staff at the Center include: Joseph Brewer, Assistant

Professor of American Indian Studies' Ron McKinney, Native American Student Advisor; Valerian ThreeIrons, Diversity Associate and MaryJo Benton Lee, Coordinator of the SDSU/Flandreau Indian School Success Academy. In addition to being home to the staff above, the Center includes a student lounge, computer laboratory and meeting/conference room.

Animal Disease Research and Diagnostic Laboratory (ADRDL)

The South Dakota Animal Disease Research and Diagnostic Laboratory (ADRDL) is a public service laboratory that is totally integrated with the Veterinary and Biomedical Sciences Department. Career service personnel, professional diagnosticians and faculty operate the lab. The faculty is 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 Laboratory 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 fully accredited by the American Association of Veterinary Laboratory Diagnosticians and is a member of the USDA National Animal Health Laboratory Network (NAHLN), as well as the Food Emergency Response Network (FERN). It is a select agent registered facility.

The Director, David H. Zeman, can be contacted at 605-688-5172 or by e-mail: david.zeman@sdstate.edu.

Career Planning Services

(www.sdstate.edu/gs/index.cfm)

It is not unusual for students to begin their university experience being undecided about their major, and the College of General Studies is designed to help students reach an informed decision. Students are assigned to academic advisors who guide the exploration of degree programs that will allow the integration of their unique characteristics into a satisfying career. Students take general classes required for all students, so they do not lose time toward graduation while researching their options. GS 100, University Experience, is a class offered to ease the transition to university life and familiarize students with campus resources.

Academic Success Support Services

Developing effective study skills is key to academic success at the university level. GS 143, Mastering Lifetime Learning Skills, is a two credit course offered to help students become more skillful learners. In addition, students may seek individual assistance with cultivating productive study skills, overcoming test anxiety and preparing for the CAAP proficiency exam.

The Wintrade Student Success

(www.sdstate.edu/gs/students/tutoring/index.cfm)

The Wintrade Program provides free tutoring to SDSU students in select courses. Students can access tutoring by scheduling an appointment or utilizing walk-in sessions. Students who access tutoring will receive assistance with understanding course content and developing study strategies that will help them be more successful in their courses.

Career Planning Services

(www.sdstate.edu/gs/career/index.cfm)

The process of assessing interests and abilities, connecting them to careers and developing relevant academic plans can be exciting and frightening at the same time. Career consultants are available to provide individual assistance and interpret a variety of career inventories. Information on careers and SDSU majors is available through the website. GS 101, Academic and Career Exploration, is a one-credit course which begins by building self-awareness, adds knowledge of the world of work, and focuses on future career and academic planning requirements. All new GS students are advised to take this class.

Employment Services

(www.myinterfase.com/capcenter/student/)

Uncovering the best employment opportunities takes time and the effort begins with the foundation of experience developed as early as the freshman year. Whether a student is searching for part-time or summer jobs, internships, or full-time employment, the Career Planning Center offers assistance in learning effective job searching techniques. Services include individual coaching on resume writing, developing job search strategies, and improving interviewing skills, as well as special events such as practice interviews with area employers. In addition, the Career Planning Center works with SDSU colleges to facilitate job fairs and on-campus interviews for the numerous employers that recruit SDSU students. Students may register with the free online career management system to search job listings, post resumes, sign up for on-campus interviews, research employers, and receive email notices regarding job listings. SDSU hosts an on-campus branch of the South Dakota Department of Labor for the convenience of students searching for part-time and summer jobs in Brookings and the around the state. GS 489, Transition to Careers, is a one credit course offered for students preparing to make a successful passage from college to career.

Cooperative Extension Service (CES)

The South Dakota Cooperative Extension Service (CES) provides an 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 families and communities can be traced to this unique type of nonformal, out-of-classroom learning opportunity provided to them for more than ninety years by SDSU in cooperation with the U.S. Department of Agriculture and county governments.

Approximately 50 percent of the funds supporting Cooperative Extension educational programs is appropriated to SDSU by the South Dakota Legislature with 41 percent from federal appropriations. Additionally, approximately \$3 million is provided by South Dakota 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 have identified the following core values:

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, community, 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 Barry Dunn, dean of College of Agriculture and Biological Sciences and interim director of South Dakota Cooperative Extension Service, SDSU, Box 2207D, Brookings, SD 57007, or phone 605-688-4792 or e-mail: barry.dunn@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 Jeanne Clery Disclosure of Campus Security Policy and Campus Crimes Statistics Act. The report which describes policies, enforcement, statistics, and prevention information programs is distributed to all staff and students by accessing the Web at

www.sdstate.edu/campus/services/safety/crime/index.cfm; click on "Student Life" and then "Safety and Security." The crime report is also available upon request from the office of the Vice President for Student Affairs.

Diversity Enhancement, Office of

The purpose of the Office of Diversity Enhancement is to promote diversity in all its aspects by advising the university community, developing and implementing diversity enhancement programming, facilitating minority student recruiting and minority faculty and staff recruiting, and working to eliminate discrimination at SDSU. Diversity is defined as a stimulating environment generated by a variety of perspectives, opinions, values, knowledge, ideas, and personal histories represented on campus by people and programs. This variety is expressed through, but is not limited to, differences in ethnicity, race, gender, national origin, religion, sexual orientation, ability, class, and age.

South Dakota State University 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 suggestions and recommendations for diversity programming and questions or concerns relating to diversity issues on campus. The Office of Diversity Enhancement can be reached at 605-688-6361.

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 interdisciplinary and, therefore, 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 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, South Dakota, 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 the 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.

Economics

The Milton Nies Chair in Enterprise Economics was established by the late Milton Nies, who spent most of his professional life as a businessman in Bismarck, North Dakota. Mr. Nies was a native of Eureka, South Dakota, and graduated from South Dakota State University with a degree in economics in 1950. He had a strong interest in business planning and in assisting new business startups. He initially worked for United Accounts, a business he later owned. He was collaborating with the SDSU Foundation on the particulars of the Nies Chair prior to his death in 2003.

The purpose of the Nies Chair is to provide leadership in market research and analysis, business assistance, new enterprise development, and entrepreneurship. Regionally based products and industries will be emphasized through teaching, research, and outreach activities. This person will establish a close working relationship with the South Dakota Enterprise Institute at SDSU.

The Nies Chair is a faculty position that will be held by a nationally recognized leader in enterprise economics education and research who possesses skills in economics, business management and development, and entrepreneurship.

Environmental Health & Safety Office

The primary function of the Environmental Health and Safety Office is to assist campus personnel in making SDSU a safe learning and working environment for faculty, staff, and students.

The EHS office is responsible for enforcing federal, state, and local safety and environmental rules and regulations, including radiation, chemical, and biological safety; management of hazardous materials and conditions; management of indoor air quality in cooperation with Facilities and Services; recycling of electronics, batteries, and heavy metal containing light bulbs; disposal of hazardous wastes and other functions relating to research, teaching, and administrative duties.

EHS provides training in the various areas listed above, not only to be in compliance with regulations, but to be sure that all SDSU students, staff, and visitors have an enjoyable and safe experience at SDSU.

Facilities and Services

The Facilities and Services Department is a service department established for the purpose of providing the necessary support to the teaching, research, and service missions of South Dakota State University.

Facilities and Services works to ensure that the buildings and grounds are operated and maintained in an appropriate and safe manner. Facilities and Services must approve modifications in facilities and grounds, facilitating code interpretation.

Facilities and Services perform most building maintenance functions with in-house talents. South Dakota State University Electricians, Painters, Welders, Carpenters, Plumbers, and HVAC Technicians provide service every day to the campus. The Engineering Section provides project management, master planning support, and maintenance support.

For staff and students with questions concerning any of these functions, contact EHS at:

Environmental Health & Safety

Shepard Hall 059; Box 2202, Brookings, SD 57007

Phone: 605-688-4264

E-mail: EHS@sdstate.edu

The Customer Service Center processes all incoming and outgoing mail for SDSU departments.

Faculty and Staff are encouraged to note problems or deficiencies in the areas of campus that you use. Please contact Facilities and Services with questions, comments or concerns.

Phone: 605-688-4136

E-mail: “SDSU Facilities and Services Front Desk” from
global address list

Office: Administration Bldg 304

Visit at: <http://facilitiesandservices.sdstate.edu/>

Find: online service guide, customer forms, facilities information, maps, and contact information for Facilities and Services personnel.



Tuition and Fees listed below are approved for the 2011-2012 academic year – 2011 Summer, 2011 Fall and 2012 Spring terms. Minnesota Reciprocity tuition rates are effective for 2011 Fall, 2012 Spring & 2012 Summer terms. Rate schedules are subject to change without notice. For current information see the Web site: www.sdstate.edu/admissions/financing/undergrad/cost/index.cfm

Application Fee

Nonrefundable charge assessed to all degree-seeking applicants for initial admission unless you have previously attended South Dakota State University or another South Dakota public university. Students re-admitted after a lapse of three consecutive terms are assessed the non-refundable charge.

Activity Fee

A fee of \$24.95 per credit is charged to support student health, student union, and student activity programs such as admission to plays, athletic events, athletic facilities, and partially funded judging, music, and forensic programs. Fee is mandatory and is assessed on courses taught on-campus.

University Support Fee

A fee of \$90.30 per credit is charged assessed per credit to replace expendable supplies; defray cost of maintenance, repair, and replacement of equipment; provide testing and other instruction-related costs while providing additional services that benefit students, which are not funded from other sources. Fee is mandatory and is assessed on courses taught on-campus.

Late Charges Assessed beginning Fourth Day of Classes

If you do not pay tuition and fees at the regular established due dates, you will be assessed a late charge. A late charge may be assessed each time you fail to satisfy your financial obligations within established due dates. Failure to pay in a timely manner could result in you being 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.

Liability Insurance Charge

Students enrolled in selected courses that involve internship, cooperative education, practicum, field and other experiences where students have contact with third parties are assessed a charge for liability insurance. Nursing, Medical Laboratory Science, Pharmacy, Education and students in other programs may be assessed this charge.

Animal Science Fee

A fee of \$42.00 per credit is charged for courses in animal, range and veterinary sciences.

Architecture Fee and Special Expenses

A fee of \$272.90 per credit is charged for architecture courses. A fee of \$2020.00 is charged per semester for students enrolled in the studio experience portion of the undergraduate and graduate Architecture programs.

Aviation Flight Training Fees

Aviation students are assessed fees for flight training. This per hour fee is used to defray the costs of aircraft operations, maintenance, simulators, and individual instruction. Fee costs vary depending on type of aircraft and hourly operating costs.

Dairy Science Fee

A fee of \$75.00 per credit is charged for courses in dairy science.

Economics Fee

A fee of \$26.60 per credit is charged for undergraduate courses and a \$48.20 per credit is charged for graduate courses related to Economics, Business and Entrepreneurship.

Special Expenses for Education Students

Education students enrolled in selected Education courses are assessed a fee of \$155.90 per semester for Sophomore/Junior Field Experience, \$312.00 per semester for Senior Student Teaching, and \$155.90 one-time per semester for Master's Level Internships.

Special Expenses for Engineering Courses

A fee of \$62.40 per credit hour is charged for courses in the College of Engineering and designated courses in mathematics, computer science and physics. A fee of \$20.40 per credit hour is charged for courses in statistics, and remaining courses in mathematics, physics and computer science.

Equine Fee

\$174.05 per designated course is charge to all equine experience classes. These funds are used for the care and maintenance of equine animals and equestrian equipment.

Health and Nutrition Fee

A fee of \$17.50 per credit hour is charged for courses in Athletic Training, Health, Recreation, Physical Education, Nutrition Food Science, Hospitality Management and HPER courses.

Lab Fee for Engineering, Natural Sciences and Laboratory Experiences.

\$53.75 per designated course is charged to all lab classes in engineering, mathematics, computer science, natural sciences and selected laboratory experience courses. These funds are used for supplies and materials and to purchase equipment.

Special Expenses for Medical Laboratory Science Students

A fee of \$1,413.95 is charged per semester for students enrolled in the campus delivery of the professional portion of the Medical Laboratory Science program. Students enrolled in the MLS Upward Mobility program are assessed a fee of \$850.00 per semester.

Nursing Fee and Special Expenses

Uniforms must be purchased by second year nursing students. Transportation must be provided by the student in Community Health Nursing and selected independent experiences. Students enrolled in undergraduate NURS, NACC and HSC courses are assessed a fee of \$89.00 per credit and graduate NURS and HSC courses are assessed a fee of \$199.00 per credit.

Pharmacy Fee

A fee of \$177.50 per credit is charged for courses in Pharmacy. Students in the PharmD program are assessed a \$55.00 annual charge for electronic pharmacology reference guide.

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, room and board, financial aid, but not obligations due to student organizations.

Tuition, Living, and Other Expenses

Using Academic Year September 2011-May 2012

For current information see the Web site: www.sdstate.edu/admissions/financing/undergrad/cost/index.cfm

All charges and procedures listed are subject to change pending

Board of Regents action.

TUITION AND FEES

	Resident*	Nonresident
Tuition		
undergraduate on-campus per semester credit	\$114.30	\$171.45
graduate on-campus per semester credit	173.25	366.70
University Support Fee - per credit	90.30	90.30
Activity Fee - per credit	24.95	24.95

See accompanying text for the descriptions of fees for Architecture, Business/Economics, Animal & Dairy Sciences, Engineering, Health & Nutrition, Nursing, Pharmacy, Medical Laboratory Science, and other courses; Education students; and lab and equine experience courses.

CAMPUS ROOM AND BOARD COSTS

Meal Plan, per semester

Students have a choice of 7 Meal Plans ranging from \$1,194.50 to \$1,700.30 per semester. For more detailed information, contact the Food Service Office or Card Services Office.

	Double	Single
Wecota Annex	-	\$1,714.00
Brown, Hansen, Waneta	\$1,352.00	\$1,944.85
Binnewies, Pierson, Young	\$1,489.00	\$1,986.75
Matthews	\$1,592.00	\$2,124.30
Jackrabbit Village Designed Single	-	\$2,260.65
Caldwell/Jackrabbit Village	\$2,100.00	\$2,624.90
Berg/Bailey Apartments	-	\$2,100.00

TYPICAL EDUCATION EXPENSES FOR FULL TIME UNDERGRADUATE FOR ONE SEMESTER

	Resident	Nonresident
Tuition - 16 credits	\$1,828.80	\$2,743.20
University Support & Activity Fees -	1,844.00	1,844.00
Books and supplies (estimate)	650.00	650.00
Meal Plan (midpoint of range)	1,362.55	1,362.55
Residence hall rent	1,489.00	1,489.00
	\$7,174.35**	\$8,088.75**

** Expenses will be higher if a student takes coursework requiring course, program or lab fees. See accompanying text on FEES.

ELECTRONIC BILLING & ELECTRONIC PAYMENT OF TUITION & FEES

All tuition, fees, housing, food service and miscellaneous charges to student accounts will be on an electronic billing (eBilling) system and can be viewed on SDePay, a secured website via the Internet. Payment of the student account can also be made electronically (ePayment) through SDePay. Students can authorize parents, spouse and other individuals to view the eBill and make ePayment on their student account.

E-MAIL POLICY

E-mail messages sent by SDSU to students through University-assigned, Jacks e-mail addresses will constitute an official means of communication. It is the student's responsibility and obligation to access official University e-mail messages in a timely manner. As other e-mail accounts may be blocked by the SDSU firewall, SDSU is only able to monitor student e-mails coming from University-assigned e-mail accounts.

Refunds

A petition process does exist for students or parents who feel that individual circumstances warrant exception from the published refund policy. Contact the Registrar, SAD 100, 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 percent point of the period.

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, Academic Competitiveness Grants, SMART 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 percent of the period (academic term) a student "earns" Title IV funds and other applicable aid on a per

PAYMENT PROCESS

By the third day of classes, each student makes a full payment of charges based on the number of credits early registered for, residency status, and campus housing. Late fees will be assessed starting on the fourth day of classes. We encourage students to mail payment before registration day. Payment of tuition and fees can be made directly to the University by cash, check or electronic bank transfer. Payment of tuition & fees using a debit or credit card can only be made through SDePay, electronic billing & payment system. American Express, MasterCard and Discover cards are accepted by SDePay. Visa Card is not accepted. A 2.75 percent service fee is assessed by and payable to NelNet, host provider of SDePay.

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 HOB0 DOUGH, 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.

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 five days are excluded from the calculation. A student who remains enrolled beyond the 60 percent point earns all aid (100 percent) 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.

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, Academic Competitiveness Grant, SMART 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.

Financial Assistance

General Information

Approximately 89 percent 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 (FAFSA), 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 a federal calculation from the FAFSA.

The SDSU award policy gives priority for Federal Supplemental Grant, and Work Study to students completing the FAFSA before March 10. However, the largest financial aid programs, the Federal Pell Grant and the Federal Stafford (Direct) Loan, do not have priority processing dates. Students must reapply for federal financial aid every academic year. Please refer to the SDSU web page for eligibility, aid programs, consumer information, policies, and other financial aid related information: www.sdstate.edu (Keyword: financial aid).

Federal Financial Aid Programs

I. General eligibility requirements

1. Enrolled as a regular student in a SDSU degree program.
 2. Enrolled as a full-time student to receive full award. Eligible students not enrolled full-time may be eligible for some aid programs based on a completed FAFSA.
 3. United States citizen or eligible non-citizen.
 4. Cannot be in default on a federal student loan or owe a refund to a federal student grant program.
 5. Selective Service laws require male students born after December 31, 1959, to be registered with Selective Service.
 6. Maintain Satisfactory Progress as described in detail in the SDSU Satisfactory Progress Standards (on SDSU financial aid web page). Satisfactory Progress is the measurement of a student's academic performance (credits completed, cumulative grade point average, and maximum credits attempted) toward the completion of the student's degree program. Students not meeting Satisfactory Progress Standards will have their federal financial aid eligibility suspended and can appeal, as applicable.
2. SDSU participates in all of the federal financial aid programs. Specific information, including other aid programs not listed below, is available at www.sdstate.edu. A SDSU Financial Aid award letter identifies the specific awards and other information is enclosed for the financial aid recipient.
 1. Grants are gift aid based on financial need.
 1. Federal Pell Grant awards are determined by a federal formula for the student's first bachelor degree.
 2. Federal Supplemental Educational Opportunity Grant awards are based on Pell Grant eligibility and available funds.
 3. TEACH Grant for teacher education in "high need" fields and who agree to teach at a Title I school as defined by the U.S. Department of Education.
 2. 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 at www.studentloans.gov.
 1. The Federal Direct Loan Program is the largest financial need-based loan program for eligible students. The Direct Loan requires a completed Master Promissory Note. 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 Unsubsidized Federal Direct Loan can be used by students who are not eligible for need-based loans as determined by the FAFSA. The interest is paid by the student or capitalized if not paid.

2. The Federal PLUS (Parent Loan for Undergraduate Students): The SDSU PLUS Request Form is completed by a parent to start the process. A monthly payment may start beginning 60 days after the PLUS is disbursed. Interest rate is 7.9 percent and has loan fees (see MPN).
 3. 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.
 4. 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.
 5. 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.
3. Work opportunities may provide part-time employment for students.
 1. The Federal Work Study financial aid awards are based on financial need, available funds, 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 Career and Academic Planning Services and South Dakota Job Service.
 4. State of South Dakota no-need aid program information available at www.sdstate.edu (Keyword: Scholarships).
 1. South Dakota Opportunity Scholarship is for students who are South Dakota residents at the time of high school graduation who have a minimum ACT composite of 24 and met the Regents Scholar requirements.
 2. Dakota Corps Scholarship for new high school graduates from South Dakota who will major in a degree that will prepare the student to work in a critical need occupation.

III. Scholarships

The SDSU scholarship programs have increased yearly with additional scholarships for new, continuing, and transfer students. SDSU awards over 4,700 scholarships to undergraduate students. There are approximately 1,400 new-freshman student scholarships. A single scholarship application available from SDSU or from your high school needs to be completed and returned to the SDSU Scholarship Office before January 25 for priority consideration for the new student academic scholarships.

- A. Selected new freshman scholarships.
 1. Renewable scholarships, upon meeting academic standards, include: Briggs; Lohr; May; Nichols; and many named Foundation scholarships.
 2. Jackrabbit Guarantee (JG) eligibility for new, first-time freshman students who score a 24 or higher ACT composite score. Scholarship is renewable when academic requirements as defined by the JG program are attained. The \$1,000 minimum in scholarship assistance can be met by any academic SDSU scholarship award.

3. 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 an annual 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.

2. Financial assistance may also be available through various agencies including Vocational Rehabilitation and other special services agencies.
3. SDSU is fully accredited for Veterans Assistance benefits for qualified students.
4. Please contact the SDSU Financial Aid Office, Box 2201, SAD 100, 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: www.sdstate.edu.

Foundation, SDSU

The SDSU Foundation is a private, non-profit corporation which seeks, accepts, and administers private gifts for the support of programs at South Dakota State University.

The SDSU Foundation manages total net assets valued at more than \$100 million, including an endowment of more than \$60 million. The work of the SDSU Foundation provides support that translates to more than \$200,000 each week to assist the 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. Steve Erpenbach is the Foundation's president and CEO.

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: steve.erpenbach@sdsufoundation.org; or check out the web site at: www.sdsufoundation.org.

Geographic Information Sciences Center of Excellence

Matthew C. Hansen
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The study of the land surface and its modification over time is a major component of global change research. Land cover change impacts climate, biogeochemical cycles, ecosystem function, and the state of human welfare. To study large area land cover dynamics, satellite-based earth observations are required. The Geographic Information Science Center of Excellence (GIScCE) is a new collaboration between SDSU and the US Geological Survey EROS Data Center (EDC) with a focus on the science of earth observation and monitoring. EDC is the world's largest repository of remotely sensed data sets and a renowned center of applied earth science studies. The GIScCE is a research partnership of SDSU faculty and EDC scientists which employs the capabilities of geographic information science (GISc), namely remote sensing, geographic information systems, digital mapping, and geostatistics, to document and understand the changing earth. To achieve this, an interdisciplinary center of study is required, one which utilizes engineering principles to efficiently and accurately process earth observation data, geographic principles to create meaningful thematic

depictions of land cover and land use change, and applications which focus on the resultant effects of change on the geosphere, biosphere and hydrosphere. Through the combined resources of many disciplines, the GIScCE seeks to investigate important questions regarding the dynamic earth system.

Students play an integral role in the research performed by the center. A student can earn graduation recognition as a Center Scholar by completing a combination of courses, programs, and professional experiences. Center Scholars must have completed all Regental and University core classes with an undergraduate GPA of 3.0 in major and GISc coursework at time of graduation. Undergraduates must also have a cumulative GPA of 2.75 for all coursework at time of graduation. Graduate students must have a cumulative GPA of 3.2 for GISc and all other coursework at the time of graduation. All Center Scholars will participate in a Center Internship, which will include the development of a scholarly study. Results from this study must then be presented to an appropriate professional meeting or accepted by a peer-reviewed science journal. A final student portfolio will be assembled and submitted for approval to the GIScCE portfolio review committee. Graduates of the program will be qualified to work as GISc professional scientists in government, education, business and industry throughout the state, nation and world. The Center is also a major player in the Ph.D. in Geospatial Science and Engineering.

Information Technology, Office of

The Office of Information Technology provides the technology, skills, and services that contribute to and support the land-grant mission of South Dakota State University and is committed to creating an environment in which faculty and students develop opportunities which will make them successful in their scholarship, research, and creative activities. In addition, OIT actively promotes the incorporation of technology as a means of effectively and efficiently conducting University business.

Under the direction of Dr. Mike Adelaine, the Vice President for Information Technology, programs, services, and support are provided to the university community.

Administrative and Research Computing (ARC)

ARC provides computational resources for large-scale research on campus. Analysis and computer programming for management administrative and student information support are also ARC priorities. For more information, call 688-4988.

Classroom Technology Services (CTS)

This unit is responsible for all technology-enhanced and DDN classrooms located on the University campus. This includes the initial installation of equipment, its maintenance, and upgrades. For more information, call 688-6312.

Information Security

This unit ensures University data security and establishes procedures to protect information, users, and the University. Questions or concerns should be reported to the Support Desk (688-6776) immediately. For more information, call 688-4988.

Information Technology Services (ITS)

ITS serves as contact for students, faculty, and staff needing tech support through its operation of the Support Desk. Equipment loan, repair, and the maintenance of general use computer labs are also the responsibility of ITS. For more information, call 688-6776.

Instructional Design Services (IDS)

This unit offers faculty services in instructional design, distributed learning, and the use of integrated media in the classrooms. They also provide faculty with training in a wide variety of software programs and applications, as well as instruction in the use of equipment. For more information, call 688-6312.

Office of Web Development & Management

This division fosters excellence throughout the university's web communication systems by ensuring their continual development, as well as providing leadership and direction for its web-related activities. The Office promotes, supports, and sustains the online distribution of the institution's academic, research, and Extension information and the conveyance of its messages to their respective audiences. For more information, call 688-6134.

University Networking Systems and Services (UNSS)

UNSS provides the infrastructure upon which technology systems are built and assures internet access to the campus community. In addition, they maintain the server farm, on which the majority of institutional software and applications are run. For more information, call 688-4988.

Intercollegiate Athletics

South Dakota State University is a Division I, National Collegiate Athletic Association member and offers competition in eleven sports for women and ten sports for men. The National Collegiate Athletic Association (NCAA) governs competition for both women and men. Women compete in cross country, equestrian, 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.

Every undertaking within South Dakota State University's Athletic Department is driven by a relentless commitment to excellence. We are committed to providing each and every student-athlete with a comprehensive collegiate experience. Academic achievement is important because it is the fundamental purpose of the student-athlete

experience. Social responsibility is also a vital component. We expect to contribute to the well-being of our campus, community and state. Positive student-athlete experiences and competitive success also define our program because they are integral to the student-athlete's growth. Our vision is to be a premier student-centered collegiate athletic program. We are working tirelessly to create a special place where student-athletes can develop life skills that lead not only to athletic success, but pave the way for victories long into their lives. The important work of creating that setting is the heart of our mission: to passionately and relentlessly create an environment, rooted in sportsmanship and ethical conduct, where motivated student-athletes can develop into lifelong champions. We are guided by a stringent set of values that will not be compromised: honesty, equity, academic integrity, fiscal integrity and social responsibility with the expectation of competing at the highest level.

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.

International Affairs

The Office of International Affairs (OIA) serves as the administrative unit at SDSU where programs and activities designed to assist the entire University and its constituents in gaining an international perspective are initiated, coordinated, and managed. These activities include semester or year-long student and faculty international exchanges, short-term study abroad programs for students, international seminars for faculty, as well as on-campus programs designed to help internationalize the university.

The Office of International Programs (now Affairs) was established in 1988 and initiated its first international agreements for exchanges with Yunnan Normal University, in Kunming, China; with Chungnam National University, in Daejeon, South Korea; and with Manchester Metropolitan University, Manchester, England, among others.

Today, through the efforts of the OIA, SDSU has agreements with two dozen international universities, on six continents, and holds memberships in several prominent national and international organizations, including the Association for International Education Administrators (AIEA), the American Council on Education's Internationalization Collaborative, the International Student Exchange Program (ISEP), the Council on International Educational Exchange (CIEE), Cooperative Center for Study Abroad (CCSA), and the College Consortium for International Studies (CCIS).

For more information about the Office of International Affairs, please contact the Director at 605-688-4706, or SAD 315, Box 2201, SDSU, Brookings, SD 57007-2098.

Intramurals and Recreational Sports and Sports Clubs

The purpose of the Intramural Program is to provide the opportunity for all activity-fee-paying 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 life-long positive attitude toward physical activity. Activities are organized on an individual, team, and club basis. Leagues are established for women, men, and mixed competition activities. Teams can be formed from residence hall, independent, and organizational groups.

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.

For further information, contact the Intramural Office at 605-688-4724 or Web site: <http://www3.sdstate.edu/Athletics/Intramurals>.

Library, Hilton M. Briggs

Library services and collections are housed in the spacious Briggs Library, which is named for President Hilton M. Briggs, who served the University from 1958 to 1975. Library collections consist of more than 659,000 bound volumes, 573,000 government documents and 42,000 online journals and other electronic resources.

A wide variety of other resources and equipment is available in the library including wireless networking, laptop loans and more than 50 public computer workstations providing access to the Internet, to library databases, and to software such as MS Word, Excel, PowerPoint and statistical packages. In addition, Briggs Library contains group study/conference rooms for student use, individual study rooms for faculty and graduate students, two computer labs, several informal lounge areas, and photocopiers on each floor. Special collections of congressional papers, archival, state and local history, and curriculum materials are available for students, faculty, and researchers. Briggs Library is also the home of the Honors College and the Teaching Learning Center.

The faculty and staff of Briggs Library are proud of the services they offer to the SDSU community, as well as to distance students and faculty at Sioux Falls, Rapid City, and other locations throughout South Dakota and the U.S. They respond to tens-of-thousands of information requests annually through personal contacts and via telephone, e-mail, and instant messaging. Each year they teach more than 300 classes on information literacy and use of library resources.

Hilton M. Briggs Library is a founding member of the South Dakota Library Network, which provides electronic access to the holdings of 70 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 over 5 million items that are available through interlibrary loan to students at any member institution. In addition, each year the library's interlibrary loan staff acquires over 4,000 copies (mostly electronic) of journal articles and over 1,000 books from other libraries worldwide to supplement the resources the library normally provides for SDSU students and faculty.

Logos, Seals, Caricatures, Wordmarks

Official University Symbols

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.

NOTE: All SDSU logos, seals, caricatures, or wordmarks are licensed and cannot be used without permission.

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

These names (or wordmarks) are registered:

- South Dakota State University ®
- SDSU®
- SDSU Jackrabbits®
- Hobo Day™
- SDSU Jacks®
- Go Big. Go Blue. Go Jacks®
- SD State®
- Dirty Lil™
- Weary Willie™
- Jackrabbits™
- Jacks™
- Cereal Bowl™
- Oak Lake Field Station™
- Midwest Market Analysis™
- Garden Line™
- Go Jacks®
- On Call®
- Today's Ag®
- Beef Bowl®
- You can go anywhere from here!®
- Jackrabbit Guarantee®
- Pride of the Dakotas®
- Be Great. Start Here.

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**



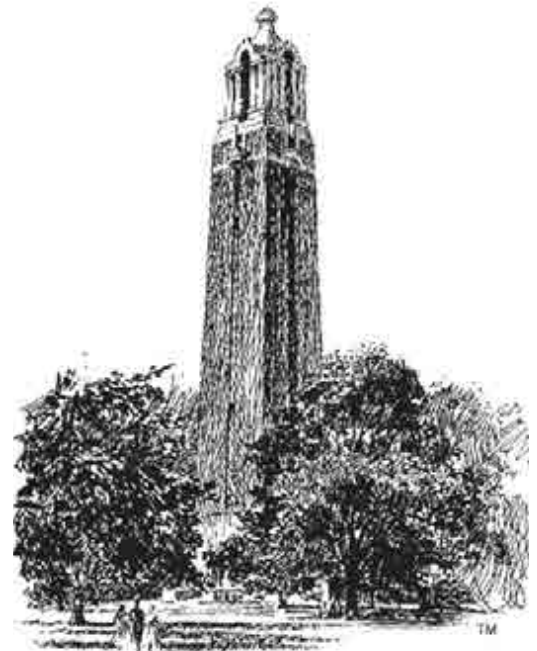
Official SDSU Logo
(as of May 1994)



Official SDSU Seal



Official Oak Lake Field
Station Logo



The Coughlin Campanile occupies a central focus on campus.

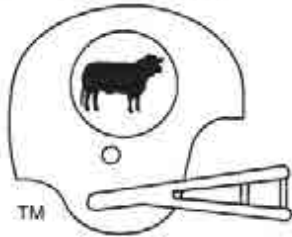


The Athletic Department's official sports logo

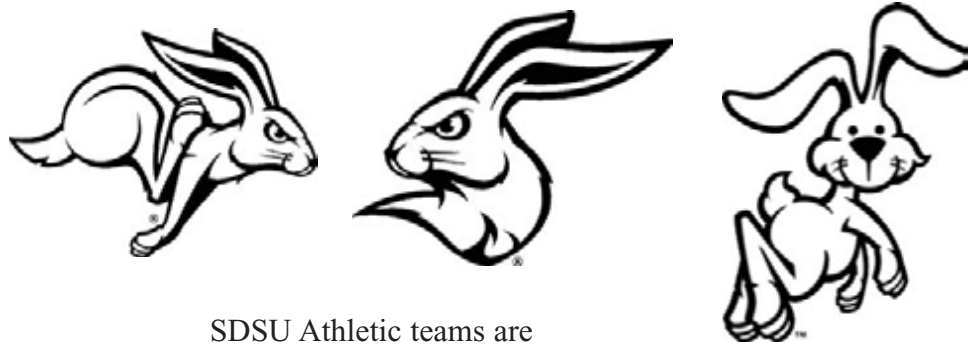


"Dirty Lil" and "Weary Willie" represent the spirit of Hobo Days (SDSU's Homecoming).

BEEF BOWL



Official Beef Bowl Logo



SDSU Athletic teams are nicknamed the "Jackrabbits."



Official Cereal Bowl Logo



Official Midwest Market Analysis Logo (Television Production)



Official Garden Line Logo (Television Production)



Official Today's Ag Logo (Television Production)

McCrary Gardens

McCrary Gardens is recognized as one of the top small ornamental display and botanical gardens in the United States. It is operated by the Department of Horticulture, Forestry, Landscape and Parks, with operations primarily supported through private gifts of visitors, Friends of McCrary Gardens, professional associations, and corporate donations. The gardens are used extensively for teaching, public education, and ornamental plant research. A new Education and Visitor's Center, set to open the fall of 2011, will be the new focal point for the gardens, offering information to visitors and a venue for educational programming and other functions. Each year student

gardeners are hired to help plant and maintain the gardens. It is composed of approximately 25-acres of public display area and a 45-acre arboretum.

The Gardens are open daily from dawn until dusk; no entry fee is charged but donations from visitors are encouraged. Trees, shrubs, ground covers, annuals, and perennials are featured throughout the gardens. The straw bale house is another popular attraction, which features a living roof. For more information, call 605-688-5136 or e-mail: david.graper@sdstate.edu.

Museums/Collections

The **South Dakota Art Museum's** collection of more than 6,000 objects consists of paintings, photographs, textiles, sculptures, and Native American art and artifacts. The museum has a dynamic exhibition schedule featuring our permanent collection of paintings by Harvey Dunn, children's book author/illustrator Paul Goble, the Marghab Linen Collection, Native American art, in addition to rotating exhibits from outside sources.

The museum is located on Medary Avenue at Harvey Dunn Street. The museum is open free to the public Monday through Friday from 10:00 a.m. to 5:00 p.m., Saturdays from 10:00 to 4:00 and Sunday's from noon to 4 p.m. The museum is closed on state holidays. Visit the museum store to find unique handmade gifts, books, and music by regional artists, and an outstanding collection of books on Native American history and culture.

For more information or to schedule a group tour, call 866-805-7590 or 605-688-5423, e-mail sdsu.sdam@sdstate.edu or visit our Web site at www.southdakotaartmuseum.com.

The University's **Agricultural Heritage Museum** collection of 100,000 objects interprets South Dakota's 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 Eleventh Street in the old Stock Judging Pavilion. The museum is open free to the public Monday through Saturday from 10:00 a.m. to 5:00 p.m. and Sundays from 1:00 to 5:00 p.m. The museum is closed on state holidays.

The museum gift shop is an excellent source of South Dakota history books, unique gifts, and the official SDSU Christmas ornaments. For further information or to schedule a group tour, call 605-688-6226, e-mail SDSU.agmuseum@sdstate.edu or visit our Web site at <http://www.agmuseum.com>.

Olson Agricultural Analytical Services Laboratory (OAASL)

The Olson Agricultural Analytical Services Laboratory (OAASL) provides chemistry analytical services to South Dakota and the region including producers, SDSU scientists, the SD Department of Agriculture, the SD Animal Industry Board, the SD Department of Transportation, and the SD Animal Disease Research and Diagnostic Laboratory. The OAASL is a unit of the SD Agricultural Experiment Station and is managed by the Department of Veterinary and Biomedical Sciences. OAASL consists of two sections. The General Analysis

Section primarily analyzes feed, forage, fertilizer, manure, compost, soil, animal tissue, meat, water, and wastewater. The Pesticide Section is responsible for the analysis of pesticide formulations and pesticide residue found in water, foliage, and soil. The laboratory is physically located in the Animal Science Complex, on North Campus Drive of the Brookings campus and receives submissions from clients from 8 am to 5 pm daily whenever the University is open for business.

Print Lab

The Print Lab is an on-campus-printing department located in Yeager Hall, SYE 102. There is a charge for all Print Lab work, and the Print Lab only prints university-related materials.

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 or Ag Communications 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 offices of University Relations and Ag

Communications are charged with the responsibility of overseeing the consistent quality of publications, for both internal and external audiences.

Other than reprint orders and business cards, work done at the Print Lab must first be routed through University Relations (605-688-6161) or Ag Communications (605-688-4650).

Print Lab also has three manned copy centers on campus:

Ag Hall Copy Center (SAG 125), 605-688-4921

Biostress Copy Center (SNP 105), 605-688-4417

Print Lab Copy Center (SYE 102), 605-688-5111

For more information about the Print Lab’s services, call 605-688-5111, or e-mail brenda.quam@sdstate.edu.

Residential Life — Housing and Food Service

The Department of Residential Life administers programs and facilities for all on-campus housing. Complete information and policies are printed in the Department of Residential Life Handbook and Planner and Family Student Housing Information booklet. The Residential Life Office is located on the first floor of Caldwell Hall. The phone number is 605-688-5148.

Residence Halls – Residence Halls at SDSU are living units where students study, meet other students and are challenged to develop as individuals. Generally students who are not two or more years beyond graduation from high school are required by the Board of Regents to enter into residence hall and food service contracts with the University. Details on the Board of Regents’ requirements can be reviewed by contacting the Department of Residential Life and/or are listed on the department’s web pages. Requests for release from the residence hall obligation must be in writing using the form available on the department’s web page and postmarked on or before June 30 for fall semester and December 1 for new Spring Semester to avoid a monetary penalty. Currently, residence hall double rooms rent is from \$2,350 to \$3,260 depending on the assigned hall per academic year. Students not required to live in on-campus facilities but wish to, should contact the office for availability or may contact the Off-Campus Housing Assistance Office; the phone number is 605-688-5916.

Residence Hall Confirmation Fee – The Residence Hall Application Information is available to students after they are admitted to the University. The housing application is on-line available at <http://studentaffairs.sdstate.edu/ResidentialLife/> under forms. If individuals do not have access to a computer they may contact the housing office to have hard copy materials sent to them. A \$50 Confirmation fee must accompany all applications for residence hall space. The fifty dollars will be credited toward the student’s Hobo Dough account. Any person whose written request is granted for release from the residency requirement that is postmarked on or before June 30 for fall semester or December 1 for new spring semester will have the \$50 dollars refunded. Any person who is canceled at their request after these dates will forfeit the Confirmation Fee.

Married Student Housing – Seventy-eight unfurnished, one-bedroom apartments and eight unfurnished, two-bedroom apartments are available for rent on campus. Currently, rent for the one-bedroom apartments ranges from \$255-\$340 per month. Rent for the two bedroom apartments is \$402 per month. Each apartment includes a refrigerator, stove, and all utilities. To be eligible to apply for Married Student Housing you must have been accepted to SDSU, a spouse and/or at least one dependent will reside in the apartment with you and enrollment in a set number of credit hours are required. Contact Residential Life Office personnel for more information.

University Apartments – Four-bedroom apartments for single students are available in the Berg/Bailey apartment complex. Monthly rent, including utilities, dishwasher, stove, refrigerator, and air conditioning, was \$1,480 per person in 2007-2008 and an increase is expected this coming year. Nine-month contracts are available and a \$50 confirmation fee is required when assignment is made. 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 Jack’s Place at the Student Union and Medary Commons, along with convenience stores and Java City specialty beverages. 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. The phone number is 605-697-2550.

Service Learning

South Dakota State University provides Service-Learning opportunities for students through the SDSU Teaching Learning Center. Service-learning combines meaningful service in the community with a formal educational curriculum and structured time for participants to reflect on their service and educational experience.

The SDSU Teaching Learning Center assists students and faculty in arranging service-learning courses utilizing any of a variety of service sites and varying lengths of service. Supplemental service-learning

course credits can be provided in accordance with the amount of study/service, and grades are based on the learning that takes place. Special costs are involved. Study may focus on a particular culture, social system, agency, skill set, or other chosen topic.

A variety of SDSU departments have established service-learning courses and students are encouraged to contact specific departments for information. Assistance with this can be obtained from the Teaching Learning Center (605-688-6413).

Student Affairs Division

The Division of Student Affairs provides services and activities that are designed to help students gain the greatest benefit from their University education. The following departments are included in Student Affairs: Admissions, New Student Orientation, Office of Enrollment Services (Disability Services, Financial Aid, Records and Registration, and Scholarships) Residential Life (Judicial Affairs), The Union, TRiO Programs/ Multicultural Affairs (International Student Affairs), University Dining Services, and Wellness (Intramurals and Club Sports, Recreation, and Student Health & Counseling). A brief overview of each department follows. If you have questions or need information about any of these areas, contact the Vice President for Student Affairs office in SAD 312, phone 605- 688-4493. The specific programs and services offered by the departments are listed below and elsewhere in this catalog.

Admissions – The Admissions Office assists students in attaining their educational goals by providing quality services and accurate information that will enable them to make an informed and appropriate college choice. In addition, the Admissions Office processes all applications for admission and determines residency status for entering students. Questions concerning enrollment information, admission and transfer evaluation should be directed to Admissions Office, SAD 200, South Dakota State University, Box 2201, Brookings, SD 57007-0649, phone 605-688-4121.

Office of Enrollment Services

Disability Services – Disability Services coordinates services for students with a wide range of disabilities. Services include coordinating testing accommodations, the acquisition of alternative format texts, classroom accommodations, referral to other service agencies, and coordinating additional services based on the individual needs of the student. The phone number for the Coordinator of Disability Services is 605-688-4504.

Financial Aid – The Financial Aid Office administers student financial assistance programs, including federal and state financial aid, and governmental agency awards. The phone number for Financial Aid is 605-688-4695.

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, SAD 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, SAD 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, SAD 310, 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.

Records and Registration

The Registrar's Office assists students in meeting their academic goals through a variety of services that include on-line registration, adding and dropping classes, accessing final grades, academic transcripts, and coordinating the semester course schedule. Records and Registration staff are available to help students to understand the variety of policies, procedures, and deadlines that are in place. The phone number for Records and Registration is 605-688-6195.

Scholarships

Students receiving the Jackrabbit Guarantee or the South Dakota Opportunity Scholarship may find information and advising on continuing scholarship eligibility, renewal, and retention. The phone number for Scholarships is 605-688-5201.

TRIO Programs/Multicultural Affairs

International Student Advising – This office administers policies and provides a broad range of support services relative to the nonimmigrant status of international students and scholars. Services include 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 SSU 065, SDSU, Brookings, SD 57007, phone 605-688-4477.

Multicultural Affairs – The Multicultural Affairs Office (OMA) at South Dakota State University develops campus initiatives that demonstrate the valued practice and philosophy of multiculturalism within the university community. Programs and activities developed by the office promote high achievement among the increasing number of minority students at South Dakota State University. The Multicultural Affairs Office enhances and complements the University mission by broadening the social, cultural, educational and recreational experience

of students. OMA offers support to students of color, implements multicultural and diversity programming, assists in the retention of students of color, advises cultural organizations, and coordinates the Minority Peer Mentor Program. The office is located at SSU 065 and can be reached by calling 605-688-6653.

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. For further information, contact the office at 605-688-6129, SSU 065.

TRiO Student Support Services – TRiO Student Support Services is a federally funded TRiO grant program designed to support students in achieving academic success. To assist students' success at SDSU the following support services are available through the SSS 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. The ultimate goal of SSS 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. For more information on Student Support Services, visit the office in SSU 065. Phone 605-688-6653.

TRiO Upward Bound – Upward Bound is a federally funded TRiO grant program designed to support high school students in their preparation for successful college entrance. The program provides support in areas of tutoring, mentoring, cultural enrichment, college tours, personal development, and academic preparation to ultimately have students enroll and graduate with a college degree. The students attend a residential summer academic program at SDSU delivered in cooperation with the Office of Academic Affairs. We are committed to exposing our students and their parents to the college campus environment and having South Dakota State University faculty and staff play a major role in their campus experience. Upward Bound can be contacted in SSU 065 or by phone at 605-688-5933.

The Union

The Union provides an opportunity for student involvement with the campus community and a connection to the University. The department manages and operates the Performing Arts Center and the University Student Union, which includes services such as the Information Exchange, Outback Jacks, Central Reservations and State Technical Services. Students can cash checks, send faxes, play billiards, rent outdoor recreational equipment, get off-campus housing information, reserve sound and lighting services for programs, and dine at the Market or at Jacks' Place. A full-service coffee, espresso and smoothie bar are also available at Java City. The department also facilitates the advising and support for student organizations. The Student Activities office works closely with the University Program Council (UPC), Greek Life,

and manages the recognition of student organizations. The department also coordinates the New Student Orientation program for the summer, fall, and spring.

The Collegian publication, Students' Association, Student Legal Services, KSDJ 90.7, Greek Life, University Program Council, Dining Services: the Market and Jacks', the Bookstore, Card Services/Hobo Dough, and fifteen meeting rooms including the Volstorff Ballroom add to the already extensive list of student organizations and services housed in the University Student Union.

For more information regarding the Union call 605-688-4960 or 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 Web site.
- Promotion of student, faculty, departmental, and college accomplishments through news releases to area media. For media needs, contact Jeanne Jones Manzer at 605-688-4541 or e-mail: jeanne.jonesmanzer@sdstate.edu.

Publications

University Relations works closely with the campus Print Lab, the on-campus printing department located in Yeager Hall, SYE 102. 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 prepress 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.

University Relations offers writing and design services for brochures, flyers, post cards, posters, newsletters, and magazines for departments and colleges.

University Relations approves the use of the name or logo of South Dakota State University in any form. All SDSU logos, seals, caricatures or wordmarks are licensed and cannot be used without permission.

For publication and printing needs, contact the Office of University Relations at 605-688-6161.

Water and Environmental Engineering Research Center (WEERC)

The Water and Environmental Engineering Research Center (WEERC) is located in the College of Engineering at SDSU. Formerly named the Northern Great Plains Water Resources Research Center (NGPWRRC), WEERC conducts research, education and outreach activities through principal investigators who are faculty members in the Engineering College. WEERC projects are funded by governmental agencies, cities, and industry, and are focused on engineering solutions to water resources and environmental problems. Recent project topics include municipal and industrial water and wastewater treatment, water supply and wastewater disposal systems, environmental remediation,

hydrological phenomena, and hydraulics of natural and engineered systems. These projects often involve collaboration with other SDSU departments or off-campus units. WEERC also maintains an environmental chemistry laboratory in Crothers Engineering Hall in conjunction with the Civil and Environmental Engineering Department. The laboratory supports research projects, environmental engineering courses, and outreach/service activities.

For information, contact Delvin DeBoer, Director, WEERC, SDSU, Box 2219, Brookings, SD 57007-0096; phone 605-688-5210; e-mail delvin.deboer@sdstate.edu.

Water Resources Institute (WRI)

The Water Resources Institute (WRI) supports and conducts research and training in agricultural and environmental water management of significance to South Dakota and the North Central Region at South Dakota State University and other affiliated educational institutions and agencies across the state. Examples include agricultural water management such as irrigation and drainage, the role of agricultural nutrient management on water quality, phosphorous loss from agricultural fields, lake algae bloom diagnosis and monitoring, and analysis interpretations of water suitability for domestic, livestock, and irrigation use. WRI programs typically funds studies of local and regional concerns in collaboration with stakeholders, including agricultural producers, commodity groups, policy makers, water management agencies and organizations, and the public.

The WRI is committed to educating and training the water management decisionmakers of tomorrow by involving students and stakeholders in research projects, teaching, outreach activities, conferences, and meetings. Through these activities the students are exposed to current and future water-related issues and trained to formulate science-based solutions to water-based problems. A laboratory, open to students and researchers for use of lab equipment in conjunction with water research projects, is maintained by the Institute.

The Institute administers a grant program funded under the U.S. Department of the Interior, as made available through the Water Resources Research Act of 1984 and from the state of South Dakota. The funds are targeted for research.

The Water Resources Institute (WRI) supports and conducts research and training including research by students, directed toward solving state, regional, and national water problems.

The Water Resources Institute cosponsors the Eastern South Dakota Water Conference, an annual event held in Brookings. Water is an important part of the economic future of South Dakota, and this conference serves as an important event to exchange experiences and ideas, explore the latest research, and share knowledge with other participants on this resource. The WRI also cosponsors the Big Sioux Water Festival in Brookings, South Dakota, which has hosted more than 15,000 fourth-grade students during the past sixteen years, WRI provides a unique service to the public by identifying and providing solutions for water-quality problems. This includes assistance with interpretation of the results from water analyzed by a laboratory, and providing informational materials related to the potential solution to those water-quality problems. The Institute also provides a specific service to irrigators by providing recommendations on soil and water compatibility. These services are available to all South Dakotans at no cost.

WRI is located in the Agricultural Engineering Building and is associated with the College of Agriculture and Biological Sciences. For more information, please contact the Water Resources Institute by phone at 605-688-4910, by e-mail: van.kelley@sdstate.edu, or on the Web at <http://www.sdstate.edu/abe/wri>.

Wellness Center

The Wellness Center allows SDSU to provide not only highly effective health and wellness services, but fresh opportunities for student learning and outreach to the Brookings community. Services and programs provided are detailed below.

Student Health Clinic and Counseling Services

The mission of Student Health Clinic and Counseling Services is to promote the health and wellness of the University Community, to enhance student retention, and to support academic and personal success. All SDSU students are eligible for services. Hours are Monday through Friday, 8 a.m.-5 p.m. when classes are in session. During summer and academic breaks, appointments are scheduled from 8:30 a.m.-12:30 p.m., Monday, Tuesday, Thursday and Friday. (No appointments on Wednesdays.)

Drug and Alcohol Abuse Prevention 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.

Health Education and Prevention Services – The Health Education and Prevention Services are sponsored by the Student Health Clinic and Counseling Center. The program emphasizes awareness, prevention, and response to sexual assault and date rape. Closely related issues of alcohol/drug abuse, STIs (including HIV/AIDS), and unplanned pregnancies are addressed. The Counseling Center 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 Student Health Clinic and Counseling Center at 605-688-6146 for assistance or information.

Student Health Clinic – The Health Clinic includes primary care for illnesses and injuries, laboratory diagnostics, reproductive health, immunizations, and pharmacy. Spouses and dependents of students, and SDSU employees are eligible for services. You may call 605-688-4157 for further information, a medical appointment, or medical record assistance.

Counseling Center – Counseling Services provide individual and group counseling to students and SDSU employees with emotional, behavioral, and/or academic concerns to promote retention and success at SDSU. Common issues include mood disorders, substance use/abuse, relationship concerns, and personal and professional growth. Call 605-688-6146 for further information.

Additional services include nutrition education and health promotion with a student-run organization advocating for healthy lifestyles – Helping Everyone Reach Optimal Health (HEROH).

Community Fitness and Recreation

A varied menu of activities and programs are offered including: cardio and weight equipment; aerobic, martial arts, and spinning classes; walking/running track; pool; three gyms; a climbing pinnacle and bouldering wall. Staff provides personal orientation, personal fitness evaluations, and design a personal program to meet your fitness goals.

There are 24 recreational sports including flag football, 3-on-3 basketball, volleyball, and softball with more than 5,600 participants annually. Eight club sports such as hockey, rugby, and bowling compete regionally giving SDSU students additional recreation opportunities. Fitness and Recreation are open Monday through Thursday, 5:30 a.m.-11 p.m.; Friday, 5:30 a.m.-10 p.m.; Saturday, 8 a.m.-8 p.m.; and Sunday, 1-5:00 p.m. Summer hours are Monday through Friday, 5:30 a.m.-9 p.m.; Saturday, 8a.m.-5p.m.; and Sunday, 1-5:00p.m.

For further information regarding the Wellness Center and its services, you may call 605-688-5386.



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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 Terry Baloun
President
(Term expires March 31, 2010)
Highmore

Honorable Kathryn Johnson
Vice President
(Term expires March 31, 2011)
Rapid City

Honorable James O. Hansen
Secretary
(Term expires March 31, 2013)
Pierre

Honorable Harvey Jewett, IV
(Term expires March 31, 2011)

Honorable Dean Krogman
(Term expires March 31, 2015)
Brookings

Honorable Randall K. Morris
(Term expires March 31, 2010)
Spearfish

Honorable Carole Pagonis
(Term expires March 31, 2015)
Sioux Falls

Honorable Patrick Weber
Student Regent
(Term Expires July 1, 2012)
Armour

Honorable Randy Schaefer
(Term expires March 31, 2015)
Madison

Honorable Jack R. Warner
Executive Director
Pierre

General Administration

President
David L. Chicoine, Ph.D.
Provost and Vice President for Academic Affairs
Laurie Stenberg Nichols, Ph.D.
Associate Vice President for Academic Affairs
Mary Kay Helling, Ph.D.
Vice President for Information Technology
Michael F. Adelaide, Ph.D.

Vice President for Finance and Business
Wesley G. Tschetter, M.B.A.
Assistant Vice President for Finance and Business/Controller
Jeff A. Siekmann, M.B.A.
Vice President for Research
Kevin D. Kephart, Ph.D.
Vice President for Student Affairs
Marysz Palczewski-Rames, Ed.D.

Interim Associate Vice President for Research
James Doolittle, Ph.D.
Assistant Vice President for Facilities and Services
Dean Kattelmann, M.S.
Assistant Vice President for Student Affairs
Douglas Wermedal, Ph.D.
Assistant Vice President for Student Services/Registrar
Matthew Aschenbrener, Ed.D.

Deans/Associate and Assistant Deans

College of Agriculture and Biological Sciences
Barry Dunn, Ph.D., Dean
Donald M. Marshall, Ph.D., Associate Dean and Director of Academic Programs
Vacant, Associate, Dean and Director of Cooperative Extension Service
Thomas Cheesbrough, Ph.D., Interim Associate Dean and Director of Agricultural Experiment Station

College of Arts and Sciences
David Hilderband, Ph.D., Interim Dean
Kathleen Donovan, Ph.D., Interim Assistant Dean

College of Education and Human Sciences
Jill Thorngren, Ph.D., Dean
Jane Hegland, Ph.D., Assistant Dean
CY Wang, Ph.D., Assistant Dean

College of Engineering
Lewis F. Brown, Ph.D., Dean
Dennis Helder, Ph.D., Associate Dean
Richard A. Reid, Ph.D., Associate Dean

College of General Studies
Keith Corbett, Ed.D., Dean

College of Nursing
Roberta K. Olson, Ph.D., Dean
Nancy Fahrenwald, Associate Dean

College of Pharmacy
Dennis Hedge, Pharm.D., Dean
Jane Mort, Pharm.D., Associate Dean
Daniel Hansen, Pharm.D., Assistant Dean

Continuing and Extended Education
Gail Dobbs Tidemann, Ph.D., Dean

Graduate School
Mary Kay Helling, Ph.D., Interim Dean
Diane Holland Rickerl, Ph.D., Associate Dean

Honors College
Timothy J. Nichols, Ph.D., Dean

Library
Kristi Tornquist, Ph.D., Chief University Librarian

Directors

Academic Evaluation & Assessment Jo Ann Sckerl, Ed.D.	Cooperative Extension Service Barry Dunn, Ph.D.	North Central Sun Grant James Doolittle, Ph.D.
Academic Programs (College of AgBio) Donald M. Marshall, Ph.D.	Dining Services Jill Ackland, B.S.	Oak Lake Field Station Nels Troelstrup, Ph.D.
Admissions Tracy Welsh, B.A.	Disability Services Nancy Crooks, M.S.	Orientation Adam Karnopp, M.S.
Agricultural Experiment Station Thomas Cheesbrough, Ph.D., Interim	Diversity Enhancement Tim Nichols, Ph.D., Acting	Residential Life Connie Crandall, M.S.
Agricultural Heritage Museum Mac Harris, M.S.	Environmental Health & Safety Gary Yarrow, Ph.D.	Sioux Falls Programs Gail Dobbs Tidemann, Ph.D.
Alumni Association Matt Fuks, B.S., President	Financial Aid Jay A. Larsen, M.Ed.	South Dakota Art Museum Lynn Verschoor, M.S.
Animal Disease Research and Diagnostic Laboratory (ADRDL) David H. Zeman, D.V.M., Ph.D.	Geographic Information Sciences Center of Excellence Matthew Hansen, Ph.D. Thomas Loveland, Ph.D.	SDSU Foundation/Development Steve Erpenbach, B.S., President
Athletics Justin Sell, M.S.	4-H Foundation Nancy Swanson, M.A.	Student Activities Jennifer Novotny, M.S.
Bookstore, University Derek Peterson, B.S.	Human Resources Vacant	Transportation, Technology Transfer Service Vacant
Capitol University Center-Pierre Ron Woodburn, M.S.	Institutional Research Vacant	Water and Environmental Engineering Research Center Delvin DeBoer, Ph.D.
Career and Academic Planning Services Keith Corbett, Ed.D.	International Affairs Vacant	Water Resources Institute Van C. Kelley, Ph.D.
Center for Infectious Disease Research and Vaccinology David H. Francis, Ph.D.	Marketing and Communications Mike Lockrem, M.Ed.	Web Development & Management Patricia Edler, B.A.
		West River Ag Center Dan Oedekoven, M.Ed.

Department Heads (by college)

Agriculture and Biological Sciences	Journalism and Mass Communication Mary Peterson Arnold, Ph.D.	Mathematics and Statistics Kurt Cogswell, Ph.D.
Agricultural and Biosystems Engineering Van C. Kelley, Ph.D.	Military Science MAJ Kory Knight, M.S.	Mechanical Engineering Kurt Bassett, Ph.D.
Animal and Range Sciences Clinton Rusk, Ph.D.	Modern Languages Maria Ramos, Ph.D.	Nursing
Biology and Microbiology Volker Brozel, Ph.D., Acting	Music Dave Reynolds, D.M.A.	Graduate Nursing Sandra Bunkers, Ph.D.
Dairy Science Vikram V. Mistry, Ph.D.	Philosophy and Religion Greg Peterson, Ph.D.	Nursing Student Services Rebecca Randall, Ed.D.
Economics David Hilderband, Ph.D.	Psychology Bradley Woldt, Ph.D.	Undergraduate Nursing Janet Lord, Ph.D.
Horticulture, Forestry, Landscape and Parks David Graper, Ph.D.	Sociology and Rural Studies Donald Arwood, Ph.D., Acting	West River Nursing Barbara Hobbs, Ph.D.
Plant Science Sue Blodgett, Ph.D.	Visual Arts Tim Steele, Ph.D., Acting	Pharmacy
Veterinary and Biomedical Science David H. Zeman, D.V.M., Ph.D.	Education and Human Sciences	Pharmacy Practice James Clem, Pharm.D.
Wildlife and Fisheries Sciences David W. Willis, Ph.D.	Consumer Sciences Jane E. Hegland, Ph.D.	Pharmaceutical Sciences Chandradhar Dwivedi, Ph.D.
Arts and Sciences	Counseling and Human Development Jay Trenhaile, Ed.D.	
Aerospace Studies Lt Col Carleton H. Hirschel, M.P.A.	Health and Nutritional Sciences Matthew Vukovich, Ph.D.	
Architecture Brian T. Rex, M.S.	Teaching, Learning and Leadership Andrew Stremmel, Ph.D.	
Chemistry and Biochemistry James A. Rice, Ph.D.	Engineering	
Communication Studies and Theatre Laurie Haleta, Ph.D.	Civil and Environmental Engineering Bruce Berdanier, Ph.D.	
English Jason McEntee, Ph.D., Acting	Electrical Engineering and Computer Science Steven Hietspas, Ph.D., Acting	
Geography George White, Ph.D.	Engineering Technology and Management Teresa Hall, Ph.D.	
History and Political Science April Brooks, 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.

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.

Agricultural Systems Technology: 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).

Animal Disease Research and Diagnostic Laboratory: 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).

Art Museum: 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.

Athletic Training: The Athletic Training Program (undergraduate and graduate levels) is accredited by the Commission on Accreditation of Athletic Training Education (2201 Double Creek Drive, Suite 5006, Round Rock, TX 78664; Phone 512-733-9700).

Chemistry: The Department of Chemistry and Biochemistry is accredited by the American Chemical Society (1155 Sixteenth St., N.W., Washington, DC 20036; Phone 202-872-4589).

Computer Science: The Computer Science program is accredited by the Accreditation Board of Engineering & Technology (111 Market Pl., Suite 1050 Baltimore, MD 21202; Phone 410-347-7700).

Construction Management: The Construction Management program is accredited by the American Council for Construction Education (1717 North Loop 1604 East, Suite 320, San Antonio, TX 78232-1570; Phone 201-495-6161).

Counseling and Human Resource Development: 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, VA22304; Phone 703-823-9800, ext. 301).

Dietetics: The Didactic Program in Dietetics is developmentally accredited by the Commission on Accreditation for Dietetics Education of the American Dietetic Association (120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995; Phone 312-899-0040 Ext 5400).

Early Childhood Education: 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).

Engineering: The programs of Agricultural and Biosystems, Civil, Electrical, and Mechanical Engineering are accredited by the Accreditation Board for Engineering and Technology - Engineering Accreditation Commission (111 Market Place, Suite 1050, Baltimore, MD 21202; Phone 410-347-7700).

Engineering Technology: The programs of Electronics Engineering Technology and Manufacturing Engineering Technology are accredited by the Accreditation Board for Engineering and Technology - Technology Accreditation Commission (111 Market Place, Suite 1050, Baltimore, MD 21202; Phone 410-347-7700).

Extension: The extension programs of Agricultural and Biosystems Engineering; Animal and Range Sciences; Biology/Microbiology; Dairy Science; Economics; Experiment Station; Family and Consumer Sciences; Horticulture, Forestry, Landscapes and Parks; Plant Science; Rural Sociology; Station Biochemistry; Veterinary Medicine; and Wildlife and Fisheries Sciences are reviewed by the Cooperative State Research Education and Extension Services (1400 Independence Avenue SW., Stop 2201, Washington, DC 20250-2201)

Health Promotion: The Health Promotion major is endorsed and recognized by the American College of Sports Medicine for meeting the knowledge, skills, and abilities expected of an ACSM Health/Fitness Instructor.

Interior Design: The Interior Design program is accredited by the Council for Interior Design Accreditation (146 Monroe Center NW, Suite 1318; Grand Rapids, MI 49503; Phone: 616.458.0400).

Journalism and Mass Communication: The curriculum in Journalism and Mass Communication 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).

Medical Laboratory Science: The curriculum in Medical Laboratory Science is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (5600 N. River Rd., Site 720, Rosemont, IL 60018-5119; Phone 847-939-3597).

Music: 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).

Nursing: 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).

Pharmacy: The curriculum in Pharmacy is accredited by the Accreditation Council for Pharmacy Education (20 North Clark Street, Suite 2500, Chicago, IL 60602-5109; Phone 312-664-3575).

Range Sciences: The curriculum in Range Science is accredited by the Society for Range Management (10030 W 27th Ave Wheat Ridge, CO 80215-6601. Phone: (303) 986-3309; Fax: (303) 986-3892).

Teacher Education: Preparation of teachers and other professional school personnel 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 University also holds membership in the American Council on Education, the American Council on Education's Internationalization Collaborative, the Council on International Educational Exchange (CIEE), the College Consortium for International Studies (CCIS), the Cooperative Center for Study Abroad (CCSA), the International Student Exchange Program (ISEP), the American Association of Colleges for Teacher Education, the American Association of University Women, the American Association of Colleges of Pharmacy, the American Society for Engineering Education, the Association of Schools of Journalism and Mass Communication, the American Association of Colleges of Nursing, the American Library Association, Associated Western Universities, Inc., the Association of American Veterinary Medical Colleges, Council of Graduate Schools in the United States, National Association for Foreign Student Affairs, and several others which are concerned with more limited phases of college work. Through the Board of Regents, the University also participates in the Western Interstate Commission for Higher Education (WICHE).



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UNIVERSITY STAFF

As of December 2010

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

Chicoine, David L., President, Professor of Economics, Graduate Faculty, 2007; B.S., South Dakota State University, 1969; M.S., University of Delaware, 1971; M.A., Western Illinois University, 1978; Ph. D., University of Illinois, 1979.

Nichols, Laurie Stenberg, Provost and Vice President for Academic Affairs, Professor of Counseling and Human Development, Graduate Faculty, 1994, 2009; B.S., SDSU, 1978; M.Ed., Colorado State University, 1984; Ph.D., Ohio State University, 1988.

Adelaine, Michael F., Vice President for Information Technology, Graduate Faculty, 1990, 2003; B.S., Michigan State University, 1974; M.S., University of Nebraska, 1985; Ph.D., 1989.

Kephart, Kevin D., Vice President for Research, Professor of Plant Science, Graduate Faculty, 1986, 2005; B.S., Montana State University, 1979; M.S., University of Wyoming, 1982; Ph.D., Iowa State University, 1987.

Rames, Marysz Palczewski, Vice President for Student Affairs, Graduate Faculty, 1987, 2004; B.S., University of Northern Colorado, 1982; M.A., 1986; Ed.D., University of South Dakota, 1997.

Helling, Mary Kay, Associate Vice President for Academic Affairs, Interim Dean of Graduate School, and Professor of Human Development, Graduate Faculty, 1978, 2003; B.S., SDSU, 1977; M.S., 1982; Ph.D., Purdue University, 1992.

Doolittle, James J., Interim Associate Vice President of Research & Sponsored Programs, Director of North Central Sun Grant Center, Professor of Plant Science, Graduate Faculty, 1991, 2001; B.S., Purdue University, 1982; M.S., Texas A&M University, 1986; Ph.D., 1991.

Tschetter, Wesley G., Vice President for Finance and Business, 1982, 2000; B.S., SDSU, 1969; M.B.A., University of South Dakota, 1971.

Aschenbrener, Matthew S., Assistant Vice President of Student Affairs, Graduate Faculty, 2003, 2007; B.S., SDSU, 1992; M.P.A., University of South Dakota, 1994; Ed.D., University of Kansas, 2001.

Kattelmann, Dean E., Assistant Vice President of Facilities and Services, 2002; B.S., Missouri State University, 1976; M.S., University of Missouri, 1989.

Siekman, Jeffrey A., Assistant Vice President for Finance and Business/Controller, 1990; B.S., Northern State University, 1982; M.B.A., University of South Dakota, 1995.

Wermedal, Douglas, Assistant Vice President of Student Affairs, 1998, 2007; B.S., SDSU, 1985; M.S.Ed., Eastern Illinois University, 1987; Ph.D., SDSU, 2008.

Sackreiter, Kevin, Director of Teaching Learning Center, 2010; B.A., SDSU, 2000; M.S., SDSU, 2002; Ed.D., University of South Dakota, 2007.

Welsh, Tracy, Director of High School Relations and Admissions, 1984, 1997; B.A., Fontbonne College, 1980.

Yarrow, Gary, Director of Environmental Health and Safety, Professor of Chemistry; General, Radiation, Biological and Chemical Safety Officer; Graduate Faculty, 1993, 1998; B.S., SDSU, 1977; M.S., Ohio State University, 1979; Ph.D., University of Minnesota, 1985.

Academic Deans

Brown, Lewis F., Dean of the College of Engineering, Professor of Electrical Engineering, Graduate Faculty, 1992, 2000; B.S., SDSU, 1984; M.S., Iowa State University, 1986; Ph.D., 1988.

Corbett, Keith W., Dean of the College of General Studies, Professor of Educational Leadership, Graduate Faculty, 1981, 2004; B.S., SDSU, 1976; M.Ed., 1987; Ed.D., University of South Dakota, 2001.

Donovan, Kathleen, Acting Associate Dean of the College of Arts and Sciences, Professor of English, Graduate Faculty, 1994, 2000; B.A., Spalding College, 1968; M.A., University of Nebraska, 1988; Ph.D., University of Arizona, 1994.

Dunn, Barry, Dean of the College of Agriculture and Biological Sciences, Professor of Animal and Range Sciences, Graduate Faculty, 2000, 2010; B.S., SDSU, 1975; M.S., 1977; Ph.D., 2000.

Fahrenwald, Nancy, Associate Dean of Nursing, Associate Professor of Nursing, Graduate Faculty, 1995, 2006; B.S., SDSU, 1983; M.S., University of Portland, 1988; Ph.D., University of Nebraska, 2002.

Gleim, David E., Dean of Libraries, 2007; B.A., Brescia University, 1971; M.S.L.S., University of Kentucky, 1973; Ph.D., University of North Carolina-Chapel Hill, 1992.

Hansen, Daniel J., Assistant Dean for Student Services, College of Pharmacy, Assistant Professor of Pharmacy Practice, 2007, 2010; B.S., SDSU, 2003; Pharm.D., 2005.

Hedge, Dennis, Dean of the College of Pharmacy, Professor of Pharmacy Practice, Graduate Faculty, 1992, 2009; Pharm.D., University of Kansas, 1991.

Hegland, Jane E., Assistant Dean of Education and Human Sciences, Professor and Head of Consumer Sciences, Graduate Faculty, 2001, 2006; B.A., Saint Olaf College, 1985; M.A., University of Minnesota, 1991; Ph.D., 1995.

Hilderbrand, David, Interim Dean of Arts and Sciences, Professor Emeritus of Chemistry, Graduate Faculty, 1974, 2004; B.A., Southwest Baptist College, 1967; M.A., University of Missouri, 1969; Ph.D., 1971.

Marshall, Donald M., Associate Dean and Director of Academic Programs, College of Agriculture and Biological Sciences, Professor of Animal and Range Sciences, Graduate Faculty, 1984, 2002; B.S., University of Missouri, 1979; M.S., Oklahoma State University, 1981; Ph.D., 1984.

Mort, Jane R., Associate Dean for Academic Programs for College of Pharmacy, Professor of Pharmacy Practice, Graduate Faculty, 1986, 2010; Pharm.D., University of Nebraska, 1985.

Nichols, Timothy J., Dean of the Honors College, Associate Professor of Rural Sociology, Graduate Faculty, 1994, 2008; B.S., Washington State University, 1986; M.A.Ed., 1993; Ph.D., SDSU, 2001.

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.

Reid, Richard A., Associate Dean of the College of Engineering, and Professor of Civil and Environmental Engineering, Graduate Faculty, 1995, 2004; B.S., The Citadel, 1981; M.S., Georgia Institute of Technology, 1987; Ph.D., 1995.

Rickerl, Diane Holland, Associate Dean of the Graduate School and Professor of Plant Science, Graduate Faculty, 1986, 1996; B.S., Iowa State University, 1972; M.A., 1976; M.S., Auburn University, 1984; Ph.D., 1986.

Thorngren, Jill, Dean of the College of Education and Human Sciences, 2011; B.A., Idaho State University, 1994; M.S., 1996; Ph.D., 1999.

Tidemann, Gail Dobbs, Dean of the Office of Continuing and Extended Education, Professor of Counseling and Human Development, Graduate Faculty, 1986, 1997; B.S., Jacksonville State University, 1977; M.A., University of Alabama, 1978; Ph.D., 1986.

Wang, C.Y., Professor and Associate Dean of the College of Education and Human Sciences, Graduate Faculty, 1993, 2002; B.S., Shenyang Agricultural University, 1985; M.S., Iowa State University, 1989; Ph.D., 1993.

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 Emeritus of Political Science, Dean Emeritus 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 and Head 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 Emeritus of Biology and Microbiology, Graduate Faculty, 1981, 1996; B.A., Augustana College, 1964; Ph.D., University of Colorado, 1968.

Flake, Lester D., Distinguished Professor Emeritus of Wildlife and Fisheries Sciences, Graduate Faculty, 1972, 1999; B.S., Brigham Young University, 1965; M.S., 1966; Ph.D., Washington State University, 1971.

Granholt, Nels H., Distinguished Professor of Biology and Microbiology, Graduate Faculty, 1968, 1978; B.A., University of Massachusetts, 1964; Ph.D., Iowa State University, 1968.

Gritzner, Charles F., Distinguished Professor Emeritus 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 Emerita of Nursing, 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.

Jenks, Jonathan A., Distinguished Professor of Wildlife and Fisheries Sciences, Graduate Faculty, 1991, 2006; A.A., Unity College, 1982; B.S., 1984; M.S., University of Maine, 1986; Ph.D., Oklahoma State University, 1991.

Johnson, James L., Distinguished Professor Emeritus 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.

Johnson, W. Carter, Distinguished Professor of Horticulture, Forestry, Landscape and Parks, Graduate Faculty, 1989, 2006; B.S., Augustana College, 1968; Ph.D., North Dakota State University, 1971.

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.

Mc Farland, Douglas C., Distinguished Professor of Animal and Range Sciences, Graduate Faculty, 1986, 1997; B.A., Southern Connecticut State College, 1971; M.S., Washington State University, 1975; Ph.D., 1984.

Pritchard, Robbi H., Distinguished Professor of Animal and Range Sciences, Graduate Faculty, 1984, 2005; A.A.S., Black Hawk College, 1975; B.S., Southern Illinois University, 1977; M.S., 1978; Ph.D., Washington State University, 1983.

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.

Schingoethe, David J., Distinguished Professor of Dairy Science, Graduate Faculty, 1969, 2001; B.S., University of Illinois, 1964; M.S., 1965; Ph.D., Michigan State University, 1968.

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.

Widvey, Lois L., Distinguished Professor Emerita of Education, Graduate Faculty, 1973, 1998; B.S., Northern State University, 1955; M.S.Ed., 1958; Ed.D., University of Nebraska, 1971.

Willis, David W., Distinguished Professor and Head of Wildlife and Fisheries Sciences, Graduate Faculty, 1987, 1995; B.S., University of North Dakota, 1977; M.S., 1978; Ph.D., Colorado State University, 1980.

Woodard, Charles L., Distinguished Professor of English, Graduate Faculty, 1975, 1985; B.S., Dakota State University, 1964; M.A., University of Nebraska, 1966; Ph.D., University of Oklahoma, 1975.

Wrage, Leon J., Distinguished Professor Emeritus of Plant Science, Extension Specialist, 1961, 1994; B.S., SDSU, 1961; M.S., 1964.

Faculty, Staff

Aaron, David, Assistant Professor of Physics, 1986; B.S., SDSU, 1975; M.S., University of Wisconsin, 1981.

Abeln, Kristin, Instructor of General Studies, 2010; B.A., Southwest Minnesota State University, 2003; M.S., SDSU, 2007.

Abraham, Julie B., Instructor of English, 2002; B.A., Augustana College, 1990; M.A., SDSU, 2003.

Abraham, Ross P., Professor of Mathematics and Statistics, Graduate Faculty, 1997, 2006; B.S., Augustana College, 1990; M.A., University of Montana, 1993; Ph.D., University of Houston, 1997.

Ackman, John D., Professor of Communication Studies and Theatre, Graduate Faculty, 1978, 2002; B.S., SDSU, 1978; M.F.A., University of Montana, 1984.

Adamson, Dwight W., Associate Professor of Economics, Graduate Faculty, 1989, 1995; B.A., Washington State University, 1976; M.A., 1983; Ph.D., 1988.

- Agostini, Thomas**, Assistant Professor of History and Political Science, Graduate Faculty, 2009; B.A., Virginia Military Institute, 1990; M.A., James Madison University, 1993; Ph.D., Lehigh University, 2002.
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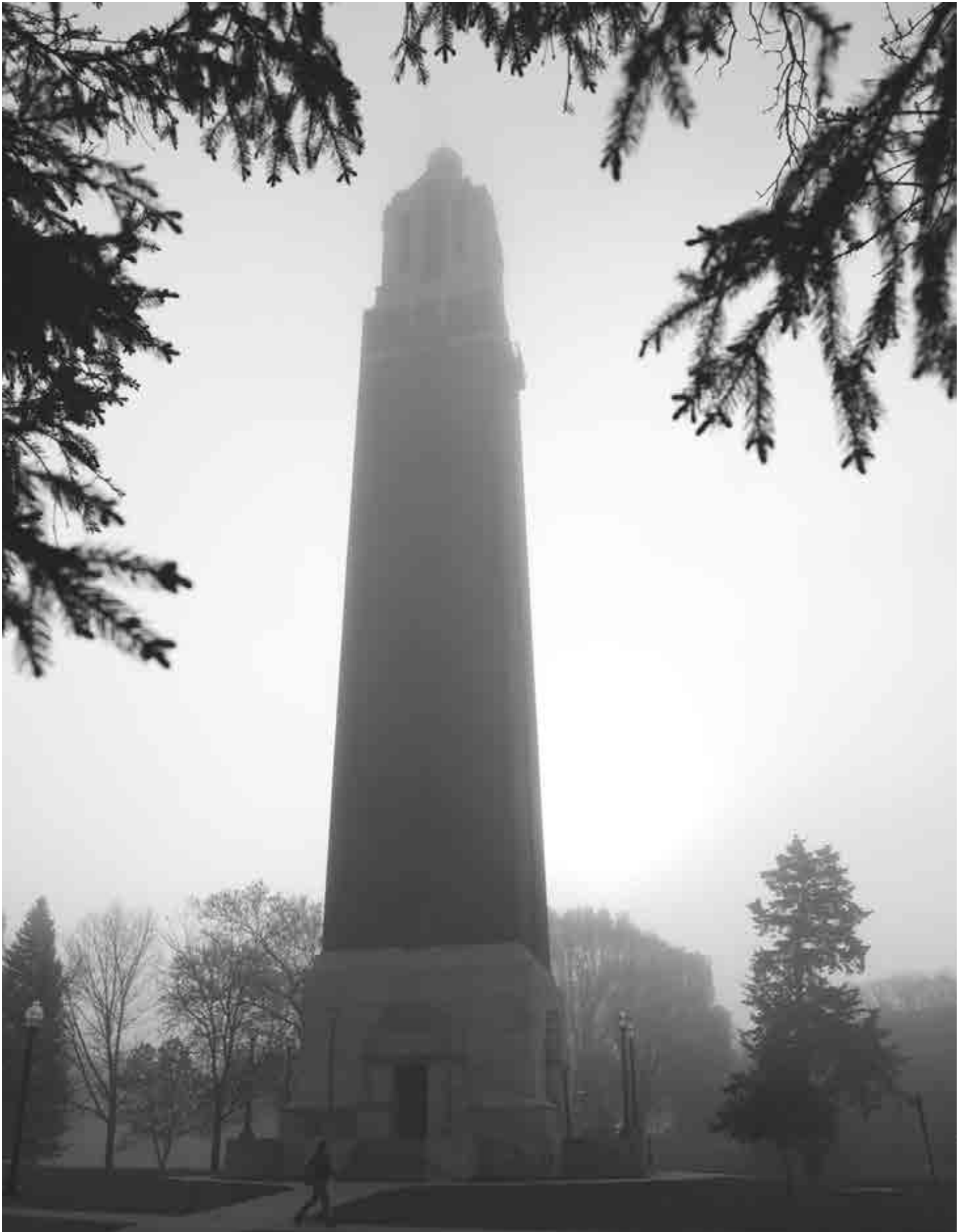
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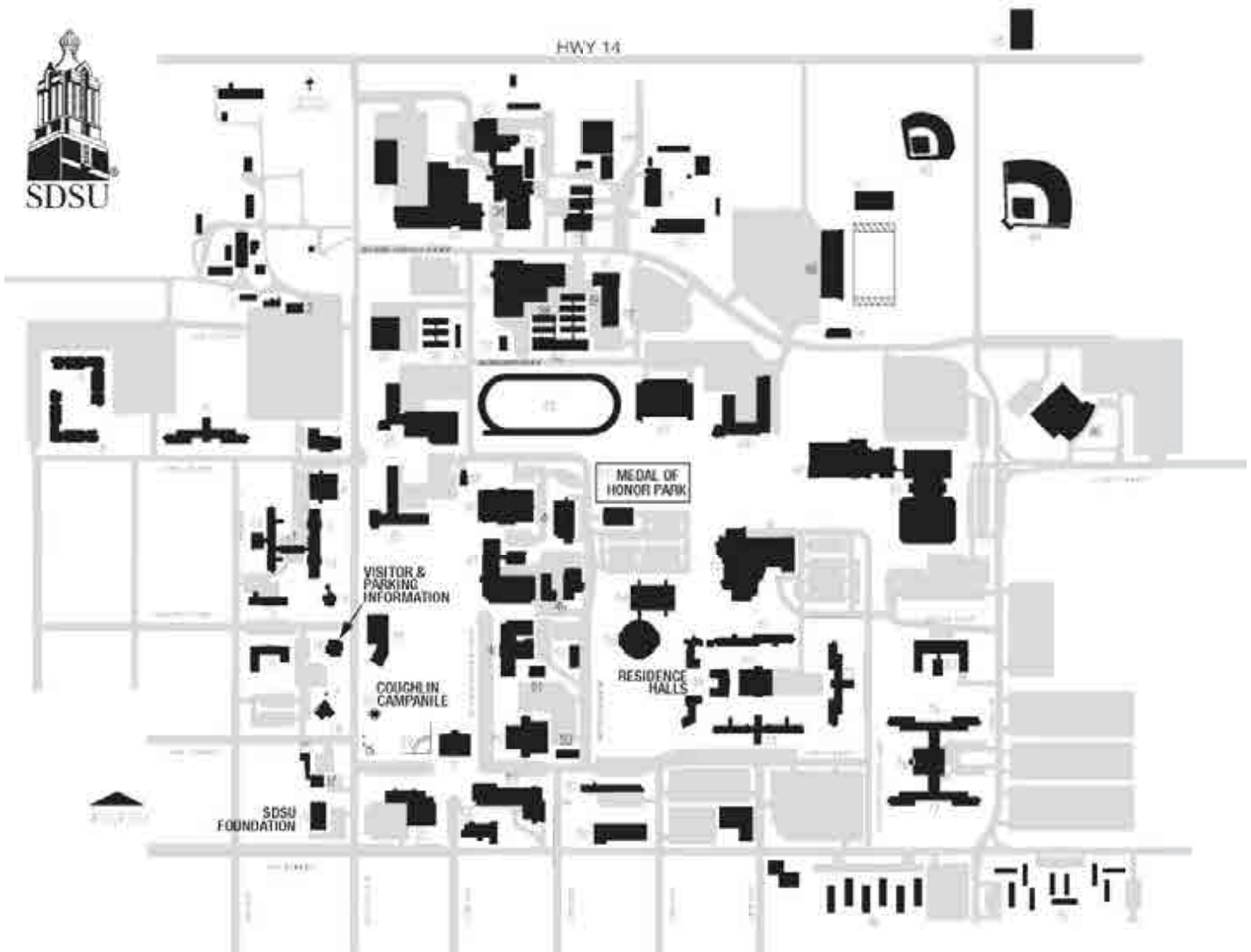
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SDSU Campus Map



Academic Evaluation and Assessment (SFND)	86	Ethel Austin Martin Building (Biology Annex) (SEM)	44	Pugsley Continuing Education Center	
Administration Building (Doner Auditorium) (SAD)	48	Facilities & Services Shops	63	(RDTN Studios/Classrooms, Christie Ballroom) (SPC)	20
Ag Vehicle Storage (Surplus Property Storage)	3	Foundation Seed Conditioning Plant (SFSS)	35	Rotunda for Arts & Sciences (SRO)	58
Agricultural Engineering (SAE)	69	Frost Arena (Stanley J. Marshall HPER Center) (SPE)	81	Scobey Hall (SSB)	16
Agricultural Hall (SAG)	25	Grove Hall (SGH)	72	Sexauer Field (SSF)	43
Agricultural Heritage Museum (SDAM)	7	Hansen Hall (SHN)	6	Solberg Hall (SSO)	52
Alvilda M. Sorenson Family Resource		Harding Hall (SHH)	57	South Dakota Art Museum (SMU)	24
& Management Center (FRMC)	15	Heat / Power Laboratory (SHPL)	1	SDSU Foundation (Enterprise Center)	19
Animal Disease Research & Diagnostic Laboratory (SAR)	34	Hilton M. Briggs Library (SBL)	62	Softball Field	83
Animal Resource Wing (SAW)	32	Horticulture & Forestry (SHF)	41	Stanley J. Marshall HPER Center (Frost Arena) (SPE)	81
Animal Science Arena (SAA)	31	Horticulture Greenhouse (SHG)	42	State Court	75
Animal Science Complex (SAA)	30	Industrial Arts Building (SIA)	53	State Village	76
Avera Health Science Center (Shepard Hall)	47	Intramural Building (SIM)	45	Student Health (Wellness Center) (SWH)	82
Bailey Hall (SBY)	4	Jackrabbit Village	88	Sylvan Theatre (SSY)	22
Baseball Field	84	Larson Commons (Food Service) (SLC)	78	Tompkins Alumni Center (SDSU Alumni Association)	18
Berg Hall (SBY)	5	Library (Hilton M. Briggs Library) (SBL)	62	Tompkins Alumni Center Clock Tower (STA)	17
Binnewies Hall (SBN)	77	Lincoln Music Center (Peterson Recital Hall) (SLM)	21	University Police Department (SOR)	15
Briggs Library (SBL)	62	Mathews Hall (SMH)	71	University Relations (SCM)	50
Brown Hall (SBL)	74	Medary Commons (CAP Center, Food Service) (SMC)	8	University Stores & Services (SSTO)	64
Caldwell Hall (SCH)	80	Memorial Park	61	University Student Union	
Central Heating Plant (SCH)	49	Motor Pool Complex (SMPC)	2	(Volstorff Ballroom, Food Service, Dept. of Student	
Communications Center (University Relations) (SCH)	50	Northern Plains Biostress Laboratory (SNP)	36	Activities, & Bookstore) (SSU)	70
Coolidge Sylvan Theatre (SSY)	22	Nursing, Family & Consumer Sciences, &		Veterinary Isolation Building (SVI)	33
Coughlin-Alumni Stadium (SCS)	66	Arts & Sciences Building (SNF)	59	Waneta Hall (SWN)	12
Coughlin-Alumni Stadium Locker Room	68	Old Horticulture	51	Wecota Annex (SWX)	11
Coughlin Campanile	23	Performing Arts Center (SPAC)	85	Wecota Hall (SWC)	10
Crothers Engineering Hall (SCS)	54	Peterson Recital Hall (Lincoln Music Center) (SLM)	21	Wellness Center (SWH)	82
Dairy Microbiology (SDM)	26	Physiology Laboratory (SPL)	37	Wenona Hall (SWE)	9
DePuy Military Hall (SDP)	60	Pierson Hall (SPR)	73	West Hall (SWH)	13
Diversity Enhancement & Service Learning (SFND)	87	Plant Science Building (SPSB)	40	West Headhouse & West Greenhouses (SWHH)	28
Dykhouse Student-Athlete Center	67	Plant Science Seedhouse (SSD)	27	Wheat Commission Greenhouse (WCG)	29
East Headhouse (SEHH)	39	Plant Science West Greenhouses	38	Wintrose Success Center (SWSC)	55
Electrical Engineering & Computer Science Complex	56	Print Lab (SYE)	46	Woodbine Cottage (President's Residence) (SWBC)	14
Equestrian Center	65			Yeager Hall (US Post Office, Central Mail, Print Lab) (SYE)	46
				Young Hall (SYH)	79

