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5-1-2012

# South Dakota State University Undergraduate General Catalog 2012-2013

South Dakota State University

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# **South Dakota State University**

## **General Catalog 2012-2013**



# Frequently Called Numbers

## General Numbers

Undergraduate Admissions Office	605-688-4121 or 1-800-952-3541	Research Office	605-688-6696
Administrative and Research Computing	605-688-6134	Residential Life	605-688-5148
Advising, First Year Advising Center	605-688-4155	SDSU Foundation	605-697-7475
Agricultural Experiment Station	605-688-4149	Student Activities	605-688-6129
Agricultural Heritage Museum	605-688-6226	Student Affairs Vice President	605-688-4493
Alumni Association Office	605-697-5198	Tickets	
American Indian Education and Cultural Center	605-688-6416	Jackrabbit Athletics	605-688-5422
Art Museum	605-688-5423		or 1-866-GO-JACKS
Board of Regents	605-773-3455	State University Theatre Box Office	605-688-6045
Bookstore	605-688-4163	University Parking and Traffic Office	605-688-7275
Capital University Center-Pierre	605-773-2160	University Police Department	605-688-5117
Career Center Office	605-688-4425	University Relations	605-688-6161
Cooperative Extension Service	605-688-4792	University Center-Sioux Falls	605-367-5640
Counseling Services	605-688-6146	University Center-Rapid City	605-394-6823
Dining Services	605-697-2550	Veterans Advising	605-688-4700
Disability Services Office	605-688-4504	<b>Administrative Numbers</b>	
Diversity Enhancement Office	605-688-6556	President's Office	605-688-4111
Environmental Health & Safety	605-688-4264	Provost and Vice President for Academic Affairs	605-688-4173
Facilities & Services	605-688-4136	Vice President for Research	605-688-6696
Financial Aid Office	605-688-4695	Vice President for Student Affairs	605-688-4493
Graduate School	605-688-4181	Vice President for Information Technology	605-688-4988
Health Services	605-688-4157	College of Agriculture and Biological Sciences	605-688-4148
Human Resources	605-688-4128	College of Arts and Sciences	605-688-4723
Information Exchange	605-688-6127	College of Education and Human Sciences	605-688-6181
International Affairs	605-688-4913	College of Engineering	605-688-4161
Library	605-688-5107	College of Nursing	605-688-5178
Multicultural Affairs Office	605-688-6129	College of Pharmacy	605-688-6197
Registrar (on-campus)	605-688-6195	Continuing and Extended Education	605-688-4154
(off-campus)	605-688-6397	Graduate School	605-688-4181
Transcripts (ordering)	605-688-6637	Honors College	605-688-5268
		University College	605-688-4153

## South Dakota State University Non-Discrimination Policy

It is the policy of South Dakota State University (SDSU) not to discriminate on the basis of race, color, creed, religion, national origin, ancestry, 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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# Purposes & Objectives

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# History and Mission: The Land-Grant Heritage

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**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 Sciences, Engineering, Home Economics, Nursing, and Pharmacy as well as the Graduate School. Today SDSU has seven colleges: Agriculture and Biological Sciences, Arts and Science, Education and Human Sciences, Engineering, Honors, Nursing, Pharmacy, and University College, 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 pre-professional, 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 2011 the College of General Studies became University College and the Office of Outreach and Distance Education became the Office of International Affairs and Academic Outreach.

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 the state. Additionally, South Dakota State University is a member of the Sun Grant Initiative that was authorized in the 2002 farm bill. Today SDSU is a national leader in Sun Grant research.

**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
  - Master's 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), Doctorate of Nursing Practice (DNP).

(Mission statement is quoted from Board of Regents Policy 1:10:2, dated May 2011.)

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; human sciences; liberal arts; pharmacy; nursing; teacher and counselor education; basic physical, biological, and social sciences; humanities and arts at the undergraduate and graduate levels.
3. Research and scholarship in agriculture; engineering and engineering technology; human sciences; liberal arts; nursing; pharmacy; teacher and counselor education; basic physical, biological and social sciences; humanities and arts at the undergraduate and graduate levels.
4. Extension/outreach programs in agriculture; engineering and engineering technology; human sciences; liberal arts;

nursing; pharmacy; teacher and counselor education; basic physical, biological and social sciences; humanities and arts for adults and youth in South Dakota.

5. Citizenship training and general learning essential for understanding and appreciating and contributing to the American way of life and its relationship to the global community as global citizens.
6. Student self-development in leadership, social, intellectual, recreational, interpersonal, ethical, changeable, socially responsible, and spiritual attributes.
7. Student self-development in international and intercultural understanding consistent with the continually increasing cultural, economic and political interdependence of the modern world.
8. Vocational learning and training in selected areas.
9. Collection, preservation, display and study of artistic, artifactual and documentary materials which are the cultural base for all future programs.
10. Service and social responsibility for the welfare of South Dakota, the region, the nation, and the world.

## Educational Objectives

The educational objective of SDSU is primarily to guide each student in attainment of intellectual and professional competence, growth of personal development, cultivation of a sense of social and civic responsibility, and achievement of satisfactory human relationships. Ideally, upon graduation, SDSU students will have attained intellectual autonomy with capabilities to think, read, speak, and write effectively, both within their practiced disciplines and beyond. 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 change-able, that is, able to embrace change in positive and constructive ways.

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

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

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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 Research Centers funded by the State Legislature, E. A. Martin Program in Human Nutrition, South Dakota EPSCoR, and 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 a 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](mailto:kevin.kephart@sdstate.edu).







# Admission Policies & Procedures

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# Application Procedures

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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 into 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 or 1-800-952-3541

e-mail: [sdsu.admissions@sdstate.edu](mailto:sdsu.admissions@sdstate.edu) or [www.sdstate.edu](http://www.sdstate.edu)

## Undergraduate Admission Requirements

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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% 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 Mathematics**<sup>1</sup>

*or* ACT Math sub-test score of 20 *or* above

*or* AP Calculus score of 3 or above

**3 years of Laboratory Science**<sup>2</sup>

*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 non-credit 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.

<sup>1</sup> Advanced math includes algebra or any higher level math.

<sup>2</sup> Laboratory science includes biology, chemistry, physics, or other approved science courses in which there is a weekly lab period scheduled.

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

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

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

**OR**

Achieve an ACT composite score of 18 or above,

**OR**

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

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

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

**AND**

Met university minimum progression standards.

## Transfer Students

Students are considered transfer students if they have college credits from an accredited institution and are six or more months beyond high school graduation. Individuals currently enrolled at other institutions 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

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 BORs 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 US colleges and universities accredited by a US 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.
        - b. If the academic discipline is not available at the university evaluating the credit, use the GEN prefix and the appropriate course level.
    - 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.
      - b. If the academic discipline is not available at the university evaluating the credit, use the GEN prefix and the appropriate course level.
  - 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.
      - b. If the academic discipline is not available at the university evaluating the credit, use the GEN prefix and the appropriate course level.
  - 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.
10. Credit Received Through Validation Methods
- A. Credit earned through validation methods other than nationally recognized examinations is limited to a maximum of 30 hours of credit for baccalaureate degrees and 15 hours of credit for associate degrees.
    1. Validation of Military credit is limited to an additional 30 hours of credit for baccalaureate degrees and an additional 15 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 a Regental institution will be accepted towards meeting these requirements at the accepting 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.

## 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

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 over 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 clear evidence of adequate resources for financing their program of study.**

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

International Students have a separate application packet. Complete applications must arrive by: June 1 to be considered for fall admission; October 1 for spring admission, for applicants outside the United States. Applications not meeting the deadline requirement for one semester will remain active and when complete will be considered for the next semester. Contact the International Student Affairs Office for the application packet and further information: International Student Affairs, Briggs Library #119, SDSU, Brookings, SD 57007. Phone: 605-688-4122; e-mail [sdsu.intlstud@sdstate.edu](mailto: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

## Residency Requirements

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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.

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, Briggs Library #119, SDSU, Brookings, SD 57007. Phone: 605-688-4122; e-mail [sdsu.intlstud@sdstate.edu](mailto:sdsu.intlstud@sdstate.edu) or fax 605-688-6540..

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









# Academic Evaluation

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# Introduction

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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

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### 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 post-secondary institution 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:
  - 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



## Assessment Program

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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 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, students are required to participate in assessment activities when requested. Assessment information is collected upon entrance into SDSU and additional assessments occur throughout the academic

career. Students participate in an assessment for each major as part of their graduation requirements. For further information contact the Office 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.

## 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

For students who have studied a subject independently or have done college level coursework for which they are unable to get a transcript acceptable to this institution, they may receive credit through a variety of evaluation programs.

Credits obtained through validation methods other than nationally recognized examinations are limited to 30 hours of credit for baccalaureate degrees and 15 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 the academic transcript, students must complete an "Application for Placement Credit" form at the Academic Evaluation and Assessment Office and pay a recording fee.

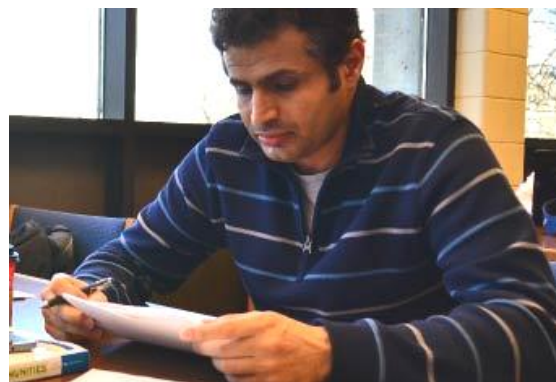
### University CLEP Policies

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 to award credit for a course, 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 the student's background in the subject area to determine if an examination is warranted.
2. Consult the appropriate dean 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 Office 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. 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. 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

Students 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 60 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 30 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 and Global Studies 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 and Global Studies 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 Global Studies 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 Global Studies 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.

1. Enrollment/credit may be allowed at or above the 300 level
2. Enrollment/Credits not allowed:
  - a. For native language courses at the 100 and 200 levels (at SDSU or from other institution as transfer credits)
  - b. For Challenge by Exam\* in the native language
  - c. For CLEP in the native language

**Determination of native language skills** is typically based on the language used in a student's secondary school instruction. The Department of Modern Languages and Global Studies 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 sciences (SGR #3 and humanities (SGR #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 and Global Studies (SWG 121, 605-688-5101) for additional information.

## Grading

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

### Undergraduate Grading Rubric

The rubric below is designed to help faculty clearly articulate the standards by which they will assess student work. The rubric reflects broad consensus regarding the chief components of such work—its content, form, and style—and regarding the qualities that mark each grade level. No single rubric, however, applies to every assignment. What follows, then, is a guideline to help foster discussion—and understanding—between faculty and students about performance expectations and about assessment. Faculty may use the rubric as is or adapt it as they see fit.

<u>Grade Descriptor</u>	<u>Grade Point Value</u>
<b>The grade of "A" ("exceptional") designates:</b>	4.00
<ul style="list-style-type: none"> <li>• fulfillment of the requirements and objectives of the assignment</li> <li>• an excellent, impressive command of content</li> <li>• a clear explanation, development, and application of ideas</li> <li>• independent thought and analysis</li> <li>• thorough and persuasive substantiation of claims</li> <li>• clear and effective organization</li> <li>• precise, fluent, and distinctive expression—written or oral</li> <li>• correct grammar, punctuation, documentation, and format</li> </ul>	Grade Points
<b>The grade of "B" ("above average") designates:</b>	3.00
<ul style="list-style-type: none"> <li>• fulfillment of most of the requirements and objectives of the assignment</li> <li>• a competent command of content</li> <li>• mostly clear explanation, development, and application of ideas</li> <li>• a capacity for independent thought and analysis, though it is not fully realized</li> <li>• sufficient and mostly persuasive substantiation of claims</li> <li>• mostly clear and effective organization</li> <li>• mostly precise, fluent, and clear expression—written or oral</li> <li>• mostly correct grammar, punctuation, documentation, and format</li> </ul>	Grade Points

<b>The grade of "C" ("average") designates:</b>	2.00
<ul style="list-style-type: none"> <li>• fulfillment of the major requirements and objectives of the assignment, though minor ones are only partially fulfilled or unfulfilled</li> <li>• an adequate command of subject matter</li> <li>• adequate explanation, development, and application of ideas, though lack of depth is evident</li> <li>• lack of independent thought or sustained analysis</li> <li>• inconsistent substantiation of claims</li> <li>• adequate organization, though lapses are evident</li> <li>• adequate expression—written or oral—though lapses in precision, fluency, and clarity are evident</li> <li>• adequate grammar, punctuation, documentation, and format, though errors are evident</li> </ul>	Grade Points
<b>The grade of "D" ("lowest passing grade") designates:</b>	1.00
<ul style="list-style-type: none"> <li>• insufficient fulfillment of the requirements and objectives of the assignment</li> <li>• an inadequate command of content</li> <li>• insufficient explanation, development, and application of ideas</li> <li>• unexamined, clichéd thinking and little analysis</li> <li>• inadequate substantiation of claims</li> <li>• inadequate organization, making the text hard to follow</li> <li>• inadequate expression—written or oral—with significant lapses in precision, fluency, and clarity</li> <li>• numerous and significant errors in grammar, punctuation, documentation, and format</li> </ul>	Grade Points
<b>The grade of "F" ("failure") designates:</b>	0.00
<ul style="list-style-type: none"> <li>• a failure to follow or complete the assignment</li> <li>• a failure to control or comprehend the content</li> <li>• a failure to sufficiently explain, develop, or apply ideas</li> <li>• a failure to analyze</li> <li>• a failure to sufficiently substantiate claims</li> <li>• a failure to organize the content, making the text or oral presentation largely incoherent</li> <li>• a failure to write or speak with any degree of precision, fluency or clarity</li> <li>• a failure to abide by the conventions of grammar, punctuation, documentation or format</li> </ul>	Grade Points

### Additional Grades

Grade Descriptor	Additional Grades	Grade Point Value
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
NP	Grade not Reported by Instructor	Does not calculate into any GPA
Grade*	Academic Amnesty	Does not calculate into any GPA, no credit given

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

1. A student has encountered extenuating circumstances that do not permit him/her to complete the course.
2. 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.
3. The student does not have to repeat the course to meet the requirements.
4. The instructor must agree to grant an Incomplete grade.
5. The instructor and student must agree on a plan to complete the coursework.
6. The coursework must be completed within one semester; extensions may be granted by the Vice President for Academic Affairs.
7. 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.
8. 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 policies 2:6.5 and 2:6.9.

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

1. The requirements for the course (for every student enrolled in the course) extend beyond the current term.
2. The extension beyond the current term must be defined before the class begins.
3. 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.
4. A definite date for completion of the course must be established in the course syllabus.

With the exception of an "I" that has not been completed within the 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. **Students 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. Some courses are taught only on a Satisfactory/Unsatisfactory basis. Consult the specific department for more information.

1. A student may enroll in up to 20 credits using the Satisfactory/Unsatisfactory System.
2. These credits must be outside the student's 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.
6. The Satisfactory/Unsatisfactory option should be known only to the academic advisor, instructor, the student and the registrar.
7. Students may request to change from satisfactory/unsatisfactory elective to graded credit or vice versa only during the add period.
8. The grade (S or U) will be recorded on a student's 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.



# Academic Expectations

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# Academic Performance

The normal progress rate toward graduation requires 12-15 semester credits and 24-30 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) of 2.00 or above. (See 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	0-29.99	2.0
Sophomore	30-59.99	2.0
Junior	60-89.99	2.0
Senior	90+	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 (01:10:27) within the Student Policy Manual. A student charged with academic

dishonesty who wishes to appeal that charge may follow the Appeals Procedure outlined in Chapter 2 of the Student Policy Manual (Academic Appeals and Classroom Standards) or contact the Vice President for Academic Affairs Office, 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 cannot 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

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1. Sophomore status requires 30 semester credit hours.
2. Junior status requires 60 semester credit hours.
3. Senior status requires 90 semester credit hours.

## Electives

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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

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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 15 credits each semester. To be a full-time student, undergraduates must carry 12 semester credits. Undergraduates are not 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 one's academic advisor. Refer to the semester course schedule and the registrar's office 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 non-standard 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% 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. **Do 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.) 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)

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



# Petitions and Appeals

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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

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Those finding it necessary to withdraw from the University are urged to consult with a faculty advisor to work out the best plan possible and then contact the Registrar's Office, SAD 100 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 (Contact the Registrar's office for date information). 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

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The overall educational objective of South Dakota State University is to guide each student in the attainment of intellectual and professional competence, 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 advisor 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. Assist students in the exploration and definition of immediate and lifelong goals.
2. Encourage students to explore and become involved in beneficial experiences that contribute to a complete university experience.
3. Inspire students to understand their freedom of choice and accept their responsibility for academic progress and planning.

## 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 advisor who fulfills the SDSU advising goals, role, and responsibilities.
2. The right to know and have timely access to an assigned advisor.
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 advisor assignment and the right to clear procedures for conveying concerns relative to quality of advising help.

## Responsibilities of the Advisee

1. Initiate and advance timely career and academic related plans and discussions with advisor.
2. Initiate regular progress appointments and seek advisor assistance when problems arise.
3. Fulfill additional requirements as agreed upon during discussions with advisor.
4. Recognize that the ultimate responsibility for timely completion of academic requirements rests with the advisee.

## Role of the Academic Advisor

The academic advisor role is to be a sensitive, knowledgeable, and skilled link that enhances the advisee's relationship with the University. The academic advisor assists the student in achieving educational goals.

## Responsibilities of the Academic Advisor

1. **Furnish Accurate Academic Information.** Provide advisees with correct and relevant information about university, college, and departmental graduation requirements.
2. **Know Advisees.** Know assigned advisees and their individual educational and career goals.
3. **Guide Major Program Planning.** Recommend courses which correspond with advisees' academic background and educational goals.
4. **Maintain Advisee Records.** Keep current advisee records and personal information in accordance with confidentiality requirements.
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.
10. **Develop Advising Knowledge and Skill.** Participate in professional development activities that will enhance advising knowledge and skills





# Affirmative Action/Equal Employment Opportunity Policy/Title IX

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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, analysis, and reports. Analysis, 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:

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

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South Dakota State University (SDSU) reaffirms that it is committed to a policy of non-discrimination on the basis of physical or mental disability/impairment in the offering of all benefits, services, educational and employment opportunities. The Coordinator for Disability Services has been designated the SDSU "Responsible Employee" to coordinate institutional compliance with the non-discrimination requirements of the **Americans with Disabilities Act (ADA) of 1990**. 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- 4504; E-mail: [sdsu.disability@sdstate.edu](mailto:sdsu.disability@sdstate.edu)

## Email Policy Statement

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Email messages sent by SDSU to students through university-assigned, jacks email addresses will constitute an official means of communication. It is the student's responsibility and obligation to access official university email messages in a timely manner. As

other email accounts may be blocked by the SDSU firewall, SDSU is only able to monitor student emails coming from university-assigned email accounts.



# Family Education Rights and Privacy Act of 1974

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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 website.

## Graduation Policies and Procedures

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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

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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 International Affairs and Outreach - Continuing and Extended Education, Briggs Library Room 119, Box: 2115 Brookings, SD 57007; 605-688-4154. E-mail: SDSU.distance@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 hand-delivered, mailed, or faxed written complaint. At SDSU, email 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 Vice President Peterson and Dean Marysz Rames.



# Student Code of Freedom and Responsibility

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

## Trip Regulations

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- 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. This must be forwarded 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 Wavier 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. 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 students missing classes shall also be submitted to the Vice President for Academic Affairs office for approval via the authorized request form by the date of the trip.

## University-Sponsored Student Athletic Trip Regulations

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- A. A written notification of all athletes participating in any off-campus event must be submitted to the Compliance 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 Compliance Office before the trip.**







# Graduation Requirements

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# General Degree Requirements

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Academic advisors assist with proper course selection to meet curricular requirements and help to avoid errors in scheduling. However, students 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 120 semester credit hours for the baccalaureate degree (see individual professional college requirements) and 60 semester credit hours for the associate degree. Remedial course credits are not counted as meeting degree requirements.
- B. A Cumulative Grade Point Average (CGPA) of 2.00. The CGPA is based on all courses attempted within the Regental system, transfer or at SDSU. If a course is repeated, F95 or later, only the last grade received will be included in the calculation of the CGPA.
- 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 30 credits for the baccalaureate degree and 15 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 15 of the last 30 credits for the baccalaureate degree and 8 of the last 15 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

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The required General Education Curriculum for all undergraduate students is further explained in the Graduation Requirements section of the Catalog. The 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) designed to achieve two major goals.

## IGR Goal #1: *First Year Experience*

Students will understand their emerging role and responsibilities as educated persons through a common intellectual experience.

## IGR Goal #2: *Cultural Awareness and Social and Environmental Responsibility*

Students will acquire knowledge about the world's peoples – their cultures, arts, and environments – that prepares them for further study, deepens their understanding of the human condition, and strengthens their commitment to social and environmental responsibility.

## NOTES:

**The course used to meet IGR Goal #2 must have a different prefix than the courses used to meet System Goals #3, 4, and 6.**

**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

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

### II. Institutional Graduation Requirements: 5 credits

Goal #1: First Year Experience	Credits: 2
Goal #2: Cultural Awareness and Social and Environmental Responsibility	Credits: 3

### III. Globalization Requirement

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

### IV. Advanced Writing Requirement

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 course work 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, 277, 283 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)

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

**Credit Hours:** 6

### **Courses**

ENGL 101 - Composition I	Credits: 3
ENGL 201 - Composition II	Credits: 3
ENGL 277 - Technical Writing in Engineering	Credits: 3
ENGL 283 - Creative Writing I	Credits: 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: #1, #2, and #3

**Credit Hours:** 3

### **Courses**

SPCM 101 - Fundamentals of Speech	Credits: 3
SPCM 215 - Public Speaking	Credits: 3
SPCM 222 - Argumentation and Debate	Credits: 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**

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

### Courses

AIS 101 - Introductory Lakota I	Credits: 4	GER 202 - Intermediate German II	Credits: 3
AIS 102 - Introductory Lakota II	Credits: 4	HIST 111 - World Civilizations I	Credits: 3
ARAB 101 - Introductory Arabic I	Credits: 4	HIST 112 - World Civilizations II	Credits: 3
ARAB 102 - Introductory Arabic II	Credits: 4	HIST 121 - Western Civilization I	Credits: 3
ART 111 - Drawing I	Credits: 3	HIST 122 - Western Civilization II	Credits: 3
ART 112 - Drawing II	Credits: 3	LAKL 101 - Introductory Lakota I	Credits: 4
ART 121 - Design I 2D	Credits: 3	LAKL 102 - Introductory Lakota II	Credits: 4
ART 123 - Three Dimensional Design	Credits: 3	MCOM 151 - Introduction to Mass Communication	Credits: 3
ARTH 100 - Art Appreciation	Credits: 3	MCOM 160 - Introduction to Film	Credits: 3
ARTH 211 - History of World Art I	Credits: 3	MUS 100 - Music Appreciation	Credits: 3
ARTH 212 - History of World Art II	Credits: 3	MUS 130 - Music Literature and History	Credits: 2
ENGL 210 - Introduction to Literature	Credits: 3	MUS 131 - Music Literature and History II	Credits: 3
ENGL 211 - World Literature I	Credits: 3	MUS 201 - History of Country Music	Credits: 3
ENGL 212 - World Literature II	Credits: 3	MUS 203 - Blues, Jazz, and Rock	Credits: 3
ENGL 221 - British Literature I	Credits: 3	PHIL 100 - Introduction to Philosophy	Credits: 3
ENGL 222 - British Literature II	Credits: 3	PHIL 200 - Introduction to Logic	Credits: 3
ENGL 240 - Juvenile Literature	Credits: 3	PHIL 215 - Introduction to Social-Political Philosophy	Credits: 3
ENGL 241 - American Literature I	Credits: 3	PHIL 220 - Introduction to Ethics	Credits: 3
ENGL 242 - American Literature II	Credits: 3	REL 213 - Introduction to Religion	Credits: 3
ENGL 248 - Women in Literature	Credits: 3	REL 224 - Old Testament	Credits: 3
ENGL 249 - Literature of Diverse Cultures	Credits: 3	REL 225 - New Testament	Credits: 3
ENGL 250 - Science Fiction	Credits: 3	REL 238 - Native American Religions	Credits: 3
ENGL 256 - Literature of the American West	Credits: 3	REL 250 - World Religions	Credits: 3
ENGL 268 - Literature	Credits: 3	RUSS 101 - Introductory Russian I	Credits: 4
FREN 101 - Introductory French I	Credits: 4	RUSS 102 - Introductory Russian II	Credits: 4
FREN 102 - Introductory French II	Credits: 4	SPAN 101 - Introductory Spanish I	Credits: 4
FREN 201 - Intermediate French I	Credits: 4	SPAN 102 - Introductory Spanish II	Credits: 4
FREN 202 - Intermediate French II	Credits: 4	SPAN 201 - Intermediate Spanish I	Credits: 3
GER 101 - Introductory German I	Credits: 4	SPAN 202 - Intermediate Spanish II	Credits: 3
GER 102 - Introductory German II	Credits: 4	THEA 100 - Introduction to Theatre	Credits: 3
GER 201 - Intermediate German I	Credits: 3	THEA 131 - Introduction to Acting	Credits: 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

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

## 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

BIOL 101-101L - Biology Survey I and Lab	Credits: 3
BIOL 103-103L - Biology Survey II and Lab	Credits: 3
BIOL 151-151L - General Biology I and Lab	Credits: 4
BIOL 153-153L - General Biology II and Lab	Credits: 4
BIOL 200-200L - Animal Diversity and Lab	Credits: 4
BOT 201-201L - General Botany and Lab	Credits: 3
CHEM 106-106L - Chemistry Survey and Lab	Credits: 3, 1
CHEM 108-108L - Organic and Biochemistry and Lab	Credits: 4, 1
CHEM 112-112L - General Chemistry I and Lab	Credits: 3, 1
CHEM 114-114L - General Chemistry II and Lab	Credits: 3, 1
CHEM 115-115L - Atomic and Molecular Structure and Lab	Credits: 3, 1
CHEM 120-120L - Elementary Organic Chemistry and Lab	Credits: 3, 1
CHEM 127-127L - Structure & Function of Org Molecules & Lab	Credits: 3, 1
GEOG 131-131L - Physical Geography: Weather and Climate & Lab	Credits: 4
GEOG 132-132L - Physical Geography: Natural Landscapes & Lab	Credits: 4
PHYS 101-101L - Survey of Physics and Lab	Credits: 4
PHYS 111-111L - Introduction to Physics I and Lab	Credits: 4
PHYS 113-113L - Introduction to Physics II and Lab	Credits: 4
PHYS 185-185L - Introduction to Astronomy I and Lab	Credits: 3
PHYS 187-187L - Introduction to Astronomy II and Lab	Credits: 3
PHYS 211-211L - University Physics I and Lab	Credits: 4
PHYS 213-213L - University Physics II and Lab	Credits: 4
PS 213-213L - Soils and Lab	Credits: 2, 1
PS 243 - Principles of Geology	Credits: 3
PS 244 - Geological Resources of South Dakota Lab	Credits: 1

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

### Credit hours: 0

#### Courses

SPCM 101- Fundamentals of Speech	Credits: 3
ENGL 101 - Composition I	Credits: 3
ENGL 201 - Composition II	Credits: 3
ENGL 283 - Creative Writing I	Credits: 3
ENGL 277 - Technical Writing in Engineering	Credits: 3

## II. SDSU's Institutional Graduation Requirements (IGRs)

(These requirements are unique to SDSU.)

### IGR Goal #1

#### *First Year Experience*

Students will understand their emerging role and responsibilities as educated persons through a common intellectual experience.

#### Student Learning Outcomes

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

1. Identify areas of self-responsibility that contribute to personal and professional goals and success.
2. Design a plan and identify appropriate strategies that will guide engagement in their education, community, and world.
3. Explain how to achieve and maintain personal and professional wellness.
4. Articulate how knowledge of contemporary issues and exposure to diversity impacts personal and professional life.
5. Explain how South Dakota State University is defined by the Land Grant Mission (Morrill Act).

Each course meeting this goal includes the following student learning outcomes: Required: #1, #2, #3, #4, and #5

#### Credit Hours: 2

ABS 109 - First Year Seminar	Credits: 2
AGED 109 - First Year Seminar - Agricultural Education	Credits: 2
ARCH 109 - First Year Seminar	Credits: 2
AS 109 - First Year Seminar	Credits: 2
AST 109 - First Year Seminar	Credits: 2
BIOL 109-109L - First Year Seminar and Lab	Credits: 2, 0
CHEM 109 - First Year Seminar	Credits: 2
DS 109 - First Year Seminar	Credits: 2
GE 109-109L - First Year Seminar and Lab	Credits: 1, 1
HON 109 - First Year Seminar – Honors	Credits: 2
MCOM 109 - First Year Seminar	Credits: 2
MUS 109 - First Year Seminar	Credits: 2
NRM 109-109L - First Year Seminar and Lab	Credits: 1, 1
NURS 109 - First Year Seminar	Credits: 2
PHA 109 - First Year Seminar – Pharmacy	Credits: 2
PHYS 109 - First Year Seminar	Credits: 2
PS 109 - First Year Seminar	Credits: 2
SPCM 109 - First Year Seminar - Communication Studies & Theatre	Credits: 2
UC 109 - First Year Seminar	Credits: 2



**Clarification of "Educational Experiences" Alternative**  
 Educational Experiences (EdEx) are an option to meet SDSU's IGRs. The Educational Experiences will parallel the guidelines for credit, requiring 45 hours of experiential learning per credit hour earned. Departments will present proposals describing Educational Experiences for approval to the SDSU Academic Affairs subcommittee who will forward a recommendation to the full Academic Affairs Committee for approval to assure that the student learning outcomes of the specific IGR has been achieved. This Educational Experiences Alternative is not to be designed to meet the needs of an individual student, but rather to meet the needs of groups of students within a department/major, throughout the University.

## II. SDSU's Institutional Graduation Requirements (IGRs)

(These requirements are unique to SDSU.)

### IGR Goal #2

#### *Cultural Awareness and Social and Environmental Responsibility*

Students will acquire knowledge about the world's peoples - their cultures, arts, and environments - that prepares them for further study, deepens their understanding of the human condition, and strengthens their commitment to social and environmental responsibility.

#### Student Learning Outcomes:

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

1. Articulate the ways in which different peoples express an understanding of the human condition and respond to environmental opportunities and constraints.
2. Describe how personal choices derive from and affect social, cultural, and environmental contexts.
3. Engage in aesthetic experience in order to understand artistic expression and to learn how meaning emerges from the cultural contexts of both artist and audience.
4. Explain the ethical consequences of decisions and actions concerning the environment to strengthen commitment to local, national, and global citizenship.

Each course meeting this goal includes the following student learning outcomes

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

#### Credit Hours: 3

ABS 203 - Global Food Systems	Credits: 3	ENGL 283 - Creative Writing I	Credits: 3
AIS 256 - Literature of American West	Credits: 3	FREN 201 - Intermediate French I	Credits: 4
AIS 368 - History and Culture of the American Indian	Credits: 3	FREN 202 - Intermediate French II	Credits: 4
AIS 421 - Indians of North America	Credits: 3	GE 231 - Technology, Society, and Ethics	Credits: 3
ANTH 421/521 - Indians of North America	Credits: 3	GEOG 200 - Introduction to Human Geography	Credits: 3
ART 111 - Drawing I	Credits: 3	GEOG 210 - World Regional Geography	Credits: 3
ART 112 - Drawing II	Credits: 3	GEOG 310-310L - Soil Geog & Land Use Interpret & Lab	Credits: 3
ART 121 - Design I 2D	Credits: 3	GEOG 415-515 - Environmental Geography	Credits: 3
ART 123 - Three Dimensional Design	Credits: 3	GEOG 459-559 - Political Geography	Credits: 3
ART 211 - Drawing III-Figurative	Credits: 3	GER 201 - Intermediate German I	Credits: 3
ART 231 - Painting I	Credits: 3	GER 202 - Intermediate German II	Credits: 3
ART 241 - Sculpture I	Credits: 3	GLST 125 - Introduction to Peace and Conflict Studies	Credits: 3
ART 251 - Ceramics I	Credits: 3	GLST 201 - Global Studies I	Credits: 3
ART 281 - Printmaking I	Credits: 3	GLST 480 - Ethics of Globalization	Credits: 3
ARTH 100 - Art Appreciation	Credits: 3	HIST 111 - World Civilizations I	Credits: 3
ARTH 120 - Film as Art	Credits: 3	HIST 112 - World Civilizations II	Credits: 3
ARTH 211 - History of World Art I	Credits: 3	HIST 121 - Western Civilization I	Credits: 3
ARTH 212 - History of World Art II	Credits: 3	HIST 122 - Western Civilization II	Credits: 3
BIOL 105 - Human Biology	Credits: 3	HIST 151 - United States History I	Credits: 3
BIOL 383 - Bioethics	Credits: 4	HIST 152 - United States History II	Credits: 3
CEE 225 - Principles of Environmental Science & Engineering	Credits: 3	HIST 368 - History and Culture of the American Indian	Credits: 3
ECON 201 - Principles of Microeconomics	Credits: 3	HLTH 443 - Public Health Science	Credits: 3
ECON 460-560 - Economic Development	Credits: 3	HON 303 - Honors Colloquium	Credits: 1-4
EES 275 - Introduction to Environmental Science	Credits: 3	HSC 443 - Public Health Science	Credits: 3
ENGL 125 - Introduction to Peace and Conflict Studies	Credits: 3	IDL 100 - Concepts in Sustainability	Credits: 3
ENGL 210 - Introduction to Literature	Credits: 3	LEAD 210 - Foundations of Leadership	Credits: 3
ENGL 211 - World Literature I	Credits: 3	MCOM 160 - Introduction to Film	Credits: 3
ENGL 221 - British Literature I	Credits: 3	MUEN 100-300 - Concert Choir	Credits: 1-2
ENGL 222 - British Literature II	Credits: 3	MUEN 102-302 - Men's Choir	Credits: 1
ENGL 240 - Juvenile Literature	Credits: 3	MUEN 103-303 - Women's Choir	Credits: 1
ENGL 241 - American Literature I	Credits: 3	MUEN 107-307 - Opera Workshop	Credits: 1-2
ENGL 242 - American Literature II	Credits: 3	MUEN 120-320 - Marching Band	Credits: 1
ENGL 248 - Women in Literature	Credits: 3	MUEN 121-321 - Symphonic Band	Credits: 1
ENGL 249 - Literature of Diverse Cultures	Credits: 3	MUEN 122-322 - Concert Band	Credits: 1
ENGL 256 - Literature of the American West	Credits: 3	MUEN 170-370 - Percussion Ensemble	Credits: 1
		MUEN 180-380 - Jazz Ensemble	Credits: 1
		NFS 111 - Food, People and the Environment	Credits: 3
		NRM 110 - Environmental Conservation	Credits: 3
		PHIL 383 - Bioethics	Credits: 4
		PHIL 454-554 - Environmental Ethics	Credits: 3
		PHIL 470-570 - Philosophy of Religion	Credits: 3
		PHIL 480 - Ethics of Globalization	Credits: 3
		POLS 210 - State and Local Government	Credits: 3
		POLS 253 - Current World Problems	Credits: 3
		PS 213-213L - Soils and Lab	Credits: 2, 1
		PS 310-310L - Soil Geog & Land Use Interpret & Lab	Credits: 3
		PS 362-362L - Environmental Soil Management and Lab	Credits: 3
		PSYC 101 - General Psychology	Credits: 3
		PSYC 244 - Environmental Psychology	Credits: 3
		PSYC 327 - Child Psychology	Credits: 3
		PSYC 364 - Cross Cultural Psychology	Credits: 3
		PSYC 367 - Psychological Gender Issues	Credits: 3
		PSYC 417 - Health Psychology	Credits: 3
		PSYC 441 - Social Psychology	Credits: 3
		PSYC 451 - Psychology of Abnormal Behavior	Credits: 3
		REL 370 - Philosophy of Religion	Credits: 3
		REL 454 - Environmental Ethics	Credits: 3
		SOC 462-562 - Population Studies	Credits: 3
		SPAN 201 - Intermediate Spanish I	Credits: 3
		SPAN 202 - Intermediate Spanish II	Credits: 3
		WMST 101 - Introduction to Women's Studies	Credits: 3
		WMST 248 - Women in Literature	Credits: 3
		WMST 367 - Psychological Gender Issues	Credits: 3

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

**Credit Hours: varied\***

\*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 120 credits required for graduation increased.

The courses listed above are approved to meet this goal. Each program area/major determines how to best address the globalization goal and student learning outcomes; therefore, students should consult the major department regarding how this goal and its expectations are accomplished within the specific program of study.

ABS 203 - Global Food Systems	Credits: 3
ABS 482-582 - International Experience	Credits: 2-4
AGEC 479 - Agricultural Policy	Credits: 3
ARAB 101 - Introductory Arabic I	Credits: 4

ARAB 102 - Introductory Arabic II	Credits: 4
ARTH 100 - Art Appreciation	Credits: 3
ARTH 211 - History of World Art I	Credits: 3
ARTH 212 - History of World Art II	Credits: 3
BIOL 383 - Bioethics	Credits: 4
BOT 419-419L - Plant Ecology and Lab	Credits: 4
CSC 303 - Ethical and Security Issues in Computing	Credits: 2
ECON 101 - Global Economy	Credits: 3
ECON 202 - Principles of Macroeconomics	Credits: 3
ECON 460-560 - Economic Development	Credits: 3
EES 275 - Introduction to Environmental Science	Credits: 3
ENGL 211 - World Literature I	Credits: 3
ENGL 212 - World Literature II	Credits: 3
ENGL 221 - British Literature I	Credits: 3
ENGL 222 - British Literature II	Credits: 3
FREN 101 - Introductory French I	Credits: 4
FREN 102 - Introductory French II	Credits: 4
FREN 385 - Travel Study Abroad Francophone	Credits: 1-6
GEOG 200 - Introduction to Human Geography	Credits: 3
GEOG 210 - World Regional Geography	Credits: 3
GEOG 219 - Geography of South Dakota	Credits: 3
GEOG 310-310L - Soil Geogr and Land Use Interprt & Lab	Credits: 3
GER 101 - Introductory German I	Credits: 4
GER 102 - Introductory German II	Credits: 4
GLST 201 - Global Studies I	Credits: 3
GLST 401 - Global Studies II	Credits: 3
HIST 112 - World Civilizations II	Credits: 3
HIST 122 - Western Civilization II	Credits: 3
HLTH 443 - Public Health Science	Credits: 3
HSC 443 - Public Health Science	Credits: 3
MCOM 416 - Mass Media in Society	Credits: 3
MCOM 417 - History of Journalism	Credits: 3
MFL 396 - Field Experience	Credits: 1-12
MFL 496-596 - Field Experience	Credits: 1-12
NRM 110 - Environmental Conservation	Credits: 3
NURS 480-480L - Advncd Popltn based Nurs Pract & Lab	Credits: 4
PHIL 383 - Bioethics	Credits: 4
POLS 253 - Current World Problems	Credits: 3
PS 310-310L - Soil Geog and Land Use Intrprtn and Lab	Credits: 3
PS 446-546 - Agroecology	Credits: 3
PSYC 409 - History and Systems of Psychology	Credits: 3
PSYC 482-582 - Travel Studies	Credits: 1-4
REL 250 - World Religions	Credits: 3
SE 330 - Human Factors and User Interface	Credits: 3
SOC 100 - Introduction to Sociology	Credits: 3
SOC 150 - Social Problems	Credits: 3
SOC 240 - The Sociology of Rural America	Credits: 3
SOC 350 - Race and Ethnic Relations	Credits: 3
SOC 440 - Urban Sociology	Credits: 3
SOC 483 - Sociology of Gender Roles	Credits: 3
SPAN 101 - Introductory Spanish I	Credits: 4
SPAN 102 - Introductory Spanish II	Credits: 4
SPCM 470 - Intercultural Communication	Credits: 3
WL 430-430L Human Dimensions in Wildlife & Fisheries & Lab	Credits: 4



## 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: varied\*

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:

ABE 422 - Design Project IV	Credits: 2
ABE 490 - Seminar	Credits: 1
ABS 475-475L - Integrated Natrl Resource Mngmnt & Lab	Credits: 3
AGEC 479 - Agricultural Policy	Credits: 3
AGED 404 - Program Plan in Agricultural Education	Credits: 3
AM 473 - Global Sourcing	Credits: 3
ARTH 310 - History of United States Art and Architecture	Credits: 3
ARTH 320 - Modern Art and Architecture Survey	Credits: 3
ARTH 490 - Seminar	Credits: 1-3
AS 489 - Current Issues in Animal Science	Credits: 2

AST 463/563 - Agricultural Waste Management	Credits: 3
AT 474-574 - Rehabilitation of Athletic Injuries	Credits: 2
AVIA 440 - Curriculum Design in Aviation	Credits: 3
BIOL 490 - Seminar	Credits: 1
CA 340 - Work Family Interface	Credits: 3
CEE 465 - Civil Engineering Capstone Design II	Credits: 2
CHEM 494 - Internship	Credits: 1-4
CHEM 498 - Undergraduate Research/Scholarship	Credits: 1-12
CM 473 - Construction Law and Accounting	Credits: 3
CSC 485 - Software Engineering II	Credits: 3
DS 490 - Seminar	Credits: 1
ECE 361-361L - Methods and Materials/ECE and Lab	Credits: 2, 1
ECON 433 - Public Finance	Credits: 3
EE 465-465L - Senior Design II and Lab	Credits: 2
ENGL 379 - Technical Communication	Credits: 3
ENGL 410 - Mythology and Literature	Credits: 3
ENGL 424 - 7-12 Language Arts Methods	Credits: 3
ET 471-471L - Capstone Experience and Lab	Credits: 1
FCSE 411 - Philosophy and Methods FCSE	Credits: 4
FREN 310 - French Language Skills	Credits: 3
GEOG 382 - Geographic Research Methods	Credits: 3
GER 433 - German Civilization I	Credits: 3
GER 434 - German Civilization II	Credits: 3
GLST 401 - Global Studies II	Credits: 3
HIST 480 - Historical Methods and Historiography	Credits: 3
HO 464 - Senior Project I	Credits: 1
HO 465 - Senior Project II	Credits: 2
HSC 490 - Seminar	Credits: 1-4
ID 322 - Interior Design Studio III	Credits: 4
IDL 479 - Interdisciplinary Studies Capstone	Credits: 2
MATH 401 - Senior Capstone and Advanced Writing	Credits: 1
MCOM 433-433L - Advanced TV News Reporting & Lab	Credits: 3
ME 479-479L - Mechanical Sytems Design II and Lab	Credits: 2
MLS 461 - Introduction to Management and Education	Credits: 2
MICR 490 - Seminar	Credits: 1
MNET 469 - Project Management	Credits: 2
MNET 471-471L - Capstone Experience and Lab	Credits: 1
MUS 433 - Music Literature and History III	Credits: 3
NFS 490/590 - Seminar	Credits: 1-2
NURS 416 - Community Health Nursing	Credits: 5
NURS 495-495L - Practicum and Clinical Lab	Credits: 6
OM 469- Project Management	Credits: 2
OM 471-471L - Capstone Experience and Lab	Credits: 1
OM 494 - Internship	Credits: 1-3
PE 490 - Seminar	Credits: 1-3
PHA 467-467L - Pharmacy Practice III and Lab	Credits: 3
PHA 468-468L - Pharmacy Practice IV and Lab	Credits: 3
PHIL 424 - Modern Political Philosophy	Credits: 3
PHYS 316-316L - Msrmnt Theory & Exprnt Design &Lab	Credits: 2
POLS 461 - Early Political Philosophy	Credits: 3
POLS 462 - Modern Political Philosophy	Credits: 3
PS 383-383L - Principles of Crop Improvement and Lab	Credits: 3
PS 390 - Seminar	Credits: 1
PSYC 376-376L - Research Methods II and Lab	Credits: 4
PSYC 409 - History and Systems of Psychology	Credits: 3
RECR 410 - Current Issues in Recreation	Credits: 3
SE 320 - Software Requirements & Formal Specifications	Credits: 3
SPAN 433 - Spanish Civilization and Culture	Credits: 3
SPAN 435 - Latin American Civilization and Culture	Credits: 3
SPCM 305 - Communication Research	Credits: 3
THEA 410 - Dramatic Literature	Credits: 3

# General Education Requirements for Associate Degree

## 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)	Credits: 3
Oral Communication (Goal #2)	Credits: 3
Social Sciences/Diversity (Goal #3)	Credits: 3
Humanities and Arts/Diversity (Goal #4)	Credits: 3
Mathematics (Goal #5)	Credits: 3
Natural Sciences (Goal #6) (6 suggested)	Credits: 3
<b>Total:</b>	<b>18</b>

### 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

### 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.

### Additional Guidelines for Baccalaureate Degrees

1. The 18 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)	Credits: 3
Oral Communications (Goal #2)	Credits: 3
Social Sciences/Diversity (Goal #3)	Credits: 3
Humanities and Arts/Diversity (Goal #4)	Credits: 3
Mathematics (Goal #5)	Credits: 3
Natural Sciences (Goal #6)	Credits: 3
<b>Total:</b>	<b>18</b>
2. Transfer students with more than 18 credit hours entering from outside the Regental System must complete the above specified 18 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:

Civil Engineering	Mechanical Engineering
Computer Science	Music
Electrical Engineering	Music Education
Interior Design	Nursing
Mathematics Education	
Agricultural and Biosystems Engineering	
Biology - Pre-professional Specialization	
4. Students transferring from non-Regental institutions must enroll in pre-general education courses during the first 30 attempted Regental credit hours. These students may enroll in other courses concurrently with the pre-general education courses. If the student does not complete the pre-general education courses during the first 30 Regental credit hours attempted, during the next 12 credit hours attempted, the student must enroll in and complete the pre-general education course(s). If the student does not successfully complete the pre-general education course(s) within 42 attempted Regental credit hours, 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. The Vice President for Academic Affairs may grant an exception.
5. Student who are placed into pre-general education MATH are expected to successfully complete MATH 095 or 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.

### Additional Guidelines for Associate Degrees

1. The 18 hours of System General Education Requirements specified below must be completed within the first 30 hours as preparation for the Proficiency Examination:

Course Requirements	Credit Hours
Written Communication (Goal #1)	Credits: 3
Oral Communications (Goal #2)	Credits: 3
Social Sciences/Diversity (Goal #3)	Credits: 3
Humanities and Arts/Diversity (Goal #4)	Credits: 3
Mathematics (Goal #5)	Credits: 3
Natural Sciences (Goal #6)	Credits: 3
<b>Total</b>	<b>18</b>

# Transfer Students

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## 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.

## College and Major Field Requirements

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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.





# Degrees & Associated Majors

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# Degree Definitions

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## 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 2:27.B.) 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.

**At South Dakota State University, the associate's degree programs are:**

- Associate of Science (A.S.) in General Agriculture
- Associate of Arts (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 ranging from 120-138 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 South Dakota State University, the bachelor's degrees offered are:**

- Bachelor of Arts (B.A.)
- Bachelor of General Studies (B.G.S.)
- Bachelor of Science (B.S.)
- 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.

- **At South Dakota State University, the master's degrees offered are:**
- **Master of Architecture (M.Arch.)**
- **Master of Education (M.Ed.)**
- **Master of Arts (M.A.)**
- **Master of Science (M.S.)**

## 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.

**At South Dakota State University, the doctoral degrees offered are:**

- Doctor of Philosophy (Ph.D.)
- Doctor of Pharmacy (Pharm.D.)
- Doctor of Nursing Practice (D.N.P.)

## 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 by College

SDSU offers **degrees** from the following colleges. Listed below are the **major** areas of study organized by college.

## **Agriculture and Biological Sciences**

### **Arts and Sciences**

### **Education and Human Sciences**

### **Engineering**

### **Nursing**

### **Pharmacy**

### **Graduate School**

### Geographic Information Sciences

### Geography

### Graphic Design

### History

### Interdisciplinary Studies

### Journalism

### Medical Laboratory Science

### Physics

### Political Science

### Psychology

### Sociology

### Speech Communication

### Studio Arts

### Theatre

## **Agriculture and Biological Sciences**

### **Associate of Science in Agriculture**

#### General Agriculture

### **Bachelor of Science in Agriculture**

#### Agricultural and Resource Economics

#### Agricultural Business

#### Agricultural Education, Communication, and Leadership

#### Agricultural Systems Technology

#### Agronomy

#### Animal Science

#### Dairy Manufacturing

#### Dairy Production

#### General Agriculture

#### Horticulture

#### Landscape Architecture

#### Range Science

### **Bachelor of Science in Biological Science**

#### Biology

#### Biotechnology

#### Ecology and Environmental Science

#### Microbiology

#### Wildlife and Fisheries Sciences

## **Arts and Sciences**

### **Associate of Arts in Arts and Sciences**

#### General Studies

### **Bachelor of Arts in Arts and Sciences**

#### Advertising

#### Architectural Studies

#### Art Education

#### Economics

#### English

#### French Studies

#### German

#### Global Studies

#### Graphic Design

#### History

#### Journalism

#### Music

#### Political Science

#### Sociology

#### Spanish

#### Studio Art

### **Bachelor of Music Education**

#### Music Education

### **Bachelor of General Studies**

#### General Studies

### **Bachelor of Science in Arts and Sciences**

#### Advertising

#### Architectural Studies

#### Art Education

#### Biochemistry

#### Chemistry

#### Economics

#### Entrepreneurial Studies

## **Education and Human Sciences**

### **Bachelor of Science**

#### Apparel Merchandising

#### Athletic Training

#### Aviation

#### Consumer Affairs

#### Dietetics

#### Early Childhood Education

#### Exercise Science

#### Family and Consumer Sciences Education

#### Health Education

#### Hospitality Management

#### Human Development and Family Studies

#### Interior Design

#### Nutrition and Food Science

#### Physical Education Teacher Education

#### Sport, Recreation and Park Management

## **Engineering**

### **Bachelor of Science**

#### Agricultural and Biosystems Engineering

#### Civil Engineering

#### Computer Science

#### Construction Management

#### Electrical Engineering

#### Electronics Technology

#### Mathematics

#### Mechanical Engineering

#### Operations Management

## **Nursing**

### **Bachelor of Science**

#### Accelerated Nursing

#### Nursing

#### RN Upward Mobility

## **Pharmacy**

### **Bachelor of Science**

#### Pharmaceutical Sciences

## **Graduate School\***

### **Master of Architecture**

### **Master of Arts**

### **Master of Education**

### **Master of Science**

### **Doctor of Nursing Practice**

### **Doctor of Pharmacy**

### **Doctor of Philosophy**

\* See Graduate School Catalog for information.

# Majors Sorted by General Degree Type

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## Associate of Arts (A.A.)

General Studies

## Associate of Science in Agriculture (A.S.)

General Agriculture

## Bachelor of Arts (B.A.)

Advertising

Architectural Studies

Art Education

Economics

English

French Studies

German

Global Studies

Graphic Design

History

Journalism

Music

Political Science

Spanish

Studio Art

## Bachelor of General Studies (B.G.S.)

General Studies

## Bachelor of Music Education (B.M.E.)

Music Education

## Bachelor of Science (B.S.)

Accelerated Nursing

Advertising

Agricultural and Biosystems Engineering

Agricultural and Resource Economics

Agricultural Business

Agricultural Education, Communication and Leadership

Agricultural Systems Technology

Agronomy

Animal Science

Apparel Merchandising

Architectural Studies

Art Education

Athletic Training

Aviation

Biochemistry

Biology (Biol Sci)

Biotechnology (Biol Sci)

Chemistry

Civil Engineering

Computer Science

Construction Management

Consumer Affairs

Dairy Manufacturing

Dairy Production

Dietetics

Early Childhood Education

Ecology and Environmental Science

Economics

Electrical Engineering

Electronics Technology

Exercise Science

Family and Consumer Sciences Education

General Agriculture

Geographic Information Sciences

Geography

Graphic Design

Health Education

History

Horticulture

Hospitality Management

Human Development and Family Studies

Interdisciplinary Studies

Interior Design

Journalism

Landscape Architecture

Mathematics (ENGR)

Mechanical Engineering

Medical Laboratory Science

Microbiology (Biol Sci)

Nursing

Nutrition and Food Science

Operations Management

Pharmaceutical Sciences

Physics

Physical Education Teacher Education

Political Science

Psychology

Range Science

RN Upward Mobility

Sociology

Speech Communication

Studio Art

Sport, Recreation and Park Management

Theatre

Wildlife and Fisheries Sciences

## Master of Architecture (M.Arch.)\*

## Master of Arts (M.A.)\*

## Master of Education (M.Ed.)\*

## Master of Science (M.S.)\*

## Doctor of Nursing Practice\*

## Doctor of Pharmacy (Pharm.D.)\*

## Doctor of Philosophy (Ph.D.)\*

\* See Graduate School Catalog for further detail about certificate programs, major specializations, emphasis, minors

# Majors, Minors, Certificates, and Specializations by Department

## Agricultural and Biosystems

### Engineering

- Agricultural and Biosystems Engineering (ABE) Major
- Agricultural Systems Technology (AST) Major

### Aerospace Studies

- Aerospace Studies (AIR) Minor (Air Force ROTC)

### Animal Science

- Animal Science (AS) Major - Business and Production Specialization
- Animal Science (AS) Major - Science Specialization
- Animal Science (AS) Minor
- Equine Studies Minor
- Swine Science (SWSC) Certificate

### Architecture

- Architectural Studies (ARCH) Major

### Biology and Microbiology

- Biology (BIOL) Major
- Biology (BIOL) Major - Pre-professional Specialization
- Biology (BIOL) Major - Secondary Education Specialization
- Biology (BIOL) Minor
- Microbiology (MICR) Major
- Microbiology (MICR) Minor
- Zoology (ZOOL) Minor
- Pre-professional Interest Areas
  - (Pre-) Chiropractic *Interest Area*
  - (Pre-) Dental *Interest Area*
  - (Pre-) Medicine *Interest Area*
  - (Pre-) Mortuary *Interest Area*
  - (Pre-) Optometry *Interest Area*
  - (Pre-) Physician Assistant *Interest Area*

### Chemistry and Biochemistry

- Biochemistry (BIOCM) Major
- Biotechnology (BIOT) Major
- Biotechnology (BIOT) Minor
- Chemistry (CHEM) Minor
- Chemistry (CHEM-ACS) Major
- Medical Laboratory Science (MLS) Major

### Civil and Environmental Engineering

- Civil Engineering (CEE) Major

### College of Agriculture and Biological Sciences

- General Agriculture (GNAG) Major (AS & BS)

## College of Arts and Sciences

- American Indian Studies (AIS) Minor
- General Studies AA & BGS\* (Administered by University College and Continuing and Extended Education)
- Interdisciplinary Studies (IDL) Major
- Women's Studies (WMST) Minor

## College of Engineering

- Biomedical Engineering Minor

## Communication Studies and Theatre

- Communication Studies and Theatre (CST) Minor
- Dance (DANC) Minor
- Speech Communication (SPCM) Major
- Speech Communication (SPCM) Major - Speech Education specialization
- Theatre (THEA) Major
- Theatre (THEA) Minor

## Consumer Sciences

- Apparel Merchandising (AM) Major
- Aviation (AVIA) Major - Aviation Education Specialization
- Aviation (AVIA) Major - Aviation Maintenance Management Specialization
- Aviation (AVIA) Minor
- Consumer Affairs (CA) Major - Consumer Services Management Specialization
- Consumer Affairs (CA) Major - Family Financial Management Specialization
- Hospitality Management (HMGT) Major
- Interior Design (ID) Major
- Interior Design (ID) Minor
- Leadership & Management of Nonprofit Organizations (LMNO) Minor
- Leadership (LEAD) Minor

## Counseling and Human Development

- Human Development and Family Studies (HDFS) Major
- Human Development and Family Studies (HDFS) Minor
- Gerontology (GERO) Minor
- Rehabilitation Services (REHS) Minor

## Dairy Science

- Dairy Manufacturing (DM) Major
- Dairy Manufacturing (DM) Major - Microbiology Specialization
- Dairy Production (DPROD) Major

## Economics

- Accounting (ACCT) Minor
- Agricultural and Environmental Law (AGEL) Certificate

- Agricultural and Resource Economics (AGEC) Major
- Agricultural Business (AGBU) Major
- Agricultural Business (AGBU) Minor
- Agricultural Marketing Minor
- Economics (ECON) Major
- Economics (ECON) Major - Business Specialization
- Economics (ECON) Minor
- Entrepreneurial Studies (ENTR) Major
- Entrepreneurial Studies (ENTR) Minor
- Entrepreneurship (ENTR) Certificate
- Management (MGMT) Minor
- Marketing Minor

## Electrical Engineering and Computer Science

- Computer Applications (COMA) Certificate
- Computer Science (CSC) Major
- Computer Science (CSC) Minor
- Electrical Engineering (EE) Major
- Software Engineering (SE) Minor

## Engineering Technology and Management

- Construction Management (CM) Major
- Operations Management (OM) Major
- Electronics Technology (ET) Major

## English

- English (ENGL) Major
- English (ENGL) Major - English Education Specialization
- English (ENGL) Major - Writing Specialization
- English (ENGL) Minor
- Peace and Conflict Studies Minor
- Professional Writing Minor

## Geography

- Geographic Information Sciences (GIS) Major
- Geographic Information Sciences (GIS) Minor
- Geographic Information Sciences (GIS) Certificate
- Geography (GEOG) Major
- Geography (GEOG) Minor

## Health and Nutritional Sciences

- Athletic Coaching Certification
- Athletic Training (AT) Major
- Dietetics (DIET) Major
- Exercise Science (EXSC) Major
- Food Safety Minor
- Health Education (HLED) Major
- Health Education (HLED) Minor
- Nutrition (NFS) Minor
- Nutrition and Food Science (NFS) Major



# Majors, Minors, Certificates, and Specializations by Department

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## Health and Nutritional Sciences

- Physical Education (PE Minor)
- Physical Education Teacher Education (PETE) Major
- Recreation Administration (RECR) Minor
- Sport, Recreation and Park Management (SRPM) Major
- Pre-professional Interest Areas
  - (Pre-) Occupational Therapy *Interest Area*
  - (Pre-) Physical Therapy *Interest Area*

## History and Political Science

- History (HIST) Major
- History (HIST) Major - Teaching Specialization
- History (HIST) Minor
- Political Science (POLS) Major
- Political Science (POLS) Minor
- Philosophy (PHIL) Minor
- Religion (REL) Minor
- Pre-professional Interest Areas
  - (Pre-) Law *Interest Area*
  - (Pre-) Ministerial *Interest Area*

## Honors College

- *Honor's Designation*

## Journalism and Mass Communication

- Advertising (ADV) Major
- Advertising (ADV) Minor
- Journalism (MCOM) Major
- Journalism (MCOM) Minor

## Mathematics and Statistics

- Informatics (INFO) Minor
- Mathematics (MATH) Major
- Mathematics (MATH) Major - Teaching Specialization
- Mathematics (MATH) Minor
- Statistics (STAT) Minor

## Mechanical Engineering

- Mechanical Engineering (ME) Major

## Military Science

- Military Science (MSL) Minor (Army ROTC)

## Modern Languages and Global Studies

- French Studies (FREN) Major
- French Studies (FREN) Major - Teaching Specialization
- French Studies (FREN) Minor

- German (GER) Major
- German (GER) Major - Teaching Specialization
- German (GER) Minor
- Global Studies (GLST) Major
- Global Studies (GLST) Minor
- Spanish (SPAN) Major
- Spanish (SPAN) Major - Teaching Specialization
- Spanish (SPAN) Minor

## Music

- Music (MUS) Major - Music Entrepreneurship Specialization
- Music (MUS) Major - Music Studies Specialization
- Music (MUS) Minor
- Music Education Major

## Natural Resource Management

- Botany (BOT) Minor
- Ecology and Environmental Science (EES) Major
- Range Science (RANG) Major
- Range Science (RANG) Minor
- Wildlife and Fisheries Sciences (WL) Major

## Nursing

- Nursing (NURS) Major
- Health Science (HSC) Minor

## Pharmaceutical Sciences

- Pharmaceutical Sciences (PHA) Major

## Physics

- Nuclear Engineering (NE) Minor
- Physics (PHYS) Major
- Physics (PHYS) Major - Science Teaching Specialization
- Physics (PHYS) Minor

## Plant Science

- Agronomy (AGRO) Major
- Agronomy (AGRO) Minor
- Horticulture (HO) Major
- Horticulture (HO) Minor
- Landscape Architecture (LA) Major
- Pest Management Minor
- Soil Science Certification
- Soil Science Minor

## Psychology

- Psychology (PSYC) Major
- Psychology (PSYC) Major - Teaching Specialization
- Psychology (PSYC) Minor

## Sociology and Rural Studies

- Criminal Justice (CJUS) Minor
- Sociology (SOC) Major
- Sociology (SOC) Major - Human Resources Specialization
- Sociology (SOC) Major - Human Services Specialization
- Sociology (SOC) Major - Teaching Specialization
- Sociology (SOC) Minor

## Teaching, Learning and Leadership

- Agricultural Education, Communication and Leadership (AGCL) Major - Agricultural Education Specialization
- Agricultural Education, Communication and Leadership (AGCL) Major - Communication Specialization
- Agricultural Education, Communication and Leadership (AGCL) Major - Leadership Specialization
- Early Childhood Education (ECE) Major - Birth to 5 Specialization
- Early Childhood Education (ECE) Major - Birth to 8 Specialization
- Early Childhood Education (ECE) Kindergarten Education Endorsement
- Early Childhood Education (ECE) Major - Cooperative Program with DSU or NSU
- Early Childhood Special Education Endorsement
- Family and Consumer Sciences Education (FCSE) Major
- Teacher Education-Certification

## Veterinary and Biomedical Sciences

- Pre-professional Interest Area
  - (Pre-) *Veterinary Medicine Interest Area*

## Visual Arts

- Animation (ANIM) Certificate
- Art Education (ARTE) Major
- Art History (ARTH) Certificate
- Ceramics (CERM) Certificate
- Graphic Design (ARTD) Major
- Graphic Design (ARTD) Certificate
- Painting (PAIN) Certificate
- Printmaking (PRMK) Certificate
- Sculpture (SCUL) Certificate
- Studio Arts (ART) Major
- Studio Arts (ART) Minor

# Pre-Professional Interest Areas

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## Pre-Professional Areas Of Study

- Pre- Chiropractic (3-4 years)
- Pre- Dental (4 years)
- Pre- Law (4 years)
- Pre- Medicine (4 years)
- Pre- Ministerial (4 years)
- Pre- Mortuary
- Pre- Occupational Therapy (2-4 years)
- Pre- Optometry (2-4 years)
- Pre- Physical Therapy (4 years)
- Pre- Physician Assistant (2 years)
- Pre- Veterinary Medicine (2-3 years)

## Administered By

- ABS/Biology and Microbiology
- ABS/Biology and Microbiology
- A&S/History and Political Science
- ABS/Biology and Microbiology
- A&S/History and Political Science
- ABS/Biology and Microbiology
- EHS/Health and Nutritional Sciences
- ABS/Biology and Microbiology
- EHS/Health and Nutritional Sciences
- ABS/Biology and Microbiology
- ABS/Veterinary and Biomedical Sciences

# Academic Organizational Structure

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## College of Agriculture and Biological Sciences

- Agricultural and Biosystems Engineering
- Animal Science
- Biology and Microbiology
- Dairy Science
- Economics
- Natural Resource Management
- Plant Science
- Veterinary and Biomedical Sciences
- Wildlife and Fisheries Sciences

## College of Arts and Sciences

- Air Force ROTC
- Architecture
- Army ROTC
- Chemistry and Biochemistry
- Communication Studies and Theatre
- English
- Geography
- History and Political Science
- Journalism and Mass Communication
- Modern Languages and Global Studies
- Music
- Physics
- Psychology
- Sociology and Rural Studies
- Visual Arts

## College of Education and Human Sciences

- Consumer Sciences
- Counseling and Human Development
- Health and Nutritional Sciences
- Teaching, Learning and Leadership

## College of Engineering

- Agricultural and Biosystems Engineering
- Civil and Environmental Engineering
- Electrical Engineering and Computer Science
- Engineering Technology and Management
- Mathematics and Statistics
- Mechanical Engineering

## College of Nursing

- Graduate Nursing
- Nursing Student Services
- Undergraduate Nursing

## College of Pharmacy

- Pharmacy Practice
- Pharmaceutical Sciences

## Graduate School

## Honors College

## Continuing & Extended Education

- Outreach Programs
- General Studies (B.G.S)

## University College

- Deciding/undeclared Students
- General Studies (A.A.)
- First Year Advising Center





## Colleges

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# Agriculture and Biological Sciences

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## Introduction

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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

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Agricultural and Biosystems Engineering (Ag Systems Technology)  
Animal Science  
Biology and Microbiology  
Dairy Science  
Economics  
Natural Resources Management

Plant Science  
Veterinary and Biomedical Sciences  
Agricultural Experiment Station  
Animal Disease Research & Diagnostic Lab  
Cooperative Extension Service  
Water Resources Institute

## Degrees Offered

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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

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American Association of Veterinary Laboratory Diagnosticians (AAVLD)  
American Society of Agricultural Engineering (ASAE)  
National Institute of Food and Agriculture (NIFA)  
Society for Range Management

## Programs

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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 advisor reassignment.

# Agriculture and Biological Sciences Curricula

Major Field of Study	Degree Certification	Department
Agricultural Business	Agriculture	Economics
Agricultural and Resource Economics	Agriculture	Economics
Agricultural Education, Communications and Leadership	Agriculture	Varies by specialization
Agricultural Systems Technology	Agriculture	Agricultural and Biosystems Engineering
Agronomy	Agriculture	Plant Science
Animal Science	Agriculture	Animal Sciences
Biology	Biological Sciences	Biology and Microbiology
Biotechnology	Biological Sciences	Biology and Microbiology
Dairy Manufacturing	Agriculture	Dairy Science
Dairy Production	Agriculture	Dairy Science
Ecology and Environmental Science	Biological Science	Natural Resource Management
General Agriculture	Agriculture	Office of Academic Programs
Horticulture	Agriculture	Plant Science
Landscape Architecture	Agriculture	Plant Science
Microbiology	Biological Science	Biology and Microbiology
Pre-Professional/Health	Non-degree interest area	Biology and Microbiology
Pre-Veterinary Medicine	Non-degree interest area	Veterinary and Biomedical Sciences
Range Science	Agriculture	Natural Resource Management
Wildlife and Fisheries Sciences	Biological Sciences	Natural Resource Management

## Degree Requirements

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

### Bachelor of Science in Agriculture

Students who wish to complete a Bachelor of Science in Agriculture must complete a minimum of 11 credits from at least four courses on the approved list of **Group 1 courses in Agriculture**.

Some departments require specific courses from the list, whereas others leave the selection entirely to the student and the advisor.

### Bachelor of Science in Biological Sciences

Students who wish to complete a Bachelor of Science in Biological Sciences must complete a minimum of 33 credits from the natural sciences. Refer to departments offering the degree for specific courses.

### 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

### 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, whereas others leave the selection entirely to the student and the advisor.

ABS 203 - Global Food Systems	Credits: 3
ABS 381 - Multicultural Ag/Bio Science Experience	Credits: 2-4
ABS 482-582 - International Experience	Credits: 2-4
ABS 475-475L - Integrated Natrl Resrcr Mangmnt & Lab	Credits: 3
AGEC 271-271L - Farm and Ranch Management and Lab	Credits: 4
AGEC 354 - Agricultural Marketing and Prices	Credits: 3
AS 101-101L - Introduction to Animal Science and Lab	Credits: 3
AS 233-233L - Applied Animal Nutrition and Lab	Credits: 4
AS 241-241L - Introduction to Meat Science and Lab	Credits: 3
AST 202-202L - Construction Tech and Materials and Lab	Credits: 2
AST 213-213L - Ag, Industrial and Outdoor Power and Lab	Credits: 3
AST 333-333L - Soil and Water Mechanics and Lab	Credits: 3
AST 342-342L - Applied Electricity and Lab	Credits: 3
DS 130-130L - Introduction to Dairy Science and Lab	Credits: 3
DS 231 - Dairy Foods	Credits: 3
HO 111-111L - Biology of Horticulture and Lab	Credits: 3
LA 201 - Introduction to Landscape Design	Credits: 3
MICR 311-311L - Food Microbiology and Lab	Credits: 4
NRM 110 - Environmental Conservation	Credits: 3
PRM 101 - Parks and Society	Credits: 3
PS 103-103L - Crop Production and Lab	Credits: 3
PS 213-213L - Soils and Lab	Credits: 2, 1
PS 223-223L - Principles of Plant Pathology and Lab	Credits: 3
PS 305-305L - Insect Biology and Lab	Credits: 3
PS 307-307L - Insect Pest Management and Lab	Credits: 3
RANG 105-105L - Intro to Range Management and Lab	Credits: 3

# Arts and Sciences

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## Introduction

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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. Students receive education on the scientific method, critical thinking, analysis, synthesis, and cogent expression. They 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 departments and programs in the College of Arts and Sciences offer major and/or minor programs leading to associate, bachelor, master's, and doctoral degrees.

## Departments

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Aerospace Studies  
Architecture  
Chemistry and Biochemistry  
Communication Studies and Theatre  
Economics  
English  
Geography  
History and Political Science

Journalism and Mass Communication  
Military Science  
Modern Languages and Global Studies  
Music  
Psychology  
Physics  
Sociology and Rural Studies  
Visual Arts

## Degrees Offered

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Associate of Arts  
Bachelor of Arts  
Bachelor of General Studies  
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.

## Accreditations

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The Journalism and Mass Communication Department is accredited by the Accrediting Council on Education in Journalism and Mass Communication.

The Music Department is accredited by the National Association of Schools of Music.

The Chemistry programs are accredited by the American Chemical Society.

The Medical Laboratory Science program is accredited by the National accrediting Agency for Clinical Laboratory Sciences.

The Teacher education programs in the College of Arts and Sciences are accredited by the National Council for Accreditation of Teacher Education.

## Arts and Sciences Curricula

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### Major Programs

Advertising  
Architectural Studies  
Art Education  
Communication Studies  
Chemistry  
Economics  
English  
Entrepreneurial Studies  
French Studies  
General Studies  
Geographic Information Sciences  
Geography  
German

Global Studies  
Graphic Design  
History  
Interdisciplinary Studies  
Journalism  
Medical Laboratory Science  
Music  
Music Education  
Physics  
Political Science  
Psychology  
Sociology  
Spanish  
Speech Communication

Studio Arts  
Theatre

### Additional Programs

Aerospace Studies  
American Indian Studies  
Criminal Justice  
Military Science  
Peace and Conflict Studies  
Philosophy and Religion  
Professional Writing  
Women's Studies

# Degree Requirements

The Associate of Arts, Bachelor of General Studies, Bachelor of Science, Bachelor of Arts, Bachelor of Music Education degrees are offered by the Arts and Sciences College. Students seeking B.S., B.A., and B.M.E. degrees 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 Arts<sup>+</sup>

Modern Languages* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course)	3-14
Social Sciences	8
Humanities	6

\* 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/AIS 368 - History and Culture of the American Indian or ANTH/AIS 421 Indians of North America	3
SOC 100 - Introduction to Sociology or PSYC 101 - General Psychology	3

## Bachelor of Science<sup>+</sup>

Natural Science*	14
With 6 credits of Biological Sciences	
With 8 credits of Physical Sciences**	
Social Sciences	12
Humanities	8*

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.

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

*\*Refer to the following pages for approved lists of courses of courses that satisfy the Natural Sciences, Social Sciences, and Humanities Requirements.*

## 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. Education and Human Sciences and the Department of Teaching, Learning, and Leadership 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. Bachelor’s degrees in the College of Arts and Sciences must include 33 semester credits from upper division courses (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, public address, and oral interpretation of literature. 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.





# Approved Courses for the College of Arts and Sciences Requirements

## Biological Sciences

ANTH 220 - Physical Anthropology	Credits: 3	BIOL 325-325L - Physiology and Lab	Credits: 4
BIOL 101-101L - Biology Survey I and Lab	Credits: 3	BOT 201-201L - General Botany and Lab	Credits: 3
BIOL 103-103L - Biology Survey II and Lab	Credits: 3	MICR 231-231L - General Microbiology and Lab	Credits: 4
BIOL 105 - Human Biology	Credits: 3	NFS 221 - Survey of Nutrition	Credits: 3
BIOL 151-151L - General Biology I and Lab	Credits: 4	NRM 110 - Environmental Conservation	Credits: 3
BIOL 153-153L - General Biology II and Lab	Credits: 4	PE 252-252L - Fndmts of Mtr Lrning & Devlpmnt & Lab	Credits: 2
BIOL 200-200L - Animal Diversity and Lab	Credits: 4	PS 103-103L - Crop Production and Lab	Credits: 3
BIOL 221-221L - Human Anatomy and Lab	Credits: 4	WL 220 - Intro to Wildlife and Fisheries Management	Credits: 3

## Physical Sciences

CHEM 106-106L - Chemistry Survey and Lab	Credits: 3,1	PHYS 111-111L - Introduction to Physics I and Lab	Credits: 4
CHEM 108-108L - Organic and Biochemistry and Lab	Credits: 4, 1	PHYS 113-113L - Introduction to Physics II and Lab	Credits: 4
CHEM 112-112L - General Chemistry I and Lab	Credits: 3, 1	PHYS 185-185L - Introduction to Astronomy I and Lab	Credits: 3
CHEM 114-114L - General Chemistry II and Lab	Credits: 3, 1	PHYS 187-187L - Introduction to Astronomy II and Lab	Credits: 3
CHEM 115-115L - Atomic & Molecular Structure & Lab	Credits: 3, 1	PHYS 211-211L - University Physics I and Lab	Credits: 4
CHEM 120-120L - Elemtry Organic Chemistry and Lab	Credits: 3, 1	PHYS 213-213L - University Physics II and Lab	Credits: 4
CHEM 127-127L - Structr & Fcnct of Org Molecules & Lab	Credits: 3, 1	PS 213-213L - Soils and Lab	Credits: 2, 1
GEOG 131-131L - Physical Geog: Weather & Climate & Lab	Credits: 4	PS 243 - Principles of Geology	Credits: 3
GEOG 132-132L - Physical Geog: Natural Landscapes & Lab	Credits: 4	PS 244 - Geological Resources of South Dakota Lab	Credits: 1
PHYS 101-101L - Survey of Physics and Lab	Credits: 4	STAT - 281 Introduction to Statistics	Credits: 3

## Humanities

AIS 101 - Introductory Lakota I	Credits: 4	HIST 122 - Western Civilization II	Credits: 3
AIS 102 - Introductory Lakota II *	Credits: 4	HIST 368 - History and Culture of the American Indian	Credits: 3
AIS 201 - Intermediate Lakota I	Credits: 3	LAKL 101 - Introductory Lakota I	Credits: 4
AIS 202 - Intermediate Lakota II	Credits: 3	LAKL 102 - Introductory Lakota II	Credits: 4
AIS 238 - Native American Religions	Credits: 3	LAKL 201 - Intermediate Lakota I	Credits: 3
AIS 256 - Literature of American West	Credits: 3	LAKL 202 - Intermediate Lakota II	Credits: 3
AIS 368 - History and Culture of the American Indian	Credits: 3	LAS 301 - Latin American Cultures	Credits: 2-3
ARAB 101 - Introductory Arabic I	Credits: 4	MCOM 151 - Introduction to Mass Communication	Credits: 3
ARAB 102 - Introductory Arabic II	Credits: 4	MCOM 160 - Introduction to Film	Credits: 3
ART 111 - Drawing I	Credits: 3	MUS 100 - Music Appreciation	Credits: 3
ART 112 - Drawing II	Credits: 3	MUS 130 - Music Literature and History I	Credits: 2
ART 121 - Design I 2D	Credits: 3	MUS 131 - Music Literature and History II	Credits: 3
ART 122 - Design II Color	Credits: 3	MUS 201 - History of Country Music	Credits: 3
ART 123 - Three Dimensional Design	Credits: 3	MUS 203 - Blues, Jazz, and Rock	Credits: 3
ARTH 100 - Art Appreciation	Credits: 3	MCOM 145 - Media Literacy and Ethics	Credits: 3
ARTH 120 - Film as Art	Credits: 3	PHIL 100 - Introduction to Philosophy	Credits: 3
ARTH 211 - History of World Art I	Credits: 3	PHIL 200 - Introduction to Logic	Credits: 3
ARTH 212 - History of World Art II	Credits: 3	PHIL 215 - Introduction to Social-Political Philosophy	Credits: 3
ENGL 125 - Introduction to Peace and Conflict Studies	Credits: 3	PHIL 220 - Introduction to Ethics	Credits: 3
ENGL 210 - Introduction to Literature	Credits: 3	PHIL 313 - Great Philosophers	Credits: 2-3
ENGL 211 - World Literature I	Credits: 3	PHIL 331 - Philosophy of Science	Credits: 3
ENGL 212 - World Literature II	Credits: 3	PHIL 470-570 - Philosophy of Religion	Credits: 3
ENGL 221 - British Literature I	Credits: 3	REL 213 - Introduction to Religion	Credits: 3
ENGL 222 - British Literature II	Credits: 3	REL 224 - Old Testament	Credits: 3
ENGL 240 - Juvenile Literature	Credits: 3	REL 225 - New Testament	Credits: 3
ENGL 241 - American Literature I	Credits: 3	REL 237 - Religion in American Culture	Credits: 3
ENGL 242 - American Literature II	Credits: 3	REL 238 - Native American Religions	Credits: 3
ENGL 248 - Women in Literature	Credits: 3	REL 250 - World Religions	Credits: 3
ENGL 249 - Literature of Diverse Cultures	Credits: 3	REL 370 - Philosophy of Religion	Credits: 3
ENGL 250 - Science Fiction	Credits: 3	REL 401-501 - History of Western Religious Thought I	Credits: 3
ENGL 256 - Literature of the American West	Credits: 3	REL 402-502 - History of Western Religious Thought II	Credits: 3
ENGL 268 - Literature	Credits: 3	RUSS 101 - Introductory Russian I	Credits: 4
FREN 101 - Introductory French I	Credits: 4	RUSS 102 - Introductory Russian II	Credits: 4
FREN 102 - Introductory French II	Credits: 4	RUSS 201 - Intermediate Russian I	Credits: 3
FREN 201 - Intermediate French I	Credits: 4	RUSS 202 - Intermediate Russian II	Credits: 3
FREN 202 - Intermediate French II	Credits: 4	SPAN 101 - Introductory Spanish I	Credits: 4
GER 101 - Introductory German I	Credits: 4	SPAN 102 - Introductory Spanish II	Credits: 4
GER 102 - Introductory German II	Credits: 4	SPAN 201 - Intermediate Spanish I	Credits: 3
GER 201 - Intermediate German I	Credits: 3	SPAN 202 - Intermediate Spanish II	Credits: 3
GER 202 - Intermediate German II	Credits: 3	THEA 100 - Introduction to Theatre	Credits: 3
HIST 111 - World Civilizations I	Credits: 3	THEA 131 - Introduction to Acting	Credits: 3
HIST 112 - World Civilizations II	Credits: 3	WMST 248 - Women in Literature	Credits: 3
HIST 121 - Western Civilization I	Credits: 3		

# Approved Courses for the College of Arts and Sciences Requirements

## Social Sciences

ABS 482-582 - International Experience	Credits: 2-4	MSL 201 - Innovative Team Leadership	Credits: 2
AIR 101-101L - Foundations of the US Air Force and Lab	Credits: 1	MSL 202 - Foundation of Tactical Leadership	Credits: 2
AIR 102-102L - Foundations of the US Air Force and Lab	Credits: 1	POLS 100 - American Government *	Credits: 3
AIR 201-201L - Evolution of USAF Air & Space Power & Lab	Credits: 1	POLS 102 - American Political Issues	Credits: 3
AIR 202-202L - Evolution of USAF Air &Space Power &Lab	Credits: 1	POLS 165 - Political Ideologies	Credits: 3
AIS 421 - Indians of North America	Credits: 3	POLS 210 - State and Local Government	Credits: 3
ANTH 210 - Cultural Anthropology	Credits: 3	POLS 253 - Current World Problems	Credits: 3
ANTH 220 - Physical Anthropology	Credits: 3	PSYC 101 - General Psychology	Credits: 3
ANTH 421/521 - Indians of North America	Credits: 3	PSYC 327 - Child Psychology	Credits: 3
CJUS 201 - Introduction to Criminal Justice	Credits: 3	PSYC 367 - Psychological Gender Issues	Credits: 3
ECON 101 - Global Economy	Credits: 3	PSYC 367L - Psychological Gender Issues Laboratory	Credits: 1
ECON 201 - Principles of Microeconomics	Credits: 3	PSYC 406 - Cognitive Psychology	Credits: 3
ECON 202 - Principles of Macroeconomics	Credits: 3	PSYC 406L - Cognitive Psychology Laboratory	Credits: 1
ECON 460-560 - Economic Development	Credits: 3	PSYC 441 - Social Psychology	Credits: 3
EPSY 302 - Educational Psychology	Credits: 3	PSYC 441L - Social Psychology Laboratory	Credits: 1
GEOG 200 - Introduction to Human Geography	Credits: 3	PSYC 451 - Psychology of Abnormal Behavior	Credits: 3
GEOG 210 - World Regional Geography	Credits: 3	PSYC 461 - Theories of Personality	Credits: 3
GEOG 212 - Geography of North America	Credits: 3	REL 237 - Religion in American Culture	Credits: 3
GEOG 219 - Geography of South Dakota	Credits: 3	SOC 100 - Introduction to Sociology	Credits: 3
GLST 201 - Global Studies I	Credits: 3	SOC 150 - Social Problems	Credits: 3
HDFS 141 - Individual and the Family	Credits: 3	SOC 240 - The Sociology of Rural America	Credits: 3
HDFS 210 - Lifespan Development	Credits: 3	SOC 250 - Courtship and Marriage	Credits: 3
HIST 151 - United States History I	Credits: 3	SOC 350 - Race and Ethnic Relations	Credits: 3
HIST 152 - United States History II	Credits: 3	SOC 440 - Urban Sociology	Credits: 3
LAS 302 - Latin American Societies	Credits: 3	WMST 101 - Introduction to Women's Studies	Credits: 3
MSL 101 - Leadership and Personal Development	Credits: 1	WMST 367 - Psychological Gender Issues	Credits: 3
MSL 102 - Introduction to Tactical Leadership	Credits: 1		



# Education and Human Sciences

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## Introduction

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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

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Counseling and Human Development  
Consumer Sciences

Health and Nutritional Sciences  
Teaching, Learning and Leadership

## Degrees Offered

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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

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Accreditation Council for Education of Nutrition and Dietetics  
Commission on Accreditation of Athletic Training Education  
Council for Accreditation of Counseling and Related Educational Programs  
Council for Interior Design Accreditation  
Council on Rehabilitation Education

National Association for Education of Young Children  
National Council for the Accreditation of Teacher Education Programs  
National Institute of Food and Agriculture recognition  
South Dakota Department of Education



# Education and Human Science Curricula

## Major

Agricultural Education, Communication, and Leadership -  
Agricultural Education Specialization  
Apparel Merchandising  
Athletic Training  
Aviation  
Consumer Affairs  
Dietetics  
Early Childhood Education  
Family and Consumer Sciences Education  
Exercise Science  
Health Education  
Hospitality Management  
Human Development and Family Studies  
Interior Design  
Nutrition and Food Science  
Physical Education Teacher Education  
Sport, Recreation and Park Management

## Minors

Aviation  
Food Safety  
Gerontology  
Health Education  
Human Development and Family Studies  
Interior Design  
Leadership  
Leadership and Management of Nonprofit Organizations  
Nutrition  
Physical Education  
Recreation Administration  
Rehabilitation Services

## Department

Teaching, Learning and Leadership and the College of Agriculture  
and Biological Sciences  
Consumer Sciences  
Health and Nutritional Sciences  
Consumer Sciences  
Consumer Sciences  
Health and Nutritional Sciences  
Teaching, Learning and Leadership  
Teaching, Learning and Leadership  
Health and Nutritional Sciences  
Health and Nutritional Sciences  
Consumer Sciences  
Counseling and Human Development  
Consumer Sciences  
Health and Nutritional Sciences  
Health and Nutritional Sciences and Teaching, Learning and Leadership  
Health and Nutritional Sciences

Consumer Sciences  
Health and Nutritional Sciences  
Counseling and Human Development  
Health and Nutritional Sciences  
Counseling and Human Development  
Consumer Sciences  
Consumer Sciences  
Consumer Sciences  
Health and Nutritional Sciences  
Health and Nutritional Sciences  
Consumer Sciences  
Counseling and Human Development

## Degree Requirements

Students enrolled in the College of Education and Human Sciences must complete EHS 140/140L - Enhancing Human Potential. This course is designed to empower EHS majors to succeed at the university, exploring common issues related to individuals, families, schools, and communities and how professionals work within interdisciplinary teams to solve problems and enhance human potential.

Additionally students 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 over 20 discipline-specific content 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://www.sdstate.edu/> (Search "catalog", select current year)

# Engineering

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## Introduction

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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 advisor 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 advisor by contacting their department office.

## Departments/Units

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Agricultural and Biosystems Engineering  
Civil and Environmental Engineering  
Electrical Engineering and Computer Science  
Engineering Technology and Management  
Mathematics and Statistics

### 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

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



# 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 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 Technology, Operations Management, Mathematics, and Mechanical Engineering; Master of Science in: Agricultural and

Biosystems Engineering, Civil Engineering, Electrical Engineering, Engineering, Mechanical Engineering, Statistics and Operations 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.



# Graduate School

Kinchel Doerner, Dean of the Graduate School  
SAD 130, Box 2201  
605-688-4181  
Fax: 605-688-6171  
Brookings, SD 57007-1998  
E-mail: [sdsu\\_gradschool@sdstate.edu](mailto:sdsu_gradschool@sdstate.edu)

## Introduction

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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. 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 <http://www.sdstate.edu/graduate/>

## Departments

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

## Degrees Offered

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The University offers 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; Chemistry; Computational Science and 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.

## Programs

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See the separate Graduate Catalog available online at <http://catalog.sdstate.edu/>



# Honors College

Timothy Nichols, Dean  
Briggs Library 126, 605-688-5268  
Box 2115, Brookings, SD 57007  
E-mail: [timothy.nichols@sdstate.edu](mailto:timothy.nichols@sdstate.edu)  
Website: <http://www.sdstate.edu/honors/>

## Introduction

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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.

## Program

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### 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 24 Honors credit hours is required including 15 credit hours of Honors general education courses, 3-6 hours of Honors Colloquium, 3 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 Committee

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

## Honors Courses

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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. **First Year Seminar - Honors (HON 109).** Recommended for first semester Honors students, provides practical and philosophical foundation for students' Honors experience.
3. **Honors Colloquium (HON 301-304).** 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 pre-requisites.
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 of Research  
Lynnette Stamler, Associate Dean  
Linda Herrick, Associate Dean  
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1-888-216-9806, Ext. 2  
Box 2275, Brookings, SD 57007-0098  
E-mail: roberta.olson@sdstate.edu  
<http://www.sdstate.edu/nurs/>

## Introduction

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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

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Graduate Nursing  
Nursing Student Services

Undergraduate Nursing  
West River Nursing

## Degrees Offered

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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

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South Dakota Board of Nursing (approval)

Commission on Collegiate Nursing Education (CCNE)

## Programs

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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.

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, 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 at the masters and doctoral levels. For further information about the M.S., D.N.P., and Ph.D., see the Graduate Catalog.

# Pharmacy

Dennis D. Hedge, Dean  
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Jane Mort, Associate Dean for Academic Programs  
SAV 133, 605-688-4237  
Dan Hansen, Assistant Dean for Student Services  
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Box 2202C, Brookings, SD 57007-0099  
E-mail: college.pharmacy@sdstate.edu  
www.sdstate.edu/pha/index.cfm

## Introduction

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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 opportunities 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

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Pharmaceutical Sciences  
Pharmacy Practice

## Degrees Offered

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Bachelor of Science Degree in Pharmaceutical Sciences  
Doctor of Pharmacy (Pharm.D.)  
Doctor of Philosophy (Ph.D.)

## Accreditations

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Accreditation Council for Pharmacy Education (ACPE)

## Programs

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### 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. In their first three years of the program, students gain initial practice experience through introductory pharmacy practice experiences in settings such as community and hospital pharmacies. In the final year of the program, 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 pharmacy PHA prefix courses, excluding 201 & 321.
  - A. For pharmacy courses repeated at SDSU, 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 PHA 201, & 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*):
  1. P1 Year Standing - The student must have been admitted into the professional program.
  2. P2 Year Standing - Completion of all PHA 300 level required courses and PHA 109.
  3. 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.
  4. P4 Year Standing - completion of all PHA 600-700 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 advisor.

### **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 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, pharmaceuticals, 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.



# University College

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www.sdstate.edu/gs/index.cfm

## Introduction

Many students enrolling in the University College 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 University College, a student will receive assistance

that helps them make wise major/career choices. Most undeclared major students who enroll in University College 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 programs.

## Departments/Units

The University College is organized through the following programmatic delivery structure: Academic Programs, as well as a variety of Academic support services including academic advising and tutoring.

## Degrees

The University College is organized through the following programmatic delivery structure: Academic Programs, as well as a variety of Academic support services including academic advising and tutoring.

## Certifications

**Academic Success Peer Mentoring program** - College Reading and Learning Association, with level 1 certification.

**Tutor Training program** - College Reading and Learning Association's International Tutor Training Program, Level 3 – Master Tutor Certification

## Programs

### Associate of Arts

University College supervises the Associate of Arts degree in General Studies. This degree 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.

### Undeclared Majors

University College 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 advisors 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 University College offers a one-credit course entitled "UC 101 Academic and Career Exploration" which assists with career decision making strategies. First Year Students at SDSU also enroll in a two-credit First Year Experience course entitled "UC 109 First Year Seminar," which helps them acclimate to college life and learn about SDSU resources. A suggested first year schedule follows.

### Suggested Coursework for deciding students

Freshman Year	F	S
UC 109, First Year Seminar	2	
UC 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
UC 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





## **Extended Programs**

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# Extended Programs

International Affairs & Outreach - Continuing & Extended Education  
Briggs Library Room 119, Box: 2115, Brookings, SD 57007  
e-mail: SDSU.distance@sdstate.edu/

## Introduction

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The Office of Continuing and Extended Education works to broaden the reach of SDSU, with a commitment to providing quality education no matter where students reside. The office serves students on campus and across the globe. In addition to online education, the Office of Continuing and Extended Education coordinates the program offerings at several off-campus locations. These off-campus attendance centers effectively extend the reach of SDSU by offering

the same quality education to students who want to earn their degree while living and working in their home community. Every year, several thousand students enroll in the 10 degree-programs and 250 courses that SDSU offers online. These often require little more than an internet connection, a book or two, and a motivated, responsible student.

## Summer Term

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SDSU offers a wide range of courses and degree programs during the summer months as well as numerous special workshops, short courses, distance education classes, evening offerings, and non-credit programs. Summer programming is offered May through August and is characterized by innovation and responsiveness to your needs. Classes are comfortably sized and time is available for

individual attention from the faculty member. Participants need not be regularly matriculated at SDSU but may be admitted as special students through completion of one short form.

The schedule of offerings is located on the Records and Registration website, <http://www.sdstate.edu/campus/records/class-schedules.cfm>





# Capital University Center

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.

The undergraduate programs offered at Capital University Center in Pierre include:

- B.S. Interdisciplinary Studies
- B.G.S. General Studies
- B.S. Nursing (RN Upward Mobility)
- Certificate in Computer Applications

CUC also offers a variety of general education courses.

## University Center - Rapid City

The University Center in Rapid City provides graduate level opportunities through the College of Education and Counseling. The College offers Master of Education and Master of Science programs in Education and Counseling in Rapid City. These programs serve the military personnel, teachers, administrators, and counselors in Western South Dakota. SDSU coordinates its West River activities with other Regental universities serving the area.

The undergraduate programs offered in Rapid City include:

- A.S. General Agriculture (*Hybrid Delivery*)
- B.G.S. General Studies
- B.S. General Agriculture (*Courses toward this degree*)
- B.S. Nursing
- B.S. Range Science (*Courses toward this degree*)

Students in all majors may complete their general education core in Rapid City at University Center.

## University Center - Sioux Falls

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 undergraduate programs offered in Sioux Falls include:

- |   |   |
|---|---|
| A.A./B.G.S. General Studies             | B.S. Interdisciplinary Studies                        |
| B.S. Entrepreneurial Studies            | B.S. Journalism                                       |
| B.A./B.S. Graphic Design                | B.S. Psychology                                       |
| B.S. Consumer Affairs                   | B.S. Sociology  |
| B.S. Human Development & Family Studies | B.S. Nursing (Accelerated, Standard, Upward Mobility) |

Pre-engineering courses are also available in Sioux Falls. Students in all majors may complete their general education core in Sioux Falls at University Center.



## 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 go to the Distance Education Website at <http://www.sdstate.edu/cee/distance>

## Outreach Programs

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South Dakota State University has a long tradition of, and responsibility for, delivering a variety of outreach efforts to locations across the state, region, and world. These include educational services to 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 **Medical Laboratory Science Upward Mobility Program** is committed to providing an education program consistent with the essentials outlined by the National Accrediting Agency for Clinical Laboratory Science (NAACLS). The program will provide an educational experience that will provide for the development of responsible, competent entry-level professionals in medical laboratory science who want to further their training and education.

The curriculum in the program emphasizes basic sciences, medical laboratory sciences, critical thinking skills and communication skills, including structured learning in the laboratories of clinical affiliated hospitals. In order to receive a bachelor's of science (B.S.) degree in MLS – a student must successfully complete at least 120 semester credit hours. In addition, to all of the required courses for the program the student must complete all general education requirements and requirements of the

College of Arts and Sciences. For further information, contact the program coordinator at 605-688-6016 or visit <http://www.sdstate.edu/cee/degrees/mls.cfm>.

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 are 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. For further information, contact the Dean of Nursing at 888-216- 9806 or visit <http://sdstate.edu/nurs/>.





# Program Descriptions & Requirements by Department

*Aerospace Studies*  
*Agricultural and Biosystems Engineering*  
*Agriculture Education Communication &  
Leadership*  
*American Indian Studies*  
*Animal Science*  
*Architecture*  
*Biology and Microbiology*  
*Biomedical Engineering*  
*Chemistry and Biochemistry*  
*Civil and Environmental Engineering*  
*Communication Studies & Theatre*  
*Consumer Sciences*  
*Counseling & Human Development*  
*Dairy Science*  
*Economics*  
*Electrical Engineering & Computer Science*  
*Engineering Technology & Management*  
*English*  
*General Agriculture*  
*General Studies*  
*Geography*  
*Health & Nutritional Sciences*  
*History & Political Science*  
*Honors College*  
*Interdisciplinary Studies*  
*Journalism & Mass Communication*  
*Mathematics & Statistics*  
*Mechanical Engineering*  
*Military Science*  
*Modern Languages & Global Studies*  
*Music*  
*Natural Resource Management*  
*Nursing*  
*Pharmaceutical Sciences*  
*Physics*  
*Plant Science*  
*Psychology*  
*Sociology & Rural Studies*  
*Teaching, Learning & Leadership*  
*Veterinary & Biomedical Sciences*  
*Visual Arts*  
*Women's Studies*



## Accelerated Nursing

(See Nursing)

## Accounting (ACCT) Minor

(See Economics)

## Aerospace Studies Department (AIR)

(Air Force ROTC)

Lieutenant Colonel Carleton H. Hirschel, Head  
Department of Aerospace Studies  
DePuy Military Hall 003  
605-688-6106  
e-mail: bonnie.luecke@sdsu.edu

### Faculty

Lieutenant Colonel Hirschel, Professor of Aerospace Studies, Head;  
Assistant Professor Dan Beaudoin

### 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.

### Commission

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.

### 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

## Aerospace Studies 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 & Lab Credits: 3
- AIR 302-302L - Air Force Leadership Studies & Lab Credits: 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

### Total Required Credits: 16

### Note:

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



# Agricultural and Biosystems Engineering Department (AST, ABE)

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

## Faculty

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

## Programs

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 Department offers degrees in Ag & Biosystems Engineering (ABE), which prepares students to work with the development and design of systems that impact food sources, and in Ag Systems Technology (AST), which teaches students the practical application of new innovations in the agricultural market.

**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.

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.

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.

**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. Graduates use 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.

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 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 Major Bachelor of Science in Engineering

### System General Education Requirements\*: 33

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

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Seminar: GE 109-109 L\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### Major Requirements: 80

- BIOL 101-101L - Biology Survey I and Lab (COM) Credits: 3
- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 225 - Calculus III \* (COM) Credits: 4
- MATH 321 - Differential Equations (COM) Credits: 3
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CSC 130 - Visual Basic Programming (COM) Credits: 3
- GE 121 - Engineering Design Graphics I Credits: 1
- GE 123 - Computer Aided Drawing Credits: 1
- EM 214 - Statics (COM) Credits: 3
- EM 215 - Dynamics (COM) Credits: 3
- EM 321 - Mechanics of Materials (COM) Credits: 3
- ME 314 - Thermodynamics Credits: 3
- EM 331 - Fluid Mechanics (COM) Credits: 3
- EE 300-300L - Basic Electrical Engineering I and Lab Credits: 3
- ABE 132 - Engineering Tools for Agricultural and Biological Engineers Credits: 1
- ABE 222 - Project Development for Agricultural and Biological Engineers Credits: 1
- ABE 314-314L - Ag Power and Machines and Lab Credits: 4
- ABE 324-324L - Ag Structures and Indoor Environment and Lab Credits: 4



- ABE 343-343L - Engineering Properties of Biological Materials and Lab Credits: 3
- ABE 434-434L - Natural Resources Engineering & Lab Credits: 4
- ABE 444-444L/544-544L - Unit Operations of Biological Materials Processing and Lab Credits: 4
- ABE 463-463L - Instrumentation for Agricultural and Biological Systems and Lab Credits: 3
- ABE 464-464L - Monitoring and Controlling Agriculture and Biological Systems and Lab Credits: 2
- ABE 411 - Design Project III Credits: 2
- ABE 422 - Design Project IV (AW) Credits: 2

**Select one of the following courses**

- MATH 331 - Advanced Engineering Mathematics Credits: 3
- MATH 373 - Introduction to Numerical Analysis (COM) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3

**Select one of the following courses**

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

**Select one of the following courses**

- ABE 330 - Entrepreneurship Opportunities in Agricultural and Biosystems Engineering Credits: 1
- ABE 494 - Internship Credits: 1-6
- ABE 496 - Field Experience Credits: 1-6
- ABE 498 - Undergraduate Research/Scholarship Credits: 1-3

**Electives: 12**

The elective program for each student must be approved by the advisor and will include 12 credit hours of technical electives, at least 6 credits from 300 or above level courses in the College of Engineering.

- GE 310 - Geometric Dimensioning and Tolerancing Credits: 2
- AST 353-353L - Physical Climatology and Meteorology and Lab Credits: 3
- ABE 491 - Independent Study Credits: 1-3
- ABE 492/592 - Topics Credits: 1-4
- ABE 494 - Internship Credits: 1-6
- ABE 496 - Field Experience Credits: 1-6
- ABE 497 - Cooperative Education Credits: 1-6
- CSC 314 - Assembly Language (COM) Credits: 3
- CSC 317 - Computer Organization & Architecture (COM) Credits: 3
- EE 422 - Engineering Economics and Management Credits: 2
- GEOG 472 - Introduction to GIS Credits: 3
- MATH 331 - Advanced Engineering Mathematics Credits: 3
- MNET 320-320L - Computer Aided Design/Drawing and Lab Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3

**Structures and Environment Emphasis:**

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

**Power and Machinery Emphasis:**

- ABE 350-350L - Hydraulic & Pneumatic Systems & Lab Credits: 3
- ME 321 - Fundamentals of Machine Design Credits: 3
- ME 323 - Vibrations Credits: 3
- ME 341-341L - Metallurgy and Lab Credits: 3
- ME 362 - Industrial Engineering Credits: 3
- ME 412 - Internal Combustion Engines Credits: 3
- ME 415 - Heat Transfer Credits: 3
- ME 421 - Design of Machine Elements Credits: 3
- ME 438-438L - Machine Design-Case Studies and Lab Credits: 3
- PS 362-362L - Environmental Soil Management & Lab \*\* Credits: 3

**Water and Natural Resources Engineering Emphasis:**

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

**Total Required Credits: 130**

**Notes:**

- 1 Technical elective credit not given for both CEE/CM 482 and EE 422.
- 2 Required to receive a "C" or better in ENGL 277.
- 3 Technical Electives permit students to concentrate on applied technical area of interest.
- 4 Students must take these courses, with the exception that they may choose to replace one of these 4 Agricultural and Biosystems Engineering courses with 4 additional technical elective credits (300 or higher in the College of Engineering) in addition to the basic technical elective requirements.

**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 a 5 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 Systems Technology Major

Bachelor of Science in Agriculture

## System General Education Requirements\*: 34-35

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

## Institutional Graduation Requirements\*\*\*: 5

- Goal #1 First Year Experience: AST 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: PS 213-213L - Soils and Lab \* \*\* Credits: 3

## College Requirements: 11

- Group 1 Courses for Bachelor of Science in Agriculture Institutional Graduation Requirements\*\* (see note two): 5
- AST 342-342L - Applied Electricity and Lab Credits: 3
- AST 333-333L - Soil and Water Mechanics and Lab Credits: 3

## Major Requirements: 46

- AST 203-203L - Intro to Precision Agriculture & Lab Credits: 2
- AST 353-353L - Physical Climatology and Meteorology and Lab Credits: 3
- ABE 490 - Seminar (AW) Credits: 1
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- AST 423-423L - Rural Structures and Lab Credits: 3
- AST 443-443L - Food Processing and Engineering Fundamentals and Lab Credits: 3
- AST 463/563 - Agricultural Waste Management (AW) Credits: 3
- BADM 310 - Business Finance (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- MNET 231-231L - Manufacturing Processes I and Lab Credits: 3
- GE 121 - Engineering Design Graphics I Credits: 1
- GE 123 - Computer Aided Drawing Credits: 1
- AST 213-213L - Ag, Industrial and Outdoor Power & Lab Credits: 3  
**OR** AST 313-313L - Farm Machinery Systems Management and Lab Credits: 3
- AST 273-273L - Microcomputer Applications in Agriculture and Lab Credits: 3  
**OR** CSC 105 - Introduction to Computers (COM) Credits: 3

## Choose one from the following:

- AST 303-303L - Design Management Experience and Lab Credits: 3
- AST 494 - Internship Credits: 1-2
- AST 496 - Field Experience Credits: 1-2
- AST 497 - Cooperative Education Credits: 1-2
- Science Electives with a prefix of CHEM, PHYS, BIOL, MICR,  
**OR** BOT Credits: 6
- Biological Science Elective with a prefix of BOT, BIOL, MICR,  
**OR** ZOOL Credits: 3

## Technical Electives: 24

Any 300 or higher level course in Animal Science, Range Science, Plant Science, Agricultural Business, Agricultural and Resource Economics, and Economics Credits: 3

- ABE 464-464L - Monitoring and Controlling Agriculture and Biological Systems and Lab Credits: 2
- AST 202-202L - Construction Technology and Materials and Lab Credits: 2
- AST 213-213L - Ag, Industrial and Outdoor Power and Lab Credits: 3
- AST 313-313L - Farm Machinery Systems Management and Lab Credits: 3
- AST 412-412L/512-512L - Fluid Power Technology & Lab Credits: 3
- AST 426-426L - Emerging Technologies in Ag and Lab Credits: 3
- AST 492 - Topics Credits: (1-4)
- BADM 280 - Personal Finance (COM) Credits: 3
- MNET 231-231L - Manufacturing Processes I and Lab Credits: 3
- ET 210-210L - Introduction to Electronic Systems Credits: 4
- ET 240 - Techniques of Servicing Credits: 2
- ET 251-251L - Electricity and Electronics I and Lab Credits: 3
- ET 252-252L - Electricity and Electronics II and Lab Credits: 3
- MNET 320-320L - Computer Aided Design/Drawing & Lab Credits: 3
- GE 310 - Geometric Dimensioning and Tolerancing Credits: 2
- GE 425-525 - Occupational Safety and Health Management Credits: 3
- GEOG 472 - Introduction to GIS Credits: 3
- GEOG 473-573 - GIS: Data Creation and Integration Credits: 3
- GEOG 484-484L - Remote Sensing and Lab Credits: 3

## Total Required Credits: 120

### Notes:

- *Note One:* "C" grade required in ENGL 201.
- *Note Two:* Courses must be selected from the following areas: Botany, Biology, Entomology, Zoology, Microbiology.
- *Note Three:* 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 1 requirement.
- *Note Four:* 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 a 5 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 Environmental Law

(See Economics)

## Agriculture and Resource Economics

(See Economics)

## Agricultural Business

(See Economics)

# Agricultural Education Communication and Leadership Major (AGED)

Amy Smith, Assistant Professor of Agriculture Education  
Teaching Learning & Leadership  
Teaching Learning & Leadership-Box 0507  
Brookings, SD 57007  
605-688-6484  
Amy.R.Smith@sdstate.edu

## Program

The Agricultural Education, Communication, and Leadership major is a multidisciplinary program that provides a strong foundation in agricultural sciences. The major allows students the flexibility to select a plan of study based on their interests and skills by choosing one of three specializations: Education, Communication, or Leadership.

Students in the Agricultural Education, Communication and Leadership (AGCL) Major - Agricultural 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 Agricultural Education, Communication and Leadership (AGCL) Major - Communication specialization will be well prepared for employment in journalism, promotion and marketing, sales, and other career opportunities.

The Agricultural Education, Communication and Leadership (AGCL) Major - 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. For further information about the major contact the College of Agriculture and Biological Sciences.

## Agricultural Education, Communication and Leadership Major - Agricultural Education specialization

Bachelor of Science in Agriculture

### System General Education Requirements\*: 31

- Goal #1 Written Communication: ENGL 101\* & 201\* Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: SOC 100\* AND ECON 201\* or ECON 202\* Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics MATH 102 Credits: 3
- Goal #6 Natural Sciences: BIOL 101-101L\* and CHEM 106-106L\* Credits: 7

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: AGED 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: PS 213-213L\*\* Credits: 3

### Major Requirements: 57-58

- GEOG 131-131L - Physical Geography: Weather and Climate and Lab\* Credits: 4

- BIOL 103-103L - Biology Survey II and Lab\* (COM) Credits: 3  
**OR** GEOG 132-132L - Physical Geography: Natural Landscapes and Lab\* Credits: 4
- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4
- AGED 271-271L - Farm and Ranch Management and Lab Credits: 4
- ANTH 421/521 - Indians of North America \*\* Credits: 3
- AS 101-101L - Introduction to Animal Science & Lab Credits: 3
- AS 241-241L - Introduction to Meat Science and Lab Credits: 3
- AS 285-285L - Livestock Evaluation and Marketing and Lab Credits: 4
- AST 202-202L - Construction Technology and Materials and Lab Credits: 2
- AST 311-311L - Applied Electricity for Teachers and Lab Credits: 1, 0
- AST 211-211L - Ag and Outdoor Power for Teachers and Lab Credits: 1, 0
- AGED 491 - Independent Study Credits: 1-3 (1 credit Welding)
- AGED 404 - Program Plan in Agricultural Education (AW) Credits: 3
- AGED 408 - Supervision of Work Experience and Youth Organizations Credits: 2
- AGED 412-412L - Preparation for Supervised Teaching Internship in AGED and Lab Credits: 4, 0
- AGED 488 - 7-12 Student Teaching in AGED Credits: 6
- AGED 494 - Internship Credits: 1
- HO 111-111L - Biology of Horticulture and Lab Credits: 3
- PS 103-103L - Crop Production and Lab Credits: 3
- NRM 110 - Environmental Conservation \*\*(G) Credits: 3  
**OR** WL 220 - Introduction to Wildlife and Fisheries Management Credits: 3
- DS 130-130L - Introduction to Dairy Science and Lab Credits: 3  
**OR** DS 231 - Dairy Foods Credits: 3

### Supporting Coursework: 20

- AGED 405 - Philosophy of Career and Technical Education Credits: 2
- AGED 295 - Practicum Credits: 1
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3
- EPSY 302 - Educational Psychology (COM) Credits: 3
- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2
- Electives: 2-3 Contact advisor for approved ag electives.

### Total Required Credits: 120

### 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 a 5 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 Education, Communication and Leadership (AGCL) Major - Communication specialization**

Bachelor of Science in Agriculture

### **System General Education Requirements\*: 31**

- Goal #1 Written Communication: ENGL 101\* & 201\* Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 201\* or ECON 202\* and 3 credit elective. Credits: 6
- Goal #4 Humanities and Arts/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102\* Credits: 3
- Goal #6 Natural Sciences: BIOL 101-101L\* and CHEM 106-106L\* Credits: 7

### **Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Experience: AGED 109\*\* or MCOM 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### **College Requirements: 5**

- Group 1 Courses for Bachelor of Science in Agriculture Credits: 5

### **Major Requirements: 44-45**

- LEAD 310 - Leadership in Context \*\* Credits: 3
- AS 101-101L - Introduction to Animal Science and Lab Credits: 3
- MCOM 155 - Information Gathering Credits: 2
- MCOM 210-210L - Basic Newswriting and Studio (COM) Credits: 3
- MCOM 220-220L - Introduction to Digital Media and Lab Credits: 3
- MCOM 265-265L - Basic Photography and Studio (COM) Credits: 2
- MCOM 311-311L - News Editing and Editing Lab(COM) Credits: 3
- MCOM 430-530 - Media Law (COM) Credits: 3
- MCOM 490 - Seminar (COM) Credits: 1
- MCOM 494 - Internship (COM) Credits: 2
- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4
- PS 103-103L - Crop Production and Lab Credits: 3
- SPCM 215 - Public Speaking (COM) \* Credits: 3  
**OR** SPCM 410-510 - Organizational Communication (COM) (AW) Credits: 3
- MCOM 316 - Magazine Writing and Editing Credits: 3  
**OR** MCOM 332-332L - Broadcast Writing & Reporting & Lab Credits: 3  
**OR** MCOM 410 - Advanced Reporting (COM) Credits: 3  
**OR** MCOM 438-438L - Public Affairs Reporting and Studio (COM) (AW) Credits: 3

### **Capstone Requirements: 3-4**

Choose one of the following:

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

### **Electives: 35-36**

- Agricultural Electives Credits: 9
- MCOM Electives Credits: 10
- General Electives Credits: 16-17

### **Total Required Credits: 120**

### **Curriculum Notes**

- Students must have at least 25 credits in 300+ level courses, excluding internships, cooperative education, or field experience courses.
- 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 a 5 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 Education, Communication and Leadership Major - Leadership specialization**

Bachelor of Science in Agriculture

### **System General Education Requirements\*: 31**

- Goal #1 Written Communication: ENGL 101\* & 201\* Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 201\* or ECON 202\* and SOC 240\* Credits: 6
- Goal #4 Arts and Humanities/Diversity: PHIL 220\* and 3 credit elective. Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences: BIOL 101-101L\* and CHEM 106-106L\* Credits: 6

### **Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Experience: AGED 109\*\* or MCOM 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### **College Requirements: 2**

- Group 1 Courses for Bachelor of Science in Agriculture Credits: 2

### **Major Requirements: 33-36**

- ABS 203 - Global Food Systems \*\* (G) Credits: 3
- LEAD 310 - Leadership in Context \*\* Credits: 3
- ABS 482-582 - International Experience (G) Credits: 2-4  
**OR** 494 - Internship Credits: 2-4  
**OR** 498 - Undergraduate Research Credits: 2-4
- AGECE 479 - Agricultural Policy (AW) (G) Credits: 3
- AS 101-101L - Introduction to Animal Science & Lab Credits: 3
- LEAD 210 - Foundations of Leadership\*\* Credits: 3
- LEAD 410 - Leadership: Senior Seminar Credits: 1
- LEAD 433 - Leadership and Organizations Credits: 3
- LEAD 496 - Field Experience: Leadership in Action Credits: 2
- PS 103-103L - Crop Production and Lab Credits: 3
- SPCM 215 - Public Speaking (COM) \* Credits: 3  
**OR** SPCM 410-510 - Organizational Communication (COM) (AW) Credits: 3

### **Capstone Requirement: 3-4**

Choose one of the following:

- ABS 475-475L - Integrated Natural Resource Management and Lab (AW) Credits: 3
- AGECE 421-521 – Farming & Food Systems Economics Credits: 3
- AGECE 478-478L - Agricultural Finance and Lab Credits: 3
- AS 474-474L - Cow/Calf Management and Lab Credits: 3
- AS 475 - Feedlot Operations and Management Credits: 3
- AS 477-477L - Sheep and Wool Production and Lab Credits: 3

- AS 478-478L - Swine Production and Lab Credits: 3
- AST 303-303L - Design Management Experience and Lab Credits: 3
- AST 463/563 - Agricultural Waste Management (AW) Credits: 3
- DS 412-412L - Dairy Farm Management and Lab Credits: 4
- PS 440-440L - Crop Management with Precision Farming and Lab Credits: 3
- RANG 485-485L - Advanced Integrated Ranch Management and Lab Credits: 3

#### **Electives: 46-49**

- MCOM Elective Credits: 2
- General Electives Credits: 44-47

#### **Total Required Credits: 120**

#### **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 a 5 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**

(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)**

Richard Meyers, Coordinator  
 American Indian Studies and Tribal Outreach  
 American Indian Education and Cultural Center 107  
 605-688-4723  
 e-mail: Richard.Meyers@sdstate.edu

#### **Program**

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 US 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 Credits

#### **Required Courses**

- AIS/LAKL 101 - Introductory Lakota I \* \*\* Credits: 4
- AIS/ENGL 445 - American Indian Literature Credits: 3
- AIS 421/ANTH 421-521 - Indians of North America \*\* Credits: 3
- OR AIS/HIST 368 - History and Culture of the American Indian\*\* (COM) Credits: 3

#### **Elective Credits: 10**

- Select at least ten additional credits from the following.
- AIS 100 - Introduction to American Indian Studies Credits: 3
- AIS 421/ANTH 421-521 - Indians of North America \*\* Credits: 3
- AIS/LAKL 102 - Introductory Lakota II \* Credits: 4
- AIS/LAKL 201 - Intermediate Lakota I (COM) Credits: 3
- AIS/LAKL 202 - Intermediate Lakota II (COM) Credits: 3
- AIS/ENGL 256 - Literature of the American West\*\* Credits: 3
- AIS/ENGL 447 - American Indian Literature of Present Credits: 3
- AIS/GEOG 467 - Geography of the American Indian Credits: 3
- AIS/HIST 368 - History and Culture of the American Indian\*\* (COM) Credits: 3
- AIS/POLS 417 - American Indian Government & Politics Credits: 3
- AIS/REL 238 - Native American Religions \* Credits: 3
- ANTH 210 - Cultural Anthropology \* (COM) Credits: 3
- SOC 350 - Race and Ethnic Relations (COM) (G) Credits: 3

#### **Total Required Credits: 20**

## **Animal Science Department (AS)**

Don Marshall, Interim Head  
 Department of Animal Science  
 Animal Science Complex 103A  
 605-688-5166  
 e-mail: cheryl.beste@sdstate.edu  
 http://www.sdstate.edu/ars/index.cfm

#### **Faculty**

Distinguished Professor McFarland, Pritchard; Distinguished Professors Emeriti Costello, Wahlstrom; Professors Bruns, Clapper, Held, Marshall, Wright; Professors Emeriti Bailey, Dearborn, Gartner, Gee, J. Johnson, Kohler, Libal, Plumart, Slyter; Associate Professors Olson, Perry, Walker, Associate Professors Emeriti Bonzer; Assistant Professors Bott, Gonda, Grings, Scramlin, Underwood, Weaver Blair; Adjunct Professors Britzman, Casas, Holland, Larson, Nold, Mousel, Winterholler Trojan, Wertz-Lutz.

#### **Programs**

The Department offers instruction leading to the Bachelor of Science degree with a major in Animal Science. The curricula are designed to prepare students for careers in livestock production, related agriculture business enterprises, farming and ranching, 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.

#### **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.

### Swine Science Certificate

The Swine Science Undergraduate Certificate allows students to complete this certificate program online through their university. Upon completion of the required and elective courses, students will be able to apply for a Swine Science Online Certificate from the U.S. Pork Center of Excellence.

Objectives of the Swine Science program:

1. Integrate disciplines and concepts in order to facilitate problem solving, creating a more efficient and sustainable production system
2. Combine scientific principles and management skills involved in pork production
3. Recognize available career opportunities within the pork industry
4. Apply personnel, facility, fiscal, and livestock management
5. Perform basic swine husbandry
6. Understand the impact of societal and industry issues on production management systems
7. Explain the pork structure and trends, including production, packing, and integration

## Animal Science (AS) Major - Business and Production Specialization

Bachelors of Science in Agriculture

### System General Education Requirements\* Credits: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: BIOL 101-101L and BIOL 103-103L Credits: 6

### Institutional Graduation Requirements\*\* - 5

- Goal #1 First Year Experience: AS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 1-3

- Group 1 Courses from the College of Agriculture and Biological Sciences Credits: 1-3

### Major Requirements: 66-67

- Animal Science Core: 23
- AS 101-101L - Introduction to Animal Science and Lab Credits: 3
- AS 233-233L - Applied Animal Nutrition and Lab Credits: 4
- AS 241-241L - Introduction to Meat Science and Lab Credits: 3
- AS 285-285L - Livestock Evaluation and Marketing & Lab Credits: 4
- AS 323 - Advanced Animal Nutrition Credits: 3
- AS 332 - Livestock Breeding and Genetics Credits: 4
- AS 433-433L - Livestock Reproduction and Lab Credits: 3
- AS 489 - Current Issues in Animal Science (AW) Credits: 2
- Science Electives: 16-17
- CHEM 106-106L - Chemistry Survey and Lab\* (COM) Credits: 4
- CHEM 120-120L - Elementary Organic Chemistry & Lab\* Credits: 4
- OR CHEM 108-108L - Organic and Biochemistry and Lab\* (COM) Credits: 5
- VET 223-223L - Anatomy and Physiology of Domestic Animals and Lab Credits: 4
- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits 4
- OR MICR 231-231L - General Microbiology and Lab (COM) Credits: 4

### Production Electives: 9

- AS 365-365L - Horse Production and Lab Credits: 3
- AS 345-345L - Value-Added Meat Products and Lab Credits: 3
- AS 441-541 - Advanced Meat Science and Lab Credits: 3
- AS 474-474L - Cow/Calf Management and Lab Credits: 3
- AS 475 - Feedlot Operations and Management Credits: 3
- AS 477-477L - Sheep and Wool Production and Lab Credits: 3
- AS 478-478L - Swine Production and Lab Credits: 3
- RANG 485-485L - Advanced Integrated Ranch Management and Lab Credits: 3

### Business Electives: 18

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
  - ECON 201 - Principles of Microeconomics \* \*\* (COM) Credits: 3
- Select 12 credits from the following courses*
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
  - AGEC 271-271L - Farm and Ranch Management and Lab Credits: 4
  - AGEC 352 - Agricultural Law Credits: 3
  - AGEC 354 - Agricultural Marketing and Prices Credits: 3
  - AGEC 364 - Introduction to Cooperatives Credits: 3
  - AGEC 371 - Agricultural Business Management Credits: 3
  - AGEC 421-521 - Farming & Food Systems Economics Credits: 3
  - AGEC 454 - Economics of Grain and Livestock Marketing Credits: 3
  - AGEC 471-571 - Advanced Farm & Ranch Management Credits: 3
  - AGEC 478-478L - Agricultural Finance and Lab Credits: 3
  - AGEC 479 - Agricultural Policy (AW) (G) Credits: 3
  - AGEC 484 - Trading in Agricultural Futures & Options Credits: 3
  - BADM 280 - Personal Finance (COM) Credits: 3
  - BADM 310 - Business Finance (COM) Credits: 3
  - BADM 334 - Small Business Management (COM) Credits: 3
  - BADM 350 - Legal Environment of Business (COM) Credits: 3
  - BADM 351 - Business Law (COM) Credits: 3
  - BADM 360 - Organization and Management (COM) Credits: 3
  - BADM 474 - Personal Selling (COM) Credits: 3
  - ECON 330 - Money and Banking (COM) Credits: 3
  - ECON 370 - Marketing Credits: 3
  - STAT 281 - Introduction to Statistics (COM) Credits: 3

Elective Credits: 15-18

Total Required Credits: 120

### 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 a 5 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 (AS) Major - Science Specialization

Bachelor of Science in Agriculture

### System General Education Requirements:\*\* 34

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 201 or ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 121-121L Credits: 5
- Goal #6 Natural Sciences: BIOL 151-151L and BIOL 153-153L Credits: 8

**Institutional Graduation Requirements:\*\* 5**

- Goal #1 First Year Experience: AS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

**College Requirements: 1-3**

- Group 1 Courses from the College of Agriculture and Biological Sciences Credits: 1-3

**Major Requirements: 76**

- AS 101-101L - Introduction to Animal Science & Lab Credits: 3
- AS 233-233L - Applied Animal Nutrition and Lab Credits: 4
- AS 241-241L - Introduction to Meat Science and Lab Credits: 3
- AS 323 - Advanced Animal Nutrition Credits: 3
- AS 332 - Livestock Breeding and Genetics Credits: 4
- AS 433-433L - Livestock Reproduction and Lab Credits: 3
- AS 489 - Current Issues in Animal Science (AW) Credits: 2

**Production Credits: 6**

- AS 365-365L - Horse Production and Lab Credits: 3
- AS 474-474L - Cow/Calf Management and Lab Credits: 3
- AS 477-477L - Sheep and Wool Production and Lab Credits: 3
- AS 478-478L - Swine Production and Lab Credits: 3

**Science Credits: 48**

- Select from the following Physics Sequence
  - PHYS 111-111L – Introduction to Physics I and Lab\* (COM) AND PHYS 113-113L – Introduction to Physics II and Lab\* (COM) Credits: 8
  - **OR** PHYS 211-211L - University Physics I & Lab\* (COM) AND PHYS 213-213L - University Physics II and Lab \* (COM) Credits: 8
- CHEM 112-112L - General Chemistry I and Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II and Lab \* (COM) Credits: 3, 1
- CHEM 326-326L - Organic Chemistry I& Lab (COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab (COM) Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- BIOL 371 - Genetics (COM) Credits: 3
- MICR 231-231L - General Microbiology and Lab (COM) Credits: 4
- VET 223-223L - Anatomy and Physiology of Domestic Animals and Lab Credits: 4

**Elective Credits: 2-4****Total Required Credits: 120****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 a 5 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.

**Minors****Animal Science Minor****Required Coursework**

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

**Electives Credits: 9-10**

Electives: 3-4 - Select at least one course from the following list.

- AS 323 - Advanced Animal Nutrition Credits: 3
  - AS 332 - Livestock Breeding and Genetics Credits: 4
  - AS 433-433L - Livestock Reproduction and Lab Credits: 3
- Electives: 6 - Select at least two courses, including one of the required courses \* from the following list.
- AS 241-241L - Introduction to Meat Science and Lab Credits: 3
  - AS 365-365L - Horse Production and Lab Credits: 3
  - AS 474-474L - Cow/Calf Management and Lab Credits: 3\*
  - AS 477-477L - Sheep and Wool Production and Lab Credits: 3\*
  - AS 478-478L - Swine Production and Lab Credits: 3\*

**Total Required Credits: 20-21****Equine Studies Minor****Required Coursework**

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

**Choose one from the following**

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

**Choose one from the following**

- AGE 271-271L - Farm & Ranch Management & Lab Credits: 4
- BADM 334 - Small Business Management (COM) Credits: 3
- ENTR 336 - Entrepreneurship I (COM) Credits: 3

**Total Required Credits: 18-20****Certificate Program****Swine Science Certificate****Required Coursework**

- AS 202 - Basic Swine Science Credits: 2
  - AS 203L - Basic Swine Science Lab Credits: 1
  - AS 310 - Employee Management for the Swine Industry Credits: 1
  - AS 313 - Swine Health and Biosecurity Credits: 1
  - AS 494 - Production Internship in the Swine Industry Credits: 1
- Select one of the following Production Management courses.
- AS 306 - Swine Breeding and Gestation Management Credits: 1
  - AS 307 - Swine Farrowing Management Credits: 1
  - AS 308 - Swine Nursery and Finishing Management Credits: 1

**Elective courses**

Choose five courses not previously selected.

- AS 302 - Swine Environment Management Credits: 1
- AS 303 - Swine Feed Mill Management Credits: 1
- AS 304 - Swine Manure and Nutrient Management Credits: 1
- AS 305 - Swine Nutrition Credits: 1
- AS 306 - Swine Breeding and Gestation Management Credits: 1
- AS 307 - Swine Farrowing Management Credits: 1
- AS 308 - Swine Nursery and Finishing Management Credits: 1
- AS 309 - Swine Business and Records Analysis Credits: 1
- AS 311 - Marketing & Risk Management in the Swine Industry Credits: 1
- AS 312 - Pork Product Quality and Safety Credits: 1
- AS 314 - Pork Export Markets Credits: 1
- AS 315 - Contemporary Issues in the Swine Industry Credits: 1

**Total Required Credits: 12**

## Apparel Merchandising

(See Consumer Sciences)

## Architecture Department (ARCH)

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Brian Rex, Head  
Department of Architecture  
Intramural Building, 108  
605-688-4841  
e-mail:brian.rex@sdstate.edu  
http://www.sdstate.edu/arch/

### Programs

The new architecture program consists of two degrees, a 4-year non-professional Bachelor of Science 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.

The core academic experience offered in the Department of Architecture is our 3 and a half years of professional study leading to a Master of Architecture degree. All students who go through our program will matriculate through all the courses in our professional program.\* There are two paths a student can follow to enter these advanced professional years of study. Path A and Path B students take the 3.5 years of professional study together in the same sections.

**Path A** (4 year B.Sc.Arch.Stud. + 2 year M.Arch.) is comprised of a four year Bachelor of Science in Architectural Studies and a two year professional Master of Architecture degree. This is the typical path for high school graduates and university transfers wanting a design based liberal arts education leading into a professional education in architecture. The core professional years of study are the last 3.5 years of this 6 year program. Professional studies begin in the spring of the third year. Students graduating with a B.Sc.Arch.Stud. from SDSU will apply for admission into the graduate M.Arch. degree.

**Path B** (3.5 year M.Arch.) People who already have a B.A. or B.Sc. degree of any specialization from an accredited university can apply for admission (based primarily on undergraduate academic achievement and a portfolio that demonstrates an educated ability to make things) into the first semester of the 3.5 years of professional studies and matriculate through these years to a Master of Architecture degree. Students provisionally admitted with insufficient graphic capacity may be required to take fundamental drawing and / or design courses the Fall semester before beginning professional study.

The whole department is focused on an interactive, haptic, and performance based curriculum rooted in fundamental issues of professional architecture and design practice. The undergraduate degree program begins with a unique design based liberal arts education. Our professional graduates will know how to make buildings well; how to make good drawings and models of architecture; and how to make places by building.

## Architectural Studies Major

Bachelor of Science and Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 33

- Goal #1 Written Communication: ENGL 101\* & 201\* Credits: 6
- Goal #2 Oral Communication : SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity : POLS 210\* Credits: 6
- Goal #4 Arts and Humanities/Diversity : ART 111\* Credits: 6
- Goal #5 Mathematics: MATH 121-121L Credits: 5
- Goal #6 Natural Sciences: PHYS 111-111L and BIOL 101-101L\* Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: ARCH 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: ART 112\*\* Credits: 3

### College Requirements: 5-34

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

Bachelor of Science

- Natural Sciences Credits: 7 GEOG 131-131L Credits: 4
- Biological Sciences or Physical Sciences Credits: 3
- Social Sciences Credits: 6

### Major Requirements: 52

- ARCH 131 - Building Thinking Credits: 2
- ARCH 151 - Design Practice I Credits: 2
- ARCH 152 - Design Practice II Credits: 2
- ARCH 241 - Building History I Credits: 2
- ARCH 251 - Design Practice III Credits: 3
- ARCH 252 - Design Practice IV Credits: 3
- ARCH 242 - Building History II Credits: 2
- ARCH 351 - Preparatory Architecture Studio Credits: 4
- ARCH 341 - Building History III Credits: 2
- ARCH 321 - Drawing, modeling, & notation Credits: 2
- ARCH 331 - Building Shop I Credits: 2
- ARCH 352 - Architecture studio I Credits: 5
- ARCH 411 - Site, Environment, Urbanism & Public Space Credits: 2
- ARCH 421 - Building Information Technologies Credits: 2
- ARCH 332 - Building shop II Credits: 2
- ARCH 431 - Building Shop III Credits: 2
- ARCH 451 - Architecture Studio II Credits: 5
- ARCH 452 - Architecture Studio III Credits: 5
- ARCH 492 - Topics Credits: 3

### Supporting Credits: 17

- CM 216 - Construction Materials Credits: 3
- CM 232-232L - Cost Estimating and Lab Credits: 3
- CM 332 - Building Construction Methods and Systems Credits: 3
- CM 353-353L - Construction Structures and Lab Credits: 3
- ID 329-329L - Building Systems II and Lab Credits: 2
- MNET 231-231L - Manufacturing Processes I and Lab Credits: 3

### Elective Credits: 0-8

### Total Required Credits: 120

### 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 a 5 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.

### **Army ROTC (MLS)**

(See Military Science)

### **Art (ART)**

(See Visual Arts)

### **Athletic Coaching Certification**

(See Health and Nutrition Sciences)

### **Athletic Training (AT)**

(See Health and Nutritional; Sciences)

### **Aviation (AVIA)**

(See Consumer Sciences)

### **Biochemistry (BIOCM)**

(See Chemistry and Biochemistry)

## **Biology and Microbiology Department (BIOL, MICR, BIOT)**

Volker Brözel, Department Head  
Department of Biology and Microbiology  
Alfred Dairy Science Hall 228  
605-688-6141  
e-mail: biomicro@abs.sdstate.edu  
<http://www.sdstate.edu/biomicro/>

#### **Faculty**

Professor Brözel, Head; Professors Bleakley, Erickson, Gibbons, Gibson, Hildreth, Kayongo-Male, Reese, Wake, West, Yen; Professors Emeriti Chen, Evenson, Granholm, Haertel, McMullen, Myers, Peterson, Pengra, Whalen; Associate Professors Auger, Bücking, Kaushik, F. Li, Pedersen, Rushton, Wang, Zhou; Associate Professor Emeritus Morrill; Assistant Professors Fang, Hill, W. Li, Nepal, Rohila, Wu; Instructors Ellis, Kennedy, Ladonski, Lenertz, McCutcheon, Mediger, Murphy, Warren; Adjunct faculty Chase, Cooper, Dwivedi, Epperson, Fennell, Francis, Henry, Hughes, Johnson, Kightlinger, Lundgren, McFarland, Nelson, Reidel, Rietz, Sergeev, Steece, Specker, Todd, Wixon

#### **Programs**

##### **Biology (BIOL)**

The Biology and Microbiology Department offers curricula leading to the Bachelor's degree with a major in Biology. A minor is also offered. 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 Natural Resource Management. 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. 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. Another option within the Biology degree is an emphasis in organismal biology. A minimum GPA of 2.0 must be maintained in the major courses.

##### **Biotechnology (BIOT)**

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 pre-professional 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.

##### **Microbiology (MICR)**

The Biology and Microbiology Department offers curricula leading to the Bachelor of Science in Biological Science with a major in Microbiology. A minor is also offered. 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.

##### **Zoology**

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

##### **Pre-Professional Programs**

University also provides the opportunity to students to further direct their studies with several pre-professional interest areas. Advisors within the department provides advising services to assist each student in developing a plan and selecting a major to best suit his or her goals.

### **Biology Major**

(General Biology Major and Biology with an Organismal Emphasis)  
Bachelor of Science in Biological Sciences

#### **System General Education Requirements\*: 33-35**

- Goal #1 Written Communication: ENGL 101 and ENGL 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 4-6 MATH 102 and MATH 120  
**OR** MATH 115  
**OR** MATH 121-121L  
**OR** MATH 123 (123L)<sup>1</sup>
- Goal #6 Natural Sciences: BIOL 151-151L & 153-153L Credits: 8

### **Institutional Graduation Requirements\*\*:** 5

- Goal #1 First Year Experience: BIOL 109-109L Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### **Major Requirements: 39-44**

Biology and Microbiology: 13

- BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 3,1
- BIOL 204-204L - Genetics & Cellular Biology & Lab Credits: 3, 1
- MICR 233-2323L - Introductory Microbiology & Lab Credits: 3, 1
- BIOL 290 - Seminar Credits: 1

Chemistry: 16

- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3,1
- CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab (COM) Credits: 3, 1

Physics: 4-8

- PHYS 111-111L - Intro to Physics I and Lab\* (COM) Credits: 4 and PHYS 113-113L - Intro to Physics II and Lab\* (COM) Credits: 4  
**OR** PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4<sup>3</sup>

Mathematics: 3-4

- MATH 125 - Calculus II \* (COM) Credits: 4  
**OR** STAT 281 - Introduction to Statistics (COM) Credits: 3

Advanced Writing: 3

- ENGL 379 - Technical Communication (AW) Credits: 3

### **Select One Plan of Study**

- Biology Major
- Biology Major - Organismal Biology Emphasis

### **Biology Major: 15**

- Select at least 15 Credits from courses with the following prefixes: BIOL, BOT, MICR

### **Biology Major - Organismal Biology Emphasis: 28-33**

- BIOL 200-200L - Animal Diversity and Lab\* Credits: 4
- BIOL 373 - Evolution (COM) Credits: 3
- BOT 201-201L - General Botany & Lab\* (COM) Credits: 3
- NRM 311-311L - Principles of Ecology & Lab (COM) Credits: 3, 1

### **Electives** <sup>4,5</sup>

Select at least five courses from the following list:

- BIOL 221-221L - Human Anatomy & Lab (COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- BIOL 383 - Bioethics \*\* (G) Credits: 4
- BIOL 440-440L - Restoration Ecology Credits: 4
- BIOL 466-566 - Environmental Toxicology & Contaminants Credits: 3
- BIOL 467-467L/567-567L - Parasitology and Lab Credits: 3
- BIOL 483-483L - Developmental Biology & Lab Credits: 4
- BIOL 494 - Internship (COM) Credits: 1-12<sup>6</sup>
- BIOL 496 - Field Experience (COM) Credits: 1-12<sup>6</sup>
- BOT 301-301L - Plant Systematics (COM) Credits: 4
- BOT 327-327L - Plant Physiology & Lab (COM) Credits: 4
- BOT 405-405L/505-505L - Grasses and Grasslike Plants and Lab Credits: 3
- BOT 419-419L - Plant Ecology & Lab (COM) (G) Credits: 4
- EES 275 - Intro to Environmental Science \*\* (G) Credits: 3
- EES 425-425L/525-525L - Disturbance Ecology & Lab Credits: 4
- MICR 310-310L - Environmental Microbiology & Lab Credits: 4
- MICR 421-421L/521-521L - Soil Microbiology & Lab Credits: 3
- PS 305-305L - Insect Biology and Lab (COM) Credits: 3
- WL 302 - Animal Behavior Credits: 3

- WL 355-355L - Mammalogy and Lab Credits: 3, 0
- WL 361 - Survey of Amphibians and Reptiles Credits: 2
- WL 363-363L - Ornithology and Lab (COM) Credits: 4
- WL 367-367L - Ichthyology and Lab Credits: 3

### **Electives: 0-28**

### **Total Required Credits: 120**

### **Footnotes:**

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. Recommended for Biology-Pre-professional specialization.
4. Botany Focus: Core + 3 BOT + 2 additional courses from elective list
5. Zoology Focus: Core + 3 ZOOL/WL + 2 additional courses from elective list
6. Consult with your advisor or the Department Internship Coordinator before selecting 496/498.

### **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 (Biology-Pre-professional specialization is exempt).
- \*\* South Dakota State University has a 5 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.

## **Biology (BIOL) Major - Secondary Education Specialization**

Bachelors of Science in Biological Sciences

### **System General Education Requirements\*:** 33-35

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity: SOC 100 and/or PSYC 101 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 4-6 MATH 102 and MATH 120  
**OR** MATH 115  
**OR** MATH 121-121L  
**OR** MATH 123 (123L)
- Goal #6 Natural Sciences: BIOL 151-151L and BIOL 153-153L Credits: 8

### **Institutional Graduation Requirements\*\*:** 5

- Goal #1 First Year Experience: BIOL 109-109L Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility (Suggested AIS/ANTH 421 or AIS/HIST 368) Credits: 3

### **Major Requirements: 28**

- BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 3,1
- BIOL 204-204L - Genetics & Cellular Biology & Lab Credits: 3, 1
- MICR 231-231L - General Microbiology & Lab (COM) Credits: 3, 1
- CHEM 106-106L - Chemistry Survey & Lab\* (COM) Credits: 4
- CHEM 108-108L - Organic & Biochem & Lab\* (COM) Credits: 5
- PHYS 101-101L - Survey of Physics \* (COM) & Lab Credits: 4
- ENGL 379 - Technical Communication (AW) Credits: 3

### **Specialization Requirements: 20-22**

Secondary Education Specialization Core: 13

- BOT 201-201L - General Botany and Lab\* (COM) Credits: 3
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4



- BIOL 373 - Evolution (COM) Credits: 3
- NRM 311 - Principles of Ecology (COM) Credits: 3

### Secondary Education Specialization Electives: 7-8

Select two courses from the following list.

- BIOL 200-200L - Animal Diversity and Lab\* Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- BIOL/PHIL - 383 Bioethics\*\* (G) Credits: 4
- PHIL/REL 454-554 - Environmental Ethics \*\* (COM) Credits: 3
- WL 302 - Animal Behavior (COM) Credits: 3

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching. Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

#### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

#### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- SEED 413 - 7-12 Science Methods (COM) Credits: 3
- Native American Courses Approved for Teacher Education AIS/ANTH 421 or AIS/HIST 368 Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

#### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)  
OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

#### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

#### Total Credits Required: 120

#### 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 a 5 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.

## Biology (BIOL) Major - Pre-professional Specialization

Bachelor of Science in Biological Sciences

### System General Education Requirements\*: 33-35

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 4-6 MATH 102 and MATH 120  
OR MATH 115  
OR MATH 121-121L  
OR MATH 123 (123L)<sup>1</sup>
- Goal #6 Natural Sciences: BIOL 151-151L and BIOL 153-153L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: BIOL 109-109L Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### Major Requirements: 62-71

Biology and Microbiology: 13

- BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 3, 1
- BIOL 204-204L - Genetics & Cellular Biology & Lab Credits: 3, 1
- MICR 231-231L - General Microbiology & Lab (COM) Credits: 3, 1
- BIOL 290 - Seminar Credits: 1
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3, 1
- CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II and Lab (COM) Credits: 3, 1
- PHYS 111-111L - Intro to Physics I and Lab\* (COM) Credits: 4 and PHYS 113-113L - Intro to Physics II & Lab\*(COM)Credits:4  
OR PHYS 101-101L - Survey of Physics \* (COM) & Lab Credits: 4<sup>2</sup>
- MATH 125 - Calculus II \* (COM) Credits: 4  
OR STAT 281 - Introduction to Statistics (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3

### Specialization Core Requirements

- BIOL 221-221L - Human Anatomy and Lab (COM) Credits: 4<sup>3</sup>
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4<sup>3</sup>
- MICR 439-539 - Medical and Veterinary Immunology Credits: 3

### Electives

Select at least four courses from the list of courses.

- BIOL 383 - Bioethics \*\* (G) Credits: 4
- BIOL 494 - Internship (COM) Credits: 3<sup>4</sup>  
OR BIOL 498 - Undergrad Research/Scholarship (COM) Credits:3<sup>4</sup>
- CHEM 464 - Biochemistry I (COM) Credits: 3
- MICR 424-524 - Medical and Veterinary Virology Credits: 3
- MICR 433-533 - Medical Microbiology (COM) Credits: 3
- MICR 436 - Molecular and Microbial Genetics Credits: 4
- MICR 440L - Infectious Disease Lab Credits:
- PE 454 - Biomechanics (COM) Credits: 3<sup>5</sup>
- BIOL 476-576 - Advanced Mammalian Physiology Credits: 4
- BIOL 467-467L/567-567L - Parasitology and Lab Credits: 3
- BIOL 483-483L - Developmental Biology and Lab Credits: 4

Additional Suggested Electives *Recommended if not taken to meet core requirements to complete 120 credits for graduation*

- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- HLTH 120 - Community Health Credits: 2
- HLTH 364-364L - Emergency Medical Technician and Lab (COM) Credits: 4
- MICR 440L - Infectious Disease Lab Credits: 3
- NFS 315 - Human Nutrition Credits: 3
- NURS 323 - Introduction to Pathophysiology Credits: 3
- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- SPCM 201 - Interpersonal Communication (COM) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- MATH 121-121L - Survey of Calculus & Lab\* (COM) Credits: 5  
**OR** MATH 123 - Calculus I \* (COM) Credits: 4 and MATH 125 - Calculus II \* (COM) Credits: 4

### Total Required Credits 120

#### Curriculum Notes

1. If you select this option 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 generally not sufficient for students planning to enter professional or graduate degree programs.
3. 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).
4. A total of 3 credits is required for field study, internships, and research experiences to count as one elective. These credits can be combined from various experiences.
5. Recommended only for Pre-Chiro, Pre-OT, and Pre-PT programs.
  - The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits (Biology-Pre-professional specialization is exempt).
  - \*\* South Dakota State University has a 5 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.

## Biotechnology (BIOT) Major

Bachelor of Science in Biological Sciences

### System General Education Requirements\*: 34

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

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience BIOL 109-109L\*\* Credits: 1, 1
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: Recommended BIOL 383\*\* Credits: 3

### Major Requirements: 69-74

- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3,1
- CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 3,1
- CHEM 328-328L - Organic Chemistry II & Lab (COM) Credits: 3,1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- PHYS 111-111L - Intro to Physics I and Lab\* (COM) Credits: 4
- PHYS 113-113L - Intro to Physics II and Lab\* (COM) Credits: 4

- BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 4
- BIOL 204-204 L - Genetics & Cellular Biology & Lab Credits: 3, 1
- MICR 231-231L - General Microbiology and Lab (COM) Credits: 4
- ABS 205 - Biotechnology in Agriculture and Medicine Credits: 2
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- MICR 450 - Applied Microbiology and Biotechnology Credits: 3
- MICR 438L - Techniques in Molecular Biology Laboratory Credits: 2
- BIOL 383 - Bioethics \*\* (G) Credits: 4

### Advanced Writing Requirement: 3

Select at least one of the following:

- AGECE 479 - Agricultural Policy (AW) (G) Credits: 3
- PS 383-383L - Principles of Crop Improvement and Lab (AW) Credits: 3
- **OR** refer to approved list for additional courses.

### Advanced Genetics

Select at least one of the following:

- BIOL/PS 453-553 - Advanced Genetics Credits: 3
- MICR 436 - Molecular and Microbial Genetics Credits: 4
- PS 383-383L - Principles of Crop Improvement and Lab (AW) Credits: 3

### Advanced Fundamentals

Select at least one of the following:

- BIOL 373 - Evolution (COM) Credits: 3
- BIOL 483-483L - Developmental Biology and Lab Credits: 4
- MICR 332 - Microbial Physiology Credits: 2
- MICR 332L - Microbial Physiology Lab Credits: 2
- MICR 439-539 - Medical and Veterinary Immunology Credits: 3
- MICR 424-524 - Medical and Veterinary Virology Credits: 3
- VET 223-223L - Anatomy and Physiology of Domestic Animals and Lab Credits: 4

### Applications Requirement

Select at least one of the following courses.

- ABE 343-343L - Engineering Properties of Biological Materials and Lab Credits: 3
- AS 332 - Livestock Breeding and Genetics Credits: 4
- AS 433-433L - Livestock Reproduction and Lab Credits: 3
- DS 301-301L - Dairy Microbiology and Lab Credits: 3
- DS 411-411L - Dairy Breeds and Breeding and Lab Credits: 3
- HO 312-312L - Plant Propagation and Lab Credits: 3
- STAT 435-535 - Applied Bioinformatics Credits: 2

### Experiential Learning Requirement: 3

Complete at least 3 credits from the following - Prefixes may vary with approval of coordinator.

- BIOL 494 - Internship Credits: 1-6
- BIOL 498 - Undergraduate Research Credits: 1-6

### Electives: 0-15

### Total Required Credits: 120

#### 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 a 5 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

Bachelor of Science in Biological Sciences

### System General Education Requirements\*: 33-35

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: Credits: 4-6 MATH 102 and MATH 120  
OR MATH 115 OR MATH 121-121L OR MATH 123<sup>1</sup>
- Goal #6 Natural Sciences: BIOL 151-151L and BIOL 153-153L  
Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: BIOL 109-109L\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental  
Responsibility Credits: 3

### Major Requirements: 67-74

- BIOL 202-202L - Genetics and Organismal Biology and Lab  
Credits: 4
- BIOL 204-204 L - Genetics and Cellular Biology and Lab  
Credits: 3, 1
- MICR 231-231L - General Microbiology & Lab (COM) Credits: 4
- BIOL 290 - Seminar Credits: 1  
OR MICR 290 - Seminar Credits: 1
- MICR 332 - Microbial Physiology Credits: 2
- MICR 332L - Microbial Physiology Lab Credits: 2
- MICR 439-539 - Medical and Veterinary Immunology Credits: 3
- MICR 436 - Molecular and Microbial Genetics Credits: 4

### Applied and Environmental Microbiology

Choose at least two courses from the following:

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

### Infectious Disease

Choose at least two courses from the following:

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

### Capstone and Advanced Writing

- MICR 490 - Seminar (AW) Credits: 1
- ENGL 379 - Technical Communication (AW) Credits: 3

### Chemistry

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

### Physics

- PHYS 111-111L - Intro to Physics I & Lab\* (COM) and PHYS  
113-113L - Intro to Physics II & Lab\* (COM) Credits: 8  
OR PHYS 101-101L - Survey of Physics \* (COM) and Lab  
Credits: 4<sup>2</sup>

### Mathematics

- MATH 125 - Calculus II \* (COM) Credits: 4<sup>3</sup>  
OR STAT 281 - Introduction to Statistics (COM) Credits: 3<sup>3</sup>

### Electives: 6-15

### Total Required Credits: 120

96

### Notes

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. Pre-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.
  - \*\* South Dakota State University has a 5 credit Institutional Graduation Requirement (IGRs).

### Curriculum Notes

- (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.

## Minors

### Biology (BIOL) Minor

#### Required Coursework

- BIOL 101-101L - Biology Survey and Lab\* Credits: 3  
OR BIOL 151-151L – General Biology and Lab\* Credits: 4

#### Elective Credits: 14-15

- Select additional credit hours in Biology and Microbiology  
Departmental courses.
- Two courses must be at the 300 level or above.
- No more than 3 credits from 493, 494, 495, 496, 497 and 498.
- A minimum GPA of 2.0 is required in minor courses.

#### Total Required Credits: 18

### Biotechnology (BIOT) Minor

#### Required Coursework

- ABS 205 - Biotechnology in Agriculture and Medicine Credits: 2
- BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 4
- MICR 436 - Molecular and Microbial Genetics Credits: 4
- CHEM 464 - Biochemistry I (COM) Credits: 3  
OR CHEM 466 - Laboratory Methods - Biochemistry Credits: 1

#### Restricted Electives

Must complete remaining credits from the following list:

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

- AS 332 - Livestock Breeding and Genetics Credits: 4
- AS 433-433L - Livestock Reproduction and Lab Credits: 3
- BIOL 373 - Evolution (COM) Credits: 3
- BIOL 383 - Bioethics \*\* (G) Credits: 4
- BIOL 453-553 - Advanced Genetics Credits: 3
- CHEM 464 - Biochemistry I (COM) Credits: 3
- DS 301-301L - Dairy Microbiology and Lab Credits: 3
- DS 411-411L - Dairy Breeds and Breeding and Lab Credits: 3
- HO 312-312L - Plant Propagation and Lab Credits: 3
- HO 383-383L - Principles of Crop Improvement & Lab Credits: 2, 1
- MICR 332L - Microbial Physiology Lab Credits: 2
- MICR 424-524 - Medical and Veterinary Virology Credits: 3
- PS 383-383L - Principles of Crop Improvement & Lab (AW)  
Credits: 3
- PS 453-553 - Advanced Genetics Credits: 3
- VET 424-524 - Medical and Veterinary Virology Credits: 3
- ZOO 483-483L - Developmental Biology & Lab (COM) Credits: 4

#### Total Required Credits: 18

## Microbiology (MICR) Minor

### Required Coursework

- MICR 231-231L - General Microbiology & Lab (COM) Credits:4

### Elective Credits: 14

- Select additional courses prefixed MICR
- Two courses must be at the 300 level or above.
- DS 301-301L - Dairy Microbiology and Lab may also be included in electives
- No more than 3 credits from MICR 493-498.
- A minimum GPA of 2.0 is required in minor courses.

### Total Required Credits: 18

## Zoology (ZOOL) Minor

### Required Coursework

- BIOL 101-101L - Biology Survey I and Lab (COM) Credits: 3  
OR BIOL 151-151L - General Biology I & Lab\* (COM) Credits: 4

### Elective Credits: 14-15

- ZOOL 302 - Animal Behavior (COM) Credits: 3
- ZOOL 305-305L - Insect Biology and Lab (COM) Credits: 3
- ZOOL 355-355L - Mammalogy and Lab (COM) Credits: 3
- ZOOL 365-365L - Vertebrate Zoology and Lab (COM) Credits: 4
- BIOL 476-576 - Advanced Mammalian Physiology Credits: 4
- ZOOL 467-467L/567-567L - Parasitology and Lab (COM) Credits: 3
- ZOOL 483-483L - Developmental Biology & Lab (COM) Credits: 4
- ZOOL 491 - Independent Study Credits: 1-4
- ZOOL 492-592 - Topics Credits: 1-5
- ZOOL 494 - Internship Credits: 1-12
- ZOOL 496 - Field Experience Credits: 1-12
- ZOOL 498 - Undergraduate Research/Scholarship Credits: 1-4

### Total Required Credits: 18

### Notes

- No more than 3 credits can come from 493, 494, 495, 496, 497 and 498.
- Two courses must be at the 300 level or above.
- A minimum GPA of 2.0 is required in these courses.

## Pre-Professional Interest Areas

### (Pre-) Chiropractic

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Students who apply 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.

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

### Suggested Coursework

- BIOL 290 - Seminar Credits: 1
- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BIOL 153-153L - General Biology II and Lab\* Credits: 4
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- MICR 231-231L - General Microbiology and Lab (COM) Credits: 4
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3,1
- CHEM 326-326L - Organic Chemistry I & Lab(COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab(COM) Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3 and
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- PHYS 111-111L - Introduction to Physics I and Lab\* (COM) Credits: 4

### Electives

Select at least one of the following courses.

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

### Notes:

- 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.
- To be considered for chiropractic college admission, student must maintain a cumulative GPA of 2.5.

### (Pre-) Dental

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Department of Biology and Microbiology  
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Dental schools look for bright, articulate students who have a well-rounded education and can relate to a range of personalities. Dental schools require at least three years of college, but most now require that applicants have 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. See the Pre-Dental Advisor for a complete listing of courses and programs.

### Suggested Coursework

- BIOL 290 - Seminar Credits: 1
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BIOL 153-153L - General Biology II and Lab\* Credits: 4
- BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 4
- BIOL 204-204 L - Genetics & Cellular Biology & Lab Credits: 3, 1
- BIOL 325-325L - Physiology & Lab (COM) Credits: 4
- MICR 231-231L - General Microbiology & Lab (COM) Credits: 4
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3,1
- CHEM 326-326L - Organic Chemistry I & Lab(COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab(COM) Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- MATH 121-121L - Survey of Calculus & Lab\* (COM) Credits: 5  
OR MATH 123-123- Calculus I \*and Lab (COM) Credits: 4, 1
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- PHYS 111-111L - Intro to Physics I and Lab\* (COM) Credits: 4
- PHYS 113-113L - Intro to Physics II and Lab\* (COM) Credits: 4

### (Pre-) Medicine

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Advisors: Dr. Don Auger, Dr. Michael Hildreth, Dr. Scott Pedersen,  
Mr. Greg Heiberger.

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 advisor will have knowledge of requirements for 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. Advisors 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 the Pre-Medicine Advisor for a complete listing of courses and programs.

### Suggested Coursework

- BIOL 290 - Seminar Credits: 1
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BIOL 153-153L - General Biology II and Lab\* Credits: 4
- BIOL 202-202L - Genetics and Organismal Biology & Lab Credits: 4
- BIOL 204-204 L - Genetics and Cellular Biology & Lab Credits: 3, 1
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- MICR 231-231L - General Microbiology & Lab (COM) Credits: 4
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3,1
- CHEM 326-326L - Organic Chemistry I & Lab(COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab(COM) Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- MATH 121-121L - Survey of Calculus & Lab\* (COM) Credits: 5  
OR MATH 123 - Calculus I \* (COM) Credits: 4
- MATH 123L - Calculus I Lab (COM) Credits: 1
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- PHYS 111-111L - Intro to Physics I and Lab\* (COM) Credits: 4
- PHYS 113-113L - Intro to Physics II and Lab\* (COM) Credits: 4

### (Pre-) Mortuary

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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 Credits: 3
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- CHEM 106-106L - Chemistry Survey & Lab\* (COM) Credits: 3,1
- ENGL 101 - Composition I \* Credits: 3
- MATH 102 - College Algebra \* (COM) Credits: 3
- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- REL 360 - Moral and Ethical Perspectives on Death and Dying Credits: 3
- SOC 100 - Introduction to Sociology \* (COM) (G) Credits: 3
- SPCM 101\* - Fundamentals of Speech (COM) Credits: 3

### Sophomore Year:

- Social Science Elective Credits: 3
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- HLTH 443 - Public Health Science (G) Credits: 3



- MICR 231-231L - General Microbiology and Lab (COM)  
Credits: 4
- SPCM 201 - Interpersonal Communication (COM) Credits: 3
- Electives Credits: 9\*

#### \*Additional Suggested Courses

To meet mortuary school or state requirements, discuss the following electives with an advisor

- REL 213 - Introduction to Religion Credits: 3
- ENGL 201 - Composition II Credits: 3

### (Pre-) Optometry

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The American Optometric Association has 21 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 website 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 advisor as soon as possible to express an interest in optometry and create a plan of study. See the Pre-Optometry Advisor for a complete listing of courses and programs.

#### Suggested Coursework

- BIOL 290 - Seminar Credits: 1
- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- PSYC 451 - Psych of Abnormal Behavior \*\* (COM) Credits: 3
- NURS 201 - Medical Terminology Credits: 1
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BIOL 153-153L - General Biology II and Lab\* Credits: 4
- BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 4
- BIOL 204-204 L - Genetics & Cellular Biology & Lab Credits: 3, 1
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- MICR 231-231L - General Microbiology & Lab (COM) Credits: 4
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3,1
- CHEM 326-326L - Organic Chemistry I & Lab(COM)Credits: 3,1
- CHEM 328-328L - Organic Chemistry II & Lab(COM) Credits: 3,1
- MATH 123 - Calculus I \* (COM) Credits: 4
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- PHYS 111-111L - Intro to Physics I and Lab\* (COM) Credits: 4
- PHYS 113-113L - Intro to Physics II and Lab\* (COM) Credits: 4

### (Pre-) Physician Assistant

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

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, 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. Additionally, 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 online Physician Assistant Programs Directory.

#### Suggested Coursework

- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BIOL 153-153L - General Biology II and Lab\* Credits: 4
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3,1
- MICR 231-231L - General Microbiology & Lab (COM) Credits:4
- CHEM 326-326L - Organic Chemistry I and Lab(COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab(COM) Credits: 3, 1
- HDFS 210 - Lifespan Development \* Credits: 3
- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- PSYC 451 - Psychology of Abnormal Behavior \*\* (COM) Credits: 3
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- STAT 281 - Introduction to Statistics (COM) Credits: 3

#### Other courses required by many PA programs include

- Genetics course with lab: (e.g. BIOL 202-202L - Genetics and Organismal Biology and Lab Credits: 3, 1)
- NURS 201 - Medical Terminology Credits: 1

#### Highly recommended courses include:

- BIOL 290 - Seminar Credits: 1
- MICR 439-539 - Medical and Veterinary Immunology Credits: 3
- NURS 323 - Introduction to Pathophysiology Credits: 3
- PHA 321 - Pharmacology Credits: 3

### Botany (BOT)

(See Natural Resource Management)

### Business Area Studies

(See Economics)

## Biomedical Engineering Minor

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http://www.sdsu.edu/engr/

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

- EE 454-554 - Biomedical Instrumentation and Electrical Safety Credits: 3  
**OR** EE 450-550 - Biomedical Signal Processing Credits: 3
- BIOL 221-221L - Human Anatomy and Lab (COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- EE 464-464L - Senior Design I and Lab<sup>1</sup> (COM) Credits: 2
- EE 465-465L - Senior Design II and Lab<sup>1</sup>(COM) (AW) Credits: 2
- EE 491 - Independent Study<sup>2</sup> (COM) Credits: (1-3)

### Total Required Credits: 18

#### Notes:

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

## Chemistry and Biochemistry Department (CHEM-ACS, BIOCM, MLS)

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Department of Chemistry and Biochemistry  
Avera Health Sciences Center 131  
605-688-5151  
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Including the areas of Medical Laboratory Science (MLS)

### Faculty

Professor Rice, Head; Professor Cole-Dai, Halaweish, Utecht; Professors Emeriti Emerick, Gehrke, Hecht, Hilderbrand, Palmer, Rue, Spinar, Wadsworth; Associate Professors Cartrette, Logue, Miller, Raynie, Shore; Assistant Professors Bjordahl, Chakravarty, Hoppe, Madsen, Jewell, Robinson, Tille, Williams, Zhang; Instructors Hall, Lansink, Sato

### 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 Human Sciences 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. Chemistry 112/112L and Chemistry 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)

### 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 on-campus 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 professional program 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.

The Medical Laboratory Science Upward Mobility Program is committed to providing an education program consistent with the essentials outlined by the National Accrediting Agency for Clinical Laboratory Science (NAACLS). The program provides an educational experience for the development of responsible, competent entry-level professionals in medical laboratory science who want to further their training and education. Admission into the on-line program is contingent upon meeting the following criteria: 1) Minimum cumulative GPA of 2.8 on a 4.0 scale, 2) Statement of support from the current employer, 3) Documentation of a minimum of 2 years work experience in a clinical laboratory, 4) Completion of a one or two year regionally or nationally accredited or certified program in medical laboratory science, 5) Successful completion of all SDSU General Education Requirements including the College of Arts and Sciences or an academic plan of completion approved by the MLS program director.

The MLS course, MLS368 Medical Laboratory Science Technical Training, provides for the transcription of the completion of a laboratory science technical program, work experience and course reduction for laboratory courses and clinical internship

reduction for employed laboratory professionals. Work experience in a clinical laboratory (two years minimum, equivalency credits of 10 credits granted provided the regionally or nationally accredited or certified program includes the minimum of credit equivalent to the scientific content equivalent course work as described below.) If the program does not contain the content described, or the student has not taken college level equivalent course work, the student may be required to complete additional scientific pre-requisite courses.

Completion of a one or two year regionally or nationally accredited or certified program in medical laboratory science equivalency credit of 30 credits may be applied towards pre-requisite course work for entry level MLS courses, laboratory courses, chemistry, anatomy and physiology, and reduction in clinical course work.

All upward mobility students that have completed a one or two year regionally or nationally accredited or certified program in laboratory science (consistent with Board of Certification requirements) may be granted an equivalency of 19 credits for the following laboratory and junior level SDSU MLS courses prior to beginning the on line MLS baccalaureate program: MLS201, MLS301/301L, MLS311/311L, MLS341L, MLS402L, MLS411L, MLS412L, MLS441L, MLS431(431L), 471L The additional equivalency credit (10 credit hours) may be applied within the clinical practicum.

An additional 11 credits may be transcribed for MLT courses within the curriculum that do not meet the equivalency transfer but are recognized as natural science equivalencies to meet Chemistry 106/106L, 108/108L, Biol 221/221L and Biol 325/325L requirements for the MLS program online completion only to meet the maximum of 40 credit transfer into the MLS 398. This provides for the recognition of the completion of a NAACLS accredited MLT program, national certification and practicing professionals knowledge.

The curriculum in both the MLS on-campus and Upward Mobility program emphasizes basic sciences, medical laboratory sciences, critical thinking skills and communication skills, including structured learning in the laboratories of clinical affiliated hospitals. In order to receive a bachelor's of science (B.S.) degree in MLS – a student must successfully complete at least 120 semester credit hours. In addition, to all of the required courses for the program the student must complete all general education requirements and requirements of the College of Arts and Sciences. For further information, contact the program director at 605-688-6016 or visit the program page online at <http://www.sdstate.edu/cee/degrees/mls.cfm>.

## Biochemistry (BIOCM) Major

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

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

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: CHEM 109 Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 11

- Natural Sciences Credits: BIOL 151-151L & 153-153L Credits: 6
- Humanities Credits: 2
- Social Sciences Credits: 3

### Major Requirements: 55

- Advanced Biology Electives: 6-10
- Advanced Chemistry Electives: 6-10
- MATH 125 - Calculus II \* (COM) Credits: 4
- STAT 381 - Intro to Probability & Statistics (COM) Credits: 3
- PHYS 211-211L - University Physics I & Lab\* (COM) Credits: 4
- PHYS 213-213L - University Physics II & Lab \* (COM) Credits: 4
- CHEM 229-229L - Transformations of Organic Molecules and Lab Credits: 3, 1
- CHEM 237 - Intermediate Laboratory Investigations Credits: 2
- CHEM 348-348L - Biophysical Chemistry and Lab Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- CHEM 465 - Biochemistry II (COM) Credits: 3
- CHEM 498 - Undergraduate Research/Scholarship (COM) (AW) Credits: 1-12

### General Electives: 19

### Total Required Credits: 120

#### Notes:

- 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.
- Refer to the department for information about additional summer research experiences.
- \* 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 a 5 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.

## Chemistry (CHEM-ACS) Major

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

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

### Institutional Graduation Requirements:\*\* 5

- Goal #1 First Year Experience: CHEM 109 Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 11

- Biological Sciences Credits: 6
- Humanities Credits: 2
- Social Sciences Credits: 3

### Major Requirements: 42

- MATH 125 - Calculus II \* (COM) Credits: 4

- MATH 225 - Calculus III \* (COM) Credits: 4
- PHYS 211-211L - University Physics I & Lab\* (COM) Credits: 4
- PHYS 213-213L - University Physics II & Lab\* (COM) Credits:4
- CHEM 229-229L - Transformations of Organic Molecules and Lab Credits: 3, 1
- CHEM 237 - Intermediate Laboratory Investigations Credits: 2
- CHEM 242-242L - Chemical Equilibrium and Thermodynamics and Lab Credits: 4, 1
- CHEM 332-332L - Analytical Chemistry & Lab (COM) Credits: 3, 1
- CHEM 452-452L - Inorganic Chemistry & Lab(COM) Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- CHEM 498 - Undergraduate Research/Scholarship (COM) (AW) Credits: 1-12

### Advanced Chemistry Electives: 9

- CHEM 329 - Organic Chemistry III Credits: 2
- CHEM 329L - Organic Chemistry III Lab Credits: 2
- CHEM 345 - Quantum Mechanics of Chemical Systems Credits 2
- CHEM 347 - Chemical Kinetics Credits: 2
- CHEM 348-348L - Biophysical Chemistry & Lab Credits: 3, 1
- CHEM 432 - Analytical Chemistry II Credits: 2
- CHEM 433 - Bioanalytical Chemistry Credits: 2
- CHEM 465 - Biochemistry II (COM) Credits: 3
- CHEM 382 - Environmental Chemistry (COM) Credits: 3
- CHEM 484 - Chemical Toxicology Credits: 3

### General Electives: 23

#### Emphases

Within the major, electives may be selected to develop an American Chemistry Society recognized emphasis.

- Chemical Physics Emphasis
- Environmental Chemistry Emphasis

#### Chemical Physics Emphasis

The following courses may be taken as electives to develop the chemical physics emphasis:

- Advanced physics electives (beyond the required) Credits: 3
- Advanced mathematics electives (beyond the required) Credits: 3
- CHEM 498 - Undergraduate Research/Scholarship (COM) (AW) Credits: 1-12 (at least 3 credits in physical chemistry)
- Field work and/or studies of modeling in physical chemistry are encouraged as a component of the undergraduate research experience.

#### Environmental Chemistry Emphasis

The following courses may be taken as electives to develop the environmental chemistry emphasis:

- CHEM 382 - Environmental Chemistry (COM) Credits: 3-4
- Select one of the following sequences:
  - PS 213-213L - Soils and Lab\* \*\* Credits: 3 and PS 412-512 - Environmental Soil Chemistry Credits: 3
  - MICR 231-231L - General Micro & Lab (COM) Credits: 4 and MICR 310-310L - Environmental Micro and Lab Credits: 4
  - PS 421-421L/521-521L - Soil Microbiology & Lab Credits: 3 and CEE 333 - Hydrology Credits: 3
  - CHEM 498 - Undergraduate Research/Scholarship (COM) (AW) Credits: 1-12 (at least 3 credits in environmental chemistry)
- Field work and/or studies of modeling in environmental systems are encouraged as a component of the undergraduate research experience.

### Total Required Credits: 120

**Notes:**

- CHEM 498 Undergraduate Research must be at least 3 credits in Chemistry.
- CHEM 498 credit is given for completing a written paper of the research project and presenting the paper at a scientific meeting. The research project is usually completed during the summer preceding registration in CHEM 498.
- Consult the department for information about additional summer research experiences.
- \* 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 a 5 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.

**Chemistry (CHEM) Minor**

- Complete a minimum of 20 credits (or equivalent) of coursework.
- Twelve or more credits of upper division chemistry (CHEM 3XX or CHEM 4XX) courses
  - Select from the following areas: Analytical, Biochemistry, Inorganic, Organic, Physical and Environmental.
- Include laboratory experiences in at least two different areas beyond general chemistry.
- A grade of "C" or better is required for each

**Total Required Credits: 20****Medical Laboratory Science (MLS) Major**

Bachelor of Science in Arts and Sciences

**System General Education Requirements\*: 33**

- Goal #1 Written Communication: ENGL 101, and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: CHEM 106-106L Credits: 4 and CHEM 108-108L Credits: 5

**Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

**College Requirements: 8**

- Natural Sciences Credits: 3
- Humanities Credits: 2
- Social Sciences Credits: 3

**Major Requirements: 74**

- BIOL 221-221L - Human Anatomy and Lab (COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- MLS 201 - Understanding Medical Laboratory Science Credits: 2
- MLS 301-301L - Hematology I and Lab Credits: 3
- MLS 311-311L - Clinical Chemistry I and Lab Credits: 3, 1
- MLS 321 – Hemostasis Credits: 1
- MLS 341-341L - Diagnostic Microbiology I and Lab Credits: 3, 2
- MLS 401 - Hematology II Credits: 2
- MLS 402L - Advanced Hematology & Hemostasis Lab Credits: 1
- MLS 403 - Diagnostic Immunology Credits: 3

- MLS 411-411L - Clinical Chemistry II and Lab Credits: 3, 1
- MLS 412-412L - Laboratory Methods and Lab Credits: 2, 1
- MLS 431-431L - Principles of Immunohematology & Lab Credits: 2, 1
- MLS 441-441L - Diagnostic Microbiology II & Lab Credits: 2, 1
- MLS 451-451L - Immunohematology II and Lab Credits: 2, 1
- MLS 461 - Intro to Management and Education (AW) Credits: 2
- MLS 471-471L - Advanced Medical Diagnostics & Lab Credits: 2, 1
- MLS 480 - Molecular Diagnostics Clinical Practice Credits: 1
- MLS 481 - Chemistry, Urinalysis and Body Fluid Analysis Clinical Practice Credits: 4
- MLS 482 - Hematology & Hemostasis Clinical Practice Credits: 4
- MLS 483 - Senior Capstone Clinical Practice Credits: 2
- MLS 484 - Clinical Immunohematology Clinical Practice Credits: 4
- MLS 485 - Diagnostic Microbiology Clinical Practice Credits: 5
- MLS 489 - Phlebotomy Clinical Practice Credits: 1

**MLS Upward Mobility Program Requirements**

- MLS 321 – Hemostasis Credits: 1
- MLS 401 - Hematology II Credits: 2
- MLS 403 - Diagnostic Immunology Credits: 3
- MLS 411 - Clinical Chemistry II Credits: 3
- MLS 412 - Laboratory Methods Credits: 2
- MLS 341 - Diagnostic Microbiology I Credits: 3
- MLS 441 - Diagnostic Microbiology II Credits: 2
- MLS 451 - Immunohematology II Credits: 2
- MLS 461 - Intro to Management & Education (AW) Credits: 2
- MLS 471 - Advanced Medical Diagnostics Credits: 2
- MLS 483 - Senior Capstone Clinical Practice Credits: 2
- MLS 468 - Advanced Supervised Clinical Experience I Credits: 5
- MLS 469 - Advanced Supervised Clinical Experience II Credits: 5
- MLS 368 - Medical Lab Science Technical Training Credits: 20-40\*
  - \*Transfer credits only - Requirements for Upward Mobility may be satisfied under this course code

**Total Required Credits: 120****Notes**

- 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, Mayo SW Regional Health Network, Army Hospital Fort Collins Colorado, VA Regional Medical Center Sioux Falls, 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.
- The Medical Laboratory Sciences program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631-3415; phone (773) 714-8880.

**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 a 5 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.



# Civil and Environmental Engineering Department (CEE)

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## Faculty

Professor Berdanier, Head; Professors Burckhard, Reid, Schmit, Ting, Wehbe; Professors Emeriti De Boer, Dornbush, Hassoun, Rollag, Selim, Sigl; Associate Professors Jones, Mahgoub; Associate Professor Emeritus Tiltrum; Assistant Professors Hua, Pei, Qin; Instructor Gutzmer

## 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 all 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:

- Completion of professional licensure or specialized certification,
- Completion of advanced academic degrees and/or active participation in professional development societies, and
- 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:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a system, component, or process to meet prescribed objectives;
- an ability to function on multi-disciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- a broad education necessary to understand the impact of engineering solutions in a global and societal context;
- a recognition of the need for, and an ability to engage in lifelong learning;
- a knowledge of contemporary issues;
- 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 109 - First Year Seminar, 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 economic, social, environmental, 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 sub-disciplines 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 is accredited by the Engineering Accreditation Commission of ABET (111 Market Pl., Suite 1050 Baltimore, MD 21202 (410) 347-7700 <http://www.abet.org>).

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

Bachelors of Science in Engineering

### System General Education Requirements\*: 33

- Goal #1 Written Communication: ENGL 101 AND ENGL 201 or 277 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4
- Goal #6 Natural Sciences: PHYS 211-211L, and PHYS 213-213L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: GE 109-109L\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: CEE 225\*\* Credits: 3

### Major Requirements: 80

- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114 - General Chemistry II\* (COM) Credits: 3
- OR CHEM 120 - Elementary Organic Chemistry\* Credits: 3
- Additional Departmental Approved Basic Science Course Credits: 3
- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 225 - Calculus III \* (COM) Credits: 4
- MATH 321 - Differential Equations (COM) Credits: 3
- STAT 381 - Intro to Probability and Statistics (COM) Credits: 3
- EM 214 - Statics (COM) Credits: 3
- EM 215 - Dynamics (COM) Credits: 3
- EM 321 - Mechanics of Materials (COM) Credits: 3
- EM 331 - Fluid Mechanics (COM) Credits: 3
- CEE 106-106L - Elementary Surveying and Lab Credits: 4
- CEE 216-216L - Materials and Lab Credits: 3
- CEE 282 - Computer-Aided Design Credits: 3
- CEE 311 - Structural Materials Lab Credits: 1
- CEE 323-323L - Water Supply and Wastewater Engineering and Lab Credits: 3
- CEE 331 - Fluid Mechanics Lab Credits: 1
- CEE 340-340L - Engineering Geology and Lab Credits: 3
- CEE 346-346L - Geotechnical Engineering (COM) and Lab Credits: 4
- CEE 353 - Structural Theory (COM) Credits: 3
- CEE 363 - Highway and Traffic Engineering Credits: 3
- CEE 432 - Hydraulic Engineering Credits: 3
- CEE 455-455L - Steel Design and Lab Credits: 3
- CEE 456 - Concrete Theory and Design (COM) Credits: 3
- CEE 464 - Civil Engineering Capstone Design I (COM) Credits: 1
- CEE 465 - Civil Engineering Capstone Design II (COM) (AW) Credits: 2
- CEE 482 - Engineering Administration Credits: 3
- CEE 490 - Seminar (COM) Credits: (1-3)

### Technical Elective Credits: 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 Credits: 3
- CEE 304 - Land Surveying Credits: 3
- CEE 306-306L - Photo Interpretation and Photogrammetry and Lab Credits: 3
- CEE 333 - Hydrology Credits: 3
- CEE 411-411L/511-511L - Bituminous Materials and Lab Credits: 3
- CEE 422-422L/522-522L - Environmental Engineering Instrumentation and Lab Credits: 3
- CEE 423-523 - Municipal Water Distribution and Collection System Design Credits: 3
- CEE 424/524 - Industrial Waste Treatment Credits: 3
- CEE 429-429L/529-529L - Solid Waste Engineering and Management and Lab Credits: 3

- CEE 435/535 - Water Resources Engineering Credits: 3
- CEE 443/543 - Matrix Analysis of Structures Credits: 3
- CEE 444/544 - Precast Concrete Structures Credits: 3
- CEE 446/546 - Advanced Geotechnical Engineering Credits: 3
- CEE 452/552 - Prestressed Concrete Credits: 3
- CEE 457 - Indeterminant Structures (COM) Credits: 3
- CEE 458/558 - Design of Timber Structures Credits: 3
- CEE 459-459L/559-559L - Advanced Structural Mechanics and Lab Credits: 3
- CEE 467/567 - Transportation Engineering Credits: 3
- CEE 472/572 - Geosynthetics Credits: 3
- CEE 483-483L - Municipal Engineering and Lab Credits: 3
- CEE 491 - Independent Study (COM) Credits: (1-3)
- CEE 492/592 - Topics (COM) Credits: (1-3)
- CEE 494 - Internship Credits: (1-6)
- CEE 496 - Field Experience Credits: (1-6)
- CEE 497 - Cooperative Education Credits: (1-6)
- EE 300-300L - Basic Electrical Engineering I and Lab Credits: 3
- ME 314 - Thermodynamics Credits: 3

### Total Required Credits: 130

#### Curriculum Notes

- The 30 credit Board of Regents System General Education Requirements (SGRs).
- \*\* South Dakota State University has a 5 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.

## Communication Studies and Theatre Department (CST, DANC, SPCM, THEA)

Laurie Haleta, Head

Department of Communication Studies and Theatre

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#### Faculty

Professor Haleta, Head; Distinguished Professor Emeriti JJohnson; Professors Ackman, Shelsta; Professors Emeriti Ferguson, Hefling, Hoogstraat, Peterson, Schliessmann, Widvey; Associate Professor Tolman; Assistant Professors Anderson, Hunter, Klemp, Kuehl, Westwick, Wilburn, Wood; Instructors Carlile, Hauschild Mork, Kleijnan

#### Programs

The mission of the Department of Communication Studies and Theatre is to provide education in the fields in which communication skills are a primary component and to provide training in universally necessary communication skills. The department offers majors in Theatre or Speech Communication with an optional emphasis in Speech Education and offers minors in the areas of Theatre or Dance. Additionally students may select courses for self- improvement, take courses to meet humanities requirements, or participate in speech or theatre activities.

#### Speech Communication

The department offers a diverse curriculum in Speech Communication including a major in Speech Communication (SPCM), specialization in Speech Education (SPED), and minor in Communication Studies and Theatre (CST). As part of these programs, students have the opportunity to learn about the central role that communication has in our lives. The department offers

courses in Organizational Communication, Interpersonal Communication, Small Group Communication, Public Speaking and many others. The program facilitates internships where students apply their communication education in hands-on environments such as hospitals, businesses, corporations and political organizations.

### Theatre

As a part of the Theatre Major and Theatre Minor, students receive a broad-based education through coursework that includes: Directing, Acting, Stagecraft, Lighting, Scenic Design, Costume Design, Makeup and Theatre Arts Management. This experiential education will involve all aspects of the program through participation in State University Theatre and Prairie Repertory Theatre.

### Dance

The Dance (DANC) Minor at SDSU was created as a holistic and inclusive minor. Holistic in the nature that the minor embraces many genres of dance to include: social, multi-cultural, creative movement, dance for the musical theatre and jazz, tap, ballet and modern dance techniques. The minor has a strong theory, compositional and improvisational base. The minor is inclusive from the perspective that all students no matter their history or training will find opportunities for growth and transformation in the program.

### Advanced Placement in Speech

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

### Co-curricular Activities

#### Theatre

Professor Ackman, 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

Instructor Carlile, 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 Communication (SPCM) Major

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity (not in CST) Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: SPCM 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 34

- Natural Sciences Credits: 14  
6 credits Biological Sciences  
8 credits Physical Sciences
- Social Sciences Credits: 12
- Humanities Credits: 8

### Major Requirements: 36

- SPCM 201 - Interpersonal Communication (COM) Credits: 3
- SPCM 215 - Public Speaking (COM) \* Credits: 3
- SPCM 222 - Argumentation and Debate (COM) \* Credits: 3
- SPCM 305 - Communication Research (COM) (AW) Credits: 3
- SPCM 405 - Theories of Communication (COM) Credits: 3
- SPCM 410-510 - Organizational Comm (COM) (AW) Credits: 3
- SPCM 434 - Small Group Communication (COM) Credits: 3
- SPCM 465 - Capstone Course in Speech Communication Credits: 3
- SPCM 470 - Intercultural Communication (COM) (G) Credits: 3

### Choose 9 credits from the following:

- SPCM 281 - Speech and Debate Activities (COM) Credits: (1-4)
- SPCM 320 - Communication in Interviewing (COM) Credits: 3
- SPCM 340 - Oral Interpretation of Literature (COM) Credits: 3
- SPCM 415 - Communication and Gender (COM) Credits: 3
- SPCM 416-516 - Rhetorical Criticism (COM) Credits: 3
- SPCM 417 - Political Communication (COM) Credits: 3
- SPCM 460 - Family Communication (COM) Credits: 3

### Elective Credits: 15-30

### Total Required Credits: 120

### 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 a 5 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.

## Speech Communication (SPCM) Major - Speech Education specialization

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity (SOC 100\* and/or PSYC 101\* \*\*) Credits: 6
- Goal #4 Arts and Humanities/Diversity (Not in CST) Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\* Credits: 5

- Goal #1 First Year Experience: SPCM 109\*\* Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 34

- Natural Sciences Credits: 14  
6 credits Biological Sciences  
8 credits Physical Sciences
- Social Sciences Credits: 12
- Humanities Credits: 8

### Major Requirement Credits: 36

- SPCM 201 - Interpersonal Communication (COM) Credits: 3
- SPCM 215 - Public Speaking (COM) \* Credits: 3
- SPCM 222 - Argumentation and Debate (COM) \* Credits: 3
- SPCM 305 - Communication Research (COM) (AW) Credits: 3
- THEA 131 - Introduction to Acting \* (COM) Credits: 3
- THEA 241-241L - Stagecraft and Lab (COM) Credits: 3
- SPCM 340 - Oral Interpretation of Literature (COM) Credits: 3
- SPCM 281 - Speech and Debate Activities (COM) Credits: 1
- SPCM 476 - 7-12 Speech Methods Credits: 3
- THEA 351 - Directing (COM) Credits: 3
- **OR** THEA 355 - Children's Theatre (COM) Credits: 3
- At least 7 credits of electives from SPCM and/or THEA

#### **Elective Credits: 0-5**

#### **Teaching Specialization Requirements**

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

#### **Professional Semester I**

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

#### **Professional Semester II**

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- SPCM 476 - 7-12 Speech Methods Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

#### **Professional Semester III**

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)
- **OR** SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

#### **Additional Requirements**

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

#### **Total Credits Required: 120**

#### **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 a 5 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.

### **Theatre (THEA) Major**

Bachelor of Science in Arts and Sciences

#### **System General Education Requirements\*: 30**

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity: (Not in CST) Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

#### **Institutional Graduation Requirements\*\* - 5**

- Goal #1 First Year Experience: SPCM 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

#### **College Requirements: 34**

- Natural Sciences Credits: 14  
6 credits Biological Sciences  
8 credits Physical Sciences
- Social Sciences Credits: 12
- Humanities Credits: 8

#### **Major Requirements: 39**

- THEA 131 - Introduction to Acting \* (COM) Credits: 3
- THEA 135 - Theatre Activities-Acting Credits: 1
- **OR** THEA 145 - Theatre Activities-Technical Credits: 1
- THEA 240 - Stage Costuming (COM) Credits: 3
- THEA 241-241L - Stagecraft and Lab (COM) Credits: 3
- THEA 243 - Make-Up (COM) Credits: 3
- THEA 250 - Play Analysis Credits: 3
- THEA 351 - Directing (COM) Credits: 3
- THEA 410-510 - Dramatic Literature (AW) Credits: 3
- THEA 460-560 - History of Theatre Credits: 3
- THEA 470 - Portfolio and Resume Building Credits: 3
- THEA 480 - Summer Theatre Credits: 1-5
- THEA 375 - Theatre Arts Management Credits: 3
- **OR** THEA 441 - Scene Design (COM) Credits: 3
- **OR** THEA 445-445L - Lighting and Lab (COM) Credits: 3
- **OR** THEA 443 - Costume Design Credits: 3

#### **Electives: 12**

#### **Total Required Credits: 120**

#### **Curriculum Notes**

- Maximum Activities Credit toward major — 8 hours
- (from THEA 135, THEA 145, THEA 195, and THEA 480)
- 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 a 5 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.

## Minors

### Communication Studies & Theatre (CST) Minor

- Complete at least 20 SPCM and THEA credits including SPCM 101\*, approved by the department head.
- Not more than 8 credits of activity courses may be counted.
  - SPCM 281 - Speech and Debate Activities (COM)
  - SPCM 491 - Independent Study (COM)
  - THEA 135 - Theatre Activities-Acting
  - THEA 145 - Theatre Activities-Technical
  - THEA 491 - Independent Study (COM)

**Total Required Credits: 20**

### Dance (DANC) Minor

#### Fall

- DANC 230 - Technique 1 Credits: 1 See note one (odd yrs)
- DANC 330 - Technique 3 Credits: 1 See note one (odd yrs)
- DANC 430 - Composition & Choreography Credits: 1 (even yrs)
- DANC 431 - Dance for the Musical Theatre Credits: 1 (even yrs)

#### Fall or Spring

- DANC 130 - Dance Fundamentals Credits: 1

#### Spring

- DANC 131 - Movement 1 Credits: 2 (odd yrs)
- DANC 132 - Movement 2 Credits: 2 (odd yrs)
- DANC 231 - Technique 2 Credits: 1 See note one (odd yrs)
- DANC 240 - Multicultural Dance Activities Credits: 1 (odd yrs)
- DANC 241-241L - Creative Movement for Children & Lab Credits: 2 (even yrs)
- DANC 331 - Technique 4 Credits: 1 See note one (even yrs)

#### Elective Credits: 6

- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- MUS 100 - Music Appreciation \* \*\* (COM) Credits: 3
- PE 204 - Professional Preparation: Rhythm & Dance (COM)Credits:1
- PE 454 - Biomechanics (COM) Credits: 3
- THEA 100 - Introduction to Theatre \* (COM) Credits: 3
- THEA 131 - Introduction to Acting \* (COM) Credits: 3
- THEA 435 - History of American Musical Theater (COM) Credits: 3

**Total Credits Required: 20**

#### Note

- Students need only take 2 credits from the group of these courses – either DANC 230 and 231 or 330 and 331.

### Theatre (THEA) Minor

#### Required Coursework

- THEA 100 - Introduction to Theatre \* (COM) Credits: 3
- THEA 131 - Introduction to Acting \* (COM) Credits: 3
- THEA 241-241L - Stagecraft and Lab (COM) Credits: 3
- THEA 351 - Directing (COM) Credits: 3
- THEA 480 - Summer Theatre Credits:1-5

#### Electives: 3

Select at least one additional course from the following list.

- THEA 243 - Make-Up (COM) Credits: 3
- THEA 355 - Children's Theatre (COM) Credits: 3
- THEA 375 - Theatre Arts Management Credits:3q
- THEA 441 - Scene Design (COM) Credits: 3
- THEA 445-445L - Lighting and Lab (COM) Credits:3

**Total Credits Required: 20**

### Computer Science (CSC)

(See Electrical Engineering and Computer Science)

### Construction Management (CM)

(See Engineering Technology and Management)

## Consumer Sciences Department (AM, AVIA, CA, HMG, ID, LEAD, LMNO)

Jane E. Hegland, Department Head  
Department of Consumer Sciences  
Wagner Hall 229  
605-688-5196  
e-mail: jane.hegland@sdstate.edu  
http://www.sdstate.edu/cs/

#### Faculty

Professor Hegland, Head; Professor Boulware; Professors; Emeriti Enevoldsen, Kamstra, Nussbaumer, Semeniuk, Stoflet; Associate Professors Lyons, Peterson, Strickler; Associate Professors Emerita Gorham, Rose; Assistant Professors Bell, Boersma, Cho, Christensen, Dickinson, Johnson, Saboe-Wounded Head, Yeo, Yoon; Assistant Professor Emerita Swedlund; Instructors Leonard, McKillip, Morrison, Patel; Lecturer Yseth.

#### Programs

Apparel Merchandising (AM), Aviation (AVIA), Consumer Affairs (CA), Hospitality Management (HMG), Interior Design (ID), Leadership (LEAD) Minor, Leadership and Management in Nonprofit Organizations (LMNO) Minor

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 Aviation (AVIA), Interior Design (ID), 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 the 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. The department educates students in professions that exist in cities and towns around the country, 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 was created in 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 the 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 merchandiser. 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.

An 8 - 10-week (300 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 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 two specializations depending on career choices.

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 program.

The Aviation (AVIA) Major - 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. Students should discuss an interest in the minor with an academic advisor early during their course of study.

### **Consumer Affairs (CA)**

The Consumer Affairs program focuses on the development of knowledge and skills 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 to be completed after junior year.

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 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 (HMG)**

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.

### **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 wellbeing 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 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.

### **Minor in Interior Design**

Eighteen credit hours are required for a minor in Interior Design. Students should discuss an interest in the minor with an academic advisor early during their course of study.

### **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 Nonprofit Leadership Alliance campus Executive Director, Dr. Denise Peterson.

National Certification through the Nonprofit Leadership Alliance in nonprofit management requires an additional 300-hour

internship with a nonprofit organization. The Nonprofit Leadership Alliance 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 the Nonprofit Leadership Alliance, 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 Alliance Management Institute.

## **Apparel Merchandising (AM) Major**

Bachelor of Science in Education and Human Sciences

### **System General Education Requirements\*: 30**

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 or 215 Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 201 or 202 AND PSYC 101 or SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity: ARTH 100 AND HIST 121 or 122 Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences Credits: 6

### **Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### **College Requirements: 2**

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### **Consumer Sciences Department Requirements: 7**

- LEAD 210 - Foundations of Leadership\*\* Credits: 3
- OR CS 230 - Consumer Behavior Credits: 3
- CS 377 - Professional Documents Credits: 1
- CS 430 - Consumer Decision Making Credits: 3
- OR LEAD 435 - Organizational Leadership and Team Development Credits: 3

### **Major Requirements: 48**

- AM 172 - Introduction to Apparel Merchandising Credits: 2
- AM 231-231L - Ready-To-Wear Analysis and Lab Credits: 3
- AM 242-242L - Textiles I and Lab Credits: 3
- AM 253 - Socio-Psychological Aspects of Dress Credits: 3
- AM 274-274L - Fashion Promotion and Lab Credits: 3
- AM 282 - Customer Service Credits: 2
- AM 315-315L - Apparel Design and Lab Credits: 3
- AM 352 - History of Dress in the Western World Credits: 3
- AM 361-361L - Aesthetics and Lab Credits: 3, 0
- AM 372-372L - Trending and Buying and Lab Credits: 3
- AM 381 - Professional Behavior at Work Credits: 3
- AM 462 - Retail Management Credits: 3
- AM 472-472L - Merchandising and Lab Credits: 3
- AM 473 - Global Sourcing (AW) Credits: 3
- AM 480 - Travel Studies Credits: 1
- AM 490 - Seminar Credits: 3
- AM 495 - Practicum Credits: 3
- AM 477 - Current Issues in the Workplace Credits: 1

### **Elective Credits: 28**

### **Total Required Credits: 120**

### **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 a 5 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.

## Aviation (AVIA) Major - Aviation Education Specialization

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 32

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 AND PSYC 101 or SOC 100 Credits:6
- Goal #4 Humanities and Arts/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: GEOG 131-131L and PHYS 101-101L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience UC 109\*\* Credits:2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Consumer Sciences Department Requirements: 7

- LEAD 210 - Foundations of Leadership\*\* Credits: 3
- CS 377 - Professional Documents Credits:1
- LEAD 435 - Organizational Leadership & Team Development Credits: 3

### Major Requirements: 58

- AVIA 101 - Introduction to General Aviation Credits: 1
- AVIA 150-150L - Intro to Aviation Meteorology & Lab Credits:2
- AVIA 170 - Fundamentals of Flight Theory Credits: 3
- AVIA 171 - Introductory Flight I Credits: 2
- AVIA 180 - Attitude Instrument Theory Credits: 2
- AVIA 181 - Introductory Flight II Credits: 2
- AVIA 200 - Aviation Safety Credits: 3
- AVIA 201 - Aviation Weather Credits: 2
- AVIA 300 - Human Factors in Aviation Credits: 3
- AVIA 302 - Aviation Law Credits: 2
- AVIA 305 - Introduction to Aviation Administration Credits: 3
- AVIA 340 - Advanced Flight Principles Credits: 3
- AVIA 370 - Professional Pilot Theory I Credits: 3
- AVIA 372 - Professional Flight I Credits: 2
- AVIA 375 - Professional Pilot Theory II Credits: 3
- AVIA 377 - Professional Flight II Credits: 2
- AVIA 400 - Air Transportation System Credits: 3
- AVIA 440 - Curriculum Design in Aviation (AW) Credits: 3
- AVIA 450 - Methods of Teaching in Aviation Credits: 3
- AVIA 470 - Professional Flight Instructor Theory I Credits: 2
- AVIA 471 - Professional Flight Instructor Theory II Credits: 2
- AVIA 474 - Certified Flight Instructor I Credits: 2
- AVIA 475 - Certified Flight Instructor II Credits: 2
- AVIA 489 - Aviation Senior Seminar Credits: 3

### Supporting Coursework: 3

- ACCT 210 - Principles of Accounting I (COM) Credits: 3

### Elective Credits: 13

### Total Required Credits: 120

### 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 a 5 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.

## Aviation (AVIA) Major - Aviation Maintenance Management Specialization

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 32

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 AND PSYC 101 or SOC 100 Credits:6
- Goal #4 Humanities and Arts/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: GEOG 131-131L and PHYS 101-101L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience UC 109\*\* Credits:2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Consumer Sciences Department Requirements: 7

- LEAD 210 - Foundations of Leadership\*\* Credits: 3
- CS 377 - Professional Documents Credits:1
- LEAD 435 - Org Leadership & Team Development Credits: 3

### Major Requirements: 42

- AVIA 101 - Introduction to General Aviation Credits: 1
- AVIA 200 - Aviation Safety Credits: 3
- AVIA 300 - Human Factors in Aviation Credits: 3
- AVIA 302 - Aviation Law Credits: 2
- AVIA 305 - Introduction to Aviation Administration Credits: 3
- AVIA 400 - Air Transportation System Credits: 3
- Supporting Coursework: 27
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- BADM 310 - Business Finance (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- CSC 105 - Introduction to Computers (COM) Credits: 3
- ECON 201 - Principles of Microeconomics \* \*\* (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- SOC 353 - Sociology of Work (COM) Credits: 3

### Elective Credits: 32 Consult with advisor for approved list.

### Total Required Credits: 120

### 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 a 5 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.

## **Consumer Affairs (CA) Major - Consumer Services Management Specialization**

Bachelor of Science in Education and Human Sciences

### **System General Education Requirements\*: 30**

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 AND PSYC 101 or SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences Credits: 6

### **Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Seminar: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3 Select one of the following
  - IDL 100 - Concepts in Sustainability\*\* Credits: 3
  - GLST 201 - Global Studies I \* \*\* (G) Credits: 3
  - POLS 253 - Current World Problems \* \*\* (G) Credits: 3
  - PSYC 244 - Environmental Psychology \*\* Credits: 3
  - PSYC 364 - Cross Cultural Psychology\*\* Credits: 3
  - PSYC 441 - Social Psychology \*\* (COM) Credits: 3
  - SOC 462-562 - Population Studies \*\* (COM) Credits: 3

### **College Requirements: 2**

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### **Consumer Sciences Department Requirements: 6-7**

- LEAD 210 - Foundations of Leadership\*\* Credits: 3  
OR CS 282 - Customer Service Credits : 2
- CS 377 - Professional Documents Credits:1
- CS 381 - Professional Behavior at Work Credits: 3  
OR LEAD 435 - Organizational Leadership and Team Development Credits: 3

### **Major Requirement Credits: 43**

#### **Consumer Affairs Core Requirements: 28**

- CA 150 - Introduction to Consumer Affairs Credits: 2
- CA 230 - Consumer Behavior Credits: 3
- CA 289 - Consumers in the Market Credits: 3
- CA 340 - Work Family Interface (AW) Credits: 3
- CA 345 - Foundations in Financial Management Credits: 3
- CA 412 - Emerging Issues in Consumer Affairs Credits: 2
- CA 430 - Consumer Decision Making Credits: 3
- CA 487 - Transition to the Professional World Credits: 2
- CA 490 - Seminar Credits: 1
- CA 494 - Internship Credits: 3
- HDFS 241 - Family Relations Credits: 3

#### **Consumer Services Management Specialization :15**

- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- CA 442 - Family Resource Management Lab Credits: 3
- FCSE 421 - Adult Education Credits: 3
- HMGD 455 - Meeting and Convention Management Credits: 3

### **Electives: 33-34**

### **Total Required Credits: 120**

#### **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 a 5 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.

## **Consumer Affairs (CA) Major - Family Financial Management Specialization**

Bachelor of Science in Education and Human Sciences

### **System General Education Requirements\*: 30**

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 AND PSYC 101 or SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences Credits: 6

### **Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Seminar: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3 Select one of the following
  - IDL 100 - Concepts in Sustainability\*\* Credits: 3
  - GLST 201 - Global Studies I \* \*\* (G) Credits: 3
  - POLS 253 - Current World Problems \* \*\* (G) Credits: 3
  - PSYC 244 - Environmental Psychology \*\* Credits: 3
  - PSYC 364 - Cross Cultural Psychology\*\* Credits: 3
  - PSYC 441 - Social Psychology \*\* (COM) Credits: 3
  - SOC 462-562 - Population Studies \*\* (COM) Credits: 3

### **College Requirements: 2**

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### **Consumer Sciences Department Requirements: 6-7**

- LEAD 210 - Foundations of Leadership\*\* Credits: 3  
OR CS 282 - Customer Service Credits: 2
- CS 377 - Professional Documents Credits:1
- CS 381 - Professional Behavior at Work Credits: 3  
OR LEAD 435 - Organizational Leadership and Team Development Credits: 3

### **Major Requirements: 43**

#### **Consumer Affairs Core Requirements: 28**

- CA 150 - Introduction to Consumer Affairs Credits: 2
- CA 230 - Consumer Behavior Credits: 3
- CA 289 - Consumers in the Market Credits: 3
- CA 340 - Work Family Interface (AW) Credits: 3
- CA 345 - Foundations in Financial Management Credits: 3
- CA 412 - Emerging Issues in Consumer Affairs Credits: 2
- CA 430 - Consumer Decision Making Credits: 3
- CA 487 - Transition to the Professional World Credits: 2
- CA 490 - Seminar Credits: 1
- CA 494 - Internship Credits: 3
- HDFS 241 - Family Relations Credits: 3

#### **Family Financial Management Specialization Requirements: 15**

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- CA 350 - Family Financial Management I Credits: 3
- CA 450 - Family Financial Management II Credits: 3
- ECON 201 - Principles of Microeconomics \* \*\* (COM) Credits: 3

### **Electives: 33-34**

### **Total Required Credits: 120**

#### **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 a 5 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.

## Hospitality Management (HMGT) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101 and ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity: Credits: 6
- Goal #5 Mathematics: MATH 102 or higher Credits: 3
- Goal #6 Natural Sciences: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience UC 109\*\* Credits:2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Consumer Sciences Department Requirements: 6-7

- LEAD 210 - Foundations of Leadership\*\* Credits: 3
- OR CS 230 - Consumer Behavior Credits: 3
- OR CS 282 - Customer Service Credits: 2
- CS 377 - Professional Documents Credits: 1
- LMNO 435 - Organizational Leadership and Team Development Credits: 3

### Major Requirements: 59

- Hospitality Management Core Requirements: 41
- NFS 141-141L - Foods Principles and Lab Credits: 4
- HMGT 171 - Introduction to Hospitality Industry Credits: 3
- HMGT 251 - Foodservice Sanitation Credits: 1
- HMGT 295 - Practicum Credits: 2
- HMGT 361 - Hospitality Industry Law Credits: 3
- HMGT 370 - Lodging Operations and Purchasing Management Credits: 3
- HMGT 371-371L - Leisure Activities Management & Lab Credits: 3
- HMGT 372 - Hospitality Facilities Management & Design Credits: 3
- HMGT 380 - Foodservice Operations and Purchasing Management Credits: 3
- HMGT 381-381L - Quantity Food Production and Service and Lab Credits: 4
- HMGT 455 - Meeting and Convention Management Credits: 3
- HMGT 465 - Hospitality Managerial Accounting Credits: 3
- HMGT 482 - Hospitality Marketing Credits: 3
- HMGT 495 - Practicum Credits: (1-3) Only 2 credits required for program.
- NFS 490/590 - Seminar (AW) Credits: (1-2)

### Management Core Requirements: 18

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- MGMT 310 - Business Finance Credits: 3
- MGMT 360 - Organization and Management Credits: 3
- MGMT 460 - Human Resource Management Credits: 3
- CSC 325 - Management Information Systems (COM) Credits: 3

### Electives: 17-18

\*Consult with advisor for approved list.

**Total Required Credits: 120**

### 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 a 5 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.

## Interior Design (ID) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 32

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 or 222 Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101 and SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity: ARTH 100 and HIST 122 Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: GEOG 131-131L and GEOG 132-132L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Consumer Sciences Department Requirements: 6-7

- LEAD 210 - Foundations of Leadership\*\* Credits: 3
- OR CS 230 - Consumer Behavior Credits: 3
- OR CS 282 - Customer Service Credits: 2
- CS 377 - Professional Documents Credits: 1
- CS 381 - Professional Behavior at Work Credits: 3

### Major Requirements: 60-64

- ID 150-150L - Introduction to Interior Design I & Lab Credits: 4
- ID 151-151L - Introduction to Interior Design II & Lab Credits: 4
- ID 215-215L - Materials and Lab Credits: 3
- ID 222 - Interior Design Studio I Credits: 4 \*
- ID 223 - Interior Design Studio II Credits: 4 \*
- ID 224 - History of Interior Design I Credits: 2
- ID 225 - History of Interior Design II Credits: 2
- ID 319-319L - Building Systems I and Lab Credits: 2
- ID 317 - Professional Practices in Interior Design Credits: 2
- ID 320-320L - Lighting and Acoustics and Lab Credits: 2
- ID 322 - Interior Design Studio III (AW) Credits: 4 \*
- ID 323 - Interior Design Studio IV Credits: 4 \*
- ID 329-329L - Building Systems II and Lab Credits: 2
- ID 377-377L - Portfolio and Lab Credits: 2
- ID 422 - Interior Design Studio V Credits: 4 \*
- ID 423 - Interior Design Studio VI Credits: 4
- ID 480 - Travel Studies Credits: 1-5
- ID 490 - Seminar Credits: 1
- ID 495 - Practicum Credits: 3

### Supporting Coursework: 6

- AM 242-242L - Textiles I and Lab Credits: 3
- ART 122 - Design II Color (COM) Credits: 3

### Elective Credits: 10-15

**Total Required Credits: 120**



### 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 a 5 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.

## Minors

### Aviation (AVIA) Minor

#### Required Coursework

- AVIA 170 - Fundamentals of Flight Theory Credits: 3
- AVIA 171 - Introductory Flight I Credits: 2
- AVIA 181 - Introductory Flight II Credits: 2
- AVIA 200 - Aviation Safety Credits: 3
- AVIA 300 - Human Factors in Aviation Credits: 3
- AVIA 370 - Professional Pilot Theory I Credits: 3
- AVIA 372 - Professional Flight I Credits: 2

**Total Required Credits: 18**

### Interior Design (ID) Minor

#### Required Coursework

- ID 150-150L - Introduction to Interior Design I & Lab Credits: 4
- ID 151-151L - Introduction to Interior Design II & Lab Credits: 4
- Interior Design Electives Credits: 10

**Total Required Credits: 18**

#### Note

- Interior Design Students must earn at least a C in studio courses to advance to subsequent studios.

### Leadership (LEAD) Minor

#### Required Coursework: 9

Select nine credits from the following:

- LEAD 210 - Foundations of Leadership\*\* Credits: 3
- LEAD 310 - Leadership in Context \*\* Credits: 3
- LEAD 410 - Leadership: Senior Seminar Credits: 1
- LEAD 496 - Field Experience: Leadership in Action Credits: 2
- LEAD 435 - Organizational Leadership and Team Development Credits: 3

#### Electives: 9

- Consult with the LEAD program coordinator and academic advisor to create the plan of study.
- Students will take 9 credits from courses relevant to the program.

**Total Required Credits: 18**

### Leadership and Management of Nonprofit Organizations (LMNO) Minor

#### Required Coursework: 9

Select nine credits from the following:

- LMNO 201 - Introduction to Leadership and Management of Nonprofit Organizations Credits: 3
- LMNO 435 - Organizational Leadership and Team Development Credits: 3
- LEAD 410 - Leadership: Senior Seminar Credits: 1
- LEAD 496 - Field Experience: Leadership in Action Credits: 2

#### Elective Credits: 9

- Consult LMNO program coordinator and academic advisor to create the plan of study for the minor.
- Students will take 9 credits from courses relevant to the program.

**Total Required Credits: 18**

## Counseling and Human Development Department (CHRD, GERO, HDFS, REHS)

Jay Trenhaile, Head

Department of Counseling and Human Development

Wenona Hall 312/ Wagner Hall 369

605-688-4190 or 688-4321

e-mail: jay.trenhaile@sdstate.edu

<http://www.sdstate.edu/chd/>

#### Faculty

Professor Trenhaile, Head; Professors Britzman, Davis, Harper, Muxen, Nichols; Emeritus Professor Smith, Associate Professors H. Briddick, W. Briddick, Daniels, Oscarson; Assistant Professors Bates, Fellner, Kang, Letcher, and Instructor Graves.

#### Programs

The Department of Counseling and Human Development (CHD) is part of the College of Education and Human Sciences and comprised of the Human Development and Family Studies (HDFS) program and the nationally-accredited Counseling and Human Resource Development (CHRD) program. Students within both programs study the individual, group, and family throughout the lifespan and are prepared to enter helping professions. The mission of the department is to provide high quality educational programs to learners who will work in human science fields, and to generate knowledge of human behavior, cognition, and interaction.

#### Undergraduate 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.

#### Graduate Programs

The department also offers a Master of Education in Counseling and Human Resource Development, a Master of Science in Education and Human Sciences, and a Master of Science in Counseling and Human Resource Development. Graduate degree specializations include Adult Development in the Workplace, Family and Community Services, College Counseling, Rehabilitation and Mental Health Counseling, and Administration of Student Affairs.

The Department of Counseling and Human Development is one of the few public university departments in South Dakota that delivers programs at the main campus in Brookings, at the University Centers in Rapid City and Sioux Falls, and on-line. In addition to the academic programs, CHD a number of field specialists across the state who provide another level of teaching and training to the citizens of South Dakota. See the graduate catalog for additional information about the programs or <http://www.sdstate.edu/chd/index.cfm>

## Human Development and Family Studies (HDFS) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\*
- Goal #3 Social Sciences/Diversity: PSYC 101 and SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: BIOL 101-101L Credits: 3

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3 Suggested (LEAD 210, NFS 111, or WMST 101)

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 45

- HDFS 150-150L - Early Experience and Lab Credits: 2
- HDFS 241 - Family Relations Credits: 3
- HDFS 227 - Human Development and Personality I: Childhood Credits: 3
- HDFS 250 - Development of Human Sexuality Credits: 3
- SPCM 201 - Interpersonal Communication (COM) Credits: 3 or
- SPCM 460 - Family Communication (COM)  
OR SPCM 470 - Intercultural Communication (COM) (G) Credits: 3
- HDFS 337 - Human Development II: Adolescence Credits: 3
- HDFS 347 - Human Development III: Adulthood Credits: 3
- HDFS 441 - Professional Issues in Human Development and Family Studies Credits: 3
- HDFS 355 - Program Design, Implementation and Evaluation Credits: 3
- HDFS 410/510 - Parenting Credits: 3
- HDFS 341 - Family Theories Credits: 3
- HDFS 487 - Preparation for Practicum Credits: 1
- HDFS 495 - Practicum Credits: 6
- HDFS 425-525 - Family Resiliency Credits: 3
- HDFS 435-535 - Family Policy Credits: 3

### Supporting Coursework: 15

- SOC 307 - Research Methods I Credits: 3
- SOC 308 - Research Methods II Credits: 3  
OR STAT 281 - Introduction to Statistics (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- POLS 100 - American Government \* (COM) Credits: 3  
OR ECON 201 - Principles of Microeconomics \* \*(COM) Credits: 3  
OR ECON 202 - Principles of Macroeconomics \*(COM) (G) Credits: 3
- FCSE 421 - Adult Education Credits: 3

### Elective Credits: 23

### Total Required Credits: 120

### Curriculum Notes

- A pre-graduation check is required by end of junior year.
- A Graduation Application must be completed at beginning of graduation semester.
- To effectively meet the wide range of professional interests of HDFS majors, students are required to develop a plan of study under the supervision of a faculty advisor.
- This plan should include the specification of courses within and outside of the department that are targeted to assist in the professional preparation of the student.

- Emphases might include a focus on areas such as: children's services, religious services, family organizations, youth development organizations, gerontology services, families with special needs.
- 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.
- An average of 16 credits per semester must be completed in order to graduate in four years.
- 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 a 5 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.

## Minors

### Human Development and Family Studies (HDFS) Minor

- Any HDFS courses may be used to complete the minor. Suggested courses include (but are not limited to):
- HDFS 141 - Individual and the Family \* Credits: 3
- HDFS 210 - Lifespan Development \* Credits: 3
- HDFS 227 - Human Development and Personality I: Childhood Credits: 3
- HDFS 241 - Family Relations Credits: 3
- HDFS 250 - Development of Human Sexuality Credits: 3
- HDFS 337 - Human Development II: Adolescence Credits: 3
- HDFS 347 - Human Development III: Adulthood Credits: 3
- HDFS 410/510 - Parenting Credits: 3

### Total Required Credits: 18

### Notes:

- All the minor courses must be approved by the department head no later than the beginning of the junior year. Students must earn at least a C in all courses for the minor.

### Gerontology (GERO) Minor

Renee Oscarson, Coordinator  
Department of Counseling and Human Development  
SWG 403 605-688-5954  
e-mail: renee.oscarson@sdstate.edu

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.

### Level One Aging Credits: 11

- BIOL 425, Biology of Aging Credits: 3
- CA 442 - Family Resource Management Lab Credits: 3
- GERO 201 - Introduction to Gerontology Credits: 3
- GERO 491/591 - Independent Study Credits: 1-3
- GERO 492/592 - Topics Credits: 1-3
- HDFS 347 - Human Development III: Adulthood Credits: 3
- NURS 201 - Medical Terminology Credits: 1
- PSYC 324 - Psychology of Aging Credits: 3
- SOC 490 - Seminar (COM) Credits: 1-3

### Elective Credits: 7

- Choose 7 credits from list of Levels Two and Three courses
- A portion of Level Two courses is aging-related.
- Level Three courses are those which cover the study of biological, psychological, or social aspects of humans.
- Contact the Gerontology Coordinator, Renee Oscarson, for a list of courses which meet Level Two and Three requirements.

### Total Required Credits: 18

**Note:**

- A grade of "C" or better is required in all courses in the minor.
- Seminar, Topics, or Independent Study approved by the Gerontology Coordinator.
- The topic and credits vary by semester.

**Rehabilitation Services (REHS) Minor****Required Coursework: 15**

- CHRD 301 - Introduction to Rehabilitation Credits: 3
- CHRD 351 - Medical & Vocational Case Management Credits: 3
- CHRD 352 - Counseling Special Populations Credits: 3
- CHRD 353 - Ethics and the Helping Professions Credits: 3
- CHRD 451 - Individual and Group Counseling Credits: 3
- CHRD 452 - Addictions Rehabilitation Credits: 3
- OR CHRD 453 - Family Therapy Credits: 3

**Elective Credits: 3****Total Required Credits: 18****Criminal Justice (CJUS)**

(See Sociology and Rural Studies)

**Curriculum and Instruction**

(See Teaching Learning and Leadership Department in the Graduate Catalog)

**Dairy Manufacturing (DM)**

(See Dairy Science)

**Dairy Production (DP)**

(See Dairy Science)

**Dairy Science Department (DS)**

Vikram V. Mistry, Head  
 Department of Dairy Science  
 Alfred Dairy Science Hall 136  
 605-688-4116  
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 email: vikram.mistry@sdstate.edu  
 http://www.sdstate.edu/ds/

**Faculty**

Professor Mistry, Head; Professors Garcia, Kalscheur, Metzger; Professor Emeritus Baer, Parsons; Distinguished Professor Schingoethe; Associate Professor Emeritus Henning; Associate Professors Anand, Hassan; Assistant Professors, Anderson, Patel; Instructor Bonnemann; Farm Manager, 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 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 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. Students may also choose a Dairy Manufacturing Microbiology Specialization.

**Facilities**

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 state of the art new Davis 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.

**Student Engagement**

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 Manufacturing (DM) Major**

Bachelor of Science in Agriculture

**System General Education Requirements\*: 30**

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 and an additional non ECON class Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 or MATH 115 Credits: 3
- Goal #6 Natural Sciences: BIOL 101-101L and BIOL 103-103L Credits: 6

**Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Experience: DS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

**College Requirements: 11**

- Group 1 Courses in Agriculture Credits: 4
- DS 130-130L - Introduction to Dairy Science and Lab Credits: 3
- MICR 311-311L - Food Microbiology and Lab Credits: 4

**Major Requirements: 50-51**

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- AST 443-443L - Food Processing and Engineering Fundamentals and Lab Credits: 3 (Fall)
- CHEM 106-106L - Chemistry Survey and Lab\* (COM) Credits: 3,1  
OR CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 108-108L - Organic and Biochemistry and Lab\* (COM) Credits: 4, 1  
OR CHEM 120-120L - Elementary Organic Chemistry and Lab\* Credits: 3, 1
- DS 202 - Dairy Products Judging Credits: 1
- DS 301-301L - Dairy Microbiology and Lab Credits: 3
- DS 313-313L - Technical Control of Dairy Products I and Lab Credits: 3
- DS 321-321L - Dairy Product Processing I and Lab Credits: 5
- DS 322-322L - Dairy Product Processing II and Lab Credits: 5
- DS 421 - Dairy Plant Management Credits: 3
- DS 422-422L - Technical Control of Dairy Products II and Lab Credits: 4
- DS 490 - Seminar (AW) Credits: 1

- DS 496 - Field Experience Credits: (3-12)
- MICR 231-231L - General Microbiology and Lab (COM) Credits: 4
- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4  
OR PHYS 111-111L – Intro to Physics I & Lab\* (COM)Credits:4  
OR PHYS 211-211L - University Physics I & Lab\* (COM) Credits: 4

#### Elective Credits: 23-24

- Communications Elective Credits: 2
  - Select from: ENGL 379; courses prefixed MCOM; courses prefixed SPCM numbered 200 or above)
- ECON, BADM, STAT, ACCT, or ENTR Elective, *except ECON 202 and ACCT 210* Credits: 3
- Nutrition and Food Science Elective Credits: 3
- Additional Elective Credits: 15-16

#### Total Required Credits: 120

#### 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 a 5 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.

### Dairy Manufacturing (DM) Major - Microbiology Specialization

Bachelor of Science in Agriculture

#### System General Education Requirements\*: 32

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity : ECON 202 and an additional non ECON class Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 or MATH 115 Credits: 3
- Goal #6 Natural Sciences: CHEM 112-112L and CHEM 114-114L Credits: 8

#### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: DS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

#### College Requirements: 7

- DS 130-130L - Introduction to Dairy Science and Lab Credits: 3
- MICR 311-311L - Food Microbiology and Lab Credits: 4

#### Major Requirements: 85

- ACCT 210 - Principles of Accounting I (COM) Credits: 3  
OR STAT 281 - Introduction to Statistics (COM) Credits: 3
- AST 443-443L - Food Processing and Engineering Fundamentals and Lab Credits: 3
- BIOL 101-101L - Biology Survey I and Lab (COM) Credits: 3  
OR BIOL 151-151L - General Biology I & Lab\*(COM)Credits:3
- BIOL 103-103L - Biology Survey II and Lab\* (COM) Credits: 3  
OR BIOL 153-153L - General Biology II and Lab\* Credits: 3
- BIOL 202-202L - Genetics and Organismal Biology & Lab Credits: 4
- BIOL 204-204 L - Genetics and Cellular Biology & Lab Credits: 3, 1
- CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab (COM) Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- DS 202 - Dairy Products Judging Credits: 1
- DS 301-301L - Dairy Microbiology and Lab Credits: 3
- DS 313-313L - Technical Control of Dairy Products I & Lab Credits:3
- DS 321-321L - Dairy Product Processing I and Lab Credits: 5

- DS 421 - Dairy Plant Management Credits: 3
- DS 422-422L - Tech Control of Dairy Products II & Lab Credits: 4
- DS 490 - Seminar (AW) Credits: 1
- DS 496 - Field Experience Credits: 3
- MICR 231-231L - General Microbiology & Lab (COM) Credits:4
- MICR 310-310L - Environmental Microbiology & Lab Credits: 4
- MICR 332 - Microbial Physiology Credits: 2
- MICR 332L - Microbial Physiology Lab Credits: 2
- MICR 436 - Molecular and Microbial Genetics Credits: 4

#### General Elective Credits: 1-5

#### Total Required Credits: 120

#### 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 a 5 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.

### Dairy Production (DPROD) Major

Bachelor of Science in Agriculture

#### System General Education Requirements\*: 31-33

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 and an additional non ECON class Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Credits: 6 Goal #5 Mathematics: MATH 102 or 115 Credits: 3-5
- Goal #6 Natural Sciences: CHEM 106-106L or CHEM 112-112L AND BIOL 103-103L Credits: 7

#### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: DS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

#### College Requirements: 11

- AGE 271-271L - Farm & Ranch Management & Lab Credits: 4
- AS 233-233L - Applied Animal Nutrition and Lab Credits: 4
- PS 103-103L - Crop Production and Lab Credits: 3

#### Major Requirements: 51-53

- AS 323 - Advanced Animal Nutrition Credits: 3
- AS 433-433L - Livestock Reproduction and Lab Credits: 3
- BIOL 101-101L - Biology Survey I and Lab (COM) Credits: 3
- BIOL 371 - Genetics (COM) Credits: 3  
OR AS 332 - Livestock Breeding and Genetics Credits: 4
- CHEM 108-108L - Organic & Biochemistry & Lab\* (COM) Credits: 4, 1  
OR CHEM 120-120L - Elementary Organic Chemistry & Lab\* Credits: 3, 1
- DS 130-130L - Introduction to Dairy Science and Lab Credits: 3
- DS 202 - Dairy Products Judging Credits: 1
- DS 212 - Dairy Cattle Evaluation Credits: 2
- DS 301-301L - Dairy Microbiology and Lab Credits: 3
- DS 411-411L - Dairy Breeds and Breeding and Lab Credits: 3
- DS 412-412L - Dairy Farm Management and Lab Credits: 4
- DS 413-513 - Physiology of Lactation Credits: 3
- DS 432 - Dairy Cattle Feeding Credits: 3
- DS 490 - Seminar (AW) Credits: 1
- DS 496 - Field Experience Credits: (3-12)
- MICR 231-231L - General Microbiology & Lab (COM) Credits: 4

- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4  
**OR** PHYS 111-111L - Introduction to Physics I and Lab\* (COM)  
**OR** PHYS 211-211L - University Physics I & Lab\* (COM) Credits 4
- VET 223-223L - Anatomy and Physiology of Domestic Animals and Lab Credits: 4

#### Elective Credits: 18-22

- Communications Elective Credits: 2
  - Select from: ENGL 379; courses prefixed MCOM; courses prefixed SPCM numbered 200 or above)
- ECON, BADM, STAT, ACCT, or ENTR Elective, *except ECON 202 and ACCT 210* Credits: 3
- Nutrition and Food Science Elective Credits: 3
- PS 213-213L - Soils and Lab \* \*\* Credits: 3  
**OR** PS 313 - Forage Crop and Pasture Management Credits: 3
- General Elective Credits: 13-17

#### Total Required Credits: 120

#### 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 a 5 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.

#### Dietetics (DIET)

(See Health and Nutritional Sciences)

#### Early Childhood Education (ECE)

(See Teaching, Learning, and Leadership)

#### Ecology and Environmental Science (EES)

(See Biology and Microbiology)

### Economics (ACCT, AGECE, BADM, ECON, ENTR, MGMT)

Eluned Jones Department Head  
Jason Zimmerman, Assistant Department Head  
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#### Faculty

Professor Jones, Head; Professors, Cumber, Diersen, Fausti, Janssen, Klein, Langelett, Lyons, O'Brien, Pflueger, Santos, Van der Sluis, Warmann, Zimmerman; Professors Emeriti Allen, Dobbs, Greenbaum, Kim, Lamberton, Lundeen, Murra, Peterson, Shane, Taylor, Thompson; Associate Professors Adamson, Davis, Gustafson, Qasmi, Taylor; Assistant Professors Chang, Miller, Wang; Instructors, Heller, Koch, Kuhl, Meyer, Swain, Wipf; Field Specialists Davis, Gessner, Guthmiller.

#### Programs

The Department of Economics offers course in Accounting (ACCT), Agricultural and Resource Economics (AGECE), Business Administration (BADM), Economics (ECON), Entrepreneurial Studies (ENTR), and Management (MGMT). These programs provide students with experience in agribusiness, agricultural finance,

banking, business finance, business management, entrepreneurship, farm and ranch management, marketing, public service, research, sales, and related fields.

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 a:

- Bachelor of Science degree in Agricultural and Resource Economics from the College of Agriculture and Biological Sciences.
- Bachelor of Science degree in Agricultural Business from the College of Agriculture and Biological Sciences.
- Bachelor of Science or Bachelor of Arts degree in Economics from the College of Arts and Sciences.
- Bachelor of Science or Bachelor of Arts degree in Economics with a Business Specialization from the College of Arts and Sciences.
- Bachelor of Science degree in Entrepreneurial Studies from the College of Arts and Sciences.

#### Majors

The major in **Agricultural and Resource Economics** provides a rigorous education in economic theory and quantitative methods applied to agriculture and resource management. Students develop analytical and critical-thinking skills, and are well prepared for careers in agricultural policy analysis, natural resource stewardship, or future graduate study. The curriculum emphasizes economic theory, agricultural economics, quantitative methods, and agricultural and biological science electives.

The major in **Agricultural Business** prepares students to excel in the challenging environment of the modern agricultural industry. Graduates are creative, adaptable, and well educated in economics and management. The program combines education in management and economics with a solid technical knowledge in production agriculture and skills in problem solving. The curriculum emphasizes economic theory, agricultural business management, quantitative methods, and agricultural and biological science electives.

The major in **Economics** provides rigorous training in economic theory and quantitative methods. Students develop analytical and critical-thinking skills, and are well trained for careers in policy analysis, business, or for future graduate study. The major allows students to customize their program of study tailored to their interests by choosing electives from economics, business, accounting, agricultural economics, or entrepreneurship or a Business Economics Specialization. Students interested in pursuing a graduate degree in economics or related fields are well prepared with an economics degree.

The major in **Entrepreneurial Studies** is designed to enhance entrepreneurial talent by providing students with the knowledge, skills, and experiences to create value for society. Curricular and extracurricular opportunities in the program train students to think creatively and develop the ability to be innovative. Students acquire the abilities to understand business structure and finances, comprehend advanced market and business planning strategies, and discover alternative methods to raising capital to finance innovative ideas. They apply these concepts through writing business plans, presenting their ideas to professionals, and starting their own ventures. Students may be interested in starting a new business or



growing an existing business, working independently as a creative artist or inventor, consulting or management of an organization, development, sales, or marketing of new products.

### Minors

The following minors are available through the Department of Economics: **Accounting, Agricultural Business, Agricultural Marketing, Economics, Entrepreneurial Studies, and Management.** A minimum GPA of 2.0 over courses taken in the minor is required for each departmental minor.

The new minor, the **Management Minor** has been developed to meet needs of business and industry in the state with individuals who are able to manage resources in organizations. The minor provides core competencies via courses in business finance, management information systems, organizations and management, and human resources management with additional discipline-specific applied management curriculum.

All management programs at SDSU share the following common core which students can combine with economics, entrepreneurship, or a sector-specific management degree (such as construction, industrial, hospitality, or agribusiness management). Analytical rigor is the underlying theme in the minor.

An SDSU management-program graduate:

- Understands risk, interprets information, and puts theory into practice to develop workable solutions.
- Communicates effectively with all levels of an organization using appropriate technology and interpersonal skills.
- Effectively manages time and resources, meets deadlines, delegates and/or accepts additional responsibility when appropriate, and adapts to the evolving needs of the organization.
- Works independently or as a member of an integrated team; is able and willing to motivate, organize and lead others in a team or group setting; is able to build positive workplace relationships across cultural and generational differences.
- Understands global perspectives and their impact on the organization, and appreciates corporate culture, history, and traditions.
- Understands the strategic planning process, business plans, personal and organizational goal setting, leveraging resources, and how to use these tools effectively in the workplace.
- Understands and abides by the code of ethics that guides their profession, deals fairly and honestly with co-workers and customers, and appreciates the procedures, regulations and rules governing human-resource management.

### Certificates

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.

The **Agricultural and Environmental Law Certificate** program provides an opportunity to learn about a variety of legal concepts while achieving a 15-credit certificate. The program focuses on legal issues that arise in agriculture, rural communities, and the food industry. Legal concepts pertaining to water quality, land-use and other environmental concerns will also be studied to help students appreciate the challenges of directing immediate and long-term implications of food production, renewable energy and an expanding population. The goal of the program is to provide undergraduate students an opportunity to gain a more complete understanding of the laws that may impact their careers and personal activities.

### 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.

### 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.

## Agricultural and Resource Economics (AGEC) Major

Bachelor of Science in Agriculture

### System General Education Requirements\*: 31-32

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 121 or MATH 123 Credits: 4-5
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 5

- Group 1 Courses- Bachelor of Science in Agriculture Credits: 5

### Major Requirements: 49

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- ECON 201 - Principles of Microeconomics \* \*\* (COM) Credits: 3
- ECON 202 - Principles of Macroeconomics \* (COM) (G) Credits: 3
- ECON 301 - Intermediate Microeconomics (COM) Credits: 3
- ECON 302 - Intermediate Macroeconomics (COM) Credits: 3
- ECON 372 - Intro to Resource & Environmental Economics Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- ECON 423 - Introduction to Econometrics (COM) Credits: 3
- ECON 428 - Mathematical Economics Credits: 3
- ECON 472-572 - Resource and Environmental Economics (COM) Credits: 3
- AGECE 271-271L - Farm & Ranch Management & Lab Credits: 4
- AGECE 354 - Agricultural Marketing and Prices Credits: 3
- AGECE 479 - Agricultural Policy (AW) (G) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3

Choose one of the following:

- ECON 431-531 - Managerial Economics Credits: 3
- ECON 440-540 - Economics of International Sector Credits: 3
- ECON 450-550 - Industrial Organization (COM) Credits: 3
- ECON 460-560 - Economic Development \*\* (G) Credits: 3

Choose one of the following:

- AGEC 352 - Agricultural Law Credits: 3
- AGEC 364 - Introduction to Cooperatives Credits: 3
- AGEC 430/530 - Advanced Ag Marketing & Prices Credits: 3
- AGEC 473-473L - Rural Real Estate Appraisal & Lab Credits: 3

Choose one of the following:

- AGEC 478-478L - Agricultural Finance and Lab Credits: 3
- BADM 310 - Business Finance (COM) Credits: 3

### **Elective Credits: 28-30**

#### **Environmental Economics Emphasis:**

- PS 213-213L - Soils and Lab \* \*\* Credits: 2, 1
- NRM 110 - Environmental Conservation \*(G) Credits: 3

Choose one of the following:

- BIOL 383 - Bioethics \*(G) Credits: 4
- PHIL 100 - Introduction to Philosophy \* (COM) Credits: 3
- PHIL 383 - Bioethics \*(G) Credits: 4
- PHIL 454-554 - Environmental Ethics \*(COM) Credits: 3
- REL 454-554 - Environmental Ethics Credits: 3

Choose 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) Credits: 3
- PS 362-362L - Environmental Soil Management & Lab \*\* Credits: 3
- PS 446-546 - Agroecology (G) Credits: 3

### **Total Required Credits: 120**

#### **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 the SDSU Graduate Catalog or the Department's Graduate Coordinator Dr. Santos for complete details for the fifth year.

#### **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 a 5 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 Business (AGBU) Major**

Bachelor of Science in Agriculture

#### **System General Education Requirements\*: 31-32**

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 121-121L or MATH 123 Credits: 4
- Goal #6 Natural Sciences Credits: 6

#### **Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### **College Requirements: 5**

- Group 1 Courses- Bachelor of Science in Agriculture Credits: 5

### **Major Requirements: 48**

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- ECON 201 - Principles of Microeconomics \* \*(COM) Credits: 3
- ECON 202 - Principles of Macroeconomics \* (COM) (G) Credits: 3
- ECON 301 - Intermediate Microeconomics (COM) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- BADM 310 - Business Finance (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- BADM 424 - Operations Research (COM) Credits: 3
- BADM 460 - Human Resource Management (COM) Credits: 3
- AGEC 354 - Agricultural Marketing and Prices Credits: 3
- AGEC 479 - Agricultural Policy (AW) (G) Credits: 3
- CSC 325 - Management Information Systems (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- AGEC 371 - Agricultural Business Management Credits: 3

Choose one of the following: 3

- BADM 350 - Legal Environment of Business (COM) Credits: 3
- AGEC 352 - Agricultural Law Credits: 3

Choose one of the following: 3

- ECON 302 - Intermediate Macroeconomics (COM) Credits: 3
- ECON 330 - Money and Banking (COM) Credits: 3

Choose two of the following: 6

(at least one must be at the 400-level)

- AGEC 271-271L - Farm & Ranch Management & Lab Credits: 4
- GEC 364 - Introduction to Cooperatives Credits: 3
- AGEC 372 - Introduction to Resource and Environmental Economics Credits: 3
- AGEC 430/530 - Advanced Ag Marketing & Prices Credits: 3
- AGEC 454 - Economics of Grain & Livestock Marketing Credits: 3
- AGEC 471-571 - Advanced Farm & Ranch Management Credits: 3
- AGEC 473-473L - Rural Real Estate Appraisal & Lab Credits: 3
- AGEC 478-478L - Agricultural Finance and Lab Credits: 3
- AGEC 484 - Trading in Agricultural Futures & Options Credits: 3
- AGEC 494 - Internship Credits: 1-6
- ECON 472-572 - Resource and Environmental Economics (COM) Credits: 3

### **Electives Credits: 20-22**

### **Total Required Credits: 120**

#### **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 the SDSU Graduate Catalog or the Department's Graduate Coordinator Dr. Santos for complete details for the fifth year.

#### **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 a 5 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.

## Economics (ECON) Major

Bachelor of Arts or Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 31-32

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4-5
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College of Arts and Sciences Requirements: 34

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14

Bachelor of Science

- Biological Sciences Credits: 6
- Humanities Credits: 2

### Major Requirements: 39-40

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- ECON 201 - Principles of Microeconomics \* \*\*(COM) Credits: 3
- ECON 202 - Principles of Macroeconomics \* (COM) (G) Credits: 3
- ECON 301 - Intermediate Microeconomics (COM) Credits: 3
- ECON 302 - Intermediate Macroeconomics (COM) Credits: 3
- ECON 330 - Money and Banking (COM) Credits: 3
- ECON 423 - Introduction to Econometrics (COM) Credits: 3
- ECON 428 - Mathematical Economics Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3

Choose two courses from the following: 5-6

- ECON 403-503 - History of Economic Thought (COM) Credits: 3
- ECON 405 - Comparative Economic Systems (COM) Credits: 2-3
- ECON 433 - Public Finance (COM) (AW) Credits: 3
- ECON 440-540 - Economics of International Sector Credits: 3
- ECON 450-550 - Industrial Organization (COM) Credits: 3
- ECON 453 - Risk Management-Personal and Business Credits: 3
- ECON 460-560 - Economic Development \*\* (G) Credits: 3
- ECON 472-572 - Resource and Environmental Economics (COM) Credits: 3
- ECON 482 - Labor Economics (COM) Credits: 3

### Electives

- Electives in AGECE or ECON (except ECON 101) Credits: 6
- General Electives: 23-37

### Total Required Credits: 120

### 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 the SDSU Graduate Catalog or

the Department's Graduate Coordinator Dr. Santos for complete details for the fifth year.

### 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 a 5 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.

## Economics (ECON) Major - Business Specialization

Bachelor of Arts or Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 31-32

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity: Credits: 6
- Goal #4 Arts and Humanities/Diversity: Credits: 6
- Goal #5 Mathematics: MATH 121 or MATH 123 Credits: 4-5
- Goal #6 Natural Sciences: Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College of Arts and Sciences Requirements: 34

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14

Bachelor of Science

- Biological Sciences or Physical Sciences Credits: 5
- Humanities Credits: 2

### Major Requirements: 51

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- ECON 201 - Principles of Microeconomics \* \*\*(COM) Credits: 3
- ECON 202 - Principles of Macroeconomics \* (COM) (G) Credits: 3
- ECON 301 - Intermediate Microeconomics (COM) Credits: 3
- ECON 302 - Intermediate Macroeconomics (COM) Credits: 3
- BADM 310 - Business Finance (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- BADM 370 - Marketing (COM) Credits: 3
- BADM 460 - Human Resource Management (COM) Credits: 3
- BADM 482 - Business Policy and Strategy (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- CSC 325 - Management Information Systems (COM) Credits: 3
- One additional upper division course with the prefix ECON (excluding ECON 494) Credits: 3

### Electives

- Electives in upper division courses with the prefixes ACCT, AGECE, BADM, ECON, ENTR, or MGMT Credits: 9
- General Electives: 8-21

### Total Required Credits: 120

### 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 the SDSU Graduate Catalog or the Department's Graduate Coordinator Dr. Santos for complete details for the fifth year.

#### 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 a 5 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.

### Entrepreneurial Studies (ENTR) Major

Bachelor of Science in Arts and Sciences

#### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences Credits: 6

#### Institutional Graduation Requirements\*\* Credits: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

#### College Requirements: 14

Bachelor of Science

- Biological Sciences or Physical Sciences Credits: 9
- STAT 281 Introduction to Statistics (COM) Credits: 3
- Humanities Credits: 2

#### Major Requirement Credits: 58

- ECON 201 - Principles of Microeconomics \* \*\*(COM) Credits: 3
- ECON 202 - Principles of Macroeconomics \* (COM) (G) Credits: 3
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- ENTR 236 - Innovation & Creativity Credits: 3
- ENTR 237 - ENTR II: Entrepreneurship Development Credits: 3
- BADM 310 - Business Finance (COM) Credits: 3
- ENTR 338 - ENTR III: New Venture Creation Credits: 3
- BADM 334 - Small Business Management (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- BADM 370 - Marketing (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- ENTR 410 - Financing Innovative Ideas Credits: 3
- BADM 457 - Business Ethics Credits: 3
- BADM 460 - Human Resource Management (COM) Credits: 3
- CSC 325 - Management Information Systems (COM) Credits: 3
- BADM 476-576 - Marketing Research (COM) Credits: 3
- ENTR 483 - Small Business Consulting Credits: 3
- OR ENTR 494 - Internship Credits: 3
- ENTR 488 - Entrepreneurial Studies Capstone Credits: 1

#### Elective Credits: 13

#### Total Required Credits: 120

#### 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 a 5 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.

### Minors

#### Accounting (ACCT) Minor

##### Required Coursework

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- ACCT 310 - Intermediate Accounting I (COM) Credits: 3
- ACCT 311 - Intermediate Accounting II (COM) Credits: 3
- ACCT 320 - Cost Accounting (COM) Credits: 3
- ACCT 430 - Income Tax Accounting (COM) Credits: 3

##### Select one from the following:

- ECON 201 - Principles of Microeconomics \* \*\*(COM) Credits: 3
- ECON 202 - Principles of Macroeconomics \* (COM) (G) Credits: 3

#### Total Required Credits: 21

##### Note:

- A minimum GPA of 2.0 is required in the minor.

#### Agricultural Business (AGBU) Minor

##### Required Coursework

- AGECE 300-level or above Credits: 9
- ECON 201 - Principles of Microeconomics \* \*\*(COM) Credits: 3
- ECON 202 - Principles of Macroeconomics \* (COM) (G) Credits: 3

##### Select two of the following:

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- AGECE 271-271L - Farm & Ranch Management & Lab Credits: 4
- AGECE 354 - Agricultural Marketing and Prices Credits: 3
- BADM 310 - Business Finance (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- BADM/ECON 370 - Marketing (COM) Credits: 3

#### Total Required Credits: 21-22

#### Agricultural Marketing Minor

##### Required Coursework

- BADM/ECON 370 - Marketing (COM) Credits: 3
- AGECE 354 - Agricultural Marketing and Prices Credits: 3
- AGECE 454 - Economics of Grain & Livestock Marketing Credits: 3
- ECON 201 - Principles of Microeconomics \* \*\*(COM) Credits: 3

##### Elective Credits: 9-10

Select at least three courses from the following list.

- AGECE 430/530 - Advanced Ag Marketing and Prices Credits: 3
- AGECE 479 - Agricultural Policy (AW) (G) Credits: 3
- AGECE 484 - Trading in Agricultural Futures & Options Credits: 3
- AS 285-285L - Livestock Evaluation and Marketing & Lab Credits: 4
- BADM 474 - Personal Selling (COM) Credits: 3
- ECON 440-540 - Economics of International Sector Credits: 3
- ECON 476-576 - Marketing Research Credits: 3

#### Total Required Credits: 21-22

##### Note:

- A minimum GPA of 2.0 is required in the minor.

## Economics (ECON) Minor

### Required Coursework

- ECON 201 - Principles of Microeconomics \* \*\* (COM) Credits: 3
- ECON 202 - Principles of Macroeconomics \* (COM) (G) Credits: 3
- ECON 301 - Intermediate Microeconomics (COM) Credits: 3  
**OR** ECON 302 - Intermediate Macroeconomics (COM) Credits: 3

### Elective Credits

- Select two classes from courses prefixed: AGECE or ECON Credits: 6-7
- Select two classes from Courses prefixed ACCT, AGECE, BADM, ECON, or ENTR Credits: 3-4
- STAT 281 - Introduction to Statistics (COM) Credits: 3

### Total Required Credits: 21-24

**Note:** A minimum GPA of 2.0 is required in the minor.

## Entrepreneurial Studies (ENTR) Minor

### Required Coursework

- BADM 334 - Small Business Management (COM) Credits: 3
- BADM 370 - Marketing (COM) Credits: 3
- BADM 474 - Personal Selling (COM) Credits: 3
- ENTR 336 - Entrepreneurship I (COM) Credits: 3
- ENTR 438-538 - Entrepreneurship II (COM) Credits: 3
- ENTR 489 - Business Plan Writing & Competition (COM) Credits: 1
- ACCT 210 - Principles of Accounting I (COM) Credits: 3 and ACCT 211 - Principles of Accounting II (COM) Credits: 3  
**OR** ACCT 406-506 - Accounting for Entrepreneurs (COM) Credits: 3

### Total Required Credits: 22

**Note:** A minimum GPA of 2.0 is required in the minor.

## Management Minor

*Pending BOR approval Fall 2012*

### Management Core: 12

- MGMT/BADM 310 - Business Finance Credits: 3
- MGMT/BADM 325 - Management Information Systems Credits: 3
- MGMT/BADM 360 - Organization & Management Credits: 3
- MGMT/BADM 460 - Human Resource Management Credits: 3

### Electives: 6

Select 6 credits from at least 2 different topic areas

#### *Analytics*

- BADM 424 - Operations Research (COM) Credits: 3
- CS 430 - Consumer Decision Making Credits: 3
- ECON 431-531 - Managerial Economics Credits: 3
- ECON 453 - Risk Management-Personal and Business Credits: 3
- MNET/OM 462 - Quality Management Credits: 3

#### *Applications*

- ABS 475-475L - Integrated Natural Resource Management and Lab (AW) Credits: 3
- BADM 482 - Business Policy and Strategy (COM) Credits: 3
- BADM/ENTR - 483 Small Business Consulting (COM) Credits: 1-3
- CM 410 - Construction Project Management & Supervision Credits: 3
- ENTR 489 - Business Plan Writing & Competition (COM) Credits: 1

#### *Business Law*

- AGECE 352 - Agricultural Law Credits: 3
- AVIA 302 - Aviation Law Credits: 2
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- CM 473 - Construction Law and Accounting (AW) Credits: 3
- HMGTE 361 - Hospitality Industry Law Credits: 3

#### *Cost Accounting*

- ACCT 320 - Cost Accounting (COM) Credits: 3
- HMGTE 465 - Hospitality Managerial Accounting Credits: 3
- MNET 460-560 - Manufacturing Cost Analysis Credits: 3

#### *Organizational Behavior*

- MGMT 464 - Organizational Behavior (COM) Credits: 3
- LMNO 435 - Organizational Leadership and Team Development Credits: 3

### Total Required Credits: 18

## Marketing Minor

### Required Coursework

- ECON/BADM 370 - Marketing Credits: 3
- MCOM/ADV 370 - Advertising Principles Credits: 3
- ECON/BADM 476-576 - Marketing Research (COM) Credits: 3  
**OR** MCOM/ADV 472 - Media Research and Planning Credits: 3

### Electives: 9

Select from the following courses.

- AM 462 - Retail Management Credits: 3
- BADM 334 - Small Business Management (COM) Credits: 3
- BADM 474 - Personal Selling (COM) Credits: 3
- HMGTE 482 - Hospitality Marketing Credits: 3
- ADV 314 - Sales, Promotion and Marketing Credits: 3
- MCOM 474-574 - Media Administration and Management (COM) Credits: 3

### Total Required Credits: 18

**Note:** A minimum GPA of 2.0 is required in the minor.

## Certificate Program

### Agricultural and Environmental Law Certificate

#### Required Coursework

Select two of the following: 6

- HLTH 322 - Public Health Law Credits: 3
- AGECE 356 - Equine Law Credits: 3
- AGECE 366 - Food Law Credits: 3
- AGECE 320 - Ethics in agribusiness Credits: 3

Select one of the following: 3

- AGECE 350 - Environmental law Credits: 3
- AGECE 352 - Agricultural Law Credits: 3

### Electives: 6

- Consult advisor to select electives from approved topics such as law, agribusiness, agriculture environment and natural resources.

### Total Required Credits: 15

## Entrepreneurship Certificate

Select 10 Credits from the following courses.

- ENTR 202 - Human Resource Operations in Entrepreneurship Credits: 1
- ENTR 203 - Intellectual Property in Entrepreneurship Credits: 1
- ENTR 204 - Finance/ Venture Capital in Entrepreneurship Credits: 1
- ENTR 205 - Legal Issues/Business Structure/Risk Management Credits: 1
- ENTR 206 - Taxation in Entrepreneurship Credits: 1
- ENTR 207 - Financial Analysis/Record Keeping/Accounting in Entrepreneurship Credits: 1
- ENTR 208 - E commerce in Entrepreneurship Credits: 1
- ENTR 301 - Marketing/Promotion in Entrepreneurship Credits: 1



- ENTR 302 - International & Global Marketing in Entrepreneurship Credits: 1
- ENTR 304 - Strategy/Pricing/Location in Entrnship Credits: 1
- ENTR 305 - Selling in Entrepreneurship Credits: 1
- ENTR 306 - The Harvest in Entrepreneurship Credits: 1

**Total Required Credits: 10**

## Additional Interest Areas

### 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 courses in Business Area Studies 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. For the Business Economics Specialization – See Economics Major. The following group of business related courses represents offerings from all academic departments (or in cooperation with other institutions) of interest to majors in the various business related curricula of the University.

#### Accounting:

- ACCT 310 - Intermediate Accounting I (COM) Credits: 3
- ACCT 320 - Cost Accounting (COM) Credits: 3
- ACCT 430 - Income Tax Accounting (COM) Credits: 3
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- ACCT 311 - Intermediate Accounting II (COM) Credits: 3

#### Agricultural and Resource Economics:

- AGECE 352 - Agricultural Law Credits: 3
- AGECE 354 - Agricultural Marketing and Prices Credits: 3
- AGECE 473-473L - Rural Real Estate Appraisal & Lab Credits: 3
- AGECE 478-478L - Agricultural Finance and Lab Credits: 3
- AGECE 271-271L - Farm and Ranch Management & Lab Credits: 4
- AGECE 454 - Economics of Grain & Livestock Marketing Credits: 3

#### Design Merchandising and Consumer Sciences:

- AM 372-372L - Trending and Buying and Lab Credits: 3
- AM 462 - Retail Management Credits: 3
- AM 473 - Global Sourcing (AW) Credits: 3

#### Business Administration:

- BADM 310 - Business Finance (COM) Credits: 3
- BADM 334 - Small Business Management (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 351 - Business Law (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- BADM 424 - Operations Research (COM) Credits: 3
- BADM 474 - Personal Selling (COM) Credits: 3
- BADM 482 - Business Policy and Strategy (COM) Credits: 3
- BADM 483 - Small Business Consulting (COM) Credits: (1-3)
- BADM 280 - Personal Finance (COM) Credits: 3
- BADM 416 - Commercial Bank Management (COM) Credits: 3

#### Computer Science:

- CSC 330 - Cobol I (COM) Credits: 3

#### Economics:

- ECON 467 - Labor Law and Economics Credits: 3
- BADM 370 - Marketing (COM) Credits: 3
- BADM 476-576 - Marketing Research (COM) Credits: 3
- ECON 330 - Money and Banking (COM) Credits: 3
- ECON 370 - Marketing Credits: 3
- ECON 476-576 - Marketing Research Credits: 3

#### Engineering Technology and Management:

- BADM 260 - Principles of Production & Operations Management Credits: 3
- CM 443 - Construction Planning and Scheduling Credits: 3
- MNET 260 - Principles of Production and Operations Management Credits: 3

#### Entrepreneurial Studies

- ENTR 336 - Entrepreneurship I (COM) Credits: 3
- ENTR 410 - Financing Innovative Ideas Credits: 3
- ENTR 438-538 - Entrepreneurship II (COM) Credits: 3

#### Geography:

- GEOG 472 - Introduction to GIS Credits: 3
- GEOG 473-573 - GIS: Data Creation and Integration Credits: 3

#### Mathematics:

- MATH 440-540 - Mathematics of Finance Credits: 3

#### Mass Communications:

- ADV 370 - Advertising Principles Credits: 3

#### Psychology:

- PSYC 331 - Industrial & Organizational Psych (COM) Credits: 3

#### Speech:

- SPCM 201 - Interpersonal Communication (COM) Credits: 3
- SPCM 215 - Public Speaking (COM) \* Credits: 3

## Electrical Engineering and Computer Science Department (EE, CSC)

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The Electrical Engineering and Computer Science Department combines all aspects of electricity, electronics, hardware, and software into one multi-disciplinary unit. The department offers degree programs in Electrical Engineering and Computer Science with minors in Biomedical Engineering, Software Engineering, and Computer Science. Degrees include the Bachelor of Science (B.S.), the Master of Science (M.S.), and the Doctor of Philosophy (Ph.D.). The department has well-established, nationally and internationally-known research programs in materials science, nanotechnology, sensors, photovoltaics, and satellite image processing.

#### Faculty - Electrical Engineering (EE)

Professor Hietpas, Head; Professors A. Andrawis, M. Andrawis, Brown, Galipeau, Helder; Professors Emeriti Ellerbruch, Knabach, Sander; Associate Professors Bommisetty, Fan, Fourney, Tan; Assistant Professors Devaraj, Farrokh-Baroughi, He, Qiao, Tonkoski, 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 and machine theory, electronics, signal and system theory, electronic material and devices, digital and microprocessor systems. The capstone of the program is Senior Design I and 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

The degree program is arranged to include 27 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, 222, 222L, 245 and 245L with minimum grades of “C.” Students will not be permitted to enroll in subsequent courses for which EE 220, EE 222, 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 (15), technical (12 EE 400 level), and required (103) credits comprise the 130 credit degree. The 15 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 five credits of the Institutional Graduation requirements, students are required to take two credits of GE109/L for the First Year Seminar (IGR Goal 1) and three approved credits in Cultural Awareness and Social and Environmental Responsibility (IGR # 2).

The 12 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 Internship 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.

## Faculty - Computer Science (CSC)

Professors Salehnia, Shin; Professor Emeritus Bergum; Associate Professors Fourney, Hamer, Liu, Min; Assistant Professor: Wang; Instructors Cooley, Gamradt, Kurtenbach, Prohaska

## Program

Computer Scientists play key roles in many walks of life in today’s society. Graduates of the program work in many different areas such as; application programmer, network designer, database administrator, information technologist, game development, and many others. According to the United States Bureau of Labor Statistics, CS related jobs are among the ten fastest growing careers that show a lot of promise and opportunity for growth.

The mission of the Computer Science program is to provide a highly respective, rigorous, and 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 Computer Scientist, three or more years into their career, our alumni will:

1. Have achieved increases in duties, and/or responsibilities, and/or been promoted.
2. Have achieved advanced studies/lifelong learning in computer science or other related professional fields.

The program begins with the first year developing a strong foundation in programming, mathematics, and communication. Following this is three years of software and hardware based study in theoretical and applied computer science.

Majors complete a core of basic computer science courses that includes the study of programming and algorithms, data structures, database concepts, computer architecture and organization, programming languages, compilers, operating systems, and software engineering. Important courses in closely related fields, e.g., discrete mathematics, digital logic design, scientific computation, and probability and statistics are also taken. Computer Science students are required to study all aspects of computing, including hardware, software, and theory.

Additionally, a capstone sequence of software engineering I and II provides a yearlong sequence that provides valuable practical experience in the specification, design, implementation, and documentation of large software systems and emphasizes a team-based approach to solving a “real world” problem in computer science.

## Computer Science Emphases

The Computer Science major offers several different emphases for students, depending upon career interests.

### 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. 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.

### 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.

### **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.

### **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.

### **Academic and Graduation Requirements**

The degree program includes 12 credits of elective coursework of which all must be 300 level or higher and 9 of the 12 credits must be in approved CS or SE courses. This elective flexibility allows a student to pick a technical and non-technical course program that best suits his/her needs and interests. In addition to the graduation requirements and academic performance specified in this catalog, to earn the Bachelor of Science degree in Computer Science a student must pass all CSC and SE courses with a grade of C or better. All graduating seniors are required to take the Computer Science exit examination, which is given once per semester.

The non-technical (15), technical (12 CS/SE 300/400 level), and required (93) credits comprise the 120 credit degree. The 15 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 five credits of the Institutional Graduation requirements, students are required to take two credits of GE109/L for the First Year Seminar (IGR Goal 1) and three approved credits in Cultural Awareness and Social and Environmental Responsibility (IGR Goal 2).

### **Computer Applications Certificate**

Students interested in the Certificate Program in Computer Applications should visit with the Director 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.

### **Biomedical Engineering Minor**

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.

The biomedical engineering 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 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;
- independently conduct literature research on a current biomedical engineering topic and its application/impact on society and his/her engineering major; and
- communicate biomedical engineering related technical information in high quality written and oral presentation forms.

## **Computer Science (CSC) Major**

Bachelor of Science in Engineering

System General Education Requirements\*: 33

- Goal #1 Written Communication: ENGL 101 & 277 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4
- Goal #6 Natural Sciences: Credits: 8  
PHYS 111-111L and PHYS 113-113L  
**OR** PHYS 211-211L and PHYS 213-213L  
**OR** CHEM 112-112 and CHEM 114-114L  
**OR** BIOL 153-153L and BIOL 151-151L

**Institutional Graduation Requirements:\*\* 5**

- IGR Goal #1 First Year Experience GE 109-109L\*\* Credits: 2
- IGR Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### **Major Requirements: 45**

- CSC 150-150L - Computer Science I (COM) Credits: 3
- CSC 250 - Computer Science II (COM) Credits: 3
- CSC 300 - Data Structures (COM) Credits: 3
- CSC 314 - Assembly Language (COM) Credits: 3
- CSC 317 - Computer Organization & Architecture (COM) Credits: 3
- CSC 346 - Object Oriented Programming (COM) Credits: 3
- CSC 354 - Introduction to Systems Programming Credits: 3
- CSC 445 - Intro to Theory of Computation (COM) Credits: 3
- CSC 303 - Ethical & Security Issues in Computing (G) Credits: 2
- CSC 446 - Compiler Construction Credits: 3
- CSC 456 - Operating Systems (COM) Credits: 3
- CSC 461 - Programming Languages (COM) Credits: 3

- CSC 470 - Software Engineering (COM) Credits: 3
- CSC 484 - Database Management Systems (COM) Credits: 3
- CSC 485 - Software Engineering II (AW) Credits: 3

#### Supporting Coursework: 27

- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 253 - Logic, Sets, and Proof Credits: 3
- MATH 215 - Matrix Algebra Credits: 2
- MATH 316 - Discrete Mathematics (COM) Credits: 3
- MATH 374 - Scientific Computation I Credits: 3
- EE 245-245L - Digital Systems and Lab Credits: 4
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- Natural Science Credits: 4
- PHYS 111-111L and PHYS 113-113L  
OR PHYS 211-211L and PHYS 213-213L  
OR CHEM 112-112L and CHEM 114-114L  
OR BIOL 151-151L and BIOL 153-153L

#### Elective Credits: 12

- Applied electives credits from 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.

#### Total Required Credits: 120

#### Computer Networking Emphasis

- CSC 474/574 - Computer Networks Credits: 3
- ET 252-252L - Electricity and Electronics II and Lab Credits: 3
- ET 370-370L - Computer Systems and Lab Credits: 4
- ET 472-472L - Networking I and Lab Credits: 4
- ET 474-474L - Networking II and Lab Credits: 4

#### Game Programming Emphasis

- CSC 450/550 - Game Programming Credits: 3
- CSC 447/547 - Artificial Intelligence (COM) Credits: 3
- CSC 474/574 - Computer Networks Credits: 3
- EE 347-347L - Microcontroller Systems Design & Lab Credits: 3
- SE 440 - Embedded Systems Credits: 3

#### Information Technology Management Emphasis:

- CSC 205 - Advanced Computer Applications (COM) Credits: 3
- CSC 325 - Management Information Systems (COM) Credits: 3
- CSC 474/574 - Computer Networks Credits: 3
- CSC 484 - Database Management Systems (COM) Credits: 3

#### Software Engineering Emphasis

- SE 320 - Software Requirements and Formal Specifications (AW) Credits: 3
- SE 330 - Human Factors and User Interface (G) Credits: 3
- SE 410 - Software Test and Quality Assurance Credits: 3
- SE 440 - Embedded Systems Credits: 3

#### Curriculum Notes

- The 30 credit Board of Regents System General Education Requirements (SGRs).
- \*\* South Dakota State University has a 5 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.

## Electrical Engineering (EE) Major

Bachelor of Science in Engineering

#### System General Education Requirements\*: 33

- Goal #1 Written Communication: ENGL 101 and 277 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4
- Goal #6 Natural Sciences: CHEM 112-112L, and PHYS 211-211L Credits: 8

#### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: GE 109-109L Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

#### College Requirements: 27

- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 225 - Calculus III \* (COM) Credits: 4
- MATH 331 - Advanced Engineering Mathematics Credits: 3
- MATH 321 - Differential Equations (COM) Credits: 3
- PHYS 213-213L - University Physics II & Lab\* (COM) Credits: 4
- ME 314 - Thermodynamics Credits: 3
- CSC 150-150L - Computer Science I (COM) Credits: 3
- CSC 317 - Computer Organization & Architecture (COM) Credits: 3

#### Major Requirements: 53

- EE 102 - Introduction to Electrical Engineering II Credits: 1
- EE 220-220L - Circuits I and Lab (COM) Credits: 4
- EE 222-222L - Circuits and Machines and Lab Credits: 4
- EE 224L - EE Software Tools Lab Credits: 1
- EE 245-245L - Digital Systems and Lab Credits: 4
- EE 260 - Electronic Materials Credits: 3
- EE 310 - Probabilistic Methods in Electrical Engineering Credits: 3
- EE 316 - Signals and Systems I (COM) Credits: 3
- EE 320-320L - Electronics I (COM) Credits: 4
- EE 347-347L - Microcontroller Systems Design & Lab Credits: 3
- EE 360 - Electronic Devices Credits: 3
- EE 315 - Linear Control Systems Credits: 3
- EE 317 - Signals and Systems II (COM) Credits: 3
- EE 321-321L - Electronics II and Lab Credits: 4
- EE 385 - Electromagnetics Credits: 4
- EE 422 - Engineering Economics and Management Credits: 2
- EE 464-464L - Senior Design I and Lab(COM) Credits: 2
- EE 465-465L - Senior Design II and Lab(COM) (AW) Credits: 2

#### Technical Electives: 12

All EE majors are strongly advised to select technical electives in a coherent manner to meet desired professional/employment goals. Twelve (12) 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 technical elective credits). Thus, students are not required to take all courses in an emphasis area.

#### Biomedical Engineering Emphasis:

- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- EE 420-420L/520-520L - Electronics III and Lab Credits: 4
- EE 450-550 - Biomedical Signal Processing Credits: 3
- EE 454-554 - Biomedical Instrumentation & Electrical Safety Credits: 3

#### Communications and Advanced Electronics Emphasis:

- CSC 474/574 - Computer Networks Credits: 3
- EE 420-420L/520-520L - Electronics III and Lab Credits: 4

- EE 424-524 - RF Electronics Credits: 3
- EE 470 - Communications Engineering Credits: 3
- EE 471-471L/571-571L - Fiber Optic Communications and Lab Credits: 4
- PHYS 361 - Optics (COM) Credits: 3

#### Computers-Digital Hardware Emphasis:

- CSC 474/574 - Computer Networks Credits: 3
- EE 420-420L/520-520L - Electronics III and Lab Credits: 4
- EE 440-440L/540-540L - VLSI Design & Lab (COM) Credits: 3
- EE 492-592 - Topics (COM) Credits: (1-3)
- MATH 373 - Intro to Numerical Analysis (COM) Credits: 3

#### Electronic Devices and Materials Emphasis:

- EE 424-524 - RF Electronics Credits: 3
- EE 440-440L/540-540L - VLSI Design & Lab (COM) Credits: 3
- EE 460-460L/560-560L - Sensor & Measurements Lab Credits: 2, 1
- EE 491 - Independent Study (COM) Credits: (1-3)
- EE 492-592 - Topics (COM) Credits: (1-3)
- PHYS 331 - Introduction to Modern Physics (COM) Credits: 3
- PHYS 361 - Optics (COM) Credits: 3
- PHYS 439-539 - Solid State Physics (COM) Credits: 4
- PHYS 471-571 - Quantum Mechanics (COM) Credits: 4

#### Image Processing Emphasis:

- EE 470 - Communications Engineering Credits: 3
- EE 475-575 - Digital Image Processing Credits: 3
- MATH 373 - Intro to Numerical Analysis (COM) Credits: 3
- PHYS 361 - Optics (COM) Credits: 3

#### Power Systems Emphasis:

- CEE 482 - Engineering Administration Credits: 3
- EE 430-430L - Electromechanical Systems and Lab Credits: 4
- EE 434-434L - Power Systems and Lab Credits: 4
- EE 436-436L/536-636L - Applied Photovoltaics and Lab Credits: 3, 1
- EE 438 - Power Technology Tour Credits: 1
- EE 470 - Communications Engineering Credits: 3
- EE 492-592 - Topics (COM) Credits: (1-3)
- MATH 315 - Linear Algebra (COM) Credits: 4
- MATH 373 - Intro to Numerical Analysis (COM) Credits: 3
- ME 362 - Industrial Engineering Credits: 3

#### Cooperative Education Program:

Students have the opportunity to work in industry and receive technical elective credit for the experience through EE 494 (Internship) or EE 497 (Cooperative Education). A formal work plan must be approved by the Electrical Engineering administration prior to the work experience. Further information can be found in the Program's Internship and Cooperative Education policy, located on the program's Web site.

#### Total Required Credits: 130

#### Curriculum Notes

- The 30 credit Board of Regents System General Education Requirements (SGRs).
- \*\* South Dakota State University has a 5 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.

## Minors

### Biomedical Engineering Minor

#### Required Coursework

- EE 454-554 - Biomedical Instrumentation & Electrical Safety Credits: 3  
OR EE 450-550 - Biomedical Signal Processing Credits: 3
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- EE 464-464L - Senior Design I and Lab(COM) Credits: 2\*
- EE 465-465L - Senior Design II & Lab(COM) (AW) Credits: 2\*
- EE 491 - Independent Study (COM) Credits: (1-3)\*\*

#### Total Required Credits: 18

#### Notes:

\* 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

### Computer Science (CSC) Minor

#### Required Coursework: 9

- CSC 150-150L - Computer Science I (COM) Credits: 3
- CSC 250 - Computer Science II (COM) Credits: 3
- CSC 300 - Data Structures (COM) Credits: 3

#### Applied Electives Credits: 12

- Select 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.

#### Total Required Credits: 21

### Software Engineering (SE) Minor

#### Required Coursework

- SE 305 - Foundation of Software Engineering Credits: 3
- SE 330 - Human Factors and User Interface (G) Credits: 3
- SE 340 - Software Architecture Credits: 3
- SE 464 - Senior Design I Credits: 2
- SE 465 - Senior Design II Credits: 2

#### Electives: 6

Choose 6 credits from the following.

- SE 320 - Software Requirements & Formal Specifications (AW) Credits: 3
- SE 410 - Software Test and Quality Assurance Credits: 3
- SE 420 - Software Project Management Credits: 3
- SE 440 - Embedded Systems Credits: 3
- EE 347-347L - Microcontroller Systems Design & Lab Credits: 3
- CSC 317 - Computer Organization & Architecture (COM) Credits: 3

#### Total Required Credits: 18

## Certificate Programs

### Computer Applications Certificate

#### Required Coursework

- CSC 105 - Introduction to Computers (COM) Credits: 3
- CSC 112 - Principles of Internet Applications Credits: 3
- CSC 205 - Advanced Computer Applications (COM) Credits: 3
- CSCA 120 - Introduction to Microsoft Windows Credits: 1
- CSCA 292 - Topics (COM) Credits: (1-5)

#### Total Required Credits: 12



## Electronics Technology (ET)

(See Engineering Technology and Management)

## Engineering Technology and Management Department (CM, ET, OM)

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Teresa Hall, Head  
Department of Engineering Technology and Management  
Solberg Hall 116  
605-688-6417  
fax: 605-688-5041  
e-mail: teresa.hall@sdstate.edu

### Faculty

Professor Hall, Head; Professor Lu; Professors Emeriti Heusinkveld, Skubic, Sorensen; Associate Professors Garry, Pannell; Assistant Professors Steinlicht, Yordanova; Instructors Bertolini, Merriman, Nusz-Chandler, Prout, Sternhagen, Weist.

### Programs

The Department of Engineering Technology and Management offers Bachelor of Science degree programs in Construction Management (CM) and Operations Management (OM). Each program includes a combination of theoretical, practical and applications-based courses to prepare graduates for professional management careers. Both the CM and OM programs are participating members in the Economics – Management Initiative on campus and have adopted the Management Core sequence as part of the curriculum.

### Construction Management

The Construction Management program prepares graduates to ethically and competently assume entry level positions in construction management whether it be in building, civil, specialty or entrepreneurial areas of construction. While the CM curriculum is primarily focused on commercial building construction, we also offer courses in heavy-highway and residential construction. Our goal is to produce competent and professional project managers able to adapt to the needs of the firm and are a valued contributor to the success of the company.

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 have a 2.25 cumulative GPA in order to graduate. The CM program is accredited by the American Council for Construction Education (ACCE) which is the accreditation body for construction management programs.

### Electronics Technology

The Electronics Technology Bachelor of Science degree program is a hands-on, lab-based blend of electronics theory and application. The program has three key components: electronics foundations, advanced electronics applications, and applied management. The goal is to prepare graduates to use technical and managerial skills to be successful in a variety of career choices. Electronics technology courses include circuits, analog and digital systems (intro and advanced), networking, industrial controls and PLCs, PCB design, power systems, and communication systems. The program also includes project management, quality systems management, statistics, and industrial safety.

### General Engineering

The ETM department also delivers the non-degree General Engineering (GE) program for the College of Engineering, including

courses in the areas of engineering graphics, computer aided design, industrial safety, project management, and applied manufacturing processes. The General Engineering program provides advising for students who are undecided in their choice of a specific engineering or industry sector management major. Students in the GE program take fundamental engineering, math, and science courses required in most programs in the College of Engineering while considering their options.

### Operations Management

The new Operations Management (OM) program has been designed to prepare students to manage operations and their corresponding resources including people, equipment, facilities, finances, and time. The OM program is an applied management program tailored to entry-level positions of responsibility in manufacturing, technical services providers, suppliers to manufacturers, and/or industrial sales. The OM program is a contributing program to the Economics – Management Initiative on campus and has adopted the Management Core sequence as part of the curriculum.

There are two emphases for the OM program. Electronics prepares students to work as supervisors or project team leaders in industries that manufacture, service, or develop electronic devices or distributed systems. Courses include circuits, digital & analog devices, networks, microcontrollers, PCBs, industrial controls, and PLCs. The Manufacturing emphasis includes Lean, quality management systems, process development, workplace safety, supply chain management, and industrial controls.

The Department also offers and coordinates a Master's program in Operations Management (MSOM). For more information about the MSOM, please see the Graduate Catalog. Additional program information is available from the department office.

## Construction Management (CM) Major

Bachelor of Science in Engineering

### System General Education Requirements\*: 34

- Goal #1 Written Communication: ENGL 101 and 277 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 121-121L Credits: 5
- Goal #6 Natural Sciences: PHYS 111-111L, and CHEM 106-106L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Seminar: GE 109-109L\*\* Credits: 3
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: GE 231\*\* Credits: 3

### Major Requirements: 64

- CM 124 - Construction Graphics Credits: 2
- CM 210-210L - Construction Surveying and Lab Credits: 3
- CM 216 - Construction Materials Credits: 3
- CM 232-232L - Cost Estimating and Lab Credits: 3
- CM 320-320L - Construction Soil Mechanics and Lab Credits: 3
- CM 332 - Building Construction Methods and Systems Credits: 3
- CM 333 - Mechanical, Electrical, Plumbing Systems Credits: 3
- CM 353-353L - Construction Structures and Lab Credits: 3
- CM 374 - Heavy Construction Methods and Systems Credits: 3
- CM 400-500 - Risk Management & Construction Safety Credits: 3
- CM 410 - Construction Project Management & Supervision Credits: 3
- CM 443 - Construction Planning and Scheduling Credits: 3
- CM 473 - Construction Law and Accounting (AW) Credits: 3
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- CSC 105 - Introduction to Computers (COM) Credits: 3
- CSC 325 - Management Information Systems (COM) Credits: 3

- GE 121 - Engineering Design Graphics I Credits: 1
- GE 241 - Applied Mechanics Credits: 3
- MATH 102 - College Algebra \* (COM) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- MGMT 310 - Business Finance Credits: 3
- MGMT 360 - Organization and Management Credits: 3
- MGMT 460 - Human Resource Management Credits: 3

**Total Required Credits: 123**

**Notes**

- **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 prior to the work experience. Further information can be found in the Program's Cooperative Education policy.
- 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.

**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 a 5 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.

**Electronic Technology (ET) Major**

Bachelor of Science in Engineering

**System General Education Requirements\*: 32**

- Goal #1 Written Communication: ENGL 101 & 277 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: PHYS 111-111L and CHEM 106-106L Credits: 8

**Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Seminar: GE 109-109L\*\* Credits: 3
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: GE 231\*\* Credits: 3

**Major Requirements: 67**

- GE 121 - Engineering Design Graphics I Credits: 1
- GE 123 - Computer Aided Drawing Credits: 1
- CSC 105 - Introduction to Computers (COM) Credits: 3
- MATH 121-121L - Survey of Calculus & Lab\* (COM) Credits: 5
- PHYS 113-113L - Introduction to Physics II and Lab\* (COM) Credits: 4
- ET 210-210L - Introduction to Electronic Systems Credits: 4
- ET 232-232L - Digital Electronics and Microprocessors and Lab Credits: 3
- ET 240 - Techniques of Servicing Credits: 2
- ET 325-325L - Advanced Analog Electronics and Lab Credits: 3
- ET 330-330L - Microprocessors & Networks & Lab Credits: 3
- ET 332-332L - Advanced Digital Electronics & Lab Credits: 3
- ET 345-345L - Power Systems and Lab Credits: 3
- ET 380-380L - Circuit Boards and Design and Lab Credits: 3
- ET 451-451L - Industrial Controls and PLCs and Lab Credits: 3
- ET 426-426L - Communication Systems and Lab Credits: 4
- ET 471-471L - Capstone Experience & Lab (CI) (AW) Credits: 1

**Supporting Coursework: 31**

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3

- GE 425-525 - Occupational Safety & Health Management Credits: 3
- MGMT 310 - Business Finance Credits: 3
- MGMT 325 - Management Information Systems Credits: 3
- MGMT 360 - Organization and Management Credits: 3
- MGMT 460 - Human Resource Management Credits: 3
- OM 462-562 - Quality Management Credits: 3
- OM 469-569 - Project Management Credits: 2
- OM 494 - Internship (AW) Credits: 1-3
- Technical Elective Credits: 4

**Total Required Credits: 120**

**Notes**

- **Management Minor:** Student may choose additional courses needed to fulfill the requirements for the Management Minor offered through the Economics Department.
- **Cooperative Education Program:** Students have the opportunity to work in industry and receive technical elective credit for the experience through ET 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.

**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 a 5 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.

**Operations Management (OM) Major**

Bachelor of Science in Engineering

**System General Education Requirements\*: 34**

- Goal #1 Written Communication: ENGL 101 & 277 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 121-121L Credits: 5
- Goal #6 Natural Sciences: CHEM 106-106L, and PHYS 101-101L Credits: 8

**Institutional Graduation Requirements\*\*: 5**

- Goal #1 First Year Experience: GE 109-109L\*\* Credits: 1, 1
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: GE 231\*\* Credits: 3

**Major Requirements: 63**

- ET 210-210L - Introduction to Electronic Systems Credits: 4
- ET 451-451L - Industrial Controls & PLCs & Lab Credits: 3, 0
- GE 425-525 - Occupational Safety & Health Management Credits: 3
- MGMT 310 - Business Finance Credits: 3
- MGMT 460 - Human Resource Management Credits: 3
- MGMT 360 - Organization and Management Credits: 3
- MNET 367-367L - Production Strategy and Lab Credits: 3
- MNET 460-560 - Manufacturing Cost Analysis Credits: 3
- OM 462-562 - Quality Management Credits: 3
- OM 463-563 - Supply Chain Management Credits: 3
- OM 469-569 - Project Management Credits: 2
- OM 471-471L - Capstone Experience and Lab (CI) Credits: 1
- OM 494 - Internship (AW) Credits: 1-3
- CSC 325 - Management Information Systems (COM) Credits: 3

**Supporting Coursework: 20**

- GE 121 - Engineering Design Graphics I Credits: 1
- GE 123 - Computer Aided Drawing Credits: 1

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- CSC 105 - Introduction to Computers (COM) Credits: 3
- MATH 102 - College Algebra \* (COM) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- STAT 441-541 - Statistical Methods II Credits: 3

### Emphasis: 20-21

#### Electronics Emphasis: 21

- ET 232-232L - Digital Electronics and Microprocessors and Lab Credits: 3
- ET 320-320L - Analog Electronics and Lab Credits: 3
- ET 330-330L - Microprocessors & Networks & Lab Credits: 3
- ET 380-380L - Circuit Boards and Design and Lab Credits: 3
- OM 425 - Production/Operations Management Credits: 3
- OR OM 465 - Quality Control Applications Credits: 3
- Technical Electives 6

#### Manufacturing Emphasis: 20

- GE 241 - Applied Mechanics Credits: 3
- GE 310 - Geometric Dimensioning & Tolerancing Credits: 2
- MNET 231-231L - Manufacturing Processes I & Lab Credits: 3
- OM 425 - Production/Operations Management Credits: 3
- OM 465 - Quality Control Applications Credits: 3
- Technical Electives: 6

### Total Required Credits: 120

#### 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 a 5 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.

## English Department (ENGL)

Jason McEntee, Head  
 Department of English  
 Scobey Hall 014  
 605-688-5191  
 e-mail: jason.mcentee@sdstate.edu

#### Faculty

Associate Professor McEntee, Head; Distinguished Professor Woodard; Professors Brandt, Danker, Donovan, 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, Stewart; Instructors Andersen, Bielfeldt, Biever, Brown, Ferrell, Halverson, Michael Haug, Horsley, Hublou, Kluck, Myrick, Nordquist, Serfling

#### Programs

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. Courses in the English Department are divided into two areas: English (ENGL) and Linguistics (LING); see the Course Descriptions section of this catalog. Students may major

or minor in English. The English Major leads to a Bachelor of Arts (B.A.) degree in one of three ways:

#### English Major

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.

#### 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.

#### Writing Specialization

Students with a writing specialization receive 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.

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. Advisors assist students to ensure that all department, college, and university requirements are met. The department requires a minimum grade of "C" in courses used to count toward a major or minor.

#### English Minor

The minor in English 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.

#### Professional Writing Minor

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.

#### Peace and Conflict Studies Minor

The Minor in Peace and Conflict Studies requires 18 credits. Three courses are required: ENGL 125, ENGL 470, and SPCM 470. An additional nine credits are required from the following list of electives: POLS 253, POLS 350, POLS 454, HIST 469, HIST 460, GLST 201, GLST 480, and ENGL 380. 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."

#### The Master of Arts (M.A.) Degree.

The Department offers the Master of Arts in English. For details consult the Graduate Catalog.

## English (ENGL) Major

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity 1 Credits: 6
- Goal #4 Arts and Humanities/Diversity 2 Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\* :5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 5-16

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

### Major Requirements: 39

- ENGL 151 - Introduction to English Studies Credits: 3\*
- ENGL 221 - British Literature I \* \*\* (G) Credits: 3
- ENGL 241 - American Literature I \* \*\* Credits: 3
- ENGL 222 - British Literature II \* \*\* (G) Credits: 3
- oMath 373 r ENGL 242 - American Literature II \* \*\* Credits: 3

#### One Writing Course Credits: 3

- ENGL 379 - Technical Communication (AW)
- ENGL 383 - Creative Writing
- ENGL 483-583 - Advanced Creative Writing
- ENGL 492-592 - Topics (on Professional or Creative Writing)\*\*

#### One Linguistics Course Credits: 3

- LING 203 - English Grammar
- LING 420-520 - The New English
- LING 425-525 - The Structure of English
- LING 443-543 - Development of the English Language
- LING 452-552 - General Semantics

#### One Multi-Cultural/Minority Topics Course Credits: 3

- ENGL 211 - World Literature I \* \*\* (G)
- ENGL 212 - World Literature II \* (G)
- ENGL 248 - Women in Literature \* \*\*
- ENGL 249 - Literature of Diverse Cultures \* \*\*
- ENGL 410 - Mythology and Literature (AW)
- ENGL 445 - American Indian Literature
- ENGL 447 - American Indian Literature of the Present
- ENGL 268 - Literature \* (COM) (if multicultural topic)\*\*
- ENGL 492-592 - Topics (if multicultural topic)\*\*
- 300-400 Level English or American Literature Courses: Credits: 9
- English or Linguistics Electives: 6
- ENGL 479 - Capstone Course & Writing in the Discipline (AW)\*\*\*

### Supporting Coursework: 6

- HIST 111 - World Civilizations I \* \*\* (COM) Credits: 3  
and HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3

#### OR

- HIST 121 - Western Civilization I \* \*\* (COM) Credits: 3  
and HIST 122 - Western Civilization II \* \*\* (COM) (G)

- Elective Credits: 29-41

### Total Required Credits: 120

#### Notes

- The department strongly recommends that students take 151 prior to their junior year.
- \*\* When approved by the department.
- \*\*\* Students must have senior standing and have completed English 151 in order to enroll in 479.

- To count toward the Major or Minor, courses must be passed with a minimum grade of "C."
- For 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.

#### 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 a 5 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.

## English (ENGL) Major - English Education Specialization

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity SOC 100 and/or PSYC 101 Credits: 6
- Goal #4 Arts and Humanities/Diversity (Select from ENGL and HIST) Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirement\*\* : 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility (Select ENGL) Credits: 3

### College Requirements: 6-17

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences (Select HIST complimentary to SGR #4 choice) Credits: 3

### Major Requirements: 36

- ENGL 151 - Introduction to English Studies Credits: 3
- LING 203 - English Grammar Credits: 3
- ENGL 221 - British Literature I \* \*\* (G) Credits: 3
- ENGL 240 - Juvenile Literature \* \*\* Credit: 3
- ENGL 241 - American Literature I \* \*\* Credits: 3
- ENGL 222 - British Literature II \* \*\* (G) Credits: 3  
OR ENGL 242 - American Literature II \* \*\* Credits: 3
- ENGL 330 - Shakespeare Credits: 3
- ENGL 424 - 7-12 Language Arts Methods (AW) Credits: 3
- ENGL 447 - American Indian Literature of the Present Credits 3  
OR ENGL 445 - American Indian Literature Credits: 3
- ENGL 479 - Capstone Course and Writing in the Discipline (AW) Credits: 3
- English or Linguistics Electives: 6

### Supporting Coursework: 6

- HIST 111 - World Civilizations I \* \*\* (COM) Credits: 3  
and HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3

#### OR

- HIST 121 - Western Civilization I \* \*\* (COM) Credits: 3  
and HIST 122 - Western Civilization II \* \*\* (COM) (G)

### General Electives: 12

- *Suggested Elective* EDFN 489 - Professional Issues in Education Credits: 1

## Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- ENGL 424 - 7-12 Language Arts Methods (AW) Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)  
OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Required Credits: 120

#### Notes:

- All sections of English 210 count as a major elective.
- To count toward the Major or Minor, courses must be passed with a minimum grade of "C."
- For 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.

## 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 a 5 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.

## English (ENGL) Major - Writing Specialization

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and ENGL 201 or ENGL 283 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 5-16

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

### Major Requirements: 39

- ENGL 151 - Introduction to English Studies Credits: 3
- ENGL 479 - Capstone Course and Writing in the Discipline (AW) Credits: 3

### One Course in English Literature

- ENGL 221 - British Literature I \* \*\* (G) Credits: 3
- ENGL 222 - British Literature II \* \*\* (G) Credits: 3
- ENGL 330 - Shakespeare Credits: 3
- ENGL 334 - English Drama: Credits: 3
- ENGL 335 - English Novel: Credits: 3
- ENGL 422-522 - Age of Chaucer Credits: 3
- ENGL 423-523 - Old and Middle English Literature Credits: 3
- ENGL 427-527 - Advanced Shakespeare Credits: 3
- ENGL 428-528 English Renaissance/16th Century Literature Credits: 3
- ENGL 434-534 - 18th Century English Literature Credits: 3
- ENGL 437-537 - English Romantic Literature Credits: 3
- ENGL 438-538 - English Victorian Literature Credits: 3
- ENGL 439-539 - Modern English Literature Credits: 3
- ENGL 440-540 - Contemporary English Literature Credits: 3
- ENGL 492-592 - Topics Credits: (1-5)

### One course in American Literature

- ENGL 241 - American Literature I \* \*\* Credits: 3
- ENGL 242 - American Literature II \* \*\* Credits: 3
- ENGL 256 - Literature of the American West \* \*\* Credits: 3
- ENGL 356 - American Poetry: Credits: 3
- ENGL 367 - American Short Story: Credits: 3
- ENGL 368 - American Novel: Credits: 3
- ENGL 453-553 - American Renaissance Credits: 3
- ENGL 454-554 - American Realism and Naturalism Credits: 3
- ENGL 459-559 - American Literature Between the Wars Credits: 3
- ENGL 460-560 - Contemporary American Literature Credits: 3
- ENGL 492-592 - Topics Credits: (1-5)



### One course in Multi-Cultural/Women's Literature

- ENGL 211 - World Literature I \* \*\* (G) Credits: 3
- ENGL 212 - World Literature II \* (G) Credits: 3
- ENGL 249 - Literature of Diverse Cultures \* \*\* Credits: 3
- ENGL 445 - American Indian Literature Credits: 3
- ENGL 447 - American Indian Literature of the Present Credits: 3

### Five courses in Writing or Rhetoric

- ENGL 283 - Creative Writing I \* \*\* Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- ENGL 383 - Creative Writing Credits: 3
- ENGL 483-583 - Advanced Creative Writing Credits: 3
- ENGL 492-592 - Topics Credits: (1-5)

### Two Electives Courses in Literature

- ENGL 240 - Juvenile Literature \* \*\* Credits: 3
- ENGL 250 - Science Fiction \* Credits: 3
- ENGL 256 - Literature of the American West \* \*\* Credits: 3
- ENGL 268 - Literature \* (COM) Credits: 3
- ENGL 380 - Futuristic Communications Credits: 3
- ENGL 484 - Literary Criticism Credits: 3
- ENGL 492-592 - Topics Credits: (1-5)

### One course in Linguistics

- LING 203 - English Grammar
- LING 420-520 - The New English
- LING 425-525 - The Structure of English
- LING 443-543 - Development of the English Language
- LING 452-552 - General Semantics

### Supporting Courses

- HIST 111 - World Civilizations I \* \*\* (COM) Credits: 3  
and HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3
- OR**
- HIST 121 - Western Civilization I \* \*\* (COM) Credits: 3  
and HIST 122 - Western Civilization II \* \*\* (COM) (G) Credits: 3

### Electives: 29-41

- ENGL 494 - Internship Credits: 1-12 *highly recommended*
- See other departments' courses for additional content-based writing electives

### Total Required Credits: 120

#### Notes

- Topics only allowed to fulfill the specific requirements when approved by the department
- All sections of English 210 count as a major elective.
- Major or Minor courses require a minimum grade of C.
- English Ed majors take Psyc 101 or Soc 100 as part of SGR Goal #3.
- For 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.

#### 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 a 5 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.

## Minors

### English (ENGL) Minor

- Three courses in British Literature Credits: 9
- Two courses in American Literature Credits: 6
- One elective Credits: 2-3
- One of the following courses: Credits: 3
  - ENGL 379 - Technical Communication (AW) Credits: 3
  - ENGL 383 - Creative Writing Credits: 3
  - LING 203 - English Grammar Credits: 3
  - LING 420-520 - The New English Credits: 3
  - LING 443-543 - Development of the English Language

### Total Required Credits: 20

#### Note:

- ENGL 101 and 201 do not apply to total credits for the minor
- Major or Minor courses require a minimum grade of C.

### Peace and Conflict Studies Minor

#### Required Coursework

- ENGL 125 - Intro to Peace and Conflict Studies\*\* Credits: 3
- ENGL 470 - Capstone in Peace and Conflict Studies Credits: 3
- SPCM 470 - Intercultural Communication (COM) (G) Credits: 3

#### Electives: 9

Select at least three courses from the following list.

- POLS 253 - Current World Problems \* \*\* (G) Credits: 3
- POLS 350 - International Relations (COM) Credits: 3
- POLS 454 - International Law & Organization (COM) Credits: 3
- HIST 469 - American Foreign Relations (COM) Credits: 3
- HIST 460 - American Military History (COM) Credits: 3
- PHIL 215 - Intro to Social-Political Philosophy \* Credits: 3
- GLST 201 - Global Studies I \* \*\* (G) Credits: 3
- GLST 480 - Ethics of Globalization Credits: 3
- ENGL 380 - Futuristic Communications Credits: 3

### Total Required Credits: 18

### Professional Writing Minor

#### Required Coursework

- ENGL 492-592 - Topics Credits: 1-5
- LING 203 - English Grammar Credits: 3
- MCOM 161-161L - Fundamentals of Desktop Publishing and Lab (COM) Credits: 3
- ENGL 277 - Technical Writing in Engineering\* Credits: 3 (Engineering majors) OR ENGL 379 - Technical Communication (AW) Credits: 3 (All other majors)

#### Electives: 6

- ENGL 380 - Futuristic Communications Credits: 3
- ARTD 202 - Computer Graphics I Credits: 3
- ENGL 383 - Creative Writing Credits: 3
- ENGL 492-592 - Topics Credits: (1-5) Professional Writing: Writing for Professions in the Sciences and Humanities
- ENGL 494 - Internship Credits: (1-12)
- LING 420-520 - The New English Credits: 3
- MCOM 220-220L - Introduction to Digital Media and Lab Credits: 3
- MCOM 225-225L - Introduction to Digital Production and Lab Credits: 2

### Total Required Credits: 18

#### Note

- Major or Minor courses require a minimum grade of C.

### Entrepreneurial Studies (ENTR)

(See Economics)

## Equine Studies

(See Animal Science)

## Family and Consumer Sciences Education (FCSE)

(See Teaching, Learning, and Leadership)

## Food Safety

(See Health and Nutrition Sciences)

## French Studies (FREN)

(See Modern Languages and Global Studies)

## General Agriculture Program (GNAG)

Donald Marshall, Associate Dean

College of Agriculture and Biological Sciences

Agricultural Hall 156

605-688-5133

e-mail: Donald.Marshall@sdstate.edu

### Program

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 General Agriculture program** is designed for the student who does not find it advisable or possible to enter a regular four-year college program in Agriculture. 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 advisor when selecting courses in the major field of concentration. These courses should relate to one's 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 in General Agriculture**, 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 (GNAG) Major

Associate of Science in Agriculture

### Major Requirements: 36

- SGR Goal #1 ENGL 101\* Credits: 3
- SGR Goal #2 SPCM 101\* Credits: 3
- SGR Goal #3 \*: Social Science Credits: 3
- SGR Goal #4 \*: Humanities and Arts Credits: 3
- SGR Goal #5 Mathematics: MATH 102 or MATH 104 Credits: 3
- SGR Goal #6 \*: Natural Science Credits: 3
- First Year Experience: (ABS 109\*\* suggested) Credits: 2
- Major field of concentration Credits: 16

**General Electives: 24**

**Total Required Credits: 60**

### Curriculum Notes

- 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.

## General Agriculture (GNAG) Major

Bachelor of Science in Agriculture

### System General Education Requirements\*: 31

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

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: (ABS 109\*\* suggested) Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: PS 213-213L\*\* Credits: 3

### College Requirements: 13

- PS 103-103L - Crop Production and Lab Credits: 3
- BIOL 103-103L - Biology Survey II and Lab\* (COM) Credits: 3
- AS 101-101L - Intro to Animal Science & Lab Credits: 3
- **OR** DS 130-130L Introduction to Dairy Science & Lab Credits: 3
- AGECE 271-271L - Farm and Ranch Management and Lab Credits: 4

### Major Requirements

Core Requirements: 17-18

- AS 233-233L - Applied Animal Nutrition and Lab Credits: 4
- AGECE 271-271L - Farm and Ranch Management and Lab Credits: 4
- AGECE 354 - Agricultural Marketing and Prices Credits: 3
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- **OR** STAT 281 - Introduction to Statistics (COM) Credits: 3
- BIOL 371 - Genetics (COM) Credits: 3
- **OR** AS 332 - Livestock Breeding and Genetics Credits: 4
- **OR** PS 383-383L - Principles of Crop Improvement and Lab (AW) Credits: 3

### Science Electives: 4-5

Select one of the following courses.

- CHEM 108-108L - Organic and Biochemistry and Lab\* (COM) Credits: 4, 1
- CHEM 120-120L - Elementary Organic Chemistry & Lab\* Credits: 4
- MICR 231-231L - General Microbiology & Lab(COM)Credits: 4
- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4

### Agriculture Electives: 6

Select at least six credits from courses with the prefix(es) of ABE, ABS, AS, AST, DS, EES, HO, LA, NRM, PR, PRM, RANG or VET

### Ag Product Elective Credits: 2-4

Select at least one class from the following courses.

- AS 241-241L - Introduction to Meat Science and Lab Credits: 3
- AS 285-285L - Livestock Evaluation and Marketing and Lab Credits: 4
- AST 443-443L - Food Processing and Engineering Fundamentals and Lab Credits: 3
- DS 231 - Dairy Foods Credits: 3
- PS 303-303L - Seed Technology and Lab Credits: 3
- PS 308-308L - Grain Grading and Lab Credits: 2
- PS 312 - Grain and Seed Production and Processing Credits: 3

### Capstone Elective: 3-4

Select one of the following courses.

- ABS 475-475L - Integrated Natural Resource Management and Lab (AW) Credits: 3
- AGECE 421-521 - Farming & Food Systems Economics Credits: 3
- AS 474-474L - Cow/Calf Management and Lab Credits: 3
- AS 477-477L - Sheep and Wool Production and Lab Credits: 3
- AS 478-478L - Swine Production and Lab Credits: 3
- AST 303-303L - Design Management Experience and Lab Credits: 3
- DS 412-412L - Dairy Farm Management and Lab Credits: 4
- PS 440-440L - Crop Management with Precision Farming and Lab Credits: 3
- RANG 485-485L - Advanced Integrated Ranch Management and Lab Credits: 3

### Communication Elective: 3

Select one of the following Advanced Writing courses.

- ABS 475-475L - Integrated Natural Resource Management and Lab (AW) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- PS 383-383L - Principles of Crop Improvement and Lab (AW) Credits: 3

### Program Concentration Electives or General Electives: 31-36

### Total Required Credits: 120

#### 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 a 5 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.

## General Studies Program (GS)

### Associate of Arts

Christy Osborne, Coordinator and Advisor

College of Arts and Sciences

Wintrode Student Success Center 102

605-688-4691

e-mail: [christy.osborne@sdstate.edu](mailto:christy.osborne@sdstate.edu)

<http://www.sdstate.edu/cee/degrees/general-studies.cfm>

### Bachelors of General Studies

Carey Kilmer

Student Services Facilitator

Continuing and Extended Education

Briggs Library Room 119

605-688-4959 or 1-866-827-3918 (toll free)

e-mail: [Carey.Kilmer@sdstate.edu](mailto:Carey.Kilmer@sdstate.edu)

<http://www.sdstate.edu/cee/degrees/generalstudies.cfm>

### Programs

#### Associate of Arts in General Studies

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 60 credits.

### Bachelors of General Studies

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).

### General Studies (GS) Major

Associate of Arts Degree

Requirements for General Studies Major: 60

#### Required Coursework

- ENGL 101 - Composition I \* Credits: 3
- ENGL 201 - Composition II \* Credits: 3
- SPCM 101\* - Fundamentals of Speech (COM) Credits: 3
- SGR Goal 3 \*: Social Sciences/Diversity Credits: 6
- SGR Goal 4 \*: Humanities and Arts/Diversity Credits: 6
- SGR Goal 5 \*: Mathematics Credits: 3
- SGR Goal 6 \*: Natural Sciences Credits: 6

#### Selected Electives Credits: 30

#### Total Required Credits: 60

#### Curriculum Notes:

- \* The 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 60 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 (GS) Major

Associate of Arts Degree

Requirements for General Studies Major: 120

#### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

#### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

#### Major Requirements: 48

- GS 491 - Independent Study Credits: 3

### **Completion of 15 credits in at least 3 of the designated General Studies focus areas: 45 credits**

- At least 20 credits of the focus area credits must be numbered 300 or above.
  - Allied Health (Courses such as anatomy, athletic training, health sciences)
  - Business (Courses such as business administration, consumer affairs, economics, ag econ, entrepreneurial studies)
  - Education (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)

**Electives: 37**

**Total Required Credits: 120**

#### **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 a 5 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**

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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 Biotechnology Major and Minor are available.

#### **Courses**

- ABS 205 - Biotechnology in Agriculture and Medicine Credits: 2
- AS 332 - Livestock Breeding and Genetics Credits: 4
- BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 4
- BIOL 204-204 L - Genetics & Cellular Biology & Lab Credits: 3, 1
- BIOL 371 - Genetics (COM) Credits: 3
- BIOL 373 - Evolution (COM) Credits: 3
- BIOL/PS 453-553 - Advanced Genetics Credits: 3
- BIOL/ZOOL 483-483L - Developmental Biology and Lab Credits: 4
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
- CHEM 465 - Biochemistry II (COM) Credits: 3
- HO 312-312L - Plant Propagation and Lab Credits: 3
- HO/PS 383-383L - Principles of Crop Improvement and Lab Credits: 2, 1
- MICR 436 - Molecular and Microbial Genetics Credits: 4

## **Geography Information Sciences (GIS)**

(See Geography)

## **Geography Department (GEOG, GIS)**

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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.

#### **Program**

The Department of Geography provides coursework leading to the Bachelor of Science degree in Geography and also in Geographic Information Sciences. 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 advisors.

#### **Geography**

Geography (GEOG) 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 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.

#### **Geographic Information Sciences**

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. GISc is a highly technical field. 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.

Graduates will find themselves on the cutting edge of an important sub-discipline and will be able to find highly rewarding and remunerative jobs. This major includes the necessary courses to prepare the graduate to use the tools of GISc in business or governmental agencies. 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.

## Geographic Information Sciences (GIS) Major

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 11

Bachelor of Science

- Humanities Credits: 3
- Natural Sciences Credits: 8

### Major Requirements: 41

- MATH 120 - Trigonometry \* (COM) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- GEOG 131-131L - Physical Geography: Weather and Climate and Lab\* Credits: 4
- GEOG 132-132L - Physical Geography: Natural Landscapes and Lab\* Credits: 4
- GEOG 200 - Intro to Human Geography \* \*\* (G) Credits: 3
- GEOG 210 - World Regional Geography \* \*\* (COM) (G) Credits: 3
- GEOG 383-383L - Cartography and Lab Credits: 3
- GEOG 447 - Geography of the Future Credits: 3
- GEOG 483-483L - Air Photo Interpretation and Lab Credits: 3
- GEOG 484-484L - Remote Sensing and Lab Credits: 3
- GEOG 472 - Introduction to GIS Credits: 3
- GEOG 473-573 - GIS: Data Creation and Integration Credits: 3
- GEOG 474-574 - GIS: Vector and Raster Modeling Credits: 3
- OR GEOG 475/575 - GIS Applications Credits: 3

### Elective Credits: 41

Suggested Elective:

- GEOG 382 - Geographic Research Methods (AW) Credits: 3
- For those seeking careers in GISc programming, these additional courses are suggested:
- GEOG 384-384L - Advanced Cartography and Lab Credits: 3
  - GEOG 485-485L - Quantitative Remote Sensing & Lab Credits: 3
  - CSC 105 - Introduction to Computers (COM) Credits: 3
  - CSC 150-150L - Computer Science I (COM) Credits: 3
  - CSC 205 - Advanced Computer Applications (COM) Credits: 3
  - CSC 474/574 - Computer Networks Credits: 3
  - MATH 115 - Precalculus \* (COM) Credits: 5
  - MATH 215 - Matrix Algebra Credits: 2
  - GE 120-120L - Engineering Drawing/CAD and Lab Credits: 3
  - GE 121 - Engineering Design Graphics I Credits: 1
  - CEE 106-106L - Elementary Surveying and Lab Credits: 4
  - CEE 304 - Land Surveying Credits: 3
  - CEE 333 - Hydrology Credits: 3

### Total Required Credits: 120

#### 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 a 5 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.

## Geography (GEOG) Major

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 11

Bachelor of Science

- Humanities Credits: 3
- Natural Sciences Credits: 8

### Major Requirements: 35

- GEOG 131-131L - Physical Geography: Weather and Climate and Lab\* Credits: 4
- GEOG 132-132L - Physical Geography: Natural Landscapes and Lab\* Credits: 4
- GEOG 200 - Intro to Human Geography \* \*\* (G) Credits: 3
- GEOG 210 - World Regional Geography \* \*\* (COM) (G) Credits: 3
- GEOG 382 - Geographic Research Methods (AW) Credits: 3
- GEOG 447 - Geography of the Future Credits: 3
- GEOG 472 - Introduction to GIS Credits: 3
- OR GEOG 383-383L Cartography Credits: 3
- OR GEOG 483-483L Air Photo Interpretation Credits: 3
- GEOG Elective Credits: 6

### Choose one course from each of the following categories: 6

#### Advanced Physical Geography & Human-Earth Relationships: 3

- GEOG 310-310L - Soil Geography and Land Use Interpretation and Lab\*\* (G) Credits: 3
- GEOG 337 - Atmospheric Sciences Credits: 3
- GEOG 339 - Geomorphology Credits: 3
- GEOG 343 - Environmental Disasters and Human Hazards Credits: 3
- GEOG 363 - Rural Geography Credits: 3
- GEOG 365 - Land Use Planning\*\* Credits: 3
- GEOG 415-515 - Environmental Geography\*\* Credits: 3

#### Regional Geography and Advanced Human Geography: 3

- GEOG 212 - Geography of North America \* (COM) Credits: 3
- GEOG 219 - Geography of South Dakota \* (G) Credits: 3
- GEOG 320 - Regional Geography: Credits: 3
- GEOG 351 - Economic Geography Credits: 3
- GEOG 353 - Geography of Religion Credits: 3
- GEOG 459-559 - Political Geography \*\* Credits: 3
- GEOG 400 - Cultural Geography (COM) Credits: 3
- GEOG 405 - Historical Geography Credits: 3
- GEOG 425 - Population Geography Credits: 3
- GEOG 454 - Site Selection and Development Credits: 3
- GEOG 460-560 - Geopolitics Credits: 3
- GEOG 461 - Urban Geography Credits: 3
- GEOG 464 - Local and Regional Planning Credits: 3
- GEOG 467 - Geography of the American Indian Credits: 3

### Elective Credits: 47

### Total Required Credits: 120

**Note**

- Total 120 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.

**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) Credits: 3
- GEOG 337 - Atmospheric Sciences Credits: 3
- GEOG 339 - Geomorphology Credits: 3
- GEOG 343 - Environmental Disasters and Human Hazards Credits: 3
- GEOG 351 - Economic Geography Credits: 3
- GEOG 365 - Land Use Planning\*\* Credits: 3
- GEOG 383-383L - Cartography and Lab Credits: 3
- GEOG 425 - Population Geography Credits: 3
- GEOG 484-484L - Remote Sensing and Lab Credits: 3
- GEOG 473-573 - GIS: Data Creation and Integration Credits: 3
- GEOG 474-574 - GIS: Vector and Raster Modeling Credits: 3

**Planning 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\*\* Credits: 3
- GEOG 461 - Urban Geography Credits: 3
- GEOG 464 - Local and Regional Planning Credits: 3
- GEOG 483-483L - Air Photo Interpretation and Lab Credits: 3
- GEOG 484-484L - Remote Sensing and Lab Credits: 3
- GEOG 473-573 - GIS: Data Creation and Integration Credits: 3
- GEOG 474-574 - GIS: Vector and Raster Modeling Credits: 3

**Recommended Electives**

- PLAN 471/571 - Principles of State, Regional and Community Planning Credits: 3
- PLAN 472/572 - Techniques of State, Regional and Community Planning Credits: 3

**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 a 5 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.

**Minors****Geographic Information Sciences (GIS) Minor****Core Requirements: 12**

Select four course from the following courses.

- CEE 304 - Land Surveying Credits: 3
- GEOG 472 - Introduction to GIS Credits: 3
- GEOG 473-573 - GIS: Data Creation and Integration Credits: 3
- GEOG 474-574 - GIS: Vector and Raster Modeling Credits: 3 or GEOG 475/575 - GIS Applications
- GEOG 483-483L - Air Photo Interpretation and Lab Credits: 3
- GEOG 484-484L - Remote Sensing and Lab Credits: 3

**Electives: 6**

Select two of the following courses.

- GEOG 365 - Land Use Planning\*\* Credits: 3
- GEOG 383-383L - Cartography and Lab Credits: 3
- GEOG 384-384L - Advanced Cartography and Lab Credits: 3
- GEOG 415-515 - Environmental Geography\*\* Credits: 3
- GEOG 485-485L - Quantitative Remote Sensing & Lab Credits: 3
- CSC 300 - Data Structures (COM) Credits: 3
- CEE 225 - Principles of Environmental Science and Engineering\*\* Credits: 3
- LA 421-421L - City Planning and Lab Credits: 3
- PS 446-546 - Agroecology (G) Credits: 3
- RANG 321 - Wildland Ecosystems Credits: 3
- WL 400-400L - Habitat Conservation and Restoration/Lab Credits: 3

**Total Credits Required: 12****Note**

- Students must earn at least a “C” in each course used to meet the departmental requirements of all majors, minors, and certificates.

**Geography (GEOG) Minor****Core Requirements: 12**

- GEOG 131-131L - Physical Geography: Weather and Climate and Lab\* Credits: 4
- GEOG 132-132L - Physical Geography: Natural Landscapes and Lab\* Credits: 4
- GEOG 200 - Intro to Human Geography \* \*\* (G) Credits: 3
- GEOG 210 - World Regional Geography \* \*\* (COM) (G) Credits: 3

**Elective Credits: 6**

- Upper-division courses or substitutions approved by the Department Credits: 6

**Note**

- Students must earn at least a “C” in each course used to meet the departmental requirements of all majors, minors, and certificates.

**Certificate Program****Geographic Information Sciences Certificate****Required Coursework**

- GEOG 383-383L - Cartography and Lab Credits: 3  
OR GEOG 483-483L - Air Photo Interpretation & Lab Credits: 3
- GEOG 472 - Introduction to GIS Credits: 3

**Choose one set of technical electives: 6**

- GIS credits: 6
  - GEOG 473-573 - GIS: Data Creation & Integration Credits: 3
  - GEOG 474-574 - GIS: Vector and Raster Modeling Credits: 3
  - GEOG 475/575 - GIS Applications Credits: 3
- Remote Sensing/ Cartography credits: 6
  - GEOG 384-384L - Advanced Cartography and Lab Credits: 3
  - GEOG 484-484L - Remote Sensing and Lab Credits: 3
  - GEOG 485-485L - Quantitative Remote Sensing & Lab Credits: 3

**Total Credits Required: 12****Notes**

- 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.



## German (GER)

(See Modern Language and Global Studies)

## Gerontology (GERO)

(See Counseling and Human Development)

## Health and Nutritional Sciences Department (AT, DIET, EXCS, HLED, NFS, PETE, RECR, SRPM)

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### Faculty

Professor Vukovich, Head; Adjunct Professors Looby, Rosentrater, Warren; Professor Cassel, Dalaly, Hacker, Kattelmann, Krishnan, Specker, Wake, Wang; Professors Emeriti Forsyth, Huether; Associate Professor Dey, Droke, Fokken, Olson, Sergeev; Assistant Professor Binkley, Bowser, Kemmer, Meendering, Roiger, Zwart; Instructors Brandenburger, Gengler, Hegerfeld-Baker, Kirby, Nelson, Stluka.

### Programs

The Department of Health and Nutritional Sciences provides academic programs in Athletic Training; Dietetics, Exercise Science; Health Education, Nutrition and Food Science, Physical Education Teacher Education, and Sport, Recreation and Park Management, as well as 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 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 website through the College of Education and Human Sciences, or by contacting the program chair.

### **Dietetics Major**

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 accredited by the Accreditation Council for Education of Nutrition and Dietetics, the accrediting agency for Academy of Nutrition and Dietetics (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 are assessed a discipline fee. 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.

### **Exercise Science Major**

The Exercise Science (EXSC) 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. These professionals assist people to develop self-responsibility for their own health and wellness, and implement health assessments and wellness programs that promote a healthy lifestyle. Exercise Science 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 Exercise Science 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 2.75 GPA or higher, completion of PE 180 and WEL 100 and a "C" or better in the following courses: BIOL 221 Anatomy and BIOL 325 Physiology must be completed with a C or better PRIOR to starting the major. Students admitted to the major will complete a 4 semester sequence of courses. Students are encouraged to choose classes from a minor area of study to complete course work.

### **Health Education Major**

The Health Education (HLED) program is designed to prepare students in conducting health education and health promotion activities in a non-classroom setting. The program objectives are to facilitate the development of professional skills in program planning, implementation and evaluation as well as offer a broad course work curriculum in personal and community health. The Health Education program prepares students for careers in public or private health agencies, local and state health departments, nonprofit organizations and in private business. Upon graduation, students are encouraged to take the Certified Health Education Specialist (CHES) examination. Majoring in Health Education is an excellent foundation for students to apply to various graduate and professional programs, which may include: medical school, physician's assistant school, chiropractor school, physical therapy school, health administration and counseling.

### **Nutrition and Food Science Major**

The Nutrition and Food Science (NFS) 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.

### **Physical Education Teacher Education Major**

The Physical Education Teacher Education (PETE) major provides knowledge, skills and abilities to students who are interested in becoming physical education teachers in K-12 schools. Coursework includes skill classes designed to teach candidates how to teach the content that forms the basis of physical education in schools as well as refine their personal skills in those areas. Content also provides candidates with knowledge to develop curriculum, organize and administer physical education and sport programs, work with children with special/diverse needs, work in recreational settings, and teach dance and health in K-12 schools. Content also provides the science basis for the discipline, including biomechanics, exercise physiology, and motor learning. With this major and the accompanying teacher education coursework required for teaching licensure, candidates are eligible to take the Praxis content tests, and apply for a teaching license in South Dakota. This major also leads to

employment opportunities in areas such as Boys and Girls Clubs, YMCAs and recreation programs.

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching. All teacher education students complete SOC 100 or PSYC 101 as part of the University General Education Core prior to enrollment in the program. Application for admission into the Physical Education Teacher Education Major 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 PETE Coordinator. A minimum final grade of “C” is required in each course in the major and specialization area.

All Physical 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 major courses to remain in good standing in the program. Additionally, all Health Education Physical Education teaching specialization students are strongly encouraged to obtain a health education minor

### **Sport, Recreation and Park Management Major**

Sport, Recreation and Park Management (SRPM) professionals are needed to meet recreation demands resulting from expanding populations, increased leisure time, greater mobility and changing social attitudes. The curriculum in Sport, Recreation and Park 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.

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 curriculum offered through the Plant Science department. 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 and Nutrition Science department 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 must have a 2.0 GPA to be accepted into the program. Transfer students with less than a 2.0 GPA may petition for approval. If accepted, the transfer student will enter on probation for one semester. A student in the major 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.

## **Minors**

### **Food Safety Minor**

A minor in food safety is for students interested in the principles underlying keeping food safe and will be especially helpful for those students interested in working in this aspect of the food industry. Topics covered focus upon microbiology and safety of food as it is manufactured and distributed.

### **Health Education Minor**

A Health Education minor is an interdisciplinary minor offered to any student at SDSU; 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. This minor is strongly suggested for those individuals pursuing the Physical Education Teacher Education major. Having a Health Education minor can lead to teaching health in public schools in the region. For Minnesota certification in Health, additional coursework will be required. Please check with the PETE Coordinator for these details and to help in planning for this certification. 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.

### **Nutrition 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.

### **Physical Education Minor**

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 Recreation Administration minor. 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.

### **Recreation Administration Minor**

A Recreation Administration minor is an interdisciplinary minor offered to any student at South Dakota State University; it may be of particular interest to those pursuing seasonal and/or summer employment. The minor can be obtained by completing a required core and set of elective courses offered across several disciplines. This minor is strongly suggested for individuals pursuing studies in related areas of physical education or health. Having a Recreation administration minor can lead to summer/seasonal opportunities with municipal park and recreation agencies, state and national park agencies, Boys and Girls Clubs, and YMCA or YWCA's. Please check with the Recreation Administration Coordinator for these details and to help in planning for this minor emphasis of additional study.

## Athletic Training (AT) Major

Bachelor of Science in Education and Human Science

### System General Education Requirements\*: 32-33

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: HDFS 210 and PSYC 101 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: CHEM 106-106L and CHEM 120-120L OR CHEM 108-108L Credits: 8-9

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 62-63

- AT 164 - Introduction to Athletic Training (COM) Credits: 2
- PE 354-354L - Prevention and Care of Athletic Injuries and Lab(COM) Credits: 2
- HLTH 250-250L - Pre-Professional First Aid & CPR & Lab (COM) Credits: 2
- HLTH 120 - Community Health Credits: 2
- OR HLTH/HSC 212 - Contemporary Health Problems Credits: 2
- OR HLTH/HSC 443 - Public Health Science (G) Credits: 3
- NURS 201 - Medical Terminology Credits: 1
- NURS 323 - Introduction to Pathophysiology Credits: 3
- PHA 201 - Medications and Wellness Credits: 2
- PE 350 - Exercise Physiology (COM) Credits: (2-3)
- PE 400-400L - Exercise Test and Prescription and Lab (COM) Credits: 3
- PE 454 - Biomechanics (COM) Credits: 3
- PSYC 451 - Psych of Abnormal Behavior \*\* (COM) Credits: 3
- AT 441-541 - Athletic Training Techniques I Credits: 3
- AT 442-542 - Athletic Training Techniques II Credits: 3
- AT 443-543 - Athletic Training Techniques III Credits: 3
- AT 444-544 - Athletic Training Techniques IV Credits: 3
- AT 371 - Athletic Training Clinical Experience I Credits: 2
- AT 372 - Athletic Training Clinical Experience II Credits: 2
- AT 373 - Athletic Training Clinical Experience III Credits: 2
- AT 374 - Athletic Training Clinical Experience IV Credits: 2
- AT 454-554 - Athletic Injury Assessment-Lower Extremity Credits: 2
- AT 456-556 - Athletic Injury Assessment-Upper Extremity Credits: 2
- AT 464-564 - Therapeutic Modalities in Athletic Training Credits: 2
- AT 471 - Fall Clinical Experience Credits: 1
- AT 474-574 - Rehabilitation of Athletic Injuries (AW) Credits: 2
- AT 490 - Seminar Credits: 2
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- NFS 221 - Survey of Nutrition Credits: 3

### Electives: 18-19

### Total Required Credits: 120

#### 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 a 5 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.

## Dietetics (DIET) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 32

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: CHEM 112-112L and CHEM 114-114L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 80

- HMG2 251 - Foodservice Sanitation Credits: 1
- NFS 141-141L - Foods Principles and Lab Credits: 4
- NFS 315 - Human Nutrition Credits: 3
- NFS 322-322L - Assessment and Counseling Skills in Nutrition and Lab Credits: 4
- NFS 323 - Nutrition Across the Life Cycle Credits: 3
- NFS 341-341L - Food Science and Lab Credits: 4
- NFS 380 - Foodservice Operations and Purchasing Management Credits: 3
- NFS 381-381L - Quantity Food Production and Service and Lab Credits: 4
- NFS 422-522 - Advanced Human Nutrition Credits: 4
- NFS 423-423L/523-523L - Medical Nutrition Therapy I and Lab Credits: 3
- NFS 424-424L/524-524L - Community Nutrition and Lab Credits: 3
- NFS 425-425L/525-525L - Medical Nutrition Therapy II and Lab Credits: 3
- BADM 460 - Human Resource Management (COM) Credits: 3
- NFS 490/590 - Seminar (AW) Credits: (1-2)
- NFS 495 - Practicum Credits: 2
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II &Lab (COM) Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- OR HSC 445 Epidemiology Credits: 3
- MICR 231-231L - General Microbiology and Lab (COM) Credits: 4
- NURS 201 - Medical Terminology Credits: 1
- BIOL 371 - Genetics (COM) Credits: 3
- NFS 487 - Transition to Professional World Credits: 1

### Elective Credits: 1

### Total Required Credits: 120

#### 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 a 5 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.

## Exercise Science (EXSC) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 32-33

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: HDFS 210 and PSYC 101 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: CHEM 106-106L and 108-108L OR CHEM 112-112L & CHEM 114-114L Credits: 8-9

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 48-50

- PE 354-354L - Prevention and Care of Athletic Injuries and Lab (COM) Credits: 2
- HLTH 364-364L - Emergency Medical Technician and Lab (COM) Credits: 4  
OR HLTH 250-250L - Pre-Professional First Aid and CPR and Lab (COM) Credits: 2
- HLTH 445 - Epidemiology Credits: 3
- NURS 201 - Medical Terminology Credits: 1
- NURS 323 - Introduction to Pathophysiology Credits: 3
- PE 350 - Exercise Physiology (COM) Credits: (2-3)
- PE 454 - Biomechanics (COM) Credits: 3
- HLTH/HSC 200 - Complementary & Alternative Health Care Credits: 3  
OR HLTH/HSC 230 - Stress Management for Life Credits: 3
- HSC 302 - Wellness and the Family Credits: 2
- NFS 315 - Human Nutrition Credits: 3
- PE 367 - Health and Human Performance Credits: 3
- PE 395 - Practicum (COM) Credits: 3
- PE 400-400L - Exercise Test and Prescription and Lab (COM) Credits: 3
- PE 450-550 - Clinical Exercise Physiology Credits: 3
- HSC 490 - Seminar (AW) Credits: 1-4 <sup>2 credits required for program</sup>
- HSC 494 - Internship (COM) Credits: 1-12 <sup>1 credit required for program</sup>
- HSC 496 - Field Experience Credits: 1-12 <sup>2 credits required for program</sup>
- HLTH 479-479L - Health Promotion Programming and Evaluation and Lab Credits: 2
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- CHRD 475 - Wellness Counseling Credits: 2
- PE 455-555 - ECG and Clinical Stress Testing Credits: 3

### Electives: 30-33

### Total Required Credits: 120

#### 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 a 5 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.

## Health Education (HLED) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 32

- Goal #1 Written Communication ENGL101 and 201 Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: CHEM 106-106L and 108-108L OR CHEM 112-112L and 114-114L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: NFS 111\*\* Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 55

- HLTH 120 - Community Health Credits: 2
- HLTH 200 - Complementary and Alternative Health Care Credits: 3
- HLTH 479-479L - Health Promotion Programming and Evaluation and Lab Credits: 2
- HLTH 250-250L - Pre-Professional First Aid and CPR and Lab (COM) Credits: 2
- HLTH 420/520 - Methods of Health Instruction (COM) Credits: 2
- HLTH 230 - Stress Management for Life Credits: 3
- PE 350 - Exercise Physiology (COM) Credits: 3
- PE 454 - Biomechanics (COM) Credits: 3
- PE 352 - Adapted Physical Education (COM) Credits: 2
- HLTH 443 - Public Health Science (G) Credits: 3
- HSC 260 - Women's Health Issues Credits: 3
- HLTH 445 - Epidemiology Credits: 3
- HDFS 441 - Professional Issues in Human Development and Family Studies Credits: 3
- NFS 315 - Human Nutrition Credits: 3
- PSYC 358 - Behavior Modification Credits: 3
- PSYC 417 - Health Psychology \*\* (COM) Credits: 3
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- NURS 201 - Medical Terminology Credits: 1
- ENGL 379 - Technical Communication (AW) Credits: 3

### Electives: 26

### Required Total Credits: 120

#### 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 a 5 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.

## Nutrition and Food Science (NFS) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 32

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101 and ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: CHEM 112-112L and CHEM 114-114L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: NFS 111\*\* Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 38

- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- NFS 141-141L - Foods Principles and Lab Credits: 4
- NFS 151 - Food Safety and Technology Credits: 3
- NFS 315 - Human Nutrition Credits: 3
- BIOL 383 - Bioethics \*\* (G) Credits: 4
- NFS 490/590 - Seminar (AW) Credits: (1-2)
- PHYS 111-111L – Intro to Physics I and Lab\* (COM) Credits: 4
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab (COM) Credits: 3, 1
- CHEM 464 - Biochemistry I (COM) Credits: 3
- CHEM 466 - Laboratory Methods- Biochemistry Credits: 1

### Elective Credits: 43

### Total Required Credits: 120

#### 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 a 5 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.

## Physical Education Teacher Education (PETE)

### Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101 and/or SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 3
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 2

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab

### Major Requirements: 51

- PE 170 - Fundamental Movement (COM) Credits: 1
- PE 180 - Foundations of HPER/A (COM) Credits: 2
- PE 252-252L - Fundamentals of Motor Learning and Development and Lab (COM) Credits: 2
- PE 300 - Applied Sport and Exercise Science  
OR PE 350 - Exercise Physiology (COM) Credits: 3
- PE 354-354L - Prevention and Care of Athletic Injuries and Lab (COM) Credits: 2
- PE 454 - Biomechanics (COM) Credits: 3
- PE 490 - Seminar (AW) Credits: 2-3
- DANC 130 - Dance Fundamentals Credits: 1
- HLTH 120 - Community Health Credits: 2  
OR HLTH 212 - Contemporary Health Problems Credits: 2
- RECR 342 - Recreational Sports Programs & Administration (COM) Credits: 3
- PE 200 - Professional Preparation: Fitness (COM) Credits: 1
- PE 201 - Professional Preparation: Gymnastics (COM) Credits: 1
- PE 202 - Professional Preparation: Individual and Dual Activities (COM) Credits: 1
- PE 203 - Professional Preparation: Team Activities (COM) Credits: 1
- PE 204 - Professional Preparation Rhythm & Dance (COM) Credits: 1
- PE 341 - Curriculum Development and Evaluation (COM) Credits: 2
- PE 335 - Assisting Teaching Credits: 1
- PE 352 - Adapted Physical Education (COM) Credits: 2
- PE 360-360L - K-8 Physical Education Methods and Lab (COM) Credits: 2
- PE 440 - Organization and Administration of HPER/Athletics (COM) Credits: 2
- PE 451-451L - Tests & Measurements & Lab (COM) Credits: 2
- PE 480-480L - 7-12 Methods of Teaching PE Credits: 3
- RECR 260 - Fundamentals of Recreation Leadership Credits: 3
- DANC 241-241L - Creative Movement for Children and Lab Credits: 2-3
- HLTH 420/520 - Methods of Health Instruction (COM) Credits: 2
- HDFS 227 - Human Development and Personality I: Childhood Credits: 3  
OR HDFS 337 - Human Development II: Adolescence Credit: 3

### Teacher Education Coursework: 30

#### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 1-2
- EPSY 302 - Educational Psychology (COM) Credits: 3

#### Professional Semester II

- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2
- SEED 314 - Supervised Clinical/Field Experience Credits: 1

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

- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- HIST 368 - History and Culture of the American Indian (COM)\*\* Credits: 3
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

#### Professional Semester III

- ELED 488 - K-8 Student Teaching (COM) Credits: 6
- SEED 488 - 7-12 Student Teaching (COM) Credits: 6

### Electives: 2

### Total Required Credits: 120



### 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 a 5 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.

## Sport, Recreation and Park Management (SRPM) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6  
POLS 210 OR HDFS 210 Credits: 3  
AND ECON 201 Credits: 3
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 46-47

- PRM 101 - Parks and Society Credits: 3  
OR PE 180 - Foundations of HPER/A (COM) Credits: 3
- RECR 260 - Fundamentals of Recreation Leadership Credits: 3
- PRM 202-202L - Outdoor Recreation Resource Management and Lab Credits: 3
- PRM 302 - Commercial Recreation and Tourism Credits: 3
- PRM 360 - Recreation and Outdoor Programming Credits: 3
- RECR 415/515 - Recreation & Sport Facility Management Credits: 3
- RECR 440 - Administration of Leisure Services (COM) Credits: 3
- PRM 496 - Field Experience Credits: 1-12 (2 credits required)
- SPCM 215 - Public Speaking (COM) \* Credits: 3  
OR SPCM 201 - Interpersonal Communication (COM) Credits: 3  
OR SPCM 434 - Small Group Communication (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- MGMT 310 - Business Finance Credits: 3
- MGMT 325 - Management Information Systems Credits: 3
- MGMT 360 - Organization and Management Credits: 3
- MGMT 460 - Human Resource Management Credits: 3

### Electives: 36-37

### Total Required Credits: 120

### 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 a 5 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.

## Minors

### Food Safety Minor

#### Required Coursework

- MICR 311-311L - Food Microbiology and Lab Credits: 4
- NFS 151 - Food Safety and Technology Credits: 3
- AS 350 - Meat Product Safety and HACCP Credits: 3

#### Electives: 8

- AS 241-241L - Introduction to Meat Science and Lab Credits: 3
- AS 345-345L - Value-Added Meat Products and Lab Credits: 3
- AST 443-443L - Food Processing and Engineering Fundamentals and Lab Credits: 3
- DS 301-301L - Dairy Microbiology and Lab Credits: 3
- DS 321-321L - Dairy Product Processing I and Lab Credits: 5
- HMGT 251 - Foodservice Sanitation Credits: 1
- HSC 445 - Epidemiology Credits: 3
- NFS 351-351L - Principles of Food Processing and Lab Credits: 3
- NFS 451-451L/551-551L - New Food Product Development and Lab Credits: 4
- NFS 495 - Practicum Credits: 2
- STAT 281 - Introduction to Statistics (COM) Credits: 3

### Total Required Credits: 18

### Health Education (HLED) Minor

#### Required Coursework

- HDFS 210 - Lifespan Development \* Credits: 3
- HDFS 250 - Development of Human Sexuality Credits: 3
- HLTH 402/520 - Methods of Health Instruction (COM) Credits: 2
- NFS 221 - Survey of Nutrition Credits: 3

Choose one from the following:

- EPSY 302 - Educational Psychology (COM) Credits: 3
- PSYC 324 - Psychology of Aging Credits: 3
- PSYC 327 - Child Psychology \*\* (COM) Credits: 3

Choose one from the following:

- HLTH 120 - Community Health Credits: 2
- HLTH 212 - Contemporary Health Problems Credits: 2

Choose one from the following:

- HLTH 250-250L - Pre-Professional First Aid and CPR and Lab (COM) Credits: 2
- HLTH 251 - First Aid and CPR (COM) Credits: 1

#### Electives: 3-5

- CA 289 - Consumers in the Market Credits: 3
- HDFS 141 - Individual and the Family \* Credits: 3
- HDFS 241 - Family Relations Credits: 3
- HLTH 445 - Epidemiology Credits: 3
- HSC 302 - Wellness and the Family Credits: 2
- NURS 201 - Medical Terminology Credits: 1
- PE 354-354L - Prevention and Care of Athletic Injuries and Lab (COM) Credits: 2
- PHA 201 - Medications and Wellness Credits: 2
- PSYC 417 - Health Psychology \*\* (COM) Credits: 3
- SOC 250 - Courtship and Marriage \* (COM) Credits: 3

### Total Required Credits: 21

### Nutrition (NFS) Minor

#### Required Coursework

- NFS 111 - Food, People and the Environment\*\* Credits: 3
- NFS 141-141L - Foods Principles and Lab Credits: 4
- NFS 151 - Food Safety and Technology Credits: 3
- NFS 315 - Human Nutrition Credits: 3
- NFS 323 - Nutrition Across the Life Cycle Credits: 3
- NFS 422-522 - Advanced Human Nutrition Credits: 4

### Total Required Credits: 20

#### 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.

### Physical Education (PE) Minor

#### Required Coursework

- DANC 130 - Dance Fundamentals Credits: 1
- DANC 241-241L - Creative Movement for Children & Lab Credits: 2
- PE 170 - Fundamental Movement (COM) Credits: 1
- PE 180 - Foundations of HPER/A (COM) Credits: 2
- PE 202 - Professional Preparation: Individual and Dual Activities (COM) Credits: (1-2)
- PE 203 - Professional Preparation: Team Activities (COM) Credits: 1
- PE 352 - Adapted Physical Education (COM) Credits: 2

Choose one from the following:

- HLTH 251 - First Aid and CPR (COM) Credits: 1
- HLTH 250-250L - Pre-Professional First Aid and CPR and Lab (COM) Credits: 2

Choose one from the following:

- EPSY 302 - Educational Psychology (COM) Credits: 3
- PSYC 324 - Psychology of Aging Credits: 3
- PSYC 327 - Child Psychology \*\* (COM) Credits: 3

**Total Required Credits: 23**

### Recreation Administration (RECR) Minor

#### Required Coursework

- PE 180 - Foundations of HPER/A (COM) Credits: 2  
**OR** PRM 100 - Introduction to Park and Recreation Credits: 1
- PRM 360 - Recreation and Outdoor Programming Credits: 3
- RECR 260 - Fundamentals of Recreation Leadership Credits: 3
- RECR 440 - Administration of Leisure Services (COM) Credits: 3
- RECR 342 - Recreational Sports Programs and Administration (COM) Credits: 3
- RECR 362 - Recreation Across the Lifespan Credits: 3

#### Electives: 5

Select from the following list of courses.

- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 360 - Organization and Management (COM) Credits: 3
- DANC 130 - Dance Fundamentals Credits: 1
- HDFS 141 - Individual and the Family \* Credits: 3
- HLTH 250-250L - Pre-Professional First Aid and CPR and Lab (COM) Credits: 2
- PE 320-320L - Lifeguard Training and Lab (COM) Credits: 1-2
- PE 321-321L - Water Safety Instructor & Lab (COM) Credits: 1-2
- POLS 210 - State and Local Government \* \*\* (COM) Credits: 3
- PRM 101 - Parks and Society Credits: 3
- PRM 302 - Commercial Recreation and Tourism Credits: 3
- RECR 330 - Therapeutic Recreation (COM) Credits: 3
- RECR 395 - Practicum (COM) Credits: (1-3)
- RECR 410 - Current Issues in Recreation (AW) Credits: 3
- NRM 110 - Environmental Conservation \*(G) Credits: 3
- NFS 221 - Survey of Nutrition Credits: 3

**Total Required Credits: 21-22**

## Pre-Professional Interest Areas

### (Pre-) Occupational Therapy

Shelly Brandenburger, Coordinator  
Health and Nutritional Sciences  
SWG 421  
605-688-5750  
e-mail: Shelly.Brandenburger@sdstate.edu

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 Coursework

- PHIL 220 - Introduction to Ethics \* (COM) Credits: 3  
OR PHIL 383 - Bioethics \*\* (G) Credits: 4
- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- HDFS 210 - Lifespan Development \* Credits: 3
- SOC 100 - Introduction to Sociology \* (COM) (G) Credits: 3  
Or SOC 150 - Social Problems \* (COM) (G) Credits: 3
- BIOL 221-221L - Human Anatomy and Lab (COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4

#### Commonly Required Courses

- NURS 201 - Medical Terminology Credits: 1
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- PSYC 451 - Psychology of Abnormal Behavior \*\* (COM) Credits: 3

#### Recommended Courses

- PHTH 142 - Introduction to Physical & Occupational Therapy Credits: 1
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BIOL 153-153L - General Biology II and Lab\* Credits: 4
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\*(COM)Credits: 3, 1

### (Pre-) Physical Therapy

Shelly Brandenburger, Coordinator  
Health and Nutritional Sciences  
SWG 421  
605-688-5750  
e-mail: Shelly.Brandenburger@sdstate.edu

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 doctoral degree programs. 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 Coursework

- PHTH 142 - Introduction to Physical and Occupational Therapy Credits: 1
- NURS 201 - Medical Terminology Credits: 1
- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- HDFS 210 - Lifespan Development \* Credits: 3
- PSYC 451 - Psychology of Abnormal Behavior \*\* (COM) Credits: 3
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4

- BIOL 153-153L - General Biology II and Lab\* Credits: 4
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- CHEM 112-112L - General Chemistry I & Lab\*(COM) Credits: 3, 1
- CHEM 114-114L -General Chemistry II & Lab\*(COM)Credits: 3, 1
- PHYS 111-111L - Intro to Physics I and Lab\* (COM) Credits: 4
- PHYS 113-113L - Intro to Physics II and Lab\* (COM) Credits: 4
- STAT 281 - Introduction to Statistics (COM) Credits: 3

## Certifications

### 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 Health and Nutritional Sciences to verify the specific requirements for each state. SDSU does require an American Sports Education Program Workshop for those interested in obtaining coaching certification.

### Health Education (HLED)

(See Health and Nutritional Science)

### Health Science (HSC) Minor

(See Nursing)

## History and Political Science Department (HIST, PHIL, POLS, REL)

April Brooks, Head

Department of History and Political Science

West Hall

605-688-4311

e-mail: april.brooks@sdstate.edu

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. The philosophy and religion faculty deal with the fundamental questions of life, the basis of knowledge and morality and practices of the world's many religious traditions. 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.

## History (HIST) Program

### Faculty

Professor Brooks, Head; Professors Schmidt; Professors Emeriti Bell, Crain, Funchion, Miller, Sweeney; Assistant Professor Agostini, Potts, 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.

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. 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 Human Sciences.

## Philosophy & Religion (PHIL & REL) Program

### Faculty

Associate Professor Peterson, Assistant Professor Murphy, Professor Emeritus Nelson; Instructors Haag, Otterson, Rynearson, Tinguely, Tritle, Tsakiridis

### 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.

## Political Science (POLS) Program

### Faculty

Distinguished Professor Emeritus Burns; Professors Emeriti Cheever, Tolle; Professors Aguiar, Lonowski, Assistant Professors Lane, Wiltse

### 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 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, POLS 280 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 the social science requirements of the Arts and Sciences College. 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. Majors 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.

### Secondary Education

If you are preparing to teach secondary school, take education block prerequisite courses in the sophomore and junior years. You must consult with the department head of the Teaching, Learning, and Leadership Department prior to your junior year. Set aside one semester for the education block and off campus teaching assignment during your senior year.

### Pre-law Emphasis

Law schools require a bachelor's degree for entrance. Although a particular major is not specified, Political Science is a common choice because of its flexibility.

### Public Administration Emphasis

Students interested in working in government, 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 advisors for minor requirements.

### General Political Science Emphasis

Students 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.

### (Pre-) Law Interest Area

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

### (Pre-) Ministerial Interest Area

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.

## History (HIST) Major

Bachelor of Arts and Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility (use HIST) Credits: 3

### College of Arts and Sciences Requirements: 34

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14

Bachelor of Science

- Physical Sciences Credits: 4

### Major Requirements: 36

- HIST 111 - World Civilizations I \* \*\* (COM) Credits: 3  
OR HIST 121 - Western Civilization I \* \*\* (COM) Credits: 3
- HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3  
OR HIST 122 - Western Civilization II \* \*\* (COM) (G) Credits: 3
- HIST 151 - United States History I \* \*\* (COM) Credits: 3
- HIST 152 - United States History II \* \*\* (COM) Credits: 3
- HIST 280 - Writing History Credits: 3
- HIST 480 - Historical Methods and Historiography (COM) (AW) Credits: 3
- Upper Division Non-US History Courses Credits: 6
- Additional Upper Division Courses (US or Non US History) Credits: 12

### Electives: 38-45

### Total Required Credits: 120

### Curriculum Notes

- No more than 6 credits in HIST 491-591 - Independent Study (COM) and HIST 494 - Internship (COM) may be counted toward the major or minor.
- 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.
- \*\* South Dakota State University has a 5 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.

## History (HIST) Major - Teaching Specialization

Bachelor of Arts and Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity PSYC 101 and/or SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College of Arts and Sciences Requirements: 34

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14

Bachelor of Science

- Physical Sciences Credits: 4

### Major Requirements: 36

- HIST 111 - World Civilizations I \* \*\* (COM) Credits: 3  
OR HIST 121 - Western Civilization I \* \*\* (COM) Credits: 3
- HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3  
OR HIST 122 - Western Civilization II \* \*\* (COM) (G) Credits: 3
- HIST 151 - United States History I \* \*\* (COM) Credits: 3
- HIST 152 - United States History II \* \*\* (COM) Credits: 3
- HIST 280 - Writing History Credits: 3
- HIST 480 - Historical Methods and Historiography (COM) (AW) Credits: 3
- Upper Division Non-US History Courses Credits: 6
- Additional Upper Division Courses: (HIST 368 Recommended) Credits: 12

### Elective Credits: 14-15

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- SEED 415 - 7-12 Social Science Methods (COM) Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Edu. Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415- Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)

OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Required Credits: 120

### Curriculum Notes

- No more than 6 credits from HIST 491-591 - Independent Study (COM) and HIST 494 - Internship (COM) may be counted toward the major or minor.
- 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.
- \*\* South Dakota State University has a 5 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.

## Political Science (POLS) Major

Bachelor of Arts and Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101, and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: (except POLS) 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\* Credits: 5

- IGR Goal #1 First Year Experience UC 109 Credits: 2
- IGR Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 6-20

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14

Bachelor of Science

- Natural Sciences Credits: 8
- Humanities Credits: 6
- Social Sciences (except POLS) Credits: 6

### Major Requirements: 36

- POLS 100 - American Government \* (COM)
- POLS 210 - State and Local Government \* \*\* (COM)
- POLS 253 - Current World Problems \* \*\* (G)
- POLS 280 - Political Inquiry
- POLS 461 - Early Political Philosophy (COM) (AW)
- POLS 462 - Modern Political Philosophy (COM) (AW)
- International or Comparative Political Science Courses Credits: 6
- POLS Electives (18 must be Upper Division) Credits: 21
- Electives 29-41
- POLS 253 - Current World Problems \* \*\* (G) or other Globalization Requirement Credits: 3

### General Elective Credits: 26-38

### Total Required Credits: 120

#### 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 a 5 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.

## Minors

### History (HIST) Minor

#### Required Coursework

- HIST 151 - United States History I \* \*\* (COM) Credits: 3
- HIST 152 - United States History II \* \*\* (COM) Credits: 3

Choose one of the following:

- HIST 111 - World Civilizations I \* \*\* (COM) Credits: 3
- HIST 121 - Western Civilization I \* \*\* (COM) Credits: 3

Choose one of the following:

- HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3
- HIST 122 - Western Civilization II \* \*\* (COM) (G) Credits: 3

#### Elective Credits: 6

- Select an additional 6 credits of upper level courses

### Total Required Credits: 18

## Philosophy (PHIL) Minor

#### Required Coursework

- PHIL 100 - Introduction to Philosophy \* (COM) Credits: 3

#### Elective Credits: 12

- Upper division PHIL courses Credits: 6
- Additional PHIL courses Credits: 6

### Total Required Credits: 15

## Political Science (POLS) Minor

#### Required Coursework

- POLS 100 - American Government \* (COM) Credits: 3

#### Elective Credits: 15

Students may focus their minor by selecting electives that concentrate on American or comparative/international politics.

- Upper division Coursework (over 300 level) Credits: 9
- Additional POLS courses Credits: 6

### Total Required Credits: 18

## Religion (REL) Minor

#### Required Coursework

- REL 213 - Introduction to Religion \* Credits: 3

#### Elective Credits: 12

- Additional Religion Courses

### Total Required Credits: 15

## Pre-Professional Interest Areas

### (Pre-) Law

The formal academic training for law includes, with few exceptions, a bachelor's degree and three years of study in law school to earn a Juris Doctorate. Entering students who desire to prepare for law school and have yet to decide their major will be enrolled in University College. Those enrolled under this classification are assisted by a pre-law advisor in planning course schedules and creating a plan of study. Individuals who have chosen a field of study work with their major advisor as well as the pre-law advisor to select courses and create a plan of study.

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

An attorney must be a well-rounded individual. Reading and writing abilities are fundamental, and thus undergraduate courses that develop these skills should be stressed. A reasonable exposure to such subject areas as English composition, economics, history, literature, philosophy, political science, and sociology are typically considered foundational for the full appreciation of the law. Electives such as drama and theatre arts, debate, creative writing, and speech will sharpen those skills needed by a member of the legal profession. Additionally, courses in business, finance, and accounting are generally considered an asset to attorneys' professional practice, and many law schools expect the student to have completed at least one accounting course. Furthermore, knowledge of the physical and biological sciences will often help in the cases the lawyer pleads. In particular, certain areas of the law are only open to those with an educational training in the sciences and engineering fields.



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 in writing ability. The pre-law adviser has application forms and sample tests. The adviser also has general information on law schools.

## (Pre-) Ministerial

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: an 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.

### Suggest Courses

- REL 213 - Introduction to Religion \* Credits: 3
- REL 224 - Old Testament \*(COM) Credits: 3
- REL 225 - New Testament \*(COM) Credits: 3
- REL 237 - Religion in American Culture \* Credits: 3
- REL 238 - Native American Religions \* Credits: 3
- REL 250 - World Religions \* (COM) (G) Credits: 3
- REL 331 - Women and Religion Credits: 3
- REL 454-554 - Environmental Ethics Credits: 3
- REL 353 - Geography of Religion Credits: 3
- REL 360 - Moral & Ethical Perspectives on Death & Dying Credits: 3
- REL 370 - Philosophy of Religion (COM) Credits: 3
- REL 402-502 - History of Western Religious Thought II Credits: 3
- REL 401-501 - History of Western Religious Thought I Credits: 3
- PHIL 100 - Introduction to Philosophy \* (COM) Credits: 3
- PHIL 200 - Introduction to Logic \* (COM) Credits: 3
- PHIL 215 - Introduction to Social-Political Philosophy \* Credits: 3
- PHIL 220 - Introduction to Ethics \* (COM) Credits: 3
- PHIL 313 - Great Philosophers Credits: 2-3
- PHIL 320 - Professional Ethics Credits: 3
- PHIL 383 - Bioethics \*\* (G) Credits: 4
- PHIL 480 - Ethics of Globalization\*\* Credits: 3
- SPCM 215 - Public Speaking (COM) \* Credits: 3
- SPCM 201 - Interpersonal Communication (COM) Credits: 3

## Honors College (HON)

Timothy Nichols, Dean  
Briggs Library 126, 605-688-5268  
Box 2115, Brookings, SD 57007  
E-mail: timothy.nichols@sdstate.edu  
Website: <http://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 24 Honors credit hours is required including 15 credit hours of Honors general education courses, 3-6 hours of Honors Colloquium, 3 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 109).** Recommended for first semester Honors students, provides practical and philosophical foundation for students' Honors experience.
3. **Honors Colloquium (HON 301-304).** 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 pre-requisites.
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.

### Honors College (HON) Distinction

#### Honors General Education Courses Credits: 15

- HON 109 - First Year Seminar - Honors<sup>1</sup> Credits: 2

#### Honors Colloquium Credits: 3-6

- HON 301 - Honors Colloquium Credits: 1-4
- HON 302 - Honors Colloquium Credits: 1-4
- HON 303 - Honors Colloquium\*\* Credits: 1-4
- HON 304 - Honors Colloquium Credits: 1-4

#### Contracted Coursework

- Upper division courses (300-400 level) in students' major/minor field of study Credits: 3-62

#### Honors independent study

- HON 491 - Independent Study (COM) Credits 1-3

#### Requirements for Honors College Distinction: 24

#### Notes

- <sup>1</sup> First Year Seminar is not required but strongly recommended for first-semester Honors students.
- <sup>2</sup> 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.
- To graduate with Honors designation, students must earn a minimum cumulative 3.5 GPA.

## Hospitality Management (HMGT)

(See Consumer Sciences)

## Interdisciplinary Studies Major (IDL)

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Kathie Erdman Becker, Coordinator and Advisor  
College of Arts and Sciences  
Wagner Hall 224  
605-688-6296  
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### Program

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 division and at least 33 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 (IDL) Major

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### Major Requirements: 40

- IDL 262 - Foundations of Interdisciplinary Studies+ Credits: 3
- IDL 362 - Interdisciplinary Inquiry and Integration+ Credits: 2
- UC 489 - Transition to Careers Credits: 1
- IDL 479 - Interdisciplinary Studies Capstone (AW)+ Credits: 2
- Plan of Study courses selected by student Credits: 32

### Electives: 42

### Total Required Credits: 120

### Curriculum Notes

- +Grade of C or higher is required in IDL 262, 362, 479.
- \*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 a 5 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.

## Interior Design (ID)

(See Consumer Sciences)

## Journalism and Mass Communication Department (ADV, MCOM)

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Mary Arnold, Head  
Department of Journalism and Mass Communication  
Yeager Hall 211  
605-688-4171  
e-mail: mary.arnold@sdstate.edu  
<http://www.sdstate.edu/mcom/>

### Faculty

Professor Arnold, Head; Professors Giago, Lucchesi, Olson; Professors Emeriti Lee, Getz; Associate Professors M. Cecil, Oguntoyinbo, Paulson; Associate Professors Emerita Laird, Perpich; Assistant Professors Tiernan, Koroglu; Lecturer Klock; Instructor Jensen; Instructor Emeritus C. Cecil

### Programs

The Department offers major programs Advertising, Journalism, and supports the Communication specialization for the major in Agricultural Education, Communication and Leadership from the College of Agriculture and Biological Sciences. The department also offers minors in journalism and advertising and cooperates with the Department of Economics in offering the marketing minor.

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.

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.

### Advertising Major

The four-year advertising program awards either a Bachelor of Arts or Bachelor of Science Degree. Advertising majors are required to take a minimum of 36 credits of MCOM or ADV courses as a part of the 120-credit requirement for graduation. Students are encouraged to select one of the following emphases within Advertising: Creative Strategy, Interactive Media, or Public Relations.

- 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.
- 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.
- 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.

### Advertising Minor

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

The four-year journalism program awards either a Bachelor of Arts or Bachelor of Science Degree. Journalism majors are required to take a minimum of 36 credits of MCOM courses as a part of the 120-credit requirement for graduation. Students are encouraged to select one of the following emphases within Journalism: Broadcast Journalism or News-editorial Journalism. The Journalism major is offered both at the main campus in Brookings and at the University Center in Sioux Falls.

- 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 pursue careers in digital video storytelling for radio, television or online media and corporate environments take this emphasis.

### Journalism Minor

Available for students majoring in other fields. Courses required are Basic Newswriting, and other journalism and mass communication courses to total 16 credits.

### Agricultural Education, Communication and Leadership (AGCL) Major - Communication specialization

The department cooperates with the College of Agriculture and Biological Sciences to offer a four-year Bachelor of Science in Agriculture degree for the major in Agricultural Education, Communication and Leadership. Students interested in agriculture and developing a flexible program of study including print and multimedia communications in leadership and policy in agriculture should take this major.

### Graduate Work in Journalism

An M.S. degree is offered on campus and online. See the Graduate School Catalog for details.

### Facilities

The former Printing and Rural Journalism Building was renamed Yeager Hall in recognition of the contributions of Anson and Ada May Yeager. Mr. Yeager was longtime editor of the Argus Leader in Sioux Falls. The Department moved into expanded and renovated facilities in 2000 that cost \$2.4 million. The Yeager Media Center, completed in 2012, is a high-definition television and new media facility and the primary center for SDSU campus television and media production. There are also four computer laboratories with equipment and software for newswriting; for news editing and digital media; for broadcasting and advertising; and for photojournalism and media production. 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 faculty members.

### Advertising (ADV) Major

Bachelor of Arts and Bachelor of Science in Arts and Sciences

#### System General Education Requirements\*: 30

- Goal #1 Written Communication Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity: POLS 210 Credits: 6
- Goal #4 Arts and Humanities/Diversity: (MCOM 151 Recommended) Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: (MCOM 109 Recommended) Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 28-34

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 8
- Humanities Credits: 6

Bachelor of Science

- Natural Sciences Credits: 14  
6 credits Biological Sciences  
8 credits Physical Sciences
- Humanities Credits: 8

### Major Requirements: 41

- ECON 370 - Marketing Credits: 3
- MCOM 210-210L - Basic Newswriting and Studio (COM) Credits: 3
- MCOM 220-220L - Intro to Digital Media and Lab Credits: 3
- MCOM 416 - Mass Media in Society (G) Credits: 3
- OR ADV 476 - International and Ethnic Advertising Credits: 3
- MCOM 430-530 - Media Law (COM) Credits: 3
- MCOM 494 - Internship (COM) Credits: 1-12 <sup>2 credits required for Advertising major.</sup>
- ADV 370 - Advertising Principles Credits: 3
- ADV 371-371L - Advertising Copy and Layout and Studio Credits: 3, 0
- ADV 442-442L - Integrated Marketing Communication and Campaigns Studio Credits: 3, 0
- ADV or MCOM Electives Credits: 0-5
- Emphases: 12 *Choose one of the following suggested emphases.*

### Creative Strategies Emphasis

- ADV 314 - Sales, Promotion and Marketing Credits: 3
- ADV 372-372L - Advertising Media Strategies & Lab Credits: 3
- ADV 489 - Portfolio Production & Design Credits: 1-3
- MCOM 339-339L - Publication Design and Lab Credits: 3,0
- OR MCOM 359-359L Desktop Publishing and Projects and Lab Credits: 3,0

### Interactive and Media Emphasis

- ADV 372-372L - Advertising Media Strategies & Lab Credits: 3
- ADV 411-411L - Media Analytics and Studio Credits: 3
- Select Two Courses from the Following Group
- ADV 314 - Sales, Promotion and Marketing Credits: 3
- ADV 343 - Strategies - Public Relations Credits: 3
- ADV 472 - Media Research and Planning Credits: 3

### Public Relations Emphasis

- ADV 243 - Public Relations Principles Credits: 3
- ADV 343 - Strategies - Public Relations Credits: 3
- ADV 472 - Media Research and Planning Credits: 3
- MCOM 340-340L - Broadcast Announcing and Performance and Lab Credits: 3
- OR ADV 492 - Topics Credits: 1-5

### Electives: 8-13

### Total Required Credits: 120

### 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 a 5 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.

## Journalism (MCOM) Major

Bachelor of Arts and Bachelor of Science in Arts and Sciences

System General Education Requirements\*: 30

- Goal #1 Written Communication Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity: POLS 210 \* Credits: 6
- Goal #4 Arts and Humanities/Diversity: MCOM 151\* (Recommended) Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*\*: 5

- Goal #1 First Year Experience: (MCOM 109 Recommended) Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 28-34

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Humanities Credits: 6
- Social Sciences Credits: 8

Bachelor of Science

- Natural Sciences Credits: 14
- Humanities Credits: 8
- Social Sciences Credits: 12

### Major Requirements: 36

- MCOM 155 - Information Gathering Credits: 2
- MCOM 210-210L - Basic Newswriting and Studio (COM) Credits: 3
- MCOM 220-220L - Introduction to Digital Media and Lab Credits: 3
- MCOM 416 - Mass Media in Society (G) Credits: 3  
**OR** MCOM 417 - History of Journalism (G) Credits: 3
- MCOM 430-530 - Media Law (COM) Credits: 3
- MCOM 494 - Internship (COM) Credits: (1-12) (at least 2 credits required)
- Emphasis: 20 *Choose one of the following suggested emphases.*

### Broadcast Journalism Emphasis

- MCOM 332-332L - Broadcast Writing and Reporting and Lab Credits: 3
- MCOM 333-333L - Television News Reporting & Lab Credits: 3
- MCOM 340-340L - Broadcast Announcing and Performance and Lab Credits: 3
- MCOM 433-433L - Advanced TV News Reporting and Lab (AW) Credits: 3
- MCOM Electives Credits: 8

### News-Editorial Emphasis

- MCOM 265-265L - Basic Photography and Studio (COM) Credits: 2
- MCOM 311-311L - News Editing and Editing Lab (COM) Credits: 3

- MCOM 317 - News Gathering Credits: 3
  - MCOM 490 - Seminar (COM) Credits: 1
- Take 2 of the 3 following courses.
- MCOM 316 - Magazine Writing and Editing Credits: 3
  - MCOM 410 - Advanced Reporting (COM) Credits: 3
  - MCOM 438-438L - Public Affairs Reporting and Studio (COM) (AW) Credits: 3
  - MCOM Electives Credits: 5

**General Electives: 15-44**

**Total Required Credits: 120**

### 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 a 5 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.

## Minors

### Advertising (ADV) Minor

#### Required Coursework

- ADV 370 - Advertising Principles (COM) Credits: 3
- ADV 371-371L - Advertising Copy and Layout and Studio (AW) Credits: 3
- ADV 372-372L - Advertising Media Strategies & Lab Credits: 3
- ADV 476 - International and Ethnic Advertising Credits: 3

#### Elective Credits: 6

- ADV 243 - Public Relations Principles Credits: 3
- ADV 314 - Sales, Promotion and Marketing Credits: 3
- ADV 442-442L - Integrated Marketing Communication and Campaigns Studio Credits: 3
- ADV 472 - Media Research and Planning Credits: 3
- ADV 489 - Portfolio Production & Design Credits: 1-3
- MCOM 243- Public Relations Principles Credits: 3

**Total Required Credits: 18**

### Journalism (MCOM) Minor

#### Required Coursework

- MCOM 210-210L - Basic Newswriting & Studio (COM) Credits: 3

#### Elective Credits

- MCOM courses Credits: 13

**Total Required Credits: 16**

### Lakota (LAKL)

(See American Indian Studies Program)

### Landscape Architecture (LA)

(See Plant Science)

### Leadership and Management of Nonprofit Organizations (LMNO)

(See Consumer Sciences)

### Marketing

(See Economics)

# Mathematics and Statistics Department (MATH, STAT)

Kurt Cogswell, Head  
Department of Mathematics and Statistics  
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605-688-6196  
e-mail: kurt.cogswell@sdstate.edu  
http://mathstat.sdstate.edu

## Faculty

Mathematics: Professor Cogswell, Head; Professor Flint, Assistant Head, Professors Abraham, Kemp, Kindermann, Larson, Schaal, Schmidt; Professors Emeriti Ayers, Lacher, Monahan, Nielsen, Yocom; Associate Professors Biesecker, D. Vestal, S. Vestal; Associate Professors Emeriti Broschat, Clever; Assistant Professors Djira, Ge, Hatfield, Kimn, Pan, Roe, Saunders, Struck, Ye; Instructors Ahrendsen, Alsaker, Bahr, Bingen, Christensen, Clark, Diischer, Hales, Ji, Leiferman, Omodt, Ulvestad, Werner.

Statistics: Professors Kindermann; Associate Professor Ren; Assistant Professors Brandenburger, Djira, Ge, Hatfield, Roe, Saunders, Struck, Wu, Ye; Instructors Ahrendsen, Bahr.

## Mission

The mission of the SDSU Department of Mathematics and Statistics, 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, statistics, or mathematics teaching 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, and enroll in graduate and professional programs in mathematics, statistics, law, business, medicine, and many other fields.

Beginning with MATH 123, Calculus I, 48 mathematics credits are required out of the 120 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 minors in mathematics and statistics consists of 18 credits as outlined in the section on Major and Minor Requirements. The Informatics Minor 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. Please see the Graduate Catalog for more details.

## Mathematics (MATH) Major

Bachelor of Science in Engineering

### System General Education Requirements\*: 33

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4
- Goal #6 Natural Sciences: PHYS 211-211L AND PHYS 213-213L, or CHEM 106-106L, or CHEM 112-112L Credits: 8

### Institutional Graduation Requirements:\*\* 5

- Goal #1 First Year Experience GE 109-109L\*\* Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### Major Requirements: 48

- CSC 150-150L - Computer Science I (COM) Credits: 3
  - MATH 225 - Calculus III \* (COM) Credits: 4
  - MATH 253 - Logic, Sets, and Proof Credits: 3
  - MATH 315 - Linear Algebra (COM) Credits: 4
  - MATH 321 - Differential Equations (COM) Credits: 3
  - STAT 381 - Intro to Probability and Statistics (COM) Credits: 3
  - MATH 413 - Abstract Algebra I (COM) Credits: 3
  - MATH 425 - Real Analysis I (COM) Credits: 3
  - MATH 401 Senior Capstone & Advanced Writing (AW) Credits: 1
  - MATH 401 Senior Capstone & Advanced Writing (AW) Credits: 1
  - Math or Statistics Electives\* (300 level or above) Credits: 16
- \*Two sequences must be completed such as
- MATH 413 - Abstract Algebra I (COM) and MATH 414 - Abstract Algebra II (COM) Credits: 6
  - MATH 425 - Real Analysis I (COM) and MATH 426 - Real Analysis II (COM) Credits: 6
  - MATH 253 - Logic, Sets, and Proof and MATH 316 - Discrete Mathematics (COM) Credits: 6
  - MATH 261 - Geometry for Teachers and MATH 361 - Modern Geometry (COM) Credits: 6
  - STAT 381 - Introduction to Probability and Statistics (COM) and STAT 482-582 - Probability and Statistics II Credits: 6
  - MATH 355-355L - Methods of Teaching Mathematics and Lab and MATH 492-592 - Topics (COM) (Teaching Capstone) Credits: 6
  - OR other sequences approved by the department.

### Electives: 34

- Students are encouraged to use elective credits to complete one or minors.

### Total Required Credits: 120

### Curriculum Notes

- A grade of "C" or above is required in all Math courses.
- 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 a 5 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.

## Mathematics (MATH) Major - Teaching Specialization

Bachelor of Science in Engineering

### System General Education Requirements\*\* 33

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202\* and SOC 100\* Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4
- Goal #6 Natural Sciences: PHYS 211-211L AND PHYS 213-213L or CHEM 106-106L or CHEM 112-112L Credits: 8

### Institutional Graduation Requirements\*\* 5

- Goal #1 First Year Experience GE 109-109L\*\* Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility (Recommended ANTH/AIS 421\*\* or AIS/HIST 368 (COM)\*\*) Credits: 3

### Major Requirements: 48

- CSC 150-150L - Computer Science I (COM) Credits: 3
- MATH 315 - Linear Algebra (COM) Credits: 4
- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 225 - Calculus III \* (COM) Credits: 4
- MATH 253 - Logic, Sets, and Proof Credits: 3
- MATH 321 - Differential Equations (COM) Credits: 3
- MATH 413 - Abstract Algebra I (COM) Credits: 3
- MATH 425 - Real Analysis I (COM) Credits: 3
- MATH 401 - Senior Capstone & Advanced Writing (AW) Credits: 1
- MATH 401 - Senior Capstone & Advanced Writing (AW) Credits: 1
- MATH 316 - Discrete Mathematics (COM) Credits: 3
- MATH 261 - Geometry for Teachers Credits: 3
- MATH 371 - Technology for Mathematics Educators Credits: 3
- MATH 433 - Capstone: Mathematics Education Credits: 3
- MATH 355-355L - Methods of Teaching Mathematics and Lab Credits: 3
- STAT 381 - Introduction to Probability & Statistics (COM) Credits 3
- Mathematics or Statistics Electives Credits: 1
- Electives: 0-3

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- Native American Courses Approved for Teacher Education ANTH/AIS 421\*\* or AIS/HIST 368 (COM)\*\* Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM) OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Credits Required: 120

### 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 a 5 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.

### Total Required Credits: 120

### Curriculum Notes

- A grade of "C" or above is required in all Math courses.
- 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 a 5 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.

## Minors

### Informatics (INFO) Minor

#### Required Coursework

- INFO 101 - Introduction to Informatics Credits: 3
- INFO 102 - Social and Ethical Aspects of Informatics Credits: 3
- INFO 201 - Applied Informatics Credits: 3



**Electives: 9**

Select from the following list of courses.

- BIOL 459-559 - Bioinformatics Credits: 3
- CSC 447/547 - Artificial Intelligence (COM) Credits: 3
- CSC 484 - Database Management Systems (COM) Credits: 3
- CSC 492/592 - Topics (COM) Credits: (1-3) (Data Mining)
- ECON 428 - Mathematical Economics Credits: 3
- GEOG 484-484L - Remote Sensing and Lab Credits: 3
- GEOG 472 - Introduction to GIS Credits: 3
- GEOG 473-573 - GIS: Data Creation and Integration Credits: 3
- STAT 459 - Bioinformatics Credits: 3
- SOC 462-562 - Population Studies \*\* (COM) Credits: 3
- STAT 460-560 - Time Series Analysis Credits: 3

**Total Required Credits: 18**

**Mathematics (MATH) Minor****Required Coursework**

- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 225 - Calculus III \* (COM) Credits: 4
- MATH 253 - Logic, Sets, and Proof Credits: 3
- OR MATH 361 - Modern Geometry (COM) Credits: 3
- OR MATH 411-511 - Theory of Numbers (COM) Credits: 3
- OR MATH 450 - History of Mathematics (COM) Credits: 3
- Mathematics courses at the 200 level or above
- OR Statistics course at the 300 level credits or above Credits: 7

**Requirements for Math Minors for Teachers**

- MATH 123 - Calculus I \* (COM) Credits: 4
- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 253 - Logic, Sets, and Proof Credits: 3
- MATH 261 - Geometry for Teachers Credits: 3
- MATH 355-355L - Methods of Teaching Mathematics and Lab Credits: 3

**Two of the following:**

- MATH 315 - Linear Algebra (COM) Credits: 4
- MATH 316 - Discrete Mathematics (COM) Credits: 3
- MATH 413 - Abstract Algebra I (COM) Credits: 3

**Total Required Credits: 18**

**Note:**

- A grade of "C" or better is required in each course.

**Statistics (STAT) Minor****Required Coursework**

- STAT 381 - Intro to Probability and Statistics (COM) Credits: 3
- STAT 410-510 - SAS Programming I Credits: 3
- STAT 482-582 - Probability and Statistics II Credits: 3

**Elective Credits: 9**

Select Three Courses from the Following:

- STAT 412-512 - SAS Programming II Credits: 3
- STAT 445-545 - Nonparametric Statistics Credits: 3
- STAT 451-551 - Predictive Analytics I Credits: 3
- STAT 460-560 - Time Series Analysis Credits: 3
- MATH 441-541 - Applied Probability Theory Credits: 3
- MATH 475-575 - Operations Research Credits: 3

**Total Credits Required: 18**

**Note:**

- A grade of "C" or better is required in each course.

**Mechanical Engineering Department (ME)**

Kurt Bassett, Head

Department of Mechanical Engineering

Crothers Engineering Hall 216

605-688-5426

e-mail: kurt.bassett@sdstate.edu

<http://www.sdstate.edu/me/index.cfm>

**Mission**

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

**Faculty**

Professor Bassett, Head; Professors Delfanian, Moutsoglou; Associate Professors Hu, Duan; Assistant Professors Du, Gent, Michna; Instructors Hein, Peters, Twedt.

**Programs****Mechanical Engineering (ME) Major**

Mechanical engineers design devices and systems that efficiently employ the materials and forces of nature for the benefit of society. Mechanical Engineering is an applied science profession based on mathematics, physics and chemistry. Expertise and sound judgment in application of the sciences are gained through a combination of study and practice.

Mechanical Engineers have a remarkable range of career options 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 educational institutions. They can also work with other professions such as law and medicine. Mechanical Engineers are employed in nearly every industry. Typical examples include automotive, chemical, building HVAC systems, aircraft/aerospace, power, petroleum, computer, machinery (industrial, agricultural, recreational, office, etc), plastics, electronics, textiles, pharmaceutical, paper products and energy utilities, among 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 flexibility and individuality to those who want a challenging and satisfying career.

**Educational Objectives**

The Mechanical Engineering program provides a learning environment that prepares graduates to achieve the following career and professional accomplishments:

- 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.
- 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.

**Accreditation**

The Mechanical Engineering program at SDSU is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

## Curriculum

The curriculum of 130 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 the engineering and technical courses. The engineering sciences include solid mechanics, fluid mechanics, thermodynamics, heat transfer, dynamic systems, controls, materials, and electricity/electronics. In the design category, which is integrated throughout the curriculum, the student learn 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 goals of the System General Education Core, and the goals of the Institutional Graduation Requirements, 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-based 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.

## Student Learning Outcomes

Mechanical Engineering graduates have:

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

The Department helps students arrange internship or cooperative education 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 who 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 national Fundamentals of Engineering exam or similar test as an exit exam.

Each Mechanical Engineering student is assigned an academic advisor who provides valuable assistance with professional career advice and course planning. Students should meet with their advisor 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 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.

## Sustainable Energy Systems Minor

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.

## Student Learning Outcomes

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:

- Apply mathematics and engineering science to the analysis of energy conversion systems.
- Understand and apply the concept of sustainability to the design of energy conversion systems.
- Demonstrate competency in analysis and design of a particular type of energy converting device or system.
- Demonstrate the ability to work effectively in an area of sustainable energy systems.

## Mechanical Engineering (ME) Major

Bachelor of Science in Engineering

### System General Education Requirements\*: 33

- Goal #1 Written Communication: ENGL 101 and 277 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 (G) Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4
- Goal #6 Natural Sciences: CHEM 112-112L and PHYS 211-211L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: GE 109-109L \*\* Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### Major Requirements: 77

- EE 300-300L - Basic Electrical Engineering I and Lab Credits: 3
- EE 302-302L - Basic Electrical Engineering II and Lab Credits: 3
- EM 214 - Statics (COM) Credits: 3
- EM 215 - Dynamics (COM) Credits: 3
- EM 321 - Mechanics of Materials (COM) Credits: 3
- EM 331 - Fluid Mechanics (COM) Credits: 3
- GE 121 - Engineering Design Graphics I Credits: 1
- GE 123 - Computer Aided Drawing Credits: 1
- GE 225 - Survey of Machine Tool Applications Credits: 1
- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 225 - Calculus III \* (COM) Credits: 4
- MATH 321 - Differential Equations (COM) Credits: 3
- MATH 331 - Advanced Engineering Mathematics Credits: 3
- OR MATH 471-571 - Numerical Analysis I (COM) Credits: 3
- ME 240 - Introduction of Mechanical Design Credits: 3
- ME 241 - Engineering Materials Credits: 3
- ME 311 - Thermodynamics I Credits: 3
- ME 312 - Thermodynamics II (COM) Credits: 3
- ME 321 - Fundamentals of Machine Design Credits: 3
- ME 323 - Vibrations Credits: 3
- ME 376-376L - Measurements & Instrumentation & Lab Credits: 2
- ME 415 - Heat Transfer Credits: 3
- ME 421 - Design of Machine Elements Credits: 3
- ME 451 - Automatic Controls Credits: 3
- ME 452 - Dynamic Systems Lab Credits: 1
- ME 476 - Thermo-Fluids Lab Credits: 1
- ME 478 - Mechanical Systems Design I Credits: 2
- ME 479-479L - Mechanical Systems Design II and Lab (COM) (AW) Credits: 2
- PHYS 213-213L - University Physics II & Lab\* (COM) Credits: 4
- STAT 381 - Intro to Probability & Statistics (COM) Credits: 3

### Technical Electives: 15

The 15 credits of technical electives may be chosen from the following list. At least two courses must be in design, identified by a (D). At least three of the electives must have the ME prefix. Courses

not listed may qualify as technical electives with departmental approval.

- ABE 350-350L - Hydraulic & Pneumatic Systems & Lab Credits: 3
- CSC 130 - Visual Basic Programming (COM) Credits: 3
- OR CSC 150-150L - Computer Science I (COM) Credits: 3
- OR CSC 218 - Introduction to C/C++/Unix for Engineers Credits: 3
- ME 315 - Analytical Thermodynamics Credits: 3
- ME 341-341L - Metallurgy and Lab Credits: 3
- ME 362 - Industrial Engineering Credits: 3
- ME 381 - Mechanical Equipment of Buildings Credits: 3
- ME 410 - Principles of HVAC Engineering Credits: 3
- ME 412 - Internal Combustion Engines Credits: 3 (D)
- ME 413 - Turbomachinery Credits: 3 (D)
- ME 414/514 - Air Pollution Control Credits: 3 (D)
- ME 417-417L/517-517L - Computer-Aided Engineering and Lab Credits: 3 (D)
- ME 418 - Design of Thermal Systems Credits: 3 (D)
- ME 431 - Aerodynamics Credits: 3 (D)
- ME 437 - Gas Dynamics I Credits: 3
- ME 438-438L - Machine Design-Case Studies & Lab Credits: 3 (D)
- ME 439-439L - HVAC System Design and Lab Credits: 3 (D)
- ME 440/540 - Computer-Aided Design Credits: 3 (D)
- ME 461 - Analysis and Design of Industrial Systems Credits: 3 (D)
- ME 491 - Independent Study Credits: (1-5) (D) (1-3 Credits fulfill the Technical Elective requirement).
- ME 492/592 - Topics Credits: (1-5) (D)
- ME 494 - Internship Credits: (1-3) (D)
- ME 497 - Cooperative Education Credits: (1-3) (D)
- ME 498 - Undergraduate Scholarship/Research (COM) Credits: 1-3
- PHYS 331 - Introduction to Modern Physics (COM) Credits: 3
- NE 435 - Introduction to Nuclear Engineering Credits: 3

### Total Required Credits: 130

### Curriculum Notes:

- In general, the 30 credit Board of Regents System General Education Requirements (SGRs) must be completed as part of a student's first 64 credits. The Mechanical Engineering program has been granted an exception to this requirement.
- \*\* South Dakota State University has an 5 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.

## Minors

### Sustainable Energy Systems Minor

#### Required Coursework

- ME 311 - Thermodynamics I Credits: 3
- OR ME 314 - Thermodynamics Credits: 3
- OR PHYS 341 - Thermodynamics (COM) Credits: 2
- ME 478 - Mechanical Systems Design I Credits: 2<sup>1</sup>
- ME 479-479L - Mechanical Systems Design II and Lab (COM) (AW) Credits: 2<sup>1</sup>
- ME 492/592 - Topics Credits: (1-5) Topics Course: Renewable Energy Systems Credits: 3

#### Internship or Undergraduate Research/Scholarship

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 Credits: (1-6)
- EE 494 - Internship Credits: (1-3)
- ME 494 - Internship Credits: (1-3)

- PHYS 494 - Internship (COM) Credits: (1-4)
- ABE 498 - Undergraduate Research/Scholarship Credits: 1-3
- EE 498 - Undergraduate Research/Scholarship Credits: 1-3
- ME 498 - Undergraduate Scholarship/Research (COM) Credits: 1-3
- PHYS 498 - Undergraduate Research/Scholarship (COM) Credits: 1-12

#### Electives: 6

- ABE 444-444L/544-544L - Unit Operations of Biological Materials Processing and Lab Credits: 4
- ABE 455-455L/555-555L - Principles of Biological Separation Processing and Lab Credits: 3
- EE 430-430L - Electromechanical Systems and Lab Credits: 4
- EE 434-434L - Power Systems and Lab Credits: 4
- EE 436-436L/536-636L - Applied Photovoltaics & Lab Credits: 3, 1
- ME 410 - Principles of HVAC Engineering Credits: 3
- ME 412 - Internal Combustion Engines Credits: 3
- ME 413 - Turbomachinery Credits: 3
- ME 414/514 - Air Pollution Control Credits: 3
- ME 415 - Heat Transfer Credits: 3
- ME 418 - Design of Thermal Systems Credits: 3
- ME 431 - Aerodynamics Credits: 3
- ME 439-439L - HVAC System Design and Lab Credits: 3
- PHYS 331 - Introduction to Modern Physics (COM) Credits: 3
- NE 435 - Introduction to Nuclear Engineering Credits: 3

#### Total Required Credits: 18

#### Notes:

- <sup>1</sup> 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 Laboratory Science (MLS)

(See Chemistry and Biochemistry)

#### Microbiology (MICR)

(See Biology and Microbiology)

## Military Science Department (MSL)

MAJ Aaron Schultz, Head  
Department of Military Science  
DePuy Military Hall 200  
605-688-6151  
e-mail: garnet.wosje@sdstate.edu

#### Faculty

Professor, Major Schultz, Department Head; Assistant Professors Ness, Skovly; Adjunct Instructors Mahlen, White

#### Program

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 on campus training programs: 1) the four year program consisting of the basic course for freshmen and sophomores followed by the advanced course for juniors and seniors; 2) a three-year program where the basic course is compressed into the sophomore year followed by the advanced course; and 3) a two-year program. The first entry point is where placement credit is allowed for the basic course to qualified veterans and members of the Army National Guard and the Army Reserve. A second entry point is

available to students who desire to be paid for the equivalent of the basic course by attending the ROTC 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 Non-scholarship 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](http://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](mailto: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

#### Military Science Minor

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 with all majors.

## Military Science (MSL) Minor

#### Required Coursework

- MSL 301-301L - Adaptive Team Leadership & Lab (COM) Credits: 3
- MSL 302-302L - Leadership in Changing Environment and Lab (COM) Credits: 3
- MSL 401-401L - Developing Adaptive Leaders & Lab (COM) Credits: 4
- MSL 402-402L - Leadership in a Complex World & Lab (COM) Credits: 4
- MSL 494 - Leader Development & Assessment Course (COM) Credits: 4

#### Total Required Credits: 18

# Modern Languages and Global Studies Department (FREN, GER, GLST, SPAN)

Maria Ramos, Head  
Department of Modern Languages and Global Studies  
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 Enz, Owens, Rolz, Spitz; Assistant Professors Garst-Santos, Instructors Arnison, Iverson, Iverson-Maggi, Mejia, Orellana, Valencia.

## Programs

The Department of Modern Languages and Global Studies provides interdisciplinary training in Global Studies and proficiency-oriented instruction in languages, literatures, civilizations and cultures, following the Standards of the American Council on the Teaching of Foreign Languages. The Department offers Bachelor of Arts degrees with majors in French Studies, German, Global Studies, and Spanish. It also offers minors in French, German, Global Studies and Spanish. Students seeking to fulfill the 14-hour Bachelor of Arts requirement in modern languages (101, 102, 201, 202) may do so in French, German, or Spanish.

Students entering the University with a background in modern languages who are prepared to take courses beyond 101 (up to 310, 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 and Global Studies work 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 Major and Minor), Economics, and Education (see Education Curriculum for Teachers of Academic Subjects). Students are also strongly encouraged to plan a summer/semester/year experience studying abroad.

## Global Studies Major and Minor

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.

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:

- 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;
- enable students to apply analytical and philosophical tools for interpretation of and critical thinking about global issues and data;
- 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;
- provide the training, tools, and experiences for global studies majors to become authentic global citizens; and
- utilize the international resources of SDSU to benefit the citizens of South Dakota, the United States, and the world.

## Global Studies Major (B.A.)

Students must complete 120 credit hours including the 30 credit System General Education Core (Gen Ed) and the 5 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, 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 Global Studies, and individual colleges:

- full time study abroad at a university for one semester;
- a one-semester, paid or unpaid, internship or volunteer service learning project;
- an intense modern language immersion program worth at least 3 credit hours; or
- 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.

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 Global Studies and on the department's web page.

## French Studies (FREN) Major

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\* : 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14 \*Included in the major
- Social Sciences Credits: 2

### Major Requirements: 37

French Studies Core: 15

- FREN 102 - Introductory French II \* (COM) (G) Credits: 4
- FREN 201 - Intermediate French I \* \*\* (COM) Credits: 4
- FREN 202 - Intermediate French II \* \*\* (COM) Credits: 4
- FREN 310 - French Language Skills (COM) (AW) Credits: 3

### Major Electives: 22

*The following is a suggested sequence.*

Literature, Language, and Culture Electives\*: 22

- FREN 211 - Intermediate Oral Practice I Credits: 2
- FREN 212 - Intermediate Oral Practice II Credits: 2
- FREN 353 - Exploring Literature in French (COM) Credits: 3
- FREN 353 - Exploring Literature in French (COM) Credits: 3
- FREN 433 - French Culture and Civilization (AW) Credits: 3

Select additional credits with prefix FREN

\* Majors must take at least 9 credits of 300-400 level courses.

### Elective Credits: 47

- French Electives: 9
  - FREN 385 - Travel Study Abroad Francophone (COM) (G) (repeatable) Credits: 1-6
  - FREN 491 - Independent Study (COM) Credits: 1-3
  - FREN 492 - Topics (COM) (repeatable) Credits: 1-3
  - FREN 493 - Workshop (COM) Credits: 1-6
- General Electives: 38

**Total Required Credits: 120**

## Notes

- **Major Coursework:** A minimum grade of "C" is required for a French Studies course to count towards the major or minor. Major courses used to fulfill the Institutional requirements (IGRs) must be different from those taken to fulfill the General Education requirements (SGRs).
- **Placement:** 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 refer to Modern Language Credit under Academic Evaluation in the catalog for more detailed information.

## 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 a 5 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 Studies (FREN) Major - Teaching Specialization

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\* : 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14 \*Included in the major
- Social Sciences Credits: 2

### Major Requirements: 37

French Studies Core: 15

- FREN 102 - Introductory French II \* (COM) (G) Credits: 4
- FREN 201 - Intermediate French I \* \*\* (COM) Credits: 4
- FREN 202 - Intermediate French II \* \*\* (COM) Credits: 4
- FREN 310 - French Language Skills (COM) (AW) Credits: 3

### Major Electives: 22

*The following is a suggested sequence.*

Literature, Language, and Culture Electives\*: 22

- FREN 211 - Intermediate Oral Practice I Credits: 2
- FREN 212 - Intermediate Oral Practice II Credits: 2
- FREN 353 - Exploring Literature in French (COM) Credits: 3
- FREN 353 - Exploring Literature in French (COM) Credits: 3
- FREN 433 - French Culture and Civilization (AW) Credits: 3



Select additional credits with prefix FREN

\* Majors must take at least 9 credits of 300-400 level courses.

### Elective Credits: 12

- French Electives: 9
  - FREN 385 - Travel Study Abroad Francophone (COM) (G) (repeatable) Credits: 1-6
  - FREN 491 - Independent Study (COM) Credits: 1-3
  - FREN 492 - Topics (COM) (repeatable) Credits: 1-3
  - FREN 493 - Workshop (COM) Credits: 1-6
- General Electives 3

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- MFL 420 - K-12 Foreign Language Methods (COM) Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)  
OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Required Credits: 120

### Notes

- **Major Coursework:** A minimum grade of "C" is required for a French major to count towards the major or minor. Major courses used to fulfill the Institutional requirements (IGRs) must be different from those taken to fulfill the General Education requirements (SGRs).
- **Placement:** 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 refer to Modern Language Credit under Academic Evaluation in the catalog for more detailed information.

### 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 a 5 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.

## German (GER) Major

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14 \*Included in the major
- Social Sciences Credits: 2

### Major Requirements: 36

Major Core: 14

- GER 101 - Introductory German I \* (COM) (G) Credits: 4
- GER 102 - Introductory German II \* (COM) (G) Credits: 4
- GER 201 - Intermediate German I \* \*\* (COM) Credits: 3
- GER 202 - Intermediate German II \* \*\* (COM) Credits: 3

Major Electives: 22

- Select at least 18 upper-division credits.

*The following is a suggested sequence.*

### Composition and Conversation: 3

- GER 330 - Reading and Writing for Communication Credits: 3

### Advanced Language Electives: 4

- GER 310 - Practical German Language Skills Credits: 3
- GER 411 - Advanced Composition and Conversation I (COM) Credits: 3
- GER 412 - Advanced Composition and Conversation II (COM) Credits: 3

### Literature Electives: 4

- GER 353 - Introduction to German Literature - Credits
- GER 453 - Survey of German Literature I (COM) Credits: 3
- GER 454 - Survey of German Literature II (COM) Credits: 3
- GER 392 & 492 - Topics (COM) (if literature focused) Credits: 2-3

### Culture and Civilization: 3

- GER 433 - German Civilization I (COM) (AW) Credits: 3
- GER 434 - German Civilization II (COM) (AW) Credits: 3
- GER 392 & 492 - Topics (COM) (if culture focused) Credits: 2-3

### Travel/field Experiences

All majors are strongly encouraged to study abroad in a German-speaking country.

- GER 491 - Independent Study (COM) Credits: 1-3
- GER 296 & 396 - Field Experience Credits: 1-6

### Electives: 47

### Total Required Credits: 120

#### 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 a 5 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.

## German (GER) Major - Teaching Specialization

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101& 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14 \*Included in the major
- Social Sciences Credits: 2

### Major Requirements: 36

Major Core: 14

- GER 101 - Introductory German I \* (COM) (G) Credits: 4
- GER 102 - Introductory German II \* (COM) (G) Credits: 4
- GER 201 - Intermediate German I \* \*\* (COM) Credits: 3
- GER 202 - Intermediate German II \* \*\* (COM) Credits: 3

### Major Electives: 22

- Select at least 18 upper-division credits.

*The following is a suggested sequence.*

### Composition and Conversation: 3

- GER 330 - Reading and Writing for Communication Credits: 3

### Advanced Language Electives: 4

- GER 310 - Practical German Language Skills Credits: 3
- GER 411 - Advanced Composition and Conversation I (COM) Credits: 3
- GER 412 - Advanced Composition and Conversation II (COM) Credits: 3

### Literature Electives: 4

- GER 353 - Introduction to German Literature - Credits
- GER 453 - Survey of German Literature I (COM) Credits: 3

- GER 454 - Survey of German Literature II (COM) Credits: 3
- GER 392 & 492 - Topics (COM) (if literature focused) Credits: 2-3

### Culture and Civilization: 3

- GER 433 - German Civilization I (COM) (AW) Credits: 3
- GER 434 - German Civilization II (COM) (AW) Credits: 3
- GER 392 & 492 - Topics (COM) (if culture focused) Credits: 2-3

### Travel/field Experiences

All majors are strongly encouraged to study abroad in a German-speaking country.

- GER 491 - Independent Study (COM) Credits: 1-3
- GER 296 & 396 - Field Experience Credits: 1-6

### Electives: 13

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- MFL 420 - K-12 Foreign Language Methods (COM) Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)  
OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.

- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Required Credits: 120

#### Notes

- **Major Coursework:** A minimum grade of “C” is required for a French major to count towards the major or minor. Major courses used to fulfill the Institutional requirements (IGRs) must be different from those taken to fulfill the General Education requirements (SGRs).
- **Placement:** 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 refer to Modern Language Credit under Academic Evaluation in the catalog for more detailed information.

#### 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 a 5 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.

## Global Studies (GLST) Major

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 5-16

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

### Major Requirements: 60-64

#### Complete all of the following: 32-34

- FREN, GER, or SPAN 101<sup>1</sup> Credits: 4
- FREN, GER, or SPAN 102<sup>1</sup> Credits: 4
- FREN, GER, or SPAN 201 Credits: 3-4
- FREN, GER, or SPAN 202 Credits: 3-4

### Modern Language (300 or 400 level) Credits: 3

- HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3  
OR HIST 122 - Western Civilization II \* \*\* (COM) (G) Credits: 3
- GLST 201 - Global Studies I \* \*\* (G) Credits: 3
- POLS 253 - Current World Problems \* \*\* (G) Credits: 3
- GLST 401 - Global Studies II (G) (AW) Credits: 3
- GLST 481 - Travel Studies (Cross Cultural Experience)<sup>2</sup> Credits: 3

### Globalization: 3

Select one course from the following list.

- ECON 405 - Comparative Economic Systems (COM) Credits: 2-3
- ECON 440-540 - Economics of International Sector Credits: 3
- ECON 460-560 - Economic Development \*\* (G) Credits: 3
- POLS 350 - International Relations (COM) Credits: 3

### Modern Language: 4-6

Select two courses from the following: 4-6

- GER 211 - Intermediate Oral Practice Credits: 2-3
- SPAN 211 - Intermediate Oral Practice I (COM) Credits: 2
- FREN 310 - French Language Skills (COM) (AW) Credits: 3
- GER 312 - Composition and Conversation II (COM) Credits: 2
- SPAN 212 - Intermediate Oral Practice II (COM) Credits: 2
- FREN 333 - Topics in Francophone Culture (COM) Credits: 3

### Culture: 9

Select one lower division course from the following: 3

- ANTH 210 - Cultural Anthropology \* (COM) Credits: 3
- ENGL 212 - World Literature II \* (G) Credits: 3
- PHIL 215 - Intro to Social-Political Philosophy \* Credits: 3
- REL 250 - World Religions \* (COM) (G) Credits: 3

Select two upper division courses from the following: 6

- EURS 300 - Topics in European Culture Credits: 3
- FREN 333 - Topics in Francophone Culture (COM) Credits: 3
- GER 433 - German Civilization I (COM) (AW) Credits: 3
- GER 434 - German Civilization II (COM) (AW) Credits: 3
- HIST 418 - History of Latin America (COM) Credits: 3
- LAS 301 - Latin American Cultures Credits: 2-3
- PHIL 424 - Modern Political Philosophy (AW) Credits: 3
- POLS 462 - Modern Political Philosophy (COM) (AW) Credits: 3
- SPAN 433 - Spanish Civilization & Culture (COM) (AW) Credits: 3
- SPAN 435 - Latin American Civilization & Culture (AW) Credits: 3

### Societies: 12

Select two lower division courses from the following: 6

- ABS 203 - Global Food Systems \*\* (G) Credits: 3
- ECON 101 - Global Economy \* (G) Credits: 3
- GEOG 210 - World Regional Geography \* \*\* (COM) (G) Credits: 3
- POLS 165 - Political Ideologies \* Credits: 3

Select two upper division courses in separate disciplines from the following: 6

- EURS 301 - Topics in European Society Credits: 3
- GEOG 400 - Cultural Geography (COM) Credits: 3
- GEOG 415-515 - Environmental Geography\*\* Credits: 3
- LAS 302 - Latin American Societies Credits: 3
- POLS 454 - International Law & Organization (COM) Credits: 3

### Electives: 21-38

### Total Required Credits: 120

#### Notes

- 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 US.

- 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.)

#### 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 a 5 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.

## Spanish (SPAN) Major

Bachelor of Arts in Arts and Sciences

#### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

#### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

#### College Requirements: 2

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14 \*Included in the major
- Social Sciences Credits: 2

#### Major Requirements: 36

##### Required Courses: 12

- SPAN 201 - Intermediate Spanish I \* \*\* (COM) Credits: 3
- SPAN 202 - Intermediate Spanish II \* \*\* (COM) Credits: 3
- SPAN 310 - Practical Language Skills Credits: 3
- SPAN 330 - Reading and Writing for Communication Credits: 3

##### Upper Division Electives: 24

- See specific distribution according to emphasis
- Must include at least 16 additional upper-division electives, for a minimum of at least 20 upper-division electives in the major
- May include up to 4 credits of 200-level classes.

*The following is a suggested sequence for the non-specified 24 major credits.*

##### Advanced Language/Linguistics Electives: 3-6\*

- SPAN 308 - Spanish for the Health Professions Credits: 3
- SPAN 340 - Phonetics Credits: 3 Credits: 3
- SPAN 350 - Spanish for Business Communication (COM) Credits: 3
- SPAN 443 - Linguistics Credits: 3
- SPAN 444 - Introduction to Translation Credits: 3
- SPAN 492 - Topics (COM) (if linguistics) Credits: 3

\*1 or more courses are required for the Humanities Emphasis

\*2 or more courses are required for the Professional Emphasis

#### Literature and Culture Electives: 6-9\*

- SPAN 355 - Introduction to Latin-American Literature I (COM) Credits: 3
  - SPAN 353 - Introduction to Spanish Literature I (COM) Credits: 3
  - SPAN 433 - Spanish Civilization and Culture (COM) (AW) Credits: 3
  - SPAN 435 - Latin American Civilization and Culture (AW) Credits: 3
  - SPAN 476 - 19th and 20th Century Spain Credits: 3
  - SPAN 484 - 19th and 20th Century Latin America Credits: 3
  - SPAN 492 - Topics (COM) (if literature or culture) Credits: 3
- \*3 or more courses are required for the Humanities Emphasis  
\*2 or more courses are required for the Professional Emphasis

#### Basic and Advanced Electives: 12\*

- SPAN 211 - Intermediate Oral Practice I (COM) Credits: 2
  - SPAN 212 - Intermediate Oral Practice II (COM) Credits: 2
  - SPAN 296/396/496 - Field Experience Credits: 1-6
  - SPAN 386 - Service Learning Credits: 3
  - SPAN 415 - Extensive Reading in Spanish Credits: 3
  - SPAN 437 - Topics in Film Studies Credits: 3
  - SPAN 486 - Early Modern Spain Credits: 3
  - SPAN 491 - Independent Study (COM) Credits: 3
- \*12 or more credits from this section OR approved courses not already used to satisfy major requirements

#### General Electives: 44

#### Required Total Credits: 120

#### Notes

- **Major Coursework:** A minimum grade of "C" is required for a Spanish course to count towards the major or minor. Major courses used to fulfill the Institutional requirements (IGRs) must be different from those taken to fulfill the General Education requirements (SGRs).
- **Placement:** 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 refer to Modern Language Credit under Academic Evaluation in the catalog for more detailed information.
- **Oral Proficiency Interview:** 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 with a teaching specialization.

#### 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 a 5 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.

## Spanish (SPAN) Major - Teaching Specialization

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101 and/or SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\* Credits: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Culture Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 2

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14 \*Included in the major
- Social Sciences Credits: 2

### Major Requirements: 36

#### Required Courses: 12

- SPAN 201 - Intermediate Spanish I \* \*\* (COM) Credits: 3
- SPAN 202 - Intermediate Spanish II \* \*\* (COM) Credits: 3
- SPAN 310 - Practical Language Skills Credits: 3
- SPAN 330 - Reading and Writing for Communication Credits: 3

#### Upper Division Courses Credits: 24

Linguistics: 3\*

- SPAN 340 - Phonetics Credits: 3 Credits: 3
- SPAN 443 - Linguistics Credits: 3
- SPAN 444 - Introduction to Translation Credits: 3
- SPAN 492 - Topics (COM) (if linguistics) Credits:

\*1 or more courses are required

Literature and Culture Electives: 12

- SPAN 353 - Intro to Spanish Literature I (COM) Credits: 3
- SPAN 355 - Intro to Latin-American Literature I (COM) Credits: 3
- SPAN 433 - Spanish Civilization & Culture (COM) (AW) Credits: 3
- SPAN 435 - Latin American Civilization & Culture (AW) Credits: 3

Advanced Electives: 9\*

- Study Abroad Credits: 4\*
- SPAN 308 - Spanish for the Health Professions Credits: 3
- SPAN 350 - Spanish for Business Communication (COM) Credits: 3
- SPAN 396/496 - Field Experience Credits: 1-6
- SPAN 476 - 19th and 20th Century Spain Credits: 3
- SPAN 484 - 19th and 20th Century Latin America Credits: 3

\*Minimum credit requirements

### Electives: 13

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- MFL 420 - K-12 Foreign Language Methods (COM) Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)  
OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Required Credits: 120

#### Notes

- **Major Coursework:** A minimum grade of "C" is required for a Spanish course to count towards the major or minor. Major courses used to fulfill the Institutional requirements (IGRs) must be different from those taken to fulfill the General Education requirements (SGRs).
- **Placement:** 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 refer to Modern Language Credit under Academic Evaluation in the catalog for more detailed information.
- **Oral Proficiency Interview:** 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 with a teaching specialization.

#### 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 a 5 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.

## Minors

### French Studies (FREN) Minor

#### Required Coursework

- FREN 102 - Introductory French II \* (COM) (G) Credits: 4
- FREN 201 - Intermediate French I \* \*\* (COM) Credits: 4
- FREN 202 - Intermediate French II \* \*\* (COM) Credits: 4

#### Elective Credits

- French electives, 300 and above Credits: 10

#### Total Required Credits: 22

#### Note:

- A minimum grade of "C" is required of all French classes for them to count for the French major or minor.

### German (GER) Minor

#### Required Coursework

- GER 101 - Introductory German I \* (COM) (G) Credits: 4
- GER 102 - Introductory German II \* (COM) (G) Credits: 4
- GER 201 - Intermediate German I \* \*\* (COM) Credits: 3
- GER 202 - Intermediate German II \* \*\* (COM) Credits: 3

#### Elective Credits

- GER 300-400 level Electives Credits: 6

#### Total Required Credits: 20

### Global Studies (GLST) Minor

#### Core Requirements: 18

- ECON 101 - Global Economy \* (G) Credits: 3
- GEOG 200 - Intro to Human Geography \* \*\* (G) Credits: 3
- GLST 201 - Global Studies I \* \*\* (G) Credits: 3
- POLS 253 - Current World Problems \* \*\* (G) Credits: 3
- REL 250 - World Religions \* (COM) (G) Credits: 3
- HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3
- OR HIST 122 - Western Civilization II \* \*\* (COM) (G) Credits: 3

#### Travel/Cross Cultural Experience: 2-4

- Other travel/study experience outside the United States Credits: 3
- GLST 481 - Travel Studies (Cross Cultural Experience) Credits: 3
- ABS 381 - Multicultural Agriculture/Biological Science Experience Credits: 2-4

#### Electives: 3

Complete at least three credits from the following list of courses.

- EURS 300 - Topics in European Culture Credits: 3
- EURS 301 - Topics in European Society Credits: 3
- GEOG 415-515 - Environmental Geography\*\* Credits: 3
- GEOG 425 - Population Geography Credits: 3
- LAS 301 - Latin American Cultures Credits: 2-3
- LAS 302 - Latin American Societies Credits: 3
- POLS 350 - International Relations (COM) Credits: 3
- POLS 454 - International Law & Organization (COM) Credits: 3

#### Total Required Credits: 23

### Spanish (SPAN) Minor

#### Required Coursework

- SPAN 201 - Intermediate Spanish I \* \*\* (COM) Credits: 3
- SPAN 202 - Intermediate Spanish II \* \*\* (COM) Credits: 3
- SPAN 310 - Practical Language Skills Credits: 3
- SPAN 330 - Reading and Writing for Communication Credits: 3

#### Elective Credits

- Electives (may include SPAN 211-212) Credits: 8

#### Total Required Credits: 20

## Music Department (MUS, MUSED)

David Reynolds, Head

Department of Music

Lincoln Music Hall 204

605-688-5187

e-mail: david.reynolds@sdstate.edu

#### Faculty

Professor Reynolds, Head; Professors Crowe, Lis; Professors Emeriti Canaan, Colson, Hatfield, Johnson, McKinney, Piersel, Walker, D.; Associate Professors Brawand, Diddle, Toronto, Walker; Assistant Professors Jorgensen, Peterson, Ragsdale, Walsh; Instructor Coull

#### Programs

The Music Department offers three degree options: Bachelor of Arts in Music, Bachelor of Arts in Music - Music Entrepreneurship Specialization, and a Bachelor of Music Education.

#### Bachelor of Arts, Music

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, students often use the degree as preparation for careers in musicology, composing, music librarianship, and private studio teaching. The flexibility of the curriculum is also used by students desiring a performance-based course of study and to prepare for graduate school.

#### Bachelor of Arts, Music - Music Entrepreneurship Specialization

This degree is designed for students who enjoy music but want a career option outside of performing or teaching music. The program prepares students for careers in music manufacturing, retail sales, music production, publishing, arts management, industry, and a variety of other fields. An on-the-job internship experience is included as part of the professional requirement for the degree.

#### 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 advisor.
9. Recommendations for music entrepreneurship students wishing to enroll for the Internship experience must be issued by the program 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 - Music Entrepreneurship Specialization

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience MUS 109\*\*Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 5-16

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

### Major Requirements: 63-66

Music Core Requirements: 32

- MUS 110 - Basic Music Theory I (COM) Credits: 4
- MUS 110L - Basic Music Theory I Lab (COM) Credits: 0
- MUS 111 - Basic Music Theory II (COM) Credits: 4
- MUS 111L - Basic Music Theory II Lab (COM) Credits: 0
- MUS 130 - Music Literature and History I \* Credits: 2
- MUS 201 - History of Country Music \* Credits: 3
- MUS 202 - The Music Industry Credits: 3
- MUS 203 - Blues, Jazz, and Rock \* Credits: 3
- MUS 210 - Advanced Music Theory I (COM) Credits: 4
- MUS 210L - Advanced Music Theory I Lab (COM) Credits: 0
- MUS 211 - Advanced Music Theory II (COM) Credits: 4
- MUS 211L - Advanced Music Theory Lab II (COM) Credits: 0
- MUS 302 - Introduction to Recording Industry Credits: 2
- MUS 433 - Music Literature and History III (AW) Credits: 3

Music Organization Requirements: 7

- MUEN 100-299 - Music Ensemble Credits: 4
- MUEN 300-499 - Music Ensemble Credits: 3

Applied Music Requirements: 6

- MUAP 115-116 - Class Instruction- Keyboard Credits: 2
- MUAP 100-299 - Applied Music Credits: 4
- MUS 185 - Recital Attendance (COM) Credits: 0

Entrepreneurial Requirements: 18-21

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ENTR 336 - Entrepreneurship I (COM) Credits: 3
- ENTR 438-538 - Entrepreneurship II (COM) Credits: 3
- BADM/ECON 370 - Marketing (COM) Credits: 3
- MCOM 161-161L - Fundamentals of Desktop Publishing and Lab (COM) Credits: 3
- MUS 494 - Internship Credits: 3-6

### Electives: 2-17

### Total Required Credits: 120

### 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 a 5 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.

## Music (MUS) Major - Music Studies Specialization

Requirements for Music Major: 120 Credits

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: Social Science courses only Credits: 6
- Goal #4 Arts and Humanities/Diversity: Humanities (no foreign language) Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

**Institutional Graduation Requirements\*\*:** 5

- Goal #1 First Year Experience MUS 109\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

**College Requirements:** 5-16

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

**Music Studies Core:** 30

- MUS 110 - 110L Basic Music Theory I & Lab (COM) Credits: 4
- MUS 111-111L - Basic Music Theory II & Lab (COM) Credits: 4
- MUS 130 - Music Literature and History I \* Credits: 2
- MUS 131 - Music Literature and History II \* Credits: 3
- MUS 210-210L - Advanced Music Theory I & Lab (COM) Credits: 4
- MUS 211-211L - Advanced Music Theory II and Lab (COM) Credits: 4
- MUS 270/370 - Pedagogy Credits: 1
- MUS 313 - Form and Analysis (COM) Credits: 3
- MUS 360-360L - Conducting (COM) Credits: 2, 0
- MUS 433 - Music Literature and History III (AW) Credits: 3
- MUAP 483 - Public Recital (COM) Credits: 0

**Music Organization:** 8

- MUEN 100-299 - Music Organization Credits: 4
- MUEN 300-499 - Music Organization Credits: 4

**Applied Music Credits:** 12

- MUAP 100-299 - Applied Music Credits: 4
- MUAP 300-499 - Applied Music Credits: 8
- MUS 185 - Recital Attendance (COM) Credits: 0<sup>1</sup>

**Electives:** 19-30**Total Required Credits:** 120**Notes**

- Students must earn at least a “C” in each course used to meet the departmental requirements of all majors, minors, and certificates.

<sup>1</sup> Concurrent enrollment with all MUAP courses.

**Curriculum Notes**

- The 30 credit Board of Regents System General Education Requirements (SGRs).
- \*\* South Dakota State University has a 5 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.

**Music Education (MUSED) Major**

Bachelor of Music Education

**System General Education Requirements\*:** 32

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101 or SOC 100 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 8
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

**Institutional Graduation Requirements\*\*:** 5

- Goal #1 First Year Experience: MUS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

**Major Requirements:** 63

- MUAP 100-155, Applied Music Credits: 2
- MUAP 200-255, Applied Music Credits: 2
- MUAP 300-355, Applied Music Credits: 4
- MUAP 400-455, Applied Music Credits: 2
- MUEN 100-122, Music Organization Credits: 4
- MUEN 300-322, Music Organization Credits: 3
- MUS 110 - Basic Music Theory I (COM) Credits: 4
- MUS 110L - Basic Music Theory I Lab (COM) Credits: 0
- MUS 111 - Basic Music Theory II (COM) Credits: 4
- MUS 111L - Basic Music Theory II Lab (COM) Credits: 0
- MUS 210 - Advanced Music Theory I (COM) Credits: 4
- MUS 210L - Advanced Music Theory I Lab (COM) Credits: 0
- MUS 211 - Advanced Music Theory II (COM) Credits: 4
- MUS 211L - Advanced Music Theory Lab II (COM) Credits: 0
- MUS 313 - Form and Analysis (COM) Credits: 3
- MUS 433 - Music Literature and History III (AW) Credits: 3
- MUS 185 - Recital Attendance (COM) Credits: 0 \* *Concurrent enrollment with all MUAP courses*
- MUS 360-360L - Conducting (COM) Credits: 2, 0
- MUS 361-361L - Music Education II: Conducting and Lab Credits: 2
- MUS 270 - Pedagogy I Credits: (1-2)
- MUS 271 - Pedagogy II Credits: (1-2)
- MUS 370 - Pedagogy III Credits: (1-2)
- MUS 371 - Pedagogy IV Credits: (1-2)
- MUS 420 - Orchestration and Arranging (COM) Credits: 3
- MUS 362-362L - Music Education III: Methods and Materials Credits: 2
- MUS 365-365L - Music Education IV: Supervision and Administration of School Music and Lab Credits: 2
- MUS 465 - Music Education V: Practical Applications Credits: 2
- MUS 351 - Elementary School Music Methods (COM) Credits: 2-3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- MUAP 483 - Public Recital (COM) Credits: 0
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2

**Choral and Instrumental Emphasis**

Student may elect a Choral and/or Instrumental Emphasis by adding appropriate hours.

Course sections vary based on emphasis.

- MUS 270 - Pedagogy I Credits: (1-2)
- MUS 271 - Pedagogy II Credits: (1-2)
- MUS 351 - Elementary School Music Methods (COM) Credits: 2
- MUS 360-360L - Conducting (COM) Credits: 2, 0
- MUS 361-361L - Music Education II: Conducting and Lab Credits: 2
- MUS 362-362L - Music Education III: Methods and Materials Credits: 2
- MUS 365-365L - Music Education IV: Supervision and Administration of School Music and Lab Credits: 2
- MUS 370 - Pedagogy III Credits: 1-2
- MUS 371 - Pedagogy IV Credits: 1-2

## Education Program Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- Native American Course Approved for Teacher Education - HIST 368 - History & Culture of the American Indian Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM) Credits: 4  
AND SEED 488 - 7-12 Student Teaching (COM) Credits: 4

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Required Credits: 126

### Curriculum Notes

- The 30 credit Board of Regents System General Education Requirements (SGRs).
- \*\* South Dakota State University has a 5 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.

## Minor

### Music (MUS) Minor

#### Required Coursework

- MUS 110 - Basic Music Theory I (COM) Credits: 4
- MUS 110L - Basic Music Theory I Lab (COM) Credits: 0
- MUS 130 - Music Literature and History I \* Credits: 2

Select one of the following courses: 3

- MUS 100 - Music Appreciation \* \*\* (COM) Credits: 3
- MUS 131 - Music Literature and History II \* Credits: 3
- MUS 201 - History of Country Music \* Credits: 3
- MUS 203 - Blues, Jazz, and Rock \* Credits: 3
- MUS 433 - Music Literature and History III (AW) Credits: 3

#### Elective Coursework

- MUAP/MUEN Ensemble and Applied Music (applied music not to exceed the 200-level) (see note below) Credits: 6
- MUS/MUAP/MUEN Electives Credits: 3

### Total Required Credits: 18

#### 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

(See Music)

## Music Entrepreneurship

(See Music)

## Natural Resource Management Department (BOT, EES, RANG, WL)

David Willis, Department Head  
Department of Natural Resource Management  
Northern Plains Biostress Laboratory 138C  
605-688-6121  
e-mail: david.willis@sdstate.edu  
www.sdstate.edu/wfs/

### Faculty

Distinguished Professor Willis, Head; Professor Troelstrup, Assistant Head; Distinguished Professor Emeritus Flake; Distinguished Professors Jenks, W. Johnson; Professors Emeritus Berry, Higgins, Scalet; Professors Brown, Chipps, Dieter, Gates, Gilmanov, Hubbard, P. Johnson, Johnston, Larson, Smart, Wimberly; Associate Professors Graeb, Jensen, Stafford, Xu; Assistant Professors Bertrand, Gigliotti, Grovenburg, Perkins, Wuellner; Adjunct Professors Barnes, Bowyer, Chipps, Fredrickson, Leslie, Mousel, Wahl, Wylie; Adjunct Associate Professors Blackwell, DePerno, Euliss, Klaver, Klumb, Naugle, Stafford, Sutton, Uresk, Waits; Adjunct Assistant Professors Adams, Anteau, Austin, Bakker, Fincel, Gigliotti, Granfors, Grovenburg, Holland, Isermann, Jacques, James, Lehman, Pegg, Rumble, Schmitz, Sovada, Switzer

### Programs

North America is blessed with a wide diversity of natural resources. These natural resources provide both consumptive and non-consumptive values to humans. Natural resources provide economic benefit from the wise use of renewable natural resources such as grass or wildlife. In addition, the quality of life for many

humans is intimately tied to natural resources. Thus, educational opportunities in natural resource management at SDSU can lead to a diverse array of career opportunities. SDSU offers three majors focused on improving our understanding and management of natural resources. These include majors in Ecology and Environmental Science, Range Science, and Wildlife and Fisheries Sciences.

### Ecology and Environmental Science Major

The Ecology and Environmental Science major includes a strong core in biophysical sciences and a variety of elective courses that allow students to follow their interests within the major. Students are given the opportunity to select from two emphases. Undergraduate students interested in education to become an ecologist are encouraged to pursue the Ecology emphasis. Curricula are designed so that upon completion students may become a certified ecologist (certification from the Ecological Society of America) for employment with state or federal agencies, or private consulting firms. Undergraduate students interested in a career or graduate program to address contemporary environmental issues should select the Environmental Science emphasis. This emphasis includes a broader selection of elective credits, allowing the student to design a track optimal for their future career or graduate education path. Most students enrolled in this major are planning careers with environmental monitoring and regulatory agencies or private consulting firms.

### Range Science Major

Undergraduate students interested in Range Science can choose one of two emphases. An emphasis in Rangeland Ecology and Management is available for students who wish to find employment opportunities with agencies such as the Natural Resource Conservation Service. Students more interested in grasslands and cattle can pursue a Ranch Management emphasis. The Range Science major is accredited by the Society for Range Management.

### Wildlife and Fisheries Science Major

Undergraduate students interested in this subject matter can find career opportunities with a B.S. degree by working as conservation officers for state natural resource agencies. For students more interested in the biology of wildlife and fishes, there are some technician-level positions for B.S.-level wildlife and fisheries biologists. However, most of the biologist positions are filled with individuals who have earned a graduate degree. Students majoring in Wildlife and Fisheries Sciences can be certified by the American Fisheries Society and The Wildlife Society.

### Minors

The Department offers a minor in Range Science and Botany Minor for those wishing to students with varied interests. Plants are the base of the energy web within the planet's natural resources, and thus these minors cross many disciplines to other fields such as ecology and wildlife and fisheries sciences.

### Graduate degrees

Graduate programs include M.S. and Ph.D. degrees in either Biological Science or Wildlife and Fisheries Sciences. The M.S. 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. By using specifically identified coursework 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. The Ph.D. 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 B.S. and M.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.

## Ecology and Environmental Science (EES)

### Major

Bachelor of Science in Biological Sciences

#### System General Education Requirements\*: 33-35

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: Credits: 4-6
- MATH 102 and MATH 120  
OR MATH 115  
OR MATH 121-121L  
OR MATH 123 (123L)
- Goal #6 Natural Sciences: BIOL 151-151L and BIOL 153-153L Credits: 8

#### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Seminar: NRM109-109L\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: PS 213-213L\*\* Credits: 3

#### Major Requirements: 50-51

Consult an advisor to select courses for either the ecology or environmental science emphasis.

- BIOL 371 - Genetics (COM)Credits: 3
- MICR 231-231L - General Microbiology and Lab (COM) Credits: 4
- NRM 311-311L - Principles of Ecology & Lab (COM) Credits: 3, 1
- ABS 475-475L - Integrated Natural Resource Management and Lab (AW) Credits: 3  
OR ENGL 379 - Technical Communication (AW) Credit: 3
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II &Lab\* (COM) Credits: 3, 1
- CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 3, 1
- PHYS 111-111L - Intro to Physics I and Lab\* (COM) Credits: 4
- PHYS 113-113L - Intro to Physics II and Lab\* (COM) Credits: 4
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- EES 425-425L/525-525L - Disturbance Ecology &Lab Credits: 4
- PS 243 - Principles of Geology\* Credits: 3 or BIOL 373 - Evolution (COM) Credits: 3
- EES 275 - Intro to Environmental Science \*\* (G) Credits: 3  
OR NRM 464-564 - Ecosystem Ecology Credits: 3
- GEOG 472 - Introduction to GIS Credits: 3  
OR BOT 419-419L Plant Ecology and Lab Credits: 4

#### Electives: 20-37

- Major Electives selected with an advisor Credits: 18-25
- General Electives Credits: 2-12

#### Total Required Credits: 120

#### 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 a 5 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.

## Range Science (RANG) Major

Bachelor of Science in Agriculture

### System General Education Requirements\*: 31-32

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity : SOC 100 (G) or SOC 150 (G) or SOC 240 (G) or ANTH 210 (G) AND ECON 201 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 (or higher) Credits: 3
- Goal #6 Natural Sciences: BIOL 153-153L or BOT 201-201L and CHEM 106-106L or CHEM 112-112L Credits: 7-8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: NRM 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### Major Requirement Credits: 34

- AS 101-101L - Introduction to Animal Science & Lab Credits: 3
- AS 233-233L - Applied Animal Nutrition and Lab Credits: 4
- AS 474-474L - Cow/Calf Management and Lab Credits: 3  
OR AS 477-477L - Sheep and Wool Production & Lab Credits: 3
- RANG 105-105L - Intro to Range Management & Lab Credits: 3
- RANG 210-210L - Range Plant Identification and Lab Credits: 2
- RANG 215 - Intro to Integrated Ranch Management \*\* Credits: 3
- RANG 321 - Wildland Ecosystems Credits: 3
- RANG 325-325L - Measurement Topics and Lab Credits: 3
- RANG 415-415L - Range Improvements and Grazing Management and Lab Credits: 4
- RANG 421-521 - Grassland Fire Ecology Credits: 3
- Capstone Course: 3
  - ABS 475-475L - Integrated Natural Resource Management and Lab (AW) Credits: 3  
OR RANG 485-485L - Advanced Integrated Ranch Management and Lab Credits: 3

### Required Support Course Credits: 38

- PS 310-310L - Soil Geography and Land Use Interpretation and Lab\*\* (G) Credits: 3  
OR PS 362-362L - Environmental Soil Management & Lab \*\* Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3  
OR SPCM 215 - Public Speaking (COM) \* Credits: 3
- PS 313 - Forage Crop and Pasture Management Credits: 3  
OR PR/BOT 303-303L - Forest Ecology and Management and Lab Credits: 3  
OR WL 220 - Intro to Wildlife & Fisheries Mngmnt Credits: 3
- BOT 419-419L - Plant Ecology and Lab(COM) (G) Credits: 4  
OR EES 425-425L Disturbance Ecology & Lab Credits: 4  
OR NRM 440-440L - Restoration Ecology and Lab Credits: 4, 1
- AGEC 271-271L - Farm and Ranch Management and Lab Credits: 4
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BOT 301-301L - Plant Systematics (COM) Credits: 4
- BOT 327-327L - Plant Physiology and Lab (COM) Credits: 4
- GEOG 472 - Introduction to GIS Credits: 3
- PS 213-213L - Soils and Lab \* \*\* Credits: 2, 1
- STAT 281 - Introduction to Statistics (COM) Credits: 3

### Ranch Management Emphasis: 13-15

Students are highly encouraged to take the following courses.

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- AGEC 354 - Agricultural Marketing and Prices Credits: 3
- AGEC 430/530 - Advanced Ag Marketing and Prices Credits: 3
- AS 285-285L - Livestock Evaluation & Marketing & Lab Credits: 4
- AS 332 - Livestock Breeding and Genetics Credits: 4
- PS 313 - Forage Crop and Pasture Management Credits: 3

### Rangeland Ecology and Management Emphasis: 13-15

Students are highly encouraged to take the following courses:

- BOT 405-405L/505-505L - Grasses and Grasslike Plants and Lab Credits: 3
- BIOL 311-311L - Principles of Ecology & Lab (COM) Credits: 3, 1
- PR/BOT 303-303L - Forest Ecology & Management & Lab Credits: 3
- PS 313 - Forage Crop and Pasture Management Credits: 3
- WL 220 - Intro to Wildlife and Fisheries Management Credits: 3
- WL 411-411L - Principles of Wildlife Management and Lab Credits: 4

### Total Required Credits: 120

### 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 a 5 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.

## Wildlife and Fisheries Sciences (WL) Major

Bachelor of Science in Biological Sciences

### System General Education Requirements\*: 30-34

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3-5
- Goal #6 Natural Sciences: BIOL 101-101L or BIOL 151-151L AND BIOL 103-103L or BIOL 153-153L Credits: 6-8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: NRM 109-109L \*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### Major Requirements: 69-78

- ENGL 379 - Technical Communication (AW) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- CHEM 106-106L Credits: 3,1 & CHEM 108-108L Credits 4, 1  
OR CHEM 112-112L Credits: 3, 1 & CHEM 120-120L Credits: 3, 1  
OR CHEM 112-112L Credits: 3, 1 & CHEM 326-326L Credits: 3, 1
- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4  
OR PHYS 111-111L - Introduction to Physics I and Lab\* (COM) Credits: 4
- CEE 333 - Hydrology Credits: 3  
OR CHEM 328-328L - Organic Chemistry II and Lab(COM) Credits: 3, 1  
OR PS 213-213L - Soils and Lab \* \*\* Credits: 3, 0  
OR PS 243 - Principles of Geology\* Credits: 3
- BIOL 311-311L - Principles of Ecology and Lab (COM) Credits: 3, 1
- BIOL 371 - Genetics (COM) Credits: 3
- WL 220 - Intro to Wildlife and Fisheries Management Credits: 3
- WL 230 - Wildlife and Fisheries Techniques Credits: 3

### Oral Communication Requirement: 3

Select one of the following courses.

- SPCM 201 - Interpersonal Communication (COM) Credits: 3
- SPCM 215 - Public Speaking (COM) \* Credits: 3
- SPCM 222 - Argumentation and Debate (COM) \* Credits: 3
- SPCM 434 - Small Group Communication (COM) Credits: 3

### Botany Requirement: 3-4

Select a minimum of one course.

- BOT 201-201L - General Botany and Lab\* (COM) Credits: 3
- BOT 301-301L - Plant Systematics (COM) Credits: 4
- BOT 303-303L - Forest Ecology & Management & Lab Credits: 3
- BOT 405-405L/505-505L - Grasses and Grasslike Plants and Lab Credits: 3
- BOT 415-415L/515-515L - Aquatic Plants and Lab Credits: 3
- BOT 419-419L - Plant Ecology and Lab(COM) (G) Credits: 4

### Take three of the following: 10-11

- WL 361 - Survey of Amphibians and Reptiles Credits: 2
- WL 363-363L - Ornithology and Lab(COM) Credits: 4
- WL 367-367L - Ichthyology and Lab Credits: 3
- WL 427-427L/527-527L - Limnology of Lakes & Streams and Lab Credits: 4
- WL 355-355L - Mammalogy and Lab Credits: 3, 0

### Take three of the following: 8-10

- WL 400-400L - Habitat Conservation and Restoration/Lab Credits: 3
- WL 411-411L - Principles of Wildlife Management and Lab Credits: 4
- WL 412-412L - Principles of Fisheries Management and Lab Credits: 3
- WL 429-429L/529-529L - Fish Ecology and Lab Credits: 2

### Take three of the following: 7-10

- NRM 457 - Ecological Modeling Credits: 3
- NRM 464-564 - Ecosystem Ecology Credits: 3
- EES 425-425L/525-525L - Disturbance Ecology & Lab Credits: 4
- WL 415-415L/515-515L - Upland Game Ecology and Management and Lab Credits: 3
- WL 417-417L/517-517L - Large Mammal Ecology and Management and Lab Credits: 3
- WL 419-419L/519-519L - Waterfowl Ecology and Management and Lab Credits: 3
- WL 421/521 - Grassland Fire Ecology Credits: 3
- WL 425-425L/525-525L - Wildlife Nutrition and Disease and Lab Credits: 3
- WL 431-431L - Fisheries Management in Small Waters and Lab Credits: 2
- WL 440-440L - Fisheries and Wildlife Biometrics and Lab Credits: 2

### Human Dimensions Requirement: 7

Complete two classes, one required and one elective, from the following courses.

- *Required* - WL 430-430L - Human Dimensions in Wildlife and Fisheries and Lab (G) Credits: 4
- ABS 475-475L - Integrated Natural Resource Management and Lab (AW) Credits: 3
- ECON 372 - Introduction to Resource and Environmental Economics Credits: 3
- ECON 472-572 - Resource and Environmental Economics (COM) Credits: 3
- HIST 379 - Environmental History of the U.S. (COM) Credits: 3
- PHIL/REL 454-554 - Environmental Ethics \*\* (COM) Credits: 3
- WL 420-420L - Wildlife Law and Enforcement & Lab Credits: 3

### Electives: 3-16

### Total Required Credits: 120

#### 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 a 5 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.

## Range Science (RANG) Minor

### Required Coursework: 12

- RANG 105-105L – Intro to Range Management & Lab Credits: 3
- RANG 415-415L - Range Improvements and Grazing Management and Lab Credits: 3
- RANG Courses Credits: 6

### Electives: 6

Additional credits selected from the following list and outside of the students major field of study.

- RANG Courses Credits: 6
- AS 233-233L - Applied Animal Nutrition and Lab Credits: 4
- AS 474-474L - Cow/Calf Management and Lab Credits: 3
- AS 477-477L - Sheep and Wool Production and Lab Credits: 3
- PS 213-213L - Soils and Lab \* \*\* Credits: 2, 1
- PS 313 - Forage Crop and Pasture Management Credits: 3
- BOT 301-301L - Plant Systematics (COM) Credits: 4
- BIOL 311-311L - Principles of Ecology & Lab (COM) Credits: 3, 1
- BIOL 440-440L - Restoration Ecology Credits: 4
- GEOG 365 - Land Use Planning\*\* Credits: 3
- NRM 110 - Environmental Conservation \*(G) Credits: 3
- WL 220 - Introduction to Wildlife and Fisheries Management Credits: 3
- WL 411-411L - Principles of Wildlife Management and Lab Credits: 4

### Total Required Credits: 18

## Botany (BOT) Minor

### Required Biology Course: 3-4

- BIOL 103-103L - Biology Survey II and Lab\* (COM)  
OR BIOL 153-153L - General Biology II and Lab\* Credits: 4

### Selective Electives: 14-15

- BOT 127 – Ethnobotany Credits: 3
- BOT 201-201L - General Botany and Lab\* (COM) Credits: 3

At least two botany courses must be upper-division, 300 level or above

- BOT 301-301L - Plant Systematics (COM) Credits: 4
- BOT 303-303L - Forest Ecology and Management and Lab Credits: 3
- BOT 327-327L - Plant Physiology and Lab (COM) Credits: 4
- BOT 405-405L/505-505L - Grasses and Grasslike Plants and Lab Credits: 3
- BOT 415-415L/515-515L - Aquatic Plants and Lab Credits: 3
- BOT 419-419L - Plant Ecology and Lab(COM) (G) Credits: 4
- BOT 492-592 – Topics Credits: 1-5

No more than 3 credits of may come from the following upper-division botany courses

- BOT 491 - Independent Study
- BOT 494 - Internship
- BOT 496 - Field Experience
- BOT 498 - Undergraduate Research/Scholarship

Additional elective credits may come from the following range courses

- RANG 210-210L - Range Plant Identification and Lab Credits: 3
- RANG 400 - Judging Teams (Sec 1.) Credits: 1

### Total Required Credits: 18

#### Note:

\*A minimum GPA of 2.0 is required for all courses in the minor.



## Nuclear Engineering (NE) Minor

(See Physics)

## Nursing Department (NURS)

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Roberta Olson, Dean

College of Nursing

SWG 255

605-688-5178 or 1-888-216-9806

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<http://www.sdstate.edu/nurs/>

### Faculty

Professor Olson, Dean; Professors Stamler and Herrick, Associate Deans, Distinguished Professor Hegge; Professors Craig, Foland, Hendrickx, Mylant, Peterson; Professors Emeriti Blazey, Hofland; Associate Professors Carson, Fahrenwald, Foland, Hobbs, Kropenske, Lammers, Stenvig, Tschetter, Voss, Wey; Assistant Professors Bohn, Elverson, Fjelland, Gorder, Jones, Mann, Minton, Randall, Samra, Shaver; Assistant Professors Emeriti Iken, Joffer; Instructors Arends, Atteberry, S. Bassett, Birch, Boysen, Bruner, Calhoon, Cissell, Durfee, Erickson, Forbes, Goddard, Haight-Kennedy, Hansen, Hanson, Hesson, Huber, Johansen, Klawiter, Lochridge, Lubeck, Maurer, Mordhorst, Ness, Pawelek, Pasquariello, 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, Rapid City, and Sioux Falls. Students in the Accelerated Option are admitted once a year at the beginning of the 12-month cycle in Sioux Falls and Aberdeen. 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 website. 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 website. 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 on the Nursing website or through the Department of Nursing Student Services at the Brookings campus and through the academic advisor 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.

### **Health Science Minor**

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. 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:

- Apply public health principles, to selected disciplines.
- Implement public health science methods and strategies in working with populations incorporating principles from the fields of sociology, psychology, and human growth and development.
- Apply basic human health concepts from selected sciences including biology, physiology, behavioral, and mental health.
- Advocate for needs of people served by public health systems that demonstrate an understanding of how environment and ecology affect aggregates and communities.

### **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**

Bachelor of Science in Nursing

### **Prerequisites**

#### **System General Education Requirements\* Credits: 26-27**

- Goal #1 Written Communication: ENGL 101 Credits: 3
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity: HDFS 210 Credits: 3 and SOC 100 or SOC 150 or SOC 240 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 3
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences: CHEM 106-106L, or CHEM 112-112L Credits: 4 and CHEM 108-108L or CHEM 114-114L Credits: 5-4

**Institutional Graduation Requirements\*\* Credits: 5**

- Goal #1 First Year Experience: NURS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: PSYC 101\*\* Credits:3

**Pre-Nursing Requirements**

- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- MICR 231-231L - General Microbiology and Lab (COM) Credits: 4
- NFS 315 - Human Nutrition Credits: 3
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- (Recommended Elective) NURS 201 - Medical Terminology Credits: 1

**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 Credits: 3
- Goal #4 Arts and Humanities/Diversity Credits: 3

**Major Requirements: 63-65**

- NURS 323 - Introduction to Pathophysiology Credits: 3
- NURS 215 - Professional Nursing Credits: 2
- NURS 265-265L - Health Assessment and Interventions and Lab Credits: 4
- NURS 280-280L - Professional Communication & Lab Credits: 3
- NURS 310-310L - Introduction to Public Health and Population-based Nursing and Lab Credits: 4
- NURS 325-325L - Beginning Nursing Care of the Client with Health Problems and Lab Credits: 6
- PHA 321 - Pharmacology Credits: 3
- NURS 355 - Research: Appraisal and Utilization Credits: 2
- NURS 365-365L - Nursing Care of the Client with Health Problems and Lab Credits: 6
- NURS 380-380L - Nursing Care of the Childbearing Family and Lab Credits: 5
- NURS 410-410L - Advanced Nursing Care of the Client with Health Problems and Lab Credits: 6
- NURS 420-420L - Nursing Care of the Client with Mental Health Problems and Lab Credits: 5
- HSC 445 - Epidemiology Credits: 3
- OR STAT 281 - Introduction to Statistics (COM) Credits: 3
- NURS 425 - Nursing Leadership Credits: 3
- NURS 480-480L - Advanced Population based Nursing Practice and Lab (G) Credits: 4
- NURS 495-495L - Practicum and Clinical Lab (AW) Credits: 6
- Elective Credit: 1 (Take Junior Year)

**Total Required Credits: 120****Curriculum Notes**

- The 30 credit Board of Regents System General Education Requirements (SGRs).
- \*\* South Dakota State University has a 5 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.

**Additional Program Information**

A total of 120 credits are required for graduation with a Bachelor of Science in Nursing in all options offered.

**Standard Option, Sioux Falls & Rapid City\***

\*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. 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

**RN Upward Mobility Option, Online**

Bachelor of Science in Nursing: Please contact the Coordinator, RN Upward Mobility, at 605-688-6186, or 1-888-216-9806 ext. 1.

**Accelerated Option, Sioux Falls & Aberdeen**

Bachelor of Science in Nursing: Requirements are the same as those for the Standard Option. For transcript evaluation, please contact the Academic Advisor, Sioux Falls, at 605-367-5636 or toll-free at 1-866-661-6230.

**Minors****Health Science Minor****Required Core: 12**

- HDFS 210 - Lifespan Development \* Credits: 3
- HSC 212 - Contemporary Health Problems Credits: 2
- HSC 445 - Epidemiology Credits: 3
- NURS 201 - Medical Terminology Credits: 1
- HSC 443 - Public Health Science (G) Credits: 3

**OR**

NURS 310-310L – Introduction to Public Health and Population-based Nursing Credits: 4  
AND NURS 480-480L - Advanced Population based Nursing Practice (G) Credits: 4

**Biological Science Requirements: 6**

- Select from courses prefixed BIOL, MICR, ZOOL

**Electives: 6**

Any changes/additions to elective credits must receive prior approval from the Department Head of Undergraduate Nursing.

- HLTH 250-250L - Pre-Professional First Aid and CPR and Lab (COM) Credits: 2
- OR HLTH 251 - First Aid and CPR (COM) Credits: 1
- OR HSC/HLTH 364-364L - Emergency Medical Technician and Lab Credits: 4
- HDFS 227 - Human Development and Personality I: Childhood Credits: 3
- HDFS 241 - Family Relations Credits: 3
- HDFS 250 - Development of Human Sexuality Credits: 3
- HDFS 337 - Human Development II: Adolescence Credits: 3
- HDFS 347 - Human Development III: Adulthood Credits: 3
- HSC 120 - Community Health Credits: 2
- HSC 200 - Complementary & Alternative Health Care Credits: 3
- HSC 230 - Stress Management for Life Credits: 3
- HSC 260 - Women's Health Issues Credits: 3
- HSC 302 - Wellness and the Family Credits: 2
- HSC 420/520 - Methods of Health Instruction Credits: 2
- HSC 433-533 \*\* - Occupational Health Credits: 3
- PSYC 414 - Drugs and Behavior (COM) Credits: 3
- SOC 250 - Courtship and Marriage \* (COM) Credits: 3
- STAT 281 - Introduction to Statistics (COM) Credits: 3

**Total Required Credits: 24**

## Peace and Conflict Studies Minor

(See English)

## 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

<http://www.sdstate.edu/pha/pharmSci/index.cfm>

### Faculty

Professor Dwivedi, Head; Professor Guan; Associate Professors

Chandrasekher, Fahmy, Gunaje, Perumal, Rahman, Seefeldt;

Assistant Professors, Jin, 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. For details regarding the Ph.D. degree refer to the SDSU Graduate Catalog or contact the Department directly.

## Doctor of Pharmacy Degree

### System General Education Requirements: 34

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 202 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 121-121L Credits: 5
- Goal #6 Natural Sciences: CHEM 112-112L and CHEM 114-114L Credits: 8

### Institutional Graduation Requirements: 5

- Goal #1 First Year Experience: PHA 109 Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### Major Requirement Credits: 179<sup>1,2</sup>

- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4
- CHEM 328-328L - Organic Chemistry II & Lab(COM) Credits: 3, 1
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- CHEM 326-326L - Organic Chemistry I & Lab(COM) Credits: 3, 1
- MICR 231-231L - General Microbiology & Lab (COM) Credits: 4
- STAT 284 - Biostatistics for the Health Sciences Credits: 3
- PHA 109 - First Year Seminar - Pharmacy\*\* Credits: 2
- PHA 320 - Introduction to Pathophysiology Credits: 3
- PHA 323 - Pharmaceutical Biochemistry Credits: 4
- PHA 324 - Biomedical Science I Credits: 4
- PHA 331 - Pharmaceutics I Credits: 3
- PHA 332-332L - Pharmaceutics II and Lab Credits: 4
- PHA 340-340L - Medicinal Chemistry I and Lab Credits: 4
- PHA 341-341L - Medicinal Chemistry II and Lab Credits: 4

- PHA 367-367L - Pharmacy Practice I and Lab Credits: 2
- PHA 368-368L - Pharmacy Practice II and Lab Credits: 3
- PHA 410 - Introductory Practice Experience I Credits: 3<sup>3</sup>
- PHA 415 - Biopharmaceutics and Pharmacokinetics Credits: 4
- PHA 425 - Biomedical Science II Credits: 3
- PHA 430 - Pharmacy Practice Law Credits: 3
- PHA 442 - Pharmacology I Credits: 5
- PHA 443 - Pharmacology II Credits: 4
- PHA 444 - Toxicology Credits: 2
- PHA 445 - Pharmacotherapeutics I Credits: 2
- PHA 446 - Pharmacotherapeutics II Credits: 3
- PHA 467-467L - Pharmacy Practice III and Lab (AW) Credits: 3
- PHA 468-468L - Pharmacy Practice IV and Lab Credits: 3

### Must have a bachelor's degree to begin the P3, 600-700 level courses<sup>4</sup>

- PHA 610 - Introductory Practice Experience II Credits: 3<sup>5</sup>
- PHA 714 - Community Pharmacy Practice Experience Credits: 5
- PHA 716 - Hospital/Institutional Pharmacy Practice Experience Credits: 5
- PHA 723 - Ethics in Healthcare Practice Credits: 2
- PHA 727 - Professional Resource Management Credits: 3
- PHA 741-741L - Public Health and Wellness Credits: 2
- PHA 742-742L - Patient Assessment and Self Care Credits: 2
- PHA 756 - Pharmacotherapeutics III Credits: 4
- PHA 757 - Pharmacotherapeutics IV Credits: 4
- PHA 761 - Pharmacotherapeutics V Credits: 5
- PHA 762 - Pharmacotherapeutics VI Credits: 5
- PHA 767-767L - Pharmacy Practice V and Lab Credits: 3
- PHA 768-768L - Pharmacy Practice VI and Lab Credits: 3
- PHA 772 - Internal Medicine I Practice Experience Credits: 5
- PHA 774 - Ambulatory Care Practice Experience Credits: 5

### Assigned Advanced Pharmacy Practice Experiences

*Advanced Pharmacy Practice Experiences (APPEs) are completed during Summer sessions, Fall, and Spring semesters.*

Choose 10 credits from the following:

- PHA 700 - Directed Studies Practice Experience Credits: 5
- PHA 706 - Critical Care Practice Experience Credits: 5
- PHA 707 - Infectious Disease Practice Experience Credits: 5
- PHA 717 - Community Health and Patient Monitoring Practice Experience Credits: 5
- PHA 770 - Pediatrics Practice Experience Credits: 5
- PHA 771 - Geriatrics Practice Experience Credits: 5
- PHA 773 - Internal Medicine II Practice Experience Credits: 5
- PHA 775 - Psychiatry Practice Experience Credits: 5

### Elective Advanced Pharmacy Practice Experiences

Choose 10 credits from the following APPEs not utilized from list of Assigned APPEs:

- PHA 700 - Directed Studies Practice Experience Credits: 5
- PHA 701 - Home Health/Hospice Practice Experience Credits: 5
- PHA 702 - Indian Health Services Practice Experience Credits: 5
- PHA 703 - Pharmacy Administration Practice Experience Credits: 5
- PHA 704 - Nutrition Support Practice Experience Credits: 5
- PHA 705 - Clinical Research Practice Experience Credits: 5
- PHA 708 - Surgery Practice Experience Credits: 5
- PHA 709 - Nephrology Practice Experience Credits: 5
- PHA 710 - Pharmacokinetics Practice Experience Credits: 5
- PHA 711 - Oncology Practice Experience Credits: 5
- PHA 712 - Nuclear Pharmacy Practice Experience Credits: 5
- PHA 713 - Managed Care Practice Experience Credits: 5
- PHA 780 - International Pharmacy Practice Experience Credits: 5

### Elective Credits: 10

- General Electives<sup>6</sup> Credits: 6
- Pharmacy Electives, PHA 700 level, nonAPPE Credits: 4

## Total Required Credits: 218

### Notes:

- Class standing is defined as:
- 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 on to the subsequent semester.
- P4 Year Standing – Completion of all PHA 600-700 level required, non-advanced practice courses.
- "completion" means a passing grade in each pharmacy course and maintaining semester and cumulative PHA GPA requirements.

### Addition Information

1. Eligible for B.S. in Pharmaceutical Sciences after completion of all general education requirements, 300 and 400-level required PHA courses, and general elective credits for a total of 138 credits.
2. Successful completion of the capstone activities are required as part of the degree requirements for both the BS in Pharmaceutical Science and the Doctor of Pharmacy degrees.
3. PHA 410 must be completed during the summer between the P1 and P2 years.
4. 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.
5. PHA 610 must be completed during the summer between the P2 and P3 years.
6. 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.

### 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 a 5 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.

## Pharmacy Practice

James Clem, Head  
Department of Pharmacy Practice  
SAV 149  
605-367-5637  
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<http://www.sdstate.edu/pha/pharmPrac/index.cfm>

### Faculty

Professor Clem, Head; Professor Heins, Assistant Head; Professors Farver, Fischer, Helgeland, Jensen Bender, Kutscher, Lemon, Messerschmidt, Mort; Associate Professors A. Johnson, Laible, Strain, Van Gilder; Assistant Professors Bartel, Hansen, Hayes, Hellwig, Jastorff-Gilles, Kappes, Meyer, Peters, Rausch, Shiyanbola, 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)

See History and Political Science

## Physics (PHYS) Department

Joel Rauber, Head  
Department of Physics  
Daktronics Engineering Hall 255  
605-688-5428  
e-mail: joel.rauber@sdstate.edu  
<http://www.sdstate.edu/phys>

### Faculty

Professor Rauber, Head; Professor Browning; Professors Emeriti Duffey, Graetzer, Leisure, Quist; Associate Professor Huh, McTaggart; Assistant Professors Aaron, Bonvallet; Instructors Stafford, Vondruska.

### Mission

The mission of the SDSU Physics Department is to provide high quality instruction and mentoring in physics, to seek new knowledge, and to apply that knowledge for the improvement of society and humankind.

### 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 professional careers in allied physics fields such as engineering, medical/health physics and many other possibilities; 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, leading to the Bachelors of Science (B.S.) degree in Physics: Physics and Physics-Science Teaching Specialization. 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.

### Major in Physics

The curriculum in Physics has the flexibility to accommodate a wide range of student interests. Students earn a BS in Physics by choosing a physics major with one of four elective groupings to focus their studies or they may choose the BS in Physics – Science Teaching Specialization.

### Educational Outcomes

Graduates will be productively employed and will compare favorably in their theoretical and technical knowledge with students completing similar programs nationally. Physics students will have learned to apply technical knowledge; to design an experiment and analyze and interpret the data; to communicate effectively in a team environment; and to use appropriate scientific tools in solving problems. They will have a basic understanding of contemporary issues and professional/ethical responsibilities in a local and global context. Physics graduates will have enhanced learning skills that prepare them to be lifelong learners.

### 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 engineering/science careers or for graduate programs for advanced degrees related to nuclear engineering, health physics, medical physics, or physics.

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 elective coursework from either physics, mechanical, or 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.

### Educational Outcomes

Students in the Nuclear Engineering program 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.

## Physics (PHYS) Major

Bachelor of Science in Arts and Science for Physics

### System General Education Requirements\*: 33

- Goal #1 Written Communication: ENGL 101 and ENGL 201 **OR** ENGL 277<sup>1</sup> Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4
- Goal #6 Natural Sciences: Credits: 8  
PHYS 111-111L and PHYS 113-113L  
**OR** PHYS 211-211L and PHYS 213-213L

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Seminar: PHYS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 12

Bachelor of Science

- Social Sciences Credits: 3
- Humanities: PHIL 200 **OR** PHIL 331 Credits: 3
- Natural Sciences - Biological Sciences Credits: 6

### Major Requirements: 36

- PHYS 316-316L - Measurement Theory and Experiment Design and Lab (AW) Credits: 2
- PHYS 331 - Introduction to Modern Physics (COM) Credits: 3
- PHYS 490-590 - Seminar (COM) Credits: 1-3 Only 1 credit required for program
- MATH 125 - Calculus II \* (COM) Credits: 4

- MATH 225 - Calculus III \* (COM) Credits: 4
- MATH 321 - Differential Equations (COM) Credits: 3
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3, 1  
**OR** CHEM 106-106L - Chemistry Survey & Lab\* (COM) Credits: 3, 1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3, 1  
**OR** CHEM 120-120L - Elementary Organic Chemistry and Lab\* Credits: 3, 1
- CSC 150-150L - Computer Science I (COM) Credits: 3  
**OR** CSC 218 - Introduction to C/C++/Unix for Engineers Credits: 3
- PHYS 421-521 - Electromagnetism (COM) Credits: 4
- PHYS 341 - Thermodynamics (COM) Credits: 2 and PHYS 343 - Statistical Physics (COM) Credits: 2  
**OR** PHYS 451-551 - Classical Mechanics (COM) Credits: 4  
**OR** PHYS 471-571 - Quantum Mechanics (COM) Credits: 4

### Electives: 34

Select one elective group based on career objectives

#### Group 1: Professional Physics

This group prepares students for a career as a professional physicist or a research scientist in a closely allied scientific discipline. It is an excellent choice for those intending to pursue graduate study in the sciences and/or engineering.

- PHYS 318 - Advanced Laboratory I Credits: 1
- PHYS 341 - Thermodynamics (COM) Credits: 2
- PHYS 343 - Statistical Physics (COM) Credits: 2
- PHYS 361 - Optics (COM) Credits: 3
- PHYS 418 - Advanced Lab II Credits: 1
- PHYS 451-551 - Classical Mechanics (COM)\* Credits: 4
- PHYS 471-571 - Quantum Mechanics (COM)\* Credits: 4
- EE 220-220L - Circuits I and Lab (COM) Credits: 4
- GE 121 - Engineering Design Graphics I Credits: 1
- GE 122 - Engineering Design Graphics II Credits: 1  
**OR** GE 123 - Computer Aided Drawing Credits: 1
- NE 435 - Introduction to Nuclear Engineering Credits: 3  
**OR** PHYS 433-533 - Nuclear and Elementary Particle Physics (COM) Credits: 3  
**OR** PHYS 439-539 - Solid State Physics (COM) Credits: 4
- MATH 331 - Advanced Engineering Mathematics Credits: 3  
**OR** PHYS 481-581 - Mathematical Physics (COM) Credits: 4
- Other Electives Credits: 7-9

\*One of these two courses are used to fulfill four credits of the major requirements.

#### Group 2: Health/Medical Physics

This group prepares students who have career objectives in health physics, medical physics, or other areas of physics applications in the biological sciences. This is the option of choice for students who are pre-medicine majors. Pre-med students may desire additional coursework.

- PHYS 318 - Advanced Laboratory I Credits: 1
- PHYS 418 - Advanced Lab II Credits: 1
- NE 337 - Foundations of Health Physics Credits: 3
- PHYS 361 - Optics (COM) Credits: 3  
**OR** PHYS 433-533 - Nuclear and Elementary Particle Physics (COM) Credits: 3  
**OR** NE 435 - Introduction to Nuclear Engineering Credits: 3
- EE 220-220L - Circuits I and Lab (COM) Credits: 4
- STAT 381 - Introduction to Probability and Statistics (COM) Credits: 3
- BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 4
- BIOL 153-153L - General Biology II and Lab\* Credits: 4
- BIOL 221-221L - Human Anatomy and Lab (COM) Credits: 4
- BIOL 290 - Seminar Credits: 1
- BIOL 325-325L - Physiology and Lab (COM) Credits: 4
- CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 3, 1
- CHEM 328-328L - Organic Chemistry II & Lab (COM) Credits: 3, 1

\*Six of the credits for these courses are used to fulfill the College of Arts and Sciences biological science requirement.



### Group 3: Applied Physics

This group prepares students for careers in applied physics. Students choosing this group will find opportunities to work in nuclear energy, industrial research and development, and many other areas of interest.

- PHYS 318 - Advanced Laboratory I Credits: 1
- PHYS 341 - Thermodynamics (COM) Credits: 2
- PHYS 343 - Statistical Physics (COM) Credits: 2
- PHYS 418 - Advanced Lab II Credits: 1
- NE 337 - Foundations of Health Physics Credits: 3  
**OR** PHYS 361 - Optics (COM) Credits: 3
- NE 435 - Introduction to Nuclear Engineering Credits: 3  
**OR** PHYS 433-533 - Nuclear and Elementary Particle Physics (COM) Credits: 3  
**OR** PHYS 439-539 - Solid State Physics (COM) Credits: 4
- MATH 331 - Advanced Engineering Mathematics Credits: 3  
**OR** PHYS 481-581 - Mathematical Physics (COM) Credits: 4
- EE 220-220L - Circuits I and Lab (COM) Credits: 4
- EM 214 - Statics (COM) Credits: 3
- EM 321 - Mechanics of Materials (COM) Credits: 3
- EM 331 - Fluid Mechanics (COM) Credits: 3
- GE 225 - Survey of Machine Tool Applications Credits: 1
- ME 241 - Engineering Materials Credits: 3
- ME 415 - Heat Transfer Credits: 3
- ENGL 277 - Technical Writing in Engineering\*\* Credits: 3
- ECON 202 - Principles of Macroeconomics (COM) (G)\*\* (COM) (G) Credits: 3
- Other Electives Credit: 1-3

\*These courses are used to fulfill four credits of the major requirements.

\*\*These courses are used to satisfy System Goal Requirements.

### Group 4: Flexible Emphasis

This group prepares students for a non-traditional emphasis area. All plans for Group 4 require working closely with an academic advisor to create a coherent plan of study that must be approved by the Head of the Physics Department. Many non-traditional emphasis areas are possible; examples include Science Journalism, Biophysics, Pre-Law, Chemical Physics, Digital Electronics, Financial Physics, Materials Science, etc. Electives for this option must conform to the following categories.

- Physics Electives Credits: 7
- Technical Electives\* Credits: 3
- Directed Electives Credits: 24

\*Technical electives will be selected with the assistance of the student's advisor from courses offered by the Electrical Engineering, Physics, Computer Science, Chemistry, Biology, and Mathematics Departments. 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.

### Total Required Credits: 120

#### 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 a 5 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.

## Physics (PHYS) Major - Science Teaching Specialization

Bachelor of Science in Arts and Science for Physics

### System General Education Requirements\*: 33

- Goal #1 Written Communication: ENGL 101 and ENGL 201 **OR** ENGL 277 Credits: 6
- Goal #2 Oral Communication: SPCM 101 Credits: 3
- Goal #3 Social Sciences/Diversity: SOC 100 and/or PSYC 101 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 123 Credits: 4
- Goal #6 Natural Sciences: PHYS 211-211L and PHYS 213-213L Credits: 8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Seminar: PHYS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: ANTH 421\*\* Credits: 3

### College Requirements: 12

Bachelor of Science

- Social Sciences: EPSY 302 Credits: 3
- Humanities: PHIL 200 or PHIL 331 Credits: 3
- Natural Sciences: BIOL 101-101L and BIOL 103-103L Credits: 6

### Major Requirements: 39

- PHYS 316-316L - Measurement Theory and Experiment Design and Lab (AW) Credits: 2
- PHYS 331 - Introduction to Modern Physics (COM) Credits: 3
- PHYS 421-521 - Electromagnetism (COM) Credits: 4
- PHYS 341 - Thermodynamics (COM) **and** PHYS 343 - Statistical Physics (COM) Credits: 4  
**OR** PHYS 451-551 - Classical Mechanics (COM) Credits: 4  
**OR** PHYS 471-571 - Quantum Mechanics (COM) Credits: 4
- PHYS 490-590 - Seminar (COM) Credits: 1-3 Only (1 credit required for program.)
- PHYS 337 - Foundations of Health Physics Credits: 3
- PHYS 185-185L - Introduction to Astronomy I and Lab\* (COM) Credits: 3  
**OR** PHYS 187-187L - Introduction to Astronomy II and Lab\* (COM) Credits: 3
- MATH 125 - Calculus II \* (COM) Credits: 4
- MATH 225 - Calculus III \* (COM) Credits: 4
- MATH 321 - Differential Equations (COM) Credits: 3
- CHEM 112-112L - General Chemistry I & Lab\* (COM) Credits: 3,1  
**OR** CHEM 106-106L - Chemistry Survey & Lab\* (COM) Credits: 3,1
- CHEM 114-114L - General Chemistry II & Lab\* (COM) Credits: 3,1  
**OR** CHEM 120-120L - Elementary Organic Chemistry and Lab\* Credits: 3,1

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

## Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- SEED 413 - 7-12 Science Methods (COM) Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

## Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- SEED 488 - 7-12 Student Teaching (COM) Credits: 8

## Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

## Total Credits Required: 120

### 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 a 5 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.

## Minors

### Nuclear Engineering (NE) Minor

#### Required Coursework

- PHYS 331 - Introduction to Modern Physics (COM) Credits: 3
- NE 435 - Introduction to Nuclear Engineering Credits: 3
- NE 337 - Foundations of Health Physics Credits: 3

#### Internship/Research Requirement: 2-3

The internship/research experience must be related to nuclear science or operations in the nuclear industry. Student must obtain prior approval for the experience from the Coordinator.

- NE 494 - Internship Credits: 1-3
- NE 498 - Undergraduate Research/Scholarship Credits: 1-3

#### Elective Credits: 6

Select six or more credits from the following list of courses.

- ME 341-341L - Metallurgy and Lab Credits: 3
- ME 410 - Principles of HVAC Engineering Credits: 3
- ME 413 - Turbomachinery Credits: 3
- ME 418 - Design of Thermal Systems Credits: 3

- ME 437 - Gas Dynamics I Credits: 3
- ME 439-439L - HVAC System Design and Lab Credits: 3
- ME 492/592 - Topics Credits: (1-5)
- PHYS 418 - Advanced Lab II Credits: 1
- PHYS 433-533 - Nuclear and Elementary Particle Physics (COM) Credits: 3
- EE 430-430L - Electromechanical Systems and Lab Credits: 4
- EE 434-434L - Power Systems and Lab Credits: 4

## Total Required Credits: 18

## Physics (PHYS) Minor

### Required Coursework

- PHYS 331 - Introduction to Modern Physics (COM) Credits: 3
- Select one of the following pairs of courses Credits: 8
  - PHYS 111-111L- Intro to Physics I and Lab\*(COM) Credits: 4 AND PHYS 113-113L – Intro to Physics II and Lab\* (COM) Credits: 4

### OR

- PHYS 211-211L - University Physics I and Lab\* (COM) Credits: 4 AND PHYS 213-213L - University Physics II and Lab \* (COM) Credits: 4

### Elective Credits: 6

- Select courses prefixed PHYS; 3 credits of which must be 300 level or higher

## Total Required Credits: 17

## Plant Science Department (HO, LA, AGRO)

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Tom Cheesbrough, Interim Department Head  
Douglas Malo, Assistant Department Head  
Brent Turnipseed, Undergraduate Teaching Coordinator  
Howard Woodard, Graduate Teaching Coordinator  
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### Faculty

Professor Thomas Cheesbrough Interim Head; Distinguished Professor Malo; Distinguished Professor Emeriti Wrage; Professors Ball, Beck, Bleakley, Boe, Burrows, Carlson, Chalmers, D. Clay, S. Clay, Doolittle, Fennell, Fuller, Gelderman, Graper, Hall, Johnson, Kephart, Langham, Maca, Owens, Schaefer, Schleicher, Sutton, Turnipseed, Woodard; Professors Emeriti Collins, Buchenau, Carson, Dybing, Evenson, Gerwing, Gardner, Hall, Kantack, Kenefick, Kohl, Reeves, Peterson, Schumacher, Shank, Shubeck, Smolik, Walstrom; Associate Professors Chase, Glover, Gonzalez, Gu, Moechnig, Nleya, Ren, Sexton, Tilmon; Associate Professors Emeriti Colburn, Pollmann, Stymiest; Assistant Professors Ali, Burger, Grady, Hadi, M. James, Jiang, Li, Rohila, Szczepanec, Subramanian, Wu; Assistant Professors Emeritus Bonnemann, Kingsley; Instructor K. James; Instructor Emeritus Evers. *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; (Biogenetics Inc.) Kahler; (EROS) Shunguang; (HNS) Fokken (GAEA, Inc.) Butler; (North

Central Soil and Water Conservation Research Laboratory, Morris, MN-USDA/ARS) Forcella; (North Central Agricultural Research Laboratory- USDA/ARS) Anderson, Dashiell, French, Hesler, Lehman, Lundgren, Osborne Papiernik, Pikul, Riedell; (Pioneer Hi-Bred) Jackson; (IPNI) Fixen; (Texas A&M) Ibrahim.

### Programs

The primary goal of the Department is to prepare students for success and leadership in business, government, and enterprises related to the Agronomy, Horticulture, and Landscape Architecture majors. In addition, students can prepare for graduate study leading to a career in research, teaching, business, or extension.

Graduates with training in plant science are sought by agribusiness, horticultural businesses, landscape architecture/design firms, 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 majors in Agronomy, Horticulture, and Landscape Architecture.

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 Arboriculture Club, Agronomy and Conservation Club, Horticulture Club, Landscape Club, or Turfjack Club offer opportunities for fellowship, leadership, and career planning. The Department has nationally recognized crops, horticulture, and soils judging teams. Graduate study opportunities may lead to a Master of Science or Doctor of Philosophy degrees in Plant Science or Biological Sciences. See the graduate bulletin for further details.

### Agronomy Major

The 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.

### Horticulture (HO) Major

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 emphasis are available for students with an interest in:

- Crop management and production technologies of greenhouse, nursery, turf, fruit, or vegetable crops can tailor their program of studies using the Production curriculum.
- Careers in managing nurseries, landscape maintenance, arboriculture, or garden center or greenhouse businesses should follow the Business curriculum.
- Careers in food crop production and marketing should follow the Food Crops curriculum.
- 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 man-made 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.

### Minors and Certification

In addition to the three majors, the department offers minors in Agronomy, Horticulture, Pest Management, and Soil Science, as well as a curriculum that prepares students to seek Soil Science Certification.

### Agronomy (AGRO) Major

Bachelor of Science in Agriculture

#### System General Education Requirements\*: 31-34

- Goal #1 Written Communication: ENGL 101 AND 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* or 215 or 222 Credits: 3
- Goal #3 Social Sciences/Diversity: ECON 201 or 202 AND SOC 100, 150, or 240 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 or 115 or 120 Credits: 3-5
- Goal #6 Natural Sciences: BIOL 151-151L AND BIOL 153-153L OR BOT 201-201L Credits: 7-8

#### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: PS 109\*\*<sup>A</sup> Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: PS 213-213L\*\*<sup>A</sup> Credits: 3

#### Major Requirements: 59-62

- PS 103-103L - Crop Production and Lab<sup>A</sup> Credits: 3
- PS 109 - First Year Seminar in Plant Science\*\*<sup>A</sup> Credits: 2 (IGR #1)
- PS 213-213L - Soils and Lab \* \*\* Credits: 2, 1 <sup>A</sup> (IGR #1)
- PS 223-223L - Principles of Plant Pathology and Lab<sup>A</sup> Credits: 3
- PS 305-305L - Insect Biology and Lab (COM)<sup>A</sup> Credits: 3  
OR PS 307-307L - Insect Pest Management and Lab Credits: 3
- PS 323 - Soil Fertility & Plant Nutrient Management <sup>A</sup> Credits: 3
- PS 343-343L - Weed Science and Lab<sup>A</sup> Credits: 3
- PS 390 - Seminar (AW)<sup>A</sup> Credits: 1
- PS 494 - Internship<sup>A</sup> Credits: 0.5-<sup>2</sup>
- PS 490 - Seminar<sup>A</sup> Credits: .5-1
- ABS 475-475L - Integrated Natural Resource Management and Lab (AW) <sup>A</sup> Credits: 3
- PS 383-383L - Principles of Crop Improvement and Lab (AW) Credits: 3  
OR BIOL 202-202L - Genetics & Organismal Biology & Lab Credits: 4  
OR BIOL 371 - Genetics (COM) Credits: 3
- BOT 327-327L - Plant Physiology and Lab (COM) Credits: 4
- PS 492-592 - Topics Credits: 1-3 AND PS 421-421L/521-521L - Soil Microbiology and Lab Credits: 3  
OR MICR 231-231L - General Microbio and Lab (COM)Credits: 4
- CHEM 106-106L - Chemistry Survey and Lab\* (COM) Credits: 3,1  
OR CHEM 112-112L - General Chemistry I and Lab\* (COM) Credits: 3, 1
- CHEM 120-120L - Elementary Organic Chemistry and Lab\* Credits: 3, 1  
OR CHEM 108-108L - Organic & Biochemistry and Lab\* (COM) Credits: 4, 1
- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4  
OR PHYS 111-111L - Intro to Physics I & Lab\* (COM) Credits: 4
- STAT 281 - Introduction to Statistics (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3
- AGEC 354 - Agricultural Marketing and Prices Credits: 3  
OR AS 285-285L - Livestock Eval & Marketing & Lab Credits: 4  
OR BADM 474 - Personal Selling (COM) Credits: 3

• **Natural Resources Stewardship Elective:**<sup>A, 2</sup> 3-4

Select one of the following courses

- ABS 203 - Global Food Systems\*\* (G) Credits: 3
- ABS 482-582 - International Experience (G) Credits: 3
- BIOL 383 - Bioethics\*\* (G) Credits: 4
- PS 243 - Principles of Geology\*<sup>2</sup> Credits: 3
- PS 307-307L - Insect Pest Management and Lab<sup>2</sup> Credits: 3
- PS 310-310L - Soil Geography and Land Use Interpretation and Lab\*\* (G) Credits: 3<sup>2</sup>
- PS 362-362L - Environmental Soil Mgmt and Lab\*\*<sup>2</sup> Credits: 3
- PS 446-546 - Agroecology (G)<sup>2</sup> Credits: 3

• **Plant Science Electives:** 13

Select at least two credits from each of the three areas listed.

**Crops**

- PS 222-222L - Fundamentals of Turf Management and Lab
- PS 303-303L - Seed Technology and Lab Credits: 3
- PS 308-308L - Grain Grading and Lab Credits: 2
- PS 312 - Grain and Seed Production and Processing Credits: 3
- PS 313 - Forage Crop and Pasture Management Credits: 3
- PS 320 - Crop Judging<sup>1</sup> Credits: 2
- PS 383-383L - Principles of Crop Improvement and Lab<sup>2</sup> (AW) Credits: 3
- PS 423-523 - Turfgrass Stress Physiology Credits: 3
- PS 440-440L - Crop Management with Precision Farming and Lab Credits: 3
- PS 453-553 - Advanced Genetics Credits: 3

**Plant Protection**

- PS 307-307L - Insect Pest Management and Lab<sup>2</sup> Credits: 3  
**OR** PS 305-305L - Insect Biology & Lab<sup>2</sup> (COM) Credits: 3
- PS 322-322L - Turfgrass Pests and Lab Credits: 2
- PS 333-333L - Diseases of Field Crops and Lab Credits: 3
- PS 334-334L - Diseases of Horticultural Crops and Lab Credits: 3
- PS 415-415L/515-515L - Mycology and Lab Credits: 3
- PS 431-531 - Insect Ecology & Biological Control Credits: 3
- PS 450-450L/550-550L - Field Study of Plant Disease Diagnosis and Lab Credits: 2

**Soils/Environmental Protection**

- PS 243 - Principles of Geology\*<sup>2</sup> Credits: 3
- PS 244 - Geological Resources of SD Lab Credits: 1
- PS 310-310L - Soil Geography & Land Use Interpretation & Lab\*\*<sup>2</sup> (G) Credits: 3
- PS 321 - Soil Judging<sup>1</sup> Credits: 1
- PS 362-362L - Environmental Soil Management & Lab\*\*<sup>2</sup> Credits: 3
- PS 412-512 - Environmental Soil Chemistry Credits: 3
- PS 421-421L/521-521L - Soil Microbiology & Lab<sup>2</sup> Credits: 3
- PS 446-546 - Agroecology<sup>2</sup> (G) Credits: 3
- PS 4/573-4/573L - Rural Real Estate Appraisal & Lab Credits: 3
- PS 483 - Irrigation – Crop and Soil Practices Credits: 3

**Elective Courses: 17**

**Total Required Credits: 125**

**Notes:**

1. Cannot be used to solely meet area requirements.
2. Can only be used to meet requirements in one section

<sup>A</sup> 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.

**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 a 5 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 (HORT) Major**

Bachelor of Science in Agriculture

**System General Education Requirements\*:** 31

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: BIOL 101-101L and CHEM 106-106L Credits: 7

**Institutional Graduation Requirements\*\*:** 5

- Goal #1 First Year Experience: PS 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility PS 213-213L\*\* Credits: 2, 1

**College Requirements:** 9

- HO 111-111L - Biology of Horticulture and Lab Credits: 3
- PS 223-223L - Principles of Plant Pathology and Lab Credits: 3
- PS 305-305L - Insect Biology and Lab (COM) Credits: 3

**Major Requirements:** 47

- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4
- BOT 201-201L - General Botany and Lab\* (COM) Credits: 3
- BOT 327-327L - Plant Physiology and Lab (COM) Credits: 4
- CHEM 108-108L - Organic and Biochemistry and Lab\* (COM) Credits: 4, 1
- HO 222-222L - Fundamentals of Turf Management & Lab Credits: 3
- HO 231 - Greenhouse Crop Production Credits: 2
- HO 250-250L - Woody Plants: Trees and Lab Credits: 3
- HO 260 - Woody Plants: Shrubs and Vines Credits: 2
- HO 290 - Professionalism in Horticulture Seminar Credits: 2
- HO 311-311L - Herbaceous Plants and Lab Credits: 3
- HO 312-312L - Plant Propagation and Lab Credits: 3
- HO 330 - Arboriculture Credits: 2
- HO 350 - Environmental Stewardship in Horticulture Credits: 3
- HO 440-540 - Vegetable Crop Systems Credits: 3  
**OR** HO 411-511 - Fruit Crop Systems Credits: 3
- HO 464 - Senior Project I (AW) Credits: 1
- HO 465 - Senior Project II (AW) Credits: 2
- HO 494 - Internship Credits: 1-12  
**OR** HO 496 - Field Experience Credits: 1-12

**Technical Emphasis Electives:** 24

Students will select credits from one of the groups of Horticulture technical electives.

**Business Emphasis**

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- AGECE 354 - Agricultural Marketing and Prices Credits: 3
- AST 434-434L - Landscape Irrigation and Lab Credits: 3
- BADM 280 - Personal Finance (COM) Credits: 3
- BADM 310 - Business Finance (COM) †† Credits: 3
- BADM 334 - Small Business Management (COM) Credits: 3

- BADM 350 - Legal Environment of Bus (COM) †† Credits: 3
- BADM 351 - Business Law (COM) Credits: 3
- BADM 360 - Organization & Management (COM) †† Credits: 3
- ECON 201 - Principles of Microeconomics \* \*\* (COM) Credits: 3
- ECON 202 - Principles of Macroeconomics\* (COM) (G) Credits: 3
- ECON 330 - Money and Banking (COM) Credits: 3
- ECON 370 - Marketing †† Credits: 3
- ECON 476-576 - Marketing Research Credits: 3
- PS 343-343L - Weed Science and Lab Credits: 3
- HO 322-322L - Turfgrass Pests and Lab Credits: 2
- HO 331 - Arboricultural Operations Credits: 1
- HO 383-383L - Principles of Crop Improvement & Lab Credits: 3
- HO 440-540 - Vegetable Crop Systems† Credits: 1-3  
OR HO 411-511 - Fruit Crop Systems† Credits: 1-3
- HO 415 - Nursery Management Credits: 3
- PS 343-343L - Weed Science and Lab Credits: 3

† Modules must be different than those used to satisfy core curriculum.

†† Students seeking a Management Minor must take BADM/MGMT 310 and BADM/MGMT 360, and may take BADM/MGMT 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.

#### **Food Crop Electives: 24**

- ABS 203 - Global Food Systems \*\* (G) Credits: 3
- AST 434-434L - Landscape Irrigation and Lab Credits: 3
- BADM 334 - Small Business Management (COM) Credits: 3
- CS 230 - Consumer Behavior Credits: 3
- ENTR 202 - HR Operations in Entrepreneurship Credits: 3
- ENTR 204 - Finance/ Venture Capital in Entrepreneurship Credits: 1
- ENTR 205 - Legal Issues/Business Structure/Risk Mangmnt Credits: 1
- ENTR 207 - Financial Analysis/Record Keeping/Accounting in Entrepreneurship Credits: 1
- ENTR 301 - Marketing/Promotion in Entrepreneurship Credits: 1
- ENTR 304 - Strategy/Pricing/Location in Entrepreneurship Credits: 1
- ENTR 336 - Entrepreneurship I (COM) Credits: 3
- ENTR 489 - Business Plan Writing and Competition (COM) Credits: 1
- HO 412-412L - Greenhouse Management and Lab Credits: 3
- HO 440-540 - Vegetable Crop Systems † Credits 1-3  
OR HO 411-511 - Fruit Crop Systems † Credits 1-3
- HMG 171 - Introduction to Hospitality Industry Credits: 3
- HMG 251 - Foodservice Sanitation Credits: 1
- MCOM 161-161L - Fundamentals of Desktop Publishing & Lab (COM) Credits: 3
- MICR 231-231L - General Microbiology and Lab (COM) Credits: 4
- MICR 311-311L - Food Microbiology and Lab Credits: 4
- NFS 111 - Food, People and the Environment\*\* Credits: 3
- NFS 151 - Food Safety and Technology Credits: 3
- NFS 341-341L - Food Science and Lab Credits: 4
- NFS 351-351L - Principles of Food Processing & Lab Credits: 3

† Modules must be different than those used to satisfy core curriculum.

#### **Production Electives: 24**

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- AST 434-434L - Landscape Irrigation and Lab Credits: 3
- BADM 360 - Organization & Management (COM) Credits: 3
- HO 383-383L - Principles of Crop Improvement & Lab Credits: 3
- HO 412-412L - Greenhouse Management and Lab Credits: 3
- HO 415 - Nursery Management Credits: 3
- HO 440-540 - Vegetable Crop Systems† Credits: 1-3  
OR HO 411-511 - Fruit Crop Systems† Credits: 1-3

- HO 322-322L - Turfgrass Pests and Lab Credits: 2
- HO 327-327L - Golf Course Design & Management & Lab Credits: 3
- HO 331 - Arboricultural Operations Credits: 1
- HO 423-523 - Turfgrass Stress Physiology Credits: 2
- LA 201 - Introduction to Landscape Design Credits: 3
- PS 343-343L - Weed Science and Lab Credits: 3

† Modules must be different than those used to satisfy core curriculum.

#### **Science Electives: 24**

- BIOL 202-202L - Genetics and Organismal Bio & Lab Credits: 4
  - BIOL 204-204 L - Genetics and Cellular Bio & Lab Credits: 4
  - CHEM 114-114L - General Chem II & Lab\*(COM)Credits: 4
  - CHEM 326-326L - Organic Chem I & Lab (COM) Credits: 4
  - CHEM 464 - Biochemistry I (COM) Credits: 3
  - CHEM 466 - Laboratory Methods- Biochemistry Credits: 1
  - STAT 281 - Introduction to Statistics (COM) Credits: 3
  - Horticulture Elective Credits: 1
- \*Students wishing to pursue a graduate degree or laboratory science career should replace biology, math and chemistry in the core curriculum with the following courses.
- CHEM 112-112L - General Chem I & Lab\* (COM) Credits: 4
  - BIOL 151-151L - General Biology I & Lab\*(COM) Credits 4
  - MATH 120 - Trigonometry \* (COM) Credits: 3

#### **Turfgrass Electives: 24**

- AM 381 - Professional Behavior at Work Credits: 3
- AST 213-213L - Ag, Industrial & Outdoor Power & Lab Credits 3
- AST 434-434L - Landscape Irrigation and Lab Credits: 3
- BADM 334 - Small Business Management (COM) Credits: 3
- BADM 350 - Legal Environment of Business(COM)Credits 3
- BADM 360 - Organization & Management (COM) Credits: 3
- BOT 405-405L/505-505L - Grasses & Grasslike Plants and Lab Credits: 3
- HO 322-322L - Turfgrass Pests and Lab Credits: 3
- HO 327-327L - Golf Course Design and Management and Lab Credits: 3
- HO 383-383L - Principles of Crop Improvement & Lab Credits: 3
- HO 423-523 - Turfgrass Stress Physiology Credits: 2
- HO 422 - Current Issues in Turfgrass Science Credits: 1
- LA 201 - Introduction to Landscape Design Credits 3
- PS 323 - Soil Fertility & Plant Nutrient ManagementCredits:3
- PS 343-343L - Weed Science and Lab Credits: 3

#### **Total Required Credits: 120**

#### **Curriculum Notes:**

- † Modules must be different than those used to satisfy core curriculum.
- †† 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 a 5 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.

## Landscape Architecture (LA) Major

Bachelor of Science in Agriculture

### System General Education Requirements\*: 30-31

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences CHEM 106-106L or CHEM 112-112L AND BIOL 101-101L or BIOL 151-151L Credits: 7-8

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: PS or NRM 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: PS 213-213L - Soils and Lab \* \*\* Credits: 3

### College Requirements: 12

- HO 111-111L - Biology of Horticulture and Lab Credits: 3
- LA 201 - Introduction to Landscape Design Credits: 3
- NRM 110 - Environmental Conservation \*(G) Credits: 3
- PS 213-213L - Soils and Lab \* \*\* Credits: 3

### Major Requirements: 63

- HO 250-250L - Woody Plants: Trees and Lab Credits: 3
- HO 260 - Woody Plants: Shrubs and Vines Credits: 2
- HO 311-311L - Herbaceous Plants and Lab Credits: 3
- LA 120 - Fundamentals of Landscape Graphics Credits: 2
- LA 231 - Computer Applications in Landscape Architecture Credits: 3
- LA 241 - History of Landscape Architecture Credits: 3
- LA 284 - Landscape Graphics and Theory of Design Credits: 4
- LA 314 - Landscape Design Studio Credits: 4
- LA 322 - Landscape Site Engineering Credits: 3
- LA 323 - Landscape Construction Credits: 3
- LA 324-324L - Planning Public Grounds and Lab Credits: 3
- LA 364 - Planting Design and Specifications Credits: 4
- LA 421-421L - City Planning and Lab Credits: 3
- LA 424-424L - Recreational Facilities Design & Lab Credits: 3
- LA 464 - Landscape Professional Practicum Studio Credits: 4
- LA 289 - Travel Studies in Landscape Architecture Credits: 1
- LA 289L - Travel Studies in Landscape Architecture Lab Credits: 2

### Supporting Coursework

- AST 434-434L - Landscape Irrigation and Lab Credits: 3
- CM 210-210L - Construction Surveying and Lab Credits: 3
- GE 123 - Computer Aided Drawing Credits: 1
- ENGL 379 - Technical Communication (AW) Credits: 3
- MATH 120 - Trigonometry \* (COM) Credits: 3
- Elective Credits: 0-1

### Technical Emphasis Focus: 12

Students select credits from one or both of the following focus areas<sup>1</sup>.

#### Design/Build Focus: 12

- ACCT 210 - Principles of Accounting I (COM) Credits: 3
- ACCT 211 - Principles of Accounting II (COM) Credits: 3
- BADM 280 - Personal Finance (COM) Credits: 3
- BADM 310 - Business Finance (COM) Credits: 3
- BADM 334 - Small Business Management (COM) Credits: 3
- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM 360 - Organization & Management (COM) Credits: 3
- BADM 474 - Personal Selling (COM) Credits: 3
- ECON 201 - Principles of Microeconomics\* \*\* (COM) Credits: 3
- HO 222-222L - Fundamentals of Turf Management & Lab Credits: 3
- HO 312-312L - Plant Propagation and Lab<sup>2</sup> Credits: 3
- HO 412-412L - Greenhouse Management and Lab<sup>2</sup> Credits: 3

- HO 350 - Environmental Stewardship in Horticulture Credits: 3
- LA 327-327L - Golf Course Design and Management and Lab Credits: 3

### Professional Practice Focus: 12

- ART 111 - Drawing I \* \*\* (COM) Credits: 3
- ART 121 - Design I 2D \* \*\* (COM) Credits: 3
- ART 123 - Three Dimensional Design \* \*\* (COM) Credits: 3
- BIOL 311-311L - Principles of Ecology & Lab<sup>2</sup> (COM) Credits: 4
- BOT 419-419L - Plant Ecology & Lab<sup>2</sup> (COM) (G) Credits: 4
- GEOG 472 - Introduction to GIS Credits: 3
- GEOG 473-573 - GIS: Data Creation & Integration Credits: 3
- GEOG 474-574 - GIS: Vector and Raster Modeling Credits: 3
- LA/BIOL/NRM 440-440L - Restoration Ecology & Lab<sup>2</sup> Credits: 4
- PHIL 220 - Introduction to Ethics \* (COM) Credits: 3
- PHIL 320 - Professional Ethics Credits: 3
- PLAN 471-571 - Principles of State, Regional and Community Planning Credits: 3
- PS 243 - Principles of Geology\* Credits: 3
- RANG 210-210L - Range Plant Identification and Lab Credits: 2
- SOC 240 - Sociology of Rural America\* (COM) (G) Credits: 3
- SOC 440 - Urban Sociology (COM) (G) Credits: 3
- PSYC 244 - Environmental Psychology \*\* Credits: 3

### Total Required Credits: 120

#### Curriculum Notes:

- <sup>1</sup> Students wishing to complete a Horticulture Minor should take an additional 12 credits of HO courses.
  - <sup>2</sup> Course requires completion of one or more prerequisites.
- 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 a 5 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.

## Minors

### Agronomy (AGRO) Minor

#### Required Coursework

- PS 103-103L - Crop Production and Lab Credits: 3
- PS 213-213L - Soils and Lab \* \*\* Credits: 3
- PS 223-223L - Principles of Plant Pathology and Lab Credits: 3
- PS 305-305L - Insect Biology and Lab (COM) Credits: 3
- OR PS 307-307L - Insect Pest Management and Lab Credits: 3
- PS 323 - Soil Fertility and Plant Nutrient Management Credits: 3
- PS 343-343L - Weed Science and Lab Credits: 3

### Total Required Credits: 18

#### Note

- 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.

### Horticulture (HO) Minor

#### Required Coursework

- HO 100 - Survey of Horticulture Credits: 1
- HO 111-111L - Biology of Horticulture and Lab Credits: 3
- HO 250-250L - Woody Plants: Trees and Lab Credits: 3
- OR HO 311-311L - Herbaceous Plants and Lab Credits: 3



### Elective Credits: 11

Select from the following courses.

- HO 440-540 - Vegetable Crop Systems Credits: 1-6  
**OR** HO 411-511 - Fruit Crop Systems Credits: 1-6
- HO 222-222L - Fundamentals of Turf Management and Lab Credits: 3
- HO 231 - Greenhouse Crop Production Credits: 2
- HO 260 - Woody Plants: Shrubs and Vines Credits: 2
- HO 290 - Professionalism in Horticulture Seminar Credits: 2
- HO 312-312L - Plant Propagation and Lab Credits: 3
- HO 322-322L - Turfgrass Pests and Lab Credits: 2
- HO 330 - Arboriculture Credits: 2
- HO 331 - Arboricultural Operations Credits: 1
- HO 350 - Environmental Stewardship in Horticulture Credits: 3
- HO 383-383L - Principles of Crop Improvement & Lab Credits: 3
- HO 412-412L - Greenhouse Management and Lab Credits: 3
- HO 415 - Nursery Management Credits: 3
- HO 423-523 - Turfgrass Stress Physiology Credits: 3
- HO 422 - Current Issues in Turfgrass Science Credits: 1

**Total Required Credits: 18**

### Pest Management Minor

#### Required Coursework

- PS 223-223L - Principles of Plant Pathology and Lab Credits: 3
- PS 305-305L - Insect Biology and Lab<sup>1</sup> (COM) Credits: 3  
**OR** PS 307-307L - Insect Pest Management and Lab<sup>1</sup> Credits: 3
- PS 343-343L - Weed Science and Lab Credits: 3

### Elective Credits: 8

Select at least eight credits from the following list of courses.

- PS 305-305L - Insect Biology and Lab<sup>1</sup> (COM) Credits: 3  
**OR** PS 307-307L - Insect Pest Management and Lab<sup>1</sup> Credits: 3
- PS 333-333L - Diseases of Field Crops and Lab Credits: 3
- PS 334-334L - Diseases of Horticultural Crops and Lab Credits: 3
- PS 415-415L/515-515L - Mycology and Lab Credits: 3
- PS 431-531 - Insect Ecology and Biological Control Credits: 3
- PS 450-450L/550-550L - Field Study of Plant Disease Diagnosis and Lab Credits: 2
- PS 491 - Independent Study<sup>2</sup> Credits: 1-5
- PS 492-592 - Topics<sup>2</sup> Credits: 1-3

**Total Required Credits: 18**

#### Notes

<sup>1</sup> Can only be used to meet requirements in one section.

<sup>2</sup> 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 Minor

#### Required Coursework

- PS 213-213L - Soils and Lab \* \*\* Credits: 3
- PS 310-310L - Soil Geography and Land Use Interpretation and Lab\*\* (G) Credits: 3
- PS 323 - Soil Fertility and Plant Nutrient Management Credits: 3
- PS 362-362L - Environmental Soil Mngmnt & Lab \*\* Credits: 3
- PS 412-512 - Environmental Soil Chemistry Credits: 3
- PS 421-421L/521-521L - Soil Microbiology and Lab Credits: 3

**Total Required Credits: 18**

#### Note

- Students must have a 2.5 GPA or higher and a grade of C or higher in the courses used to satisfy the Soil Science Minor in order to graduate with a Soil Science Minor.

## Certifications

### Soil Science Certification

Requirements for Soil Science Certification

The following courses are strongly recommended for students seeking certification or licensure as a professional soil scientist.

- PS 213-213L - Soils and Lab \* \*\* Credits: 3
- PS 310-310L - Soil Geography and Land Use Interpretation and Lab\*\* (G) Credits: 3
- PS 323 - Soil Fertility and Plant Nutrient Management Credits: 3
- PS 362-362L - Environmental Soil Management and Lab \*\* Credits: 3
- PS 412-512 - Environmental Soil Chemistry Credits: 3
- PS 421-421L/521-521L - Soil Microbiology and Lab Credits: 3
- Soils Elective Credits: 3

### Political Science (POLS)

(See History and Political Science)

### Pre-Professional Interest Areas

(See page 57 for listing of specific coordinating departments)

### Professional Writing Minor

(See English)

## Psychology (PSYC) Department

Brad Woldt, Head

Department of Psychology

Scobey Hall 336

605-688-4322

e-mail: bradley.woldt@sdstate.edu

http://www.sdstate.edu/psych/index.cfm

#### Faculty

Professor Woldt, Head; Professors Emeriti Branum, Hillner, Norris; Professors Phelps, Spear; Associate Professors Martin, Nowell; Assistant Professors Jenson, Miller; Instructor Jantzer.

#### Programs

The Department offers a Bachelor of Science degree with a major in Psychology as well as a minor in Psychology. Students interested in preparation for a specific area may pursue the major with one of two emphases and one specialization. The emphases include graduate school preparation and psychological services. The department also offers a teaching specialization to prepare majors 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. Advisors 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 (PSYC) Major

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: (3 credits not PSYC) Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### College Requirements: 13-34

Bachelor of Science

- Natural Sciences Credits: 8
  - Biological Sciences
  - Physical Sciences
- Humanities (not PSYC) Credits: 3
- Social Sciences Credits: 2

### Major Requirements: 39

- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- PSYC 202 - The Psychology Major Credits: 3
- PSYC 210 - Introduction to Biopsychology Credits: 3
- PSYC 375-375L - Research Methods in Psychology and Lab Credits: 4
- PSYC 376-376L - Research Methods II and Lab (AW) Credits: 4
- PSYC 409 - History and Systems of Psychology (COM) (AW) (G) Credits: 3

### Domain I- Choose one from the following:

- PSYC 244 - Environmental Psychology \*\* Credits: 3
- PSYC 287 - Controversial Issues in Psychology Credits: 3
- PSYC 289 - Pseudoscience and Psychology Credits: 3

### Domain II- Choose two from the following:

- PSYC 301 - Sensation and Perception (COM) Credits: 3
- PSYC 305 - Learning and Conditioning (COM) Credits: 3 +
- PSYC 406 - Cognitive Psychology (COM) Credits: 3 +
- PSYC 411 - Physiological Psychology Credits: 3 +
- PSYC 414 - Drugs and Behavior (COM) Credits: 3

### Domain III- Choose one from the following:

- PSYC 324 - Psychology of Aging Credits: 3
- PSYC 327 - Child Psychology \*\* (COM) Credits: 3 +
- PSYC 364 - Cross Cultural Psychology\*\* Credits: 3
- PSYC 367 - Psychological Gender Issues Credits: 3 +

### Domain IV- Choose one from the following:

- PSYC 417 - Health Psychology \*\* (COM) Credits: 3
- PSYC 441 - Social Psychology \*\* (COM) Credits: 3 +
- PSYC 451 - Psychology of Abnormal Behavior \*\* (COM) Credits: 3 +
- PSYC 461 - Theories of Personality \*\* (COM) Credits: 3

### Domain V- Choose one from the following:

- PSYC 331 - Industrial and Organizational Psychology (COM) Credits: 3
- PSYC 357 - Psychological Therapies Credits: 3
- PSYC 358 - Behavior Modification Credits: 3
- PSYC 427 - Child Psychopathology Credits: 3
- PSYC 440-540 - Forensic Psychology Credits: 3
- PSYC 477 - Psychology Testing and Measurement (COM) Credits: 3

### Domain VI- Choose one from the following:

Lab courses must be taken concurrently with the corresponding lecture course.

- PSYC 301L - Sensation and Perception Lab Credits: 1
- PSYC 305L - Learning and Conditioning Lab Credits: 1
- PSYC 367L - Psychological Gender Issues Laboratory Credits: 1
- PSYC 406L - Cognitive Psychology Laboratory Credits: 1
- PSYC 441L - Social Psychology Laboratory Credits: 1
- PSYC 477L - Psychology Testing and Measurement Laboratory Credits: 1

### Electives: 33-34

### Total Required Credits: 120

### Plans of Study

Students should consult with an advisor to personalize their curriculum plans, and may select between the major, the minor, the teaching specialization, and the two emphases.

### <sup>+</sup>Teaching specialization

This course required for the Teaching specialization, and counts towards both the major and the specialization.

### Graduate School Preparation Emphasis

The graduate school preparation emphasis is designed to provide preparation for continuing training in psychology at the graduate level. It establishes a strong foundation in principles of psychology, techniques for analyzing behavior and mental processes, historical findings and theoretical approaches. A senior independent research project is required for this emphasis.

### Psychological Services Emphasis

The psychological services emphasis is designed for those persons interested in working as diagnostic and therapeutic aides in human service facilities. The program for this emphasis includes familiarization with standard tests and techniques of therapy, as well as a supervised senior internship at a human services facility.

### Curriculum Notes

- Courses used for the major or minor require a minimum grade of C.
- \* 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 a 5 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.

# Psychology (PSYC) Major - Teaching Specialization

Bachelor of Science in Arts and Science

## System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101 and 3 credits not PSYC Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences Credits: 6

## Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility (PSYC) Credits: 3

## College Requirements: 12

Bachelor of Science

- Natural Sciences Credits: 7  
PSYC 375-375L Credit: 3 *supplies the added physical science credits*
- Humanities Credits: 2
- Social Sciences: ANTH 421- Indians of North America Credits: 3

## Major Requirements: 45

- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- PSYC 202 - The Psychology Major Credits: 3
- PSYC 210 - Introduction to Biopsychology Credits: 3
- PSYC 375-375L - Research Methods in Psychology and Lab Credits: 4
- PSYC 376-376L - Research Methods II and Lab (AW) Credits: 4
- PSYC 409 - History and Systems of Psychology (COM) (AW) (G) Credits: 3

## Domain I- Complete one of the following: 3

- PSYC 244 - Environmental Psychology \*\* Credits: 3
- PSYC 287 - Controversial Issues in Psychology Credits: 3
- PSYC 289 - Pseudoscience and Psychology Credits: 3

## Domain II- Complete both of the following: 6

- PSYC 305 - Learning and Conditioning (COM) Credits: 3
- PSYC 406 - Cognitive Psychology (COM) Credits: 3

## Domain III- Complete both of the following: 6

- PSYC 327 - Child Psychology \*\* (COM) Credits: 3
- PSYC 367 - Psychological Gender Issues Credits: 3

## Domain IV- Complete one of the following: 6

- PSYC 441 - Social Psychology \*\* (COM) Credits: 3
- PSYC 451 - Psychology of Abnormal Behavior \*\* (COM) Credits: 3

## Domain V- Complete one of the following: 3

- PSYC 331 - Industrial and Organizational Psychology (COM) Credits: 3
- PSYC 357 - Psychological Therapies Credits: 3
- PSYC 358 - Behavior Modification Credits: 3
- PSYC 427 - Child Psychopathology Credits: 3
- PSYC 440-540 - Forensic Psychology Credits: 3
- PSYC 477 - Psychology Testing and Measurement (COM) Credits: 3

## Domain VI- Complete one of the following: 1

Lab courses must be taken concurrently with the corresponding lecture course.

- PSYC 301L - Sensation and Perception Lab Credits: 1
- PSYC 305L - Learning and Conditioning Lab Credits: 1
- PSYC 367L - Psychological Gender Issues Laboratory Credits: 1

- PSYC 406L - Cognitive Psychology Laboratory Credits: 1
- PSYC 441L - Social Psychology Laboratory Credits: 1
- PSYC 477L - Psychology Testing and Measurement Laboratory Credits: 1

## Electives: 33-34

## Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

## Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

## Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- SEED 415 - 7-12 Social Science Methods (COM) Credits: 3
- Native American Courses Approved for Teacher Education ANTH 421- Indians of North America Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

## Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)

**OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8**

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

## Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

## Total Credits Required: 120

## 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 a 5 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.

## Minor

### Psychology (PSYC) Minor

#### Required Coursework

- PSYC 101 - General Psychology \* \*\* (COM) Credits: 3
- PSYC 210\* - Introduction to Biopsychology Credits: 3  
\*(pre-requisite PSYC 101 with a C or better)

#### Electives

- 300-400 level Psychology courses Credits: 12

#### Total Required Credits: 18

#### Range Science (RANG)

(See Natural Resource Management)

#### Recreation Administration Minor

(See Health and Nutrition Science)

#### Religion (REL) Minor

(See History and Political Science)

#### Reserve Officer Training Corps

(See Aerospace Studies, Military Science)

## Sociology and Rural Studies Department (CJUS, SOC)

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#### Faculty

Professor Emery, Department Head; Professors Arwood, Kayongo-Male, Redlin, Stover; Distinguished Regental Professor Emeritus R. Wagner; Professor Emeriti Hess, Mendelsohn, Satterlee; Associate Professor Emeritus Grant; Assistant Professors Jantzer, Froelich, McCurry, Lecturers: O'Neil, Atwood, Ahmad; Instructor Marlene Schulz

#### 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 advisor based on choice of specialization.

#### Sociology Major (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. Students must also achieve a minimum of a

C in all Sociology courses. 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)

#### Sociology Major - Teaching Specialization (BS)

Prepares the student 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 off-campus 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 Human Services Coordinator at SDSU. Students seeking more general social service type careers should select the Human Services specialization. (Minimum GPA of 2.2 in the major and at least a C in all courses 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.)

#### Sociology Minor

Includes SOC 100, and 15 additional (SOC or ANTH) credits. Six credits must be from courses 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

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.

#### 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.

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 must also earn at least a C in each course taken for the minor. 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.

## Sociology (SOC) Major

Bachelor of Science and Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility (can use SOC) Credits: 3

### College Requirements: 3-14

Bachelor of Arts 3-14

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences requirement may be met within major requirements.

Bachelor of Science 10

- Natural Sciences Credits: 8  
Biological Sciences (Can use ANTH 220)  
Physical Sciences
- Humanities Credits: 2

### Major Requirements: 33

- SOC/ANTH Electives Credits: 21
- SOC 100 - Introduction to Sociology \* (COM) (G) Credits: 3
- SOC 307 - Research Methods I Credits: 3
- SOC 308 - Research Methods II Credits: 3
- SOC 403 - Sociological Theory (COM) Credits: 3

### Elective Credits: 38-55

### Total Required Credits: 120

### Curriculum Notes

- 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.
- \* 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 a 5 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.

## Sociology Major (SOC) - Teaching Specialization

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity: (SOC 100 and ANTH 210 *recommended*) Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: SOC 462\*\* Credits: 3

### College Requirements: 10

- Natural Sciences Credits: 8  
Biological Sciences (ANTH 220 *recommended*)  
Physical Sciences
- Humanities Credits: 2

### Major Requirements: 33

- SOC 100 - Introduction to Sociology \* (COM) (G) Credits: 3
- SOC 307 - Research Methods I Credits: 3
- SOC 308 - Research Methods II Credits: 3
- SOC 403 - Sociological Theory (COM)
- ANTH/SOC Departmental Electives Credits: 21

### Electives: 0-17

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Ed. (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- SEED 415 - 7-12 Social Science Methods (COM) Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)  
OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Credits Required: 120

### 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 a 5 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.

## Sociology Major - Human Resources Specialization

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility (can use SOC) Credits: 3

### College Requirements: 16

- Bachelor of Science 16
- Natural Sciences Credits: 14
- Biological Sciences (Can use ANTH 220) Credits: 6
- Physical Sciences Credits: 8
- Humanities Credits: 2

### Major Requirements: 38

Specialization Core: 21

- SOC 100 - Introduction to Sociology \* (COM) (G)Credits: 3
- SOC 307 - Research Methods I Credits: 3
- SOC 308 - Research Methods II Credits: 3
- SOC 403 - Sociological Theory (COM)Credits: 3
- SOC 353 - Sociology of Work (COM)Credits: 3
- SOC 453 - Industrial Sociology Credits: 3
- ACCT 210 - Principles of Accounting I (COM)Credits: 3

### Specialization Electives: 17

Directed Electives Courses: 12

*\*STRONGLY RECOMMENDED COURSES for the HUMAN RESOURCES SPECIALIZATION*

- BADM 350 - Legal Environment of Business (COM) Credits: 3
- BADM/MGMT 360 - Organization and Management (COM) Credit: 3
- BADM/MGMT 460 - Human Resource Management (COM) Credits: 3\*
- BADM/ECON 370 - Marketing (COM) Credits: 3
- CA 289 - Consumers in the Market Credits: 3
- CSC 105 - Introduction to Computers (COM) Credits: 3
- CSC 205 - Advanced Computer Applications (COM) Credits: 3
- CSC 325 - Management Information Systems (COM) Credits: 3
- ECON 101 - Global Economy \* (G) Credits: 3
- ECON 201 - Principles of Microeconomics \* \*\* (COM) Credits: 3
- ECON 433 - Public Finance (COM) (AW)Credits: 3
- ECON 467 - Labor Law and Economics Credits: 3
- ECON 431-531 - Managerial Economics Credits: 3
- ECON 450-550 - Industrial Organization (COM) Credits: 3
- ENGL 379 - Technical Communication (AW) Credits: 3\*
- POLS 320 - Public Administration (COM) Credits: 3
- POLS 454 - International Law & Organization (COM) Credits: 3
- PSYC 331 - Industrial and Organizational Psychology (COM) Credits: 3
- PSYC 477 - Psychology Testing and Measurement (COM) Credits: 3
- PSYC 331 - Industrial and Organizational Psychology (COM) Credits: 3
- SOC 330 - Self and Society (COM) Credits: 3
- SOC 350 - Race and Ethnic Relations (COM) (G) Credits: 3
- SOC 433-533 - Leadership and Organizations (COM) Credits: 3\*
- SPAN 350 - Spanish for Business Communication (COM) Credits: 3
- SPCM 215 - Public Speaking (COM) \* Credits: 3\*

### Department Electives Courses: 5

- SOC 494 - Internship Credits: 1-12\* *STRONGLY RECOMMENDED*
- ANTH 210 - Cultural Anthropology \* (COM) Credits: 3
- ANTH 220 - Physical Anthropology \* (COM) Credits: 3
- ANTH 421/521 - Indians of North America \*\* Credits: 3
- ANTH 491-591 - Independent Study (COM) Credits: (1-3)
- ANTH 492-592 - Topics Credits: 1-3
- ANTH 494 - Internship Credits: 1-12
- ANTH 496 - Field Experience Credits: 1-12
- SOC 150 - Social Problems \* (COM) (G) Credits: 3
- SOC 240 - Sociology of Rural America\* (COM) (G) Credits: 3
- SOC 250 - Courtship and Marriage \* (COM) Credits: 3
- SOC 270 - Introduction to Social Work (COM) Credits: 3
- SOC 271 - Social Work Skills and Methods I Credits: 3
- SOC 325 - Domestic and Intimate Violence Credits: 3
- SOC 351 - Criminology (COM) Credits: 3
- SOC 354 - Victimology Credits: 3
- SOC 382 - The Family (COM) Credits: 3
- SOC 400 - Social Policy (COM) Credits: 3
- SOC 402-502 - Social Deviance (COM) Credits: 3
- SOC 440 - Urban Sociology (COM) (G) Credits: 3
- SOC 455-555 - Juvenile Delinquency (COM) Credits: 3
- SOC 456-556 - Community Corrections (COM) Credits: 3
- SOC 460-560 - Advanced Criminology (COM) Credits: 3
- SOC 462-562 - Population Studies \*\* (COM) Credits: 3
- SOC 483 - Sociology of Gender Roles (COM) (G) Credits: 3
- SOC 490 - Seminar (COM) Credits: (1-3)
- SOC 491 - Independent Study (COM) Credits: 1-3
- SOC 492 - Topics (COM) Credits: 1-3

### General Electives: 31-37

### Total Required Credits: 120



### 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 a 5 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.

## Sociology (SOC) Major - Human Services Specialization

Bachelor of Science in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: Credits: 6
- Goal #2 Oral Communication Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility (can use SOC) Credits: 3

### College Requirements: 10

- Natural Sciences Credits: 8  
Biological Sciences (Can use ANTH 220)
- Humanities Credits: 2
- Social Sciences requirement may be met within major requirements.

### Specialization Requirements: 45

- SOC 100 - Introduction to Sociology \* (COM) (G) Credits: 3
- SOC 270 - Introduction to Social Work (COM) Credits: 3
- SOC 271 - Social Work Skills and Methods I Credits: 3
- SOC 286 - Service Learning Credits: 1-3
- SOC 307 - Research Methods I Credits: 3
- SOC 308 - Research Methods II Credits: 3
- SOC 400 - Social Policy (COM) Credits: 3
- SOC 403 - Sociological Theory (COM) Credits: 3
- SOC 494 - Internship Credits: 12
- Elective courses from ANTH/SOC Credits: 9

### Elective Credits: 30

### Total Required Credits: 120

### 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 a 5 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.

## Minors

### Sociology (SOC) Minor

#### Required Coursework

- SOC 100 - Introduction to Sociology \* (COM) (G) Credits: 3

#### Elective Credits: 15

- Coursework 300 level or above Credits: 6
- Additional SOC or ANTH coursework Credits: 9

#### Total Required Credits: 18

#### Notes

- Students will need to earn a C grade or better in ANTH and SOC courses taken for the Major and Minor in Sociology
- Must have a cumulative GPA of 2.2 to enter the program and a minimum GPA of 2.2 in the minor to complete.
- Courses may not be used for both a Sociology Major or Minor and a Criminal Justice Minor.

### Criminal Justice (CJUS) Minor

#### Required Coursework

- CJUS 201- Introduction to Criminal Justice (COM) Credits: 3
- SOC 351 - Criminology (COM) Credits: 3 \*

#### Electives: 12

- CJUS 203 - Policing in a Free Society (COM) Credits: 3
- CJUS 330 - Civil Rights and Liberties Credits: 3
- CJUS 412 - Criminal Prosecution and Defense (COM) Credits: 3
- CJUS 431 - Criminal Law (COM) Credits: 3
- CJUS 433 - Criminal Procedure (COM) Credits: 3
- CJUS 436 - Juvenile Justice (COM) Credits: 3
- CJUS 491-591 - Independent Study (COM) Credits: (1-3)
- SOC 325 - Domestic and Intimate Violence Credits: 3 \*
- SOC 354 - Victimology Credits: 3 \*
- SOC 455-555 - Juvenile Delinquency (COM) Credits: 3 \*
- SOC 456-556 - Community Corrections (COM) Credits: 3 \*
- SOC 460-560 - Advanced Criminology (COM) Credits: 3 \*
- SOC 492 - Topics (COM) Credits: (1-3)

#### Total Required Credits: 18

#### Notes:

- Must have a cumulative GPA of 2.2 to enter the program and a minimum GPA of 2.2 in the minor to complete.
- Students may select any major, but (\*) courses may not be used for both a Criminal Justice Minor and Sociology Major or Minor.
- Students will need to earn a C grade or better in courses taken for the minor.

### Software Engineering (SE)

(See Electrical Engineering and Computer Science)

### Spanish (SPAN)

(See Modern Language and Global Studies)

### Speech Communication (SPCM)

(See Communication Studies and Theatre)

### Sports, Recreation, and Park Management (SRPM)

(See Health and Nutrition Science)

### Statistics (STAT)

(See Mathematics and Statistics)

### Sustainable Energy Systems Minor

(See Mechanical Engineering)

# Teaching, Learning, and Leadership Department (TLL)

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## Faculty

Professor Stremmel, Head; Professors Cutler, DeBates, Erion, Gilkerson, Hacker, Helling, Penrod, Romerein-Holmes, Wilson; Distinguished Professor Emerita Widvey; Professors Emeriti Amiotte, Edeburn, Everett, C.Hanson, D. Jensen, Lingren, P. Miller, J. Pedersen, L. Rogers, G.Steinley; Associate Professors Bowne, Rasmussen; Assistant Professors Bertolini, Burns, Edgar, Kim, M. Moeller, Nganga, Scully, Smith; Instructors Ballou, Brokmeier, Gloege, Kampmann, Lacher-Starace, Venhuizen, Weber

## Department and Programs

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. Program units in the department include Early Childhood Education, Curriculum and Instruction and Educational Administration, and Teacher Education.

## Early Childhood Education

The Early Childhood Education (ECE) Major prepares professionals who work in educational settings with children in order to promote their cognitive, physical, emotional, and social development. Program content includes the theory and practice of working with children and their families and communities. The program offers an Early Childhood Education (ECE) Major- Birth to 5 Specialization and an Early Childhood Education (ECE) Major-Birth to 8 Specialization. Students may also enroll in the Early Childhood Education Major - Cooperative Program with either Dakota State University or Northern State University.

The department offers two Early Childhood Education Endorsements. An Early Childhood Special Education Endorsement may be added to the Birth through Age 5 Specialization, Birth through Age 8 Specialization, or Cooperative Programs in the Early Childhood Education major. It required 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.

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. It requires completion of 9 semester hours in early childhood education, including a course in kindergarten education, a practicum, internship, or student teaching in kindergarten.

## Secondary Teacher Education

The Secondary Teacher Education program prepares students to teach in an academic major and/or other fields in which they are appropriately prepared. Students complete the requirements for a B.S or B.A. degree in an academic major before or while meeting the requirements for South Dakota teacher certification. 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 or several subject areas and/or K-12 teaching in art, world languages, music, or physical education. The department also offers undergraduate majors in Family and Consumer Sciences Education and Agricultural Education, Communication and Leadership, offered through the College of Agriculture and Biological Sciences.

The department also offers **Master's of Education** degree in Curriculum and Instruction and in Educational Administration. For further information refer to the graduate bulletin.

## Early Childhood Education (ECE) Major- Birth to 5 Specialization

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: HDFS 210 and PSYC 101 Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6 - *Select Course to meet Globalization Requirement*
- Goal #5 Mathematics: MATH 102 or higher Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: (*Recommended ANTH/AIS 421\*\* or AIS/HIST 368\*\**) Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 58

- ECE 150-150L - Early Experience and Lab Credits: 2
- ECE 371-371L - Infant and Toddler: Developmentally Appropriate Practices and Lab (COM) Credits: 3
- ECE 372 - Preschool to Middle Childhood Development Credits: 2

### Professional Semester I

- ECE 228-228L - Guidance with Young Children and Observation and Participation in Early Childhood Lab (COM) Credits: 2, 1
- ECE 361-361L - Methods and Materials/Early Childhood Education and Lab (AW) Credits: 2, 1
- ECE 362-362L - Early Childhood Curriculum & Assessment and Lab Credits: 2, 0
- ECE 363-363L - Emergent Literacy and Numeracy and Lab Credits: 3

### Professional Semester II

- ECE 488 - *Pre-K* Student Teaching (COM) Credits: 6
- ECE 420 - Health, Safety and Nutrition of Young Children Credits: 2
- ECE 465 - Documentation, Inquiry, and Teacher Research: 2
- ECE 464 - Parent/Child Relationships in a Professional Context Credits: 3
- ECE 470 - Early Childhood Inclusion Strategies Credits: 3

### Professional Semester III

- ECE 487 - Orientation to Child and Family Studies Practicum Credits: 1
- ECE 495 - Practicum (COM) Credits: 8
- ECE 455 - Administration and Supervision of Early Childhood Setting Credits: 2
- ECE 441 - Professional Issues in Child and Family Studies Credits: 2

### Additional Coursework

- HDFS 241 - Family Relations Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3
- Native American Courses Approved for Teacher Education ANTH/AIS 421 Indians of North America Credits: 3

**Electives: 25**

- CSC 150-150L - Computer Science I (COM) Credits: 3  
*Recommended for students who need to develop computer application skills*

**Total Required Credits: 120****Note**

- 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.

**Curriculum Note**

- \* 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 a 5 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 (ECE) Major- Birth to 8 Specialization**

Bachelor of Science in Education and Human Sciences

**System General Education Requirements\*: 31-32**

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: HDFS 210 and PSYC 101 Credits: 6
- Goal #4 Arts and Humanities/Diversity (ENGL 240; and SGR4/Globalization Requirement) Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Sciences: GEOG 131-131L and BIOL 101-101L\* Credits: 7-8

**Institutional Graduation Requirements\*\*: 8**

- Goal #1 First Year Experience: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: (ANTH/AIS 421 or AIS/HIST 368 Recommended) Credits: 3

**College Requirements: 2**

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

**Major Requirements: 50**

- ECE 150-150L - Early Experience and Lab Credits: 2
- ECE 371-371L - Infant and Toddler: Developmentally Appropriate Practices and Lab (COM) Credits: 3
- ECE 372 - Preschool to Middle Childhood Development Credits: 2

**Professional Semester I**

- ECE 228-228L - Guidance with Young Children and Observation and Participation in Early Childhood Lab (COM) Credits: 1, 1
- ECE 361-361L - Methods and Materials/Early Childhood Education and Lab (AW) Credits: 2, 1
- ECE 362-362L - Early Childhood Curriculum & Assessment and Lab Credits: 2, 1
- ECE 363-363L - Emergent Literacy & Numeracy & Lab Credits 3

**Professional Semester II**

- ECE 488 - *Pre-k* Student Teaching (COM) Credits: 6
- ECE 420 - Health, Safety and Nutrition of Young Children Credits: 2
- ECE 465 - Documentation, Inquiry, and Teacher Research: 2
- ECE 464 - Parent/Child Relationships in a Professional Context Credits: 3
- ECE 470 - Early Childhood Inclusion Strategies Credits: 3

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

- ECE 495 - K-3 Practicum (COM) Credits: 2
- ECE 478-478L - Integrated Curriculum in Birth-to-Age Eight Education and Lab Credits: 4
- ECE 475 - Pedagogy and Guidance in Primary Grade Classrooms Credits: 2
- EDFN 466-466L - Literacy in Primary Grades and Lab Credits: 3
- MATH 141 - Survey of Mathematics Credits: 3

**Professional Semester III**

- ECE 473 - Orientation to K-3 Student Teaching Credits: 2
- ECE 488 - K-3 Student Teaching (COM) Credits: 6

**Additional Coursework**

- HDFS 241 - Family Relations Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3
- Native American Courses Approved for Teacher Education ANTH/AIS 421 or AIS/HIST 368 Credits: 3
- MATH 342 Math Concepts for Teachers II Credits: 3
- PE 360-360L - K-8 Physical Education Methods and Lab (COM) Credits: 2
- MUS 351 - Elementary School Music Methods (COM) Credits: 2
- PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 4  
**OR** CHEM 106-106L - Chemistry Survey and Lab\* (COM) Credits: 4  
**OR** PHYS 185-185L - Introduction to Astronomy I and Lab\* (COM) Credits: 3

**Electives: 4-5****Total Required Credits: 120****Notes:**

- 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.

**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 a 5 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 Major Elementary Education Cooperative Program with DSU or NSU

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 31

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: HDFS 210 and PSYC 101 Credits: 6
- Goal #4 Arts and Humanities/Diversity: ART 121 and ENGL 240 Credits: 6
- Goal #5 Mathematics: MATH 102 or higher Credits: 3
- Goal #6 Natural Sciences: GEOG 131-131L and BIOL 103-103L Credits: 7

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Seminar: UC 109\*\* Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: HIST 151 \*\* or HIST 152\*\* Credits: 3

### College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

### Major Requirements: 34

- ECE 150-150L - Early Experience and Lab Credits: 2
- ECE 371-371L - Infant and Toddler: Developmentally Appropriate Practices and Lab (COM) Credits: 3
- ECE 372 - Preschool to Middle Childhood Development Credits: 2
- ECE 228-228L - Guidance with Young Children and Observation and Participation in Early Childhood Lab (COM) Credits: 2, 1
- ECE 361-361L - Methods and Materials/Early Childhood Education and Lab (AW) Credits: 2, 1
- ECE 362-362L - Early Childhood Curriculum & Assessment and Lab Credits: 2, 0
- ECE 363-363L - Emergent Literacy & Numeracy & Lab Credits: 3, 0
- ECE 488 - Student Teaching (COM) (Pre-K) Credits: 6
- ECE 420 - Health, Safety and Nutrition of Young Children Credits: 2
- ECE 465 - Introduction to Developmental Assessment and Teacher-Research with Young Children Credits: 2
- ECE 464 - Parent/Child Relationships in a Professional Context Credits: 3
- ECE 441 - Professional Issues in Child and Family Studies Credits: 3

### Supporting Coursework: 34

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3
- EPSY 302 - Educational Psychology (COM) Credits: 3
- MATH 341 - Math Concepts for Teachers I Credits: 3
- MATH 342 - Math concepts for Teachers II Credits: 3
- PE 360-360L - K-8 Physical Education Methods and Lab (COM) Credits: 2
- MUS 351 - Elementary School Music Methods (COM) Credits: 2
- POLS 100 - American Government \* (COM) Credits: 3
- GEOG 210 - World Regional Geography \* \*\* (COM) (G) Credits: 3
- Native American Course Approved for Teacher Education Credits: 3
- HLTH 420/520 - Methods of Health Instruction (COM) Credits: 2
- SPED 100 - Introduction to Persons with Exceptionalities Credits: 3
- Cooperative ELED Certification Requirements: 35
- ELED 383 - Practicum (S-I) Credits: 1
- ELED 440 - K-8 Language Arts Methods (S-I) Credits: 2
- SPED 441 - Inclusive Methods for Diverse Learners (S-I) Credits: 2 DSU only
- MLED 300 - Survey of Middle Level Education (SU) Credits: 1

- ELED 303 - Earth and Physical Science for Elementary Teachers/Lab (SU) Credits: 4
- CSC 105 Introduction to Computers (F) Credits: 3 DSU only
- EDFN 455 - Literacy Assessment & Instruction (F) Credits: 3 NSU
- ELED 495 - Practicum (COM) (F) Credits: 1
- ELED 320 - K-8 Science Methods (F) Credits: 3
- ELED 330 - K-8 Math Methods (F) Credits: 3
- ELED 360 - K-8 Social Studies Methods (F) Credits: 2
- EDFN 440 - Classroom Management (S-II) Credits: 2
- EDFN 442 - Diverse Needs of Students and Their Families (S-II) Credits: 2 NSU only
- ELED 488 - K-8 Student Teaching (COM) (S-II) Credits: 8
- ELED 450 K-8 Reading Methods (S-II) Credits: 3

### Total Required Credits: 141

#### Notes:

- 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.
- The rotation of the cooperative ELED certification courses is indicated as follows: S-I (Spring I), F (Fall), SU (Summer) and S-II (Spring II)..
- Students are required to complete 106 credits of SDSU coursework. These courses, with SDSU electives, do not constitute a degree program. Instead, students complete an additional 35 credits from the cooperating university (NSU) to fully meet the requirements for the ECE Coop-NSU/DSU specialization.
- All courses are required for certification. Upon graduation, students would be eligible for dual certification in early childhood education (Birth to Age Five) and elementary education (K - Grade 8).

#### 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 a 5 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.

## Family and Consumer Sciences Education (FCSE) Major

Bachelor of Science in Education and Human Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 & 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity: PSYC 101\* and HDFS 210\* Credits: 6
- Goal #4 Arts and Humanities/Diversity Credits: 6
- Goal #5 Mathematics: MATH 102 Credits: 3
- Goal #6 Natural Science: Biology or Chemistry (recommended) Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience: UC 109\*\* Credits: 3
- Goal #2 Cultural Awareness and Social and Environmental Responsibility: (Suggested AIS/ANTH 421\*\* or AIS/HIST 368\*\*) Credits: 3

## College Requirements: 2

- EHS 140-140L - Enhancing Human Potential and Lab Credits: 2

## Major Requirements: 82

- CA 442 - Family Resource Management Lab Credits: 3
- **OR** HDFS 425-525 - Family Resiliency Credits: 3
- Native American Courses Approved for Teacher Education Credits: 3 (If not completed for IGR #2) Credits: 3
- AM 231-231L - Ready-To-Wear Analysis and Lab Credits: 3
- CA 289 - Consumers in the Market Credits: 3
- CA 345 - Foundations in Financial Management Credits: 3
- ECE 420 - Health, Safety and Nutrition of Young Children Credits: 2
- HDFS 227 - Human Development and Personality I: Childhood Credits: 3
- ECE 228-228L - Guidance with Young Children and Observation and Participation in Early Childhood Lab (COM) Credits: 1-2, 1
- FCSE 331 - Work Force Preparation in Family and Consumer Sciences Credits: 2
- ID 150-150L - Introduction to Interior Design I & Lab Credits: 4
- HDFS 337 - Human Development II: Adolescence Credits: 3
- HDFS 410/510 - Parenting Credits: 3
- HMG 171 - Introduction to Hospitality Industry Credits: 3
- NFS 111 - Food, People and the Environment\*\* Credits: 3
- NFS 141-141L - Foods Principles and Lab Credits: 4
- NFS 221 - Survey of Nutrition Credits: 3
- AGED 295 - Practicum Credits: 1
- FCSE 405 - Philosophy of Career and Technical Education Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3
- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- FCSE 411 - Philosophy and Methods Family and Consumer Sciences (AW) Credits: 4
- FCSE 412-412L - Preparation for Student Teaching in FSCE and Lab Credits: 4
- FCSE 488 - 7-12 Student Teaching FCSE Credits: 6

## Electives: 1-4

## Total Required Credits: 120

### Notes:

- 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.

### 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 a 5 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.

## Certifications

### 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 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.
6. The universities will maintain accountability for the candidate scores on the PRAXIS II Principles of Learning and Teaching exam. The certification only program is limited to K-12 specific content areas and 7-12 specific content areas.

### Admission to Teacher Education

The coursework for teacher education is divided into three professional semesters. In addition, once one has finished the professional sequence, he/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 2.5
  - Or completed all competency plans and/or other activities prescribed by the Admissions & Scholastic Standards Committee;
6. Have recommendations on file in the department office from both the major advisor and content methods instructor (these recommendations must include 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 the 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 may be 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 2.5
  - Or completed all competency plans and/or other activities prescribed by the Admissions & Scholastic Standards Committee;
4. Taken the required exit exam(s), including the Praxis Principles of Teaching and Learning earning required cut scores;
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 Human Sciences.

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

## Education Curriculum for Teachers of Academic Subjects

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- Special Methods (varies by content area) Credits: 1-4
- Native American Courses Approved for Teacher Education Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)  
OR SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

#### Notes:

- \*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488.
- Please contact the specific coordinator for information about Art Education, Agricultural Education, Family and Consumer Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.
- There are Additional Requirements GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

## Endorsements

### Early Childhood Special Education Endorsement

- ECE 468 - Early Intervention in Family-Centered Practices Credits: 3
- ECE 470 - Early Childhood Inclusion Strategies Credits: 3
- ECE 495 - Practicum (COM) Credits: 3\*

**Total Required Credits: 9**

### Kindergarten Education Endorsement

- ELED 412 - Kindergarten Education Credits: 3 (Fall)
- ECE 495 - Practicum (COM) Credits: 1\*
- Additional coursework in early childhood education: 5

**Total Required Credits: 9**

#### Notes

\*Verified teaching experience in endorsement area 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.



## Veterinary and Biomedical Sciences Department (VET)

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David Zeman, Department Head  
Department of Veterinary and Biomedical Sciences  
SAR 105 Box 2175  
605-688-5172  
email: david.zeman@sdstate.edu  
<http://www.sdstate.edu/vs/>

### 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 also has two laboratories that help expand service to the public. The interaction of service, discovery, and education that takes place within the Veterinary and Biomedical Sciences Department results in new knowledge, timely information, and students prepared for careers that make a difference for animals and people alike.

## (Pre-) Veterinary Medicine (VET)

### Suggested Plan of Study

#### System General Education Requirements\* Credits: 30

- Goal #1 Written Communication: ENGL 101\* and ENGL 201\* Credits: 6
- Goal #2 Oral Communication: Credits: 3
- Goal #3 Social Sciences/Diversity: Credits: 6
- Goal #4 Arts and Humanities/Diversity: Credits: 6
- Goal #5 Mathematics: MATH 102 OR MATH 115OR MATH 120 Credits: 3-5
- Goal #6 Natural Sciences: BIOL 151-151L and BIOL 153-153L OR CHEM 112-112L and CHEM 114-114L; OR PHYS 111-111L and PHYS 113-113L Credits: 8

#### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

### Requirements for specific B.S.

This curriculum meets the pre-veterinary requirements of some Colleges of Veterinary Medicine. The student and his/her advisor may alter the pre-veterinary curriculum to meet specific requirements of certain colleges.

### Footnote:

- See advisor for chemistry specializations in sophomore year.

## Visual Arts Department (ART, ARTD, ARTE, ARTH)

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Tim Steele, Head  
Department of Visual Arts  
Grove Hall 101  
605-688-4103 fax: 605-688-6769  
e-mail: sdsu.artdept@sdstate.edu  
<http://www.sdstate.edu/art/index.cfm>

### Faculty

Professor Steele, Head; Professors French, Wallace; Professors Emeriti Edie, Gambill, Spinar; Professors Emeritae Morgan, Stuart; Associate Professors Cempellin, Clark; Assistant Professors Behl, Hardin; Lecturers Frewaldt, Heeren, Melkumyan, Reichardt, Stembwedel, Taylor, Wicks

### Programs

The Department of Visual Arts present art and design studio and lecture experiences to all SDSU and University Center students, regardless of major, while majors pursue careers as artists, art educators, or graphic designers. The Department offers both B.S. and B.A. degrees in Art Education, Studio Arts and Graphic Design at our Brookings campus. There are six certificates offered within the Studio Arts degree: animation, ceramics, art history, painting, printmaking, and sculpture. The Graphic Design major is offer at both the Brookings Campus and University Center in Sioux Falls. 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 animation, drawing, printmaking, painting, graphic design, computer graphics, web design, motion graphics, 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.

### Art Education (ARTE) Major

For the Art Education Major (B.S. or B.A.) , the student completes the Department's Visual Arts Core of studio courses (ART 111, 112, 121, 122, and 123), 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-5 credit hours); Teacher Education coursework (32 credit hours); and 15 credit hours in art (ceramics, sculpture, painting, printmaking and computer graphics), and 4 hours in discipline-based methods. Students 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.

### Graphic Design (ARTD) Major

The Department of Visual Arts offers a major in Graphic Design (B.S. or B.A.) 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, web, and interactive media. Areas of study may include, but are not limited to, computer animation, logos, computer graphics, publication and webpage design, illustration, advertising, posters, and interactive media. The

program aims to develop a knowledge base for careers that relates to professional practice. 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-5 credit hours), and the Department's Visual Arts Core of studio courses (ART 111, 112, 121, 122, and 123) Department Reviews (ART 110, 200, 400), and art history courses (ARTH 100, 211, 212, and ARTH Advanced Writing Requirement); 21 credit hours in graphic design courses that consist of design theory, visual communications, computer graphics, animation, design media, photography or time-based media; and 3.5 to 8.5 hours of electives in ArtD, Art, ArtH or ArtE.

### **Graphic Design Internships, Field Trips and the MacIntosh Laptop 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, China, Italy, Los Angeles, Japan, Chicago, Copenhagen, Denver, Dallas, and New York.
- Graphic Design has a MacIntosh laptop computer recommendation: MacBook Pro; minimum of 2 gigabytes RAM (visit with the Department before purchasing a computer as recommendations are regularly updated).

### **Studio Arts (ART) Major**

For the Studio Arts degree (B.S. or B.A.), students complete the Department's Core studio courses (ART 111, 112, 121, 122, and 123), 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-5 credit hours). Students are required to complete a minimum of one certificate designation for the degree, and 15 credit hours in art (ceramics, sculpture, painting, printmaking and computer graphics). 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 3.5 to 7.5 hours of electives taken from Art, ArtD, ArtE or ArtH are required to complete the degree.

### **Certificates**

Studio Art students are encouraged to pursue multiple certificates to achieve breadth and depth in the degree and to prepare for graduate study.

- Animation Certificate (ArtD 203, 303, 403 and Art 492 Animation Topics)
- History of Art Certificate (ArtH 211, 212, 310 or 320, and 490 or 492)
- Ceramics Certificate (Art 251, 351, 352 and 451)
- Graphic Design Certificate (ArtD 201, 202, 301, and 302)
- Painting Certificate (Art 231, 331, 332 and 431)
- Printmaking Certificate (Art 281, 381, 382 and 481)
- Sculpture Certificate (Art 241, 341, 342 and 441)

### **Reviews**

The Department requires reviews to complete the degree. Majors enroll in an assessment program of three reviews that considers her/his development: First Review (freshman), Portfolio Review Jury on Student Progress (sophomore) and the Senior Review.

- The First Review (ART 110) introduces students to the department curricula, faculty, service programs and extracurricular opportunities and assesses basic art knowledge through testing.
- After a student has completed 15 credit hours of Visual Arts Studio Core courses and ARTH 100, he/she enrolls in the Portfolio Review Jury on Student Progress (ART 200). This is required to continue in the department. The review involves the submission of a portfolio of studio course work to a jury of two faculty who discuss and evaluate the student's progress. The 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 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.

### **Visual Arts Field Trips**

Visual Arts' commitment art 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, Italy, Copenhagen, Denmark, Turkey, New York, and numerous trips to regional art and design centers such as Minneapolis or Kansas City.

### **Facilities**

**The Ritz Gallery** is located in Grove Hall and houses a program of public exhibitions with works by 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. For more information about the museum visit: <http://www.sdstate.edu/southdakotaartmuseum/>

**The University Archives** is located in the Hilton M. Briggs Library and contain an important growing collection of graphic design, fine art, fine books, the complete volume of original William Hogarth prints, and cuneiform tablets from ancient Sumeria. The archive offers a valuable resource to the material culture study that is essential in art and design history. For more information visit: <http://www.sdstate.edu/sdsuarchives/index.cfm>

## Art Education (ARTE) Major

Bachelor of Arts or Bachelor of Science

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101& 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity (Select SOC 100\* (COM) and/or PSYC\* \*\* (COM) Credits: 6
- Goal #4 Arts and Humanities/Diversity (Select from ART and ARTH courses) Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

### Institutional Graduation Requirements\*\*: 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility (Select ART course) Credits: 3

### College Requirements: 5-16

Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

Bachelor of Science

- Natural Sciences Credits: 8
  - Biological Sciences
  - Physical Sciences

### Major Requirement: 50.5

- ART 110 - First Review Credits: 0.5
- ART 111 - Drawing I \* \*\* (COM) Credits: 3
- ART 112 - Drawing II \* \*\* (COM) Credits: 3
- ART 121 - Design I 2D \* \*\* (COM) Credits: 3
- ART 122 - Design II Color (COM) Credits: 3
- ART 123 - Three Dimensional Design \* \*\* (COM) Credits: 3
- ART 200 - Portfolio Review Jury on Student Progress Credits: 0.5
- ART 211 - Drawing III-Figurative \*\* (COM) Credits: 3
- ARTH 100 - Art Appreciation \* \*\* (COM) (G) Credits: 3
- ARTH 211 - History of World Art I \* \*\* (COM) (G) Credits: 3
- ARTH 212 - History of World Art II \* \*\* (COM) (G) Credits: 3
- ARTH 300 level Advanced Writing Course
- ARTH 310 - History of United States Art and Architecture (AW)  
**OR** ARTH 320 - Modern Art and Architecture Survey (AW)  
**OR** ARTH 490 - Seminar (COM) (AW)
- ART 400 - Senior Review Credits: 0.5
- ARTE 414 - K-12 Art Methods (COM) Credits: (2-3)
- ARTE 491-591 - Independent Study Credits: (1-3)
- ART 231 - Painting I \*\* (COM) Credits: 3
- ART 241 - Sculpture I \*\* (COM) Credits: 3
- ART 251 - Ceramics I \*\* (COM) Credits: 3
- ART 281 - Printmaking I \*\* (COM) Credits: 3
- ARTD 202 - Computer Graphics I Credits: 3

### Electives: 0-4.5

### Teaching Specialization Requirements

The Secondary Teacher Education program is structured around the three components of General Studies (meeting university core requirements), Specialty Studies (meeting major content requirements), and Professional Studies. Professional Studies has three professional semesters which directly prepare students for the profession of teaching.

Please contact the appropriate individual for information on Agricultural Education, Art Education, Family and Consumer

Sciences Education, Music Education, and Physical Education as these programs differ significantly from other content areas.

### Professional Semester I

- EDFN 338 - Foundations of American Education (COM) Credits: 2
- EPSY 302 - Educational Psychology (COM) Credits: 3

### Professional Semester II

- SEED 314 - Supervised Clinical/Field Experience Credits: 1
- SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2
- SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 2

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

- Native American Courses Approved for Teacher Education ANTH/AIS 421 or HIST/AIS 368 Credits: 3
- EDFN 365 - Computer-Based Technology and Learning (COM) Credits: 2
- EDFN 427-527 - Middle School: Philosophy and Application Credits: 2
- EDFN 475 - Human Relations (COM) Credits: 3

### Professional Semester III

- SPED 405 - Educating Secondary Students with Disabilities Credits: 2
- SEED 410 - Social Foundations, Management and Law Credits: 2
- EDER 415 - Educational Assessment Credits: 2
- ELED 488 - K-8 Student Teaching (COM)  
**OR** SEED 488 - 7-12 Student Teaching (COM) Credits: 8

\*Candidates in K-12 areas such as Health, Physical Education and Recreation, Art, Modern Language, and Music split their student teaching credits, enrolling in both SEED 488 and ELED 488

### Additional Requirements

- Prior to enrolling in PSI, students complete SOC 100 or PSYC 101 as part of the University General Education Core.
- Students must also receive a "C" grade or better in SPCM 101, ENGL 101, and Math 102 or higher.
- There are GPA requirements for entry into and continuation within the teacher education program. For additional information please consult the Secondary Education Handbook.

### Total Credits Required: 120

### 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 a 5 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.

## Graphic Design (ARTD) Major

Bachelor of Arts in Arts and Sciences

### System General Education Requirements\*: 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity+ Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

**Institutional Graduation Requirements\*\*:** 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility+ Credits: 3

**College Requirements: 5-16**

## Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

## Bachelor of Science

- Natural Sciences Credits: 8  
Biological Sciences  
Physical Sciences

**Major Requirements: 39**

- Advanced Writing Course Credits: 3
- Animation, Photography, or Video Media Electives Credits: 6
- ART/ARTD Electives Credits: 6
- ARTD 201 - Graphic Design I Credits: 3
- ARTD 202 - Computer Graphics I Credits: 3
- ARTD 301 - Graphic Design II Credits: 3
- ARTD 302 - Computer Graphics II Credits: 3
- ARTD 352 - Design Media I Credits: 3
- ARTD 351 - Visual Communication I Credits: 3
- ARTD 451 - Visual Communication II: Senior Portfolio Credits: 3
- ARTD 452 - Design Media II Credits: 3

**Supporting Coursework: 25.5**

- Art History Elective Credits: 3
- ART 110 - First Review Credits: 0.5
- ART 111 - Drawing I \* \*\* (COM) Credits: 3
- ART 112 - Drawing II \* \*\* (COM) Credits: 3
- ART 121 - Design I 2D \* \*\* (COM) Credits: 3
- ART 122 - Design II Color (COM) Credits: 3
- ART 123 - Three Dimensional Design \* \*\* (COM) Credits: 3
- ART 200 - Portfolio Review Jury on Student Progress Credits: 0.5
- ART 400 - Senior Review Credits: 0.5
- ARTH 211 - History of World Art I \* \*\* (COM) (G) Credits: 3
- ARTH 212 - History of World Art II \* \*\* (COM) (G) Credits: 3

**Elective Credits: 4.5-15.5****Total Required Credits: 120****Curriculum Notes**

- + Students may use one Art course but cannot duplicate a course to meet SGR and IGR.
- 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.
- \*\* South Dakota State University has a 5 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.

**Studio Arts (ART) Major**

Bachelor of Science or Bachelor of Arts

**System General Education Requirements\*:** 30

- Goal #1 Written Communication: ENGL 101 and 201 Credits: 6
- Goal #2 Oral Communication: SPCM 101\* Credits: 3
- Goal #3 Social Sciences/Diversity Credits: 6
- Goal #4 Arts and Humanities/Diversity+ Credits: 6
- Goal #5 Mathematics Credits: 3
- Goal #6 Natural Sciences Credits: 6

**Institutional Graduation Requirements\*\*:** 5

- Goal #1 First Year Experience Credits: 2
- Goal #2 Cultural Awareness and Social and Environmental Responsibility Credits: 3

**College Requirements: 5-16**

## Bachelor of Arts

- Modern Languages\* (completion and competency in one language at the 202 level or a department-approved advanced upper division language course) Credits: 3-14
- Social Sciences Credits: 2

## Bachelor of Science

- Natural Sciences Credits: 8  
Biological Sciences  
Physical Sciences

**Major Requirements: 46.5**

- Art History Advanced Writing Course Credits: 3
- ART 110 - First Review Credits: 0.5
- ART 111 - Drawing I \* \*\* (COM) Credits: 3
- ART 112 - Drawing II \* \*\* (COM) Credits: 3
- ART 121 - Design I 2D \* \*\* (COM) Credits: 3
- ART 122 - Design II Color (COM) Credits: 3
- ART 123 - Three Dimensional Design \* \*\* (COM) Credits: 3
- ART 200 - Portfolio Review Jury on Student Progress Credits: 0.5
- ART 211 - Drawing III-Figurative \*\* (COM) Credits: 3
- ART 400 - Senior Review Credits: 0.5
- ARTH 100 - Art Appreciation \* \*\* (COM) (G) Credits: 3
- ARTH 211 - History of World Art I \* \*\* (COM) (G) Credits: 3
- ARTH 212 - History of World Art II \* \*\* (COM) (G) Credits: 3
- ART 231 - Painting I \*\* (COM) Credits: 3
- ART 241 - Sculpture I \*\* (COM) Credits: 3
- ART 251 - Ceramics I \*\* (COM) Credits: 3
- ART 281 - Printmaking I \*\* (COM) Credits: 3
- ARTD 202 - Computer Graphics I Credits: 3

**Electives: 22.5-30.5**

Elective credits will be completed through the choice of one or more certificates or the general art emphasis below:

- Animation Certificate
- Art History Certificate
- Ceramics Certificate
- Painting Certificate
- Printmaking Certificate
- Sculpture Certificate

**General Art emphasis:**

- ARTD/ART-Area of Specialization (see note one) Credits: 9

**Art Electives Credits: 15****Total Required Credits: 120****Notes**

- +Art history courses can be used for the Core's humanities sequence, but Studio Arts students are required to take at least three hours in humanities outside the Department.
- 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 a 5 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.

## Minors

### Studio Arts (ART) Minor

- Select courses with the following prefixes: Art (Art), Graphic Design (ArtD), and Art Education (ArtE)
- Required Art History coursework (ArtH) Credits: 6

**Total Required Credits: 24**

## Certificate Programs

### Animation Certificate

- ARTD 203 - Introduction to Classical Animation I Credits: 3
- ARTD 303 - Introduction to Classical Animation II Credits: 3
- ARTD 403 - Intermediate Animation Credits: 3
- ART 492 - Topics (COM) Credits: (1-9)

**Total Required Credits: 12**

### Ceramics Certificate

- ART 251 - Ceramics I \*\* (COM) Credits: 3
- ART 351 - Ceramics II (COM) Credits: 3
- ART 352 - Ceramics-Intermediate Level Credits: 3
- ART 451 - Ceramics-Advanced Credits: (3-9)

**Total Required Credits: 12**

### Graphic Design Certificate

- ARTD 201 - Graphic Design I Credits: 3
- ARTD 202 - Computer Graphics I Credits: 3
- ARTD 301 - Graphic Design II Credits: 3
- ARTD 302 - Computer Graphics II Credits: 3

**Total Required Credits: 12**

### Art History Certificate

- ARTH 211 - History of World Art I \* \*\* (COM) (G) Credits: 3
- ARTH 212 - History of World Art II \* \*\* (COM) (G) Credits: 3
- ARTH 310 - History of US Art and Architecture (AW) Credits: 3  
OR ARTH 320 - Modern Art & Architecture Survey (AW) Credits: 3
- ART 492 - Topics (COM) Credits: 3  
OR ARTH 490 - Seminar (COM) (AW) Credits: (1-3)

**Total Required Credits: 12**

### Painting Certificate

- ART 231 - Painting I \*\* (COM) Credits: 3
- ART 331 - Painting II (COM) Credits: 3
- ART 332 - Painting-Intermediate Level Credits: 3
- ART 431 - Painting III (COM) Credits: 3

**Total Required Credits: 12**

### Printmaking Certificate

- ART 281 - Printmaking I \*\* (COM) Credits: 3
- ART 381 - Printmaking II (COM) Credits: 3
- ART 382 - Printmaking-Intermediate Level Credits: 3
- ART 481 - Printmaking-Advanced Credits: (3-9)

**Total Required Credits: 12**

## Sculpture Certificate

- ART 241 - Sculpture I \*\* (COM) Credits: 3
- ART 341 - Sculpture II (COM) Credits: 3
- ART 342 - Sculpture III (COM) Credits: 3
- ART 441 - Sculpture-Advanced Credits: (3-9)

**Total Required Credits: 12**

**Wildlife and Fisheries Sciences (WL)**  
(See Natural Resource Management)

## Women's Studies Program (WMST)

Elizabeth Tolman, Program Coordinator  
College of Arts and Sciences  
Pugsley 115  
605-688-6664  
e-mail: elizabeth.tolman@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. The Women's Studies Program Coordinator assists students to personalize their curriculum plans.

### Women Studies Minor

#### Required Coursework

- WMST 101 - Introduction to Women's Studies \* \*\* Credits: 3
- WMST/ENGL 248 - Women in Literature Credits: 3+
- WMST 491 - Independent Study Credits: 1-4

#### Elective Credits:3

Select one course from the following list.

- HIST 349 - Women in American History Credits: 3
- HIST 350 - Women in World History Credits: 3
- POLS 305 - Women and Politics Credits: 3
- PSYC 367 - Psychological Gender Issues Credits: 3
- SOC 483 - Sociology of Gender Roles (COM) (G) Credits: 3
- WMST 305 - Women and Politics Credits: 3
- WMST 349 - Women in American History Credits: 3
- WMST 350 - Women in World History Credits: 3
- WMST 367 - Psychological Gender Issues Credits: 3
- WMST 383 - Sociology of Gender Roles Credits: 3

#### Elective Credits: 6

Courses can be selected from the required list above and from the following courses.

- AM 253 - Socio-Psychological Aspects of Dress Credits: 3
- CA 340 - Work Family Interface (AW) Credits: 3
- HDFS 250 - Development of Human Sexuality Credits: 3
- MCOM 419-519 - Women in Media Credits: 3
- REL 331 - Women and Religion Credits: 3
- SOC 325 - Domestic and Intimate Violence Credits: 3
- WMST 250 - Development of Human Sexuality Credits: 3
- WMST 325 - Domestic and Intimate Violence Credits: 3
- WMST 331 - Women and Religion Credits: 3
- WMST 419-519 - Women in Media Credits: 3
- WMST 253 - Socio-Psychological Aspects of Dress Credits: 3
- WMST 492-592 - Topics Credits: 3

**Total Credits Required: 18**

#### Notes

- The minor requires 18 hours with a "C" or better in each course.
- + Various departments periodically offer courses related to the roles of women in society and may be used as electives with approval by the Program Coordinator.

## Zoology (ZOOL)

(See Biology and Microbiology)



# Course Descriptions

*Curriculum Entries 206*

*Colleges, Departments,  
& Program*

*Abbreviations 207*

*Miscellaneous*

*Abbreviations 208*

*Other Types/*

*Instructional Methods*

*208*

*x9x Common Course*

*Descriptions 209*

*Course Descriptions 210*



# Curriculum Entries

## Course Descriptions

BIOL<sup>1</sup> 101<sup>2</sup> Biology Survey I<sup>3</sup> (COM)<sup>4</sup> ..... 3<sup>5</sup>

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<sup>6</sup>

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. COM signifies a 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 post-doctoral level (doctoral and post-doctoral 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

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<b>A&amp;S</b> , Arts and Sciences	<b>EDFN</b> , Educational Foundations	<b>ME</b> , Mechanical Engineering
<b>ABE</b> , Agricultural and Biosystems Engineering	<b>EE</b> , Electrical Engineering	<b>MEPR</b> , Media Production
<b>ABS</b> , Agriculture and Biological Sciences	<b>EES</b> , Ecology and Environmental Science	<b>MICR</b> , Microbiology
<b>ACCT</b> , Accounting	<b>EET</b> , Electronics Engineering Technology	<b>MFL</b> , Modern Foreign Languages
<b>ADV</b> , Advertising	<b>EHS</b> , Education and Human Sciences	<b>MLED</b> , Middle Level Education
<b>AGEC</b> , Agricultural and Resource Economics	<b>ELED</b> , Elementary Education	<b>MLGS</b> , Modern Language and Global Studies
<b>AGED</b> , Agricultural Education	<b>EM</b> , Engineering Mechanics	<b>MLS</b> , Medical and Laboratory Science
<b>AHED</b> , Adult Higher Education	<b>ENGL</b> , English	<b>MGMT</b> , Management
<b>AIR</b> , Aerospace Studies	<b>ENT</b> , Entomology	<b>MNET</b> , Manufacturing Engineering Technology
<b>AIS</b> , American Indian Studies	<b>ENTR</b> , Entrepreneurial Studies	<b>MRCH</b> , Merchandising
<b>AM</b> , Apparel Merchandising	<b>ENVM</b> , Environmental Management	<b>MSL</b> , Military Science Leadership
<b>ANAT</b> , Anatomy	<b>EPSY</b> , Educational Psychology	<b>MUAP</b> , Music Applied
<b>ANTH</b> , Anthropology	<b>ET</b> , Electronics Technology	<b>MUEN</b> , Music Ensemble
<b>ARAB</b> , Arabic	<b>ETM</b> , Engineering Technology and Management	<b>MUS</b> , Music
<b>ARCH</b> , Architecture	<b>EURS</b> , European Studies	<b>NE</b> , Nuclear Engineering
<b>ART</b> , Art	<b>EXCH</b> , Exchange Programs	<b>NFSH</b> , Nutrition, Food Science and Hospitality
<b>ARTD</b> , Art Design	<b>EXPL</b> , Experiential Learning	<b>NFS</b> , Nutrition and Food Science
<b>ARTE</b> , Art Education	<b>FBME</b> , Food and Biomaterials Engineering	<b>NRM</b> , Natural Resources Management
<b>ARTH</b> , Art History	<b>FCS</b> , Family and Consumer Sciences	<b>NURS</b> , Nursing
<b>AS</b> , Animal Science	<b>FCSE</b> , Family and Consumer Sciences Education	<b>OM</b> , Operations Management
<b>AST</b> , Agricultural Systems Technology	<b>FREN</b> , French	<b>PE</b> , Physical Education
<b>AT</b> , Athletic Training	<b>GCOM</b> , General Communication	<b>PHA</b> , Pharmacy
<b>AVIA</b> , Aviation	<b>GE</b> , General Engineering	<b>PHIL</b> , Philosophy
<b>BADM</b> , Business Administration	<b>GEOG</b> , Geography	<b>PHST</b> , Physics Topics for Educators
<b>BIOL</b> , Biology	<b>GER</b> , German	<b>PHTH</b> , Physical Therapy
<b>BIOS</b> , Biological Sciences	<b>GERO</b> , Gerontology	<b>PHYS</b> , Physics
<b>BOT</b> , Botany	<b>GIS</b> , Geographic Information Sciences	<b>PLAN</b> , Planning
<b>CA</b> , Consumer Affairs	<b>GLST</b> , Global Studies	<b>POLS</b> , Political Science
<b>CD</b> , Community Development	<b>GS</b> , General Studies	<b>PR</b> , Park Management
<b>CEE</b> , Civil and Environmental Engineering	<b>HD</b> , Human Development	<b>PRM</b> , Park and Recreation Management
<b>CEX</b> , Center of Excellence	<b>HDFS</b> , Human Development and Family Studies	<b>PS</b> , Plant Science
<b>CHEM</b> , Chemistry	<b>HFM</b> , Hotel and Foodservice Management	<b>PSYC</b> , Psychology
<b>CHIN</b> , Chinese	<b>HIST</b> , History	<b>RANG</b> , Range Science
<b>CHD</b> , Counseling and Human Development	<b>HLTH</b> , Health	<b>RECR</b> , Recreation
<b>CHRD</b> , Counseling and Human Resource Development	<b>HMGT</b> , Hospitality Management	<b>REL</b> , Religion
<b>CJUS</b> , Criminal Justice	<b>HNS</b> , Health and Nutritional Sciences	<b>RUSS</b> , Russian
<b>CM</b> , Construction Management	<b>HO</b> , Horticulture	<b>SE</b> , Software Engineering
<b>CS</b> , Consumer Science	<b>HON</b> , Honors	<b>SEED</b> , Secondary Education
<b>CSC</b> , Computer Science	<b>HPER</b> , Health, Physical Education and Recreation	<b>SM</b> , Safety Management
<b>CSCA</b> , Computer Science Applications	<b>HSC</b> , Health Science	<b>SOC</b> , Sociology
<b>CSS</b> , Computational Science and Statistics	<b>HSPS</b> , History and Political Science	<b>SPAN</b> , Spanish
<b>CST</b> , Communication Studies and Theatre	<b>ID</b> , Interior Design	<b>SPCM</b> , Speech Communication
<b>CTE</b> , Career and Technical Education	<b>IDL</b> , Interdisciplinary Studies	<b>STAT</b> , Statistics
<b>DANC</b> , Dance	<b>IM</b> , Industrial Management	<b>THEA</b> , Theatre
<b>DCOM</b> , Communication Disorders	<b>JAPN</b> , Japanese	<b>TLL</b> , Teaching, Learning, and Leadership
<b>DMCS</b> , Design, Merchandising and Consumer Sciences	<b>LA</b> , Landscape Design	<b>UC</b> , University College
<b>DS</b> , Dairy Science	<b>LAS</b> , Latin American Studies Minor	<b>VET</b> , Veterinary Science
<b>ECE</b> , Early Childhood Education	<b>LAKL</b> , Lakota	<b>WEL</b> , Wellness
<b>ECON</b> , Economics	<b>LEAD</b> , Leadership	<b>WL</b> , Wildlife and Fisheries Sciences
<b>ED</b> , Education	<b>LING</b> , Linguistics	<b>WMST</b> , Women's Studies
<b>EDAD</b> , Educational Administration	<b>LMNO</b> , Leadership and Management of Nonprofit Organizations	<b>ZOOL</b> , Zoology
<b>EDER</b> , Education Evaluation and Research	<b>MATH</b> , Mathematics	
	<b>MCOM</b> , Mass Communication	

# Abbreviations and Instructional Methods

## Miscellaneous Abbreviations

<b>admin</b> , administration	<b>conc</b> , Concurrent	<b>jr</b> , junior
<b>adv</b> , advanced	<b>cr</b> , credit	<b>prin</b> , principles
<b>Ag</b> , Agriculture	<b>CRN</b> , 5 digit	<b>L</b> , or lab, laboratory
<b>Am</b> , American	course reference	<b>P</b> , prerequisite
<b>AV</b> , Audio-Visual	number	<b>R</b> , recitation (lecture)
<b>AY</b> , alternate years	<b>dev</b> , development	<b>S</b> , spring semester
<b>&amp;</b> , and	<b>econ</b> , economics	<b>Schd</b> , Schedule Type
<b>CAI</b> , Computer Assisted	<b>ed</b> , educational	<b>Sec</b> , Section
Instruction	<b>F</b> , fall semester	<b>S.D.</b> , or <b>SD</b> , South Dakota
<b>chem</b> , chemistry	<b>fr</b> , freshman	<b>soph</b> , sophomore
<b>CITO</b> , Chief	<b>fund</b> ,	<b>sr</b> , senior
Information Technology	fundamentals	<b>Su</b> , summer term
Office	<b>gen</b> , general	<b>TBA</b> , time and/or credit to
<b>COM</b> , Common Course	<b>Hum</b> , Humanities	be arranged
<b>comp</b> , composition	<b>intro</b> , introduction	<b>U.S.</b> , United States

## 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.

# Definitions and x9x Common Course Descriptions

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## 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	

### 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.

# Course Descriptions

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## A&S (Arts & Sciences)

### **A&S 482-582 - Travel Studies Credits: 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 & Biosystems Engineering)**

### **ABE 122 - Introduction to Agricultural and Biological Engineering Credits: 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 Engineers Credits: 1**

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 Engineers Credits: 1**

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 Gantt Chart to reach the identified objectives. A formal written and oral presentation of the project proposal is required.

### **ABE 314-314L - Ag Power and Machines and Lab Credits: 4**

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 Credits: 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 Engineering Credits: 1**

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 Lab Credits: 3**

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 and Pneumatic Systems & Lab Credits:3**

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 valves and closed-loop control in hydraulic circuits. Prerequisites: ME 314 or Consent. Corequisites: ABE350L-350.

### **ABE 390 – Seminar Credits: 1**

### **ABE 411 - Design Project III Credits: 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 422 - Design Project IV (AW) Credits: 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 & Lab Credits: 4**

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 Credits: 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 Credits: 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 Credits: 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 measure and measurement system explored and the interaction of the dynamic characteristics of the measure and 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 Credits: 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) Credits: 1**

**ABE 491 - Independent Study Credits: (1-3)**

**ABE 492/592 – Topics Credits: (1-4)**

**ABE 494 – Internship Credits: (1-6)**

**ABE 496 - Field Experience Credits: (1-6)**

**ABE 497 - Cooperative Education Credits: (1-6)**

**ABE 498 - Undergraduate Research/Scholarship Credits: 1-3**

**ABE 503 - Energy and Environment Credits: 3**

**ABE 512 - Advanced Agricultural Tractors and Machines Credits: 2**

**ABE 522 - Bio-Environmental Engineering Credits: 2**

**ABE 543 - Fundamentals of Bioprocessing Credits: 3**

**ABE 551 - Fundamentals of Conversion Credits: 3**

**ABE 590 - Sustainability Seminar Credits: 1**

**ABE 592 – Topics Credits: 1-3**

**ABE 632 - Environmental and Ecological Risk Assessment Credits: 3**

**ABE 662 - Life Cycle Assessment Credits: 3**

**ABE 732 - Advanced Hydrology in Agriculture Credits: 2**

**ABE 733 - Ground Water Engineering in Agriculture Credits: 3**

**ABE 734-734L - Advanced Irrigation Engineering and Lab Credits: 3**

**ABE 748 – Bioseparations Credits: 3**

**ABE 752 - Theoretical Micro-Climatology Credits: 2**

**ABE 754-754L - Advanced Unit Operations of Food/Biomaterials Processing and Lab Credits: 3**

**ABE 763-763L – Instrumentation Credits: 3**

**ABE 765 - Advanced Biomass Thermochemical Conversion Credits 3**

**ABE 771 - Graduate Seminar Credits: 1**

**ABE 772-772L - Similitude Credits: 2**

**ABE 773-773L - Programming Agricultural System Credits: 3**

**ABE 787 - Research Credits: (1-9)**

**ABE 788 - Research Report/Design Paper Credits: 1-2**

**ABE 791 - Independent Study Credits: 1-3**

**ABE 792 -792L - Topics and Lab Credits: 1-3, 0**

**ABE 798 – Thesis Credits: 1-7**

**ABE 898D - Dissertation PhD Credits: 1-12**

## ABS (Agriculture and Biological Sciences)

**ABS 109 - First Year Seminar\*\* Credits: 2**

First-year experience course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Prerequisites: Written consent (for BS or AS General Agriculture students) Notes: \*\*Course meets IGR #1

**ABS 203 - Global Food Systems \*\* (G) Credits: 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: meets IGR #2

**ABS 205 - Biotechnology in Agriculture and Medicine Credits: 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 Credits: 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 & the Food System Credits: 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.

**ABS 381 - Multicultural Agriculture/Biological Science Experience Credits: 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) Credits: 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 and Lab to accompany ABS 475 Prerequisites: Senior Standing and PS 390 or Senior Standing and written consent Corequisites: ABS 475L-475



**ABS 482-582 - International Experience (G) Credits: 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.

**ABS 492-592 – Topics Credits: 1-4****ABS 704 - Plant Systems Credits: 1-10****ABS 705 - Research Methodology Credits: 1-10 P, Consent.****ABS 792 – Topics Credits: 1-6****ACCT (Accounting)****ACCT 210 - Principles of Accounting I (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 3**

Involves the study of Federal Income Tax law as it affects individuals, as well as other selected topics. Prerequisite: ACCT 211.

**ACCT 450 - Auditing (COM) Credits: 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) Credits: 3****ACCT 491 - Independent Study (COM) Credits: 1-4****ACCT 492 - Topics (COM) Credits: 1-4****ACCT 493 - Workshop (COM) Credits: 1-4****ACCT 494 - Internship (COM) Credits: 1-12****ACCT 592 – Topics Credits: 1-4****ADV (Advertising)****ADV 243 - Public Relations Principles Credits: 3**

An introduction to the theory and practice of public relations, emphasizing its publics, management function, writing skills, communication processes, tools and professional ethics. Cross-Listed: MCOM 243

**ADV 314 - Sales, Promotion and Marketing Credits: 3**

Promotion, sales, advertising, circulation, practices and theories of marketing in advertising and graphic arts.

**ADV 343 - Strategies - Public Relations Credits: 3**

Problem-solving strategies and principles of message design for developing public relations campaigns. Students will explore ways to create strategy-driven public relations plans that enable organizations to reach specific audiences with both traditional and new media. Prerequisites: ADV/MCOM 243 Cross-Listed: MCOM 343

**ADV 370 - Advertising Principles Credits: 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. Cross-Listed: MCOM 370

**ADV 371-371L - Advertising Copy & Layout & Studio Credits: 3, 0**

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. Corequisites: ADV 371L-371 Cross-Listed: MCOM 371-371L

**ADV 372-372L - Advertising Media Strategies & Lab Credits: 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. Lab - Hands-on application of advertising media strategies. Prerequisites: ADV/MCOM 370 Corequisites: ADV 372L-372

**ADV 411-411L - Media Analytics and Studio Credits: 3**

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: ADV 411L-411

**ADV 442-442L - Integrated Marketing Communication and Campaigns Studio Credits: 3, 0**

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: ADV 442L-442 Cross-Listed: MCOM 442-44L

**ADV 472 - Media Research and Planning Credits: 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. Cross-Listed: MCOM 472

**ADV 476/676 - International and Ethnic Advertising Credits: 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. Cross-Listed: ADV 676, MCOM 476-676

**ADV 489 - Portfolio Production & Design Credits: 1-3**

Planning, creation, and production of portfolios for a variety of purposes. Cross-Listed: MCOM 489

**ADV 492 - Topics**

**ADV 692 – Topics Credits: 1-3**

**AGEC (Agricultural and Resource Economics)****AGEC 271-271L - Farm & Ranch Management & Lab Credits: 4**

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-AGECE 271.

**AGEC 292 – Topics Credits: 1-4****AGEC 320 - Ethics in agribusiness Credits: 3**

Introduction to ethical theories and frameworks used to discuss general ethical questions such as death, theft, and lying, followed by more specific agribusiness issues. Includes marketing claims, unhealthy foods, the development of genetically-modified organisms, controversy over hiring undocumented workers, and the consolidation of agriculture into industrial production facilities.

**AGEC 350 - Environmental law Credits: 3**

Introduction to regulatory theory, externalities and market failures, definition of key regulations affecting agribusiness, overview of local government law, and delineation of environmental laws relating to agriculture. Current environmental issues are related to statutory, administrative, and regulatory authorities.

**AGEC 352 - Agricultural Law Credits: 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 Credits: 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 356 - Equine Law Credits: 3**

Topics include forms of equine business organization, employer requirements, taxes, debt collection, contracts, liability of horsemen, animal abuse and neglect, laws governing horse transport, estate planning, and insurance considerations.

**AGEC 364 - Introduction to Cooperatives Credits: 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 366 - Food Law Credits: 3**

Introduce U.S. statutes, regulations, and court cases relating to food safety concerns so students are prepared to handle real-world situations involving food safety. Students will gain an understanding of where and how to locate laws relating to food safety; the relationship between a statute, a regulation, and a court decision; and who has the authority to interpret them. The course also provides an overview of the interaction among federal and state food safety laws, and the expanding role of international food standards.

**AGEC 371 - Agricultural Business Management Credits: 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 Credits: 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. Cross-Listed: ECON 372.

**AGEC 421/521 - Farming & Food Systems Economics Credits: 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.

**AGEC 430/530 - Advanced Ag Marketing & Prices Credits: 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 & Livestock Marketing Credits: 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 Mngmnt Credits: 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 & Lab Credits: 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: AGECE 271-271L or PS 213-213L Corequisites: AGECE 473L-AGECE 473 Cross-Listed: PS 473-473L

**AGEC 478-478L - Agricultural Finance and Lab Credits: 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: AGEC 271, ECON 201, ACCT 210 Corequisites: AGEC 478L-AGEC 478.

**AGEC 479 - Agricultural Policy (AW) (G) Credits: 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 Ag Futures and Options Credits: 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: AGEC 354.

**AGEC 491 - Independent Study Credits: 1-3**

**AGEC 492 – Topics Credits: 1-4**

**AGEC 493 – Workshop Credits: 1-3**

**AGEC 494 – Internship Credits: 1-6**

**AGEC 498 - Undergraduate Research/Scholarship Credits: 1-4**

**AGEC 591 - Independent Study Credits: 1-3**

**AGEC 592 – Topics Credits: 1-4**

**AGEC 593 – Workshop Credits: 1-3**

**AGEC 672 - Bioenergy and Resource Economics Credits: 3**

**AGEC 691 - Independent Study Credits: 1-3**

## **AGED (Agricultural Education)**

**AGED 109 - First Year Seminar – Ag Education\*\* Credits: 2**

First-year experience course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1

**AGED 295 – Practicum Credits: 1**

**AGED 404 - Program Plan in Ag Education (AW) Credits: 3**

Developing and maintaining a strong agricultural education program requires knowledge of curriculum design and development, assessment, classroom management and other relevant topics. This course is designed to offer students an opportunity to further develop necessary skills for successfully teaching agricultural subjects in both formal and non-formal educational settings. Additionally, a brief history of the discipline, components of agricultural education, and current trends and issues will be explored. Working with advisory councils, adult education initiatives, and community organizations will also be addressed.

**AGED 405 - Philosophy of Career and Technical Education Credits: 2**

Overview of career and technical education, including history and role and purpose in schools, communities and society; organization and characteristics of instructional programs at secondary, post-secondary and adult levels; career education; funding; and current trends and issues in career and technical education. Prerequisites: Sophomore status in education program. Corequisites: AGED 295 Cross-Listed: FCSE 405 Notes: For prospective teachers in agriculture or family and consumer sciences education.

**AGED 408 - Supervision of Work Experience and Youth Organizations Credits: 2**

This course is designed to enhance students' understanding of experiential learning opportunities in agricultural education. Specifically, content will address strategies, techniques, and practices needed to effectively advise an FFA chapter and/or other student leadership organizations. Promotion, utilization and management of Supervised Agricultural Experience programs and related opportunities will also be explored. Students will develop appropriate philosophies and skills for operation of a comprehensive agricultural education program. Prerequisites: PSI: EDFN 338 and EPSY 302

**AGED 412-412L - Preparation for Supervised Teaching Internship in AGED and Lab Credits: 4, 0**

Planning and developing instruction to meet the needs of selected age groups in formal and informal settings. Classroom/laboratory management, integration of core academics into career and technical education, assessment, advisement of student organizations, professional issues, and current topics in education will be addressed in preparation for a career in an educational setting. Prerequisites: Senior Standing, AGED/FCSE 295, AGED/FCSE 405, EPSY 302, EDFN 475, SEED 314, SEED 450, FCSE/AGED 404 Cross-Listed: FCSE 412-412L

**AGED 488 - 7-12 Student Teaching in AGED Credits: 6**

An experiential application of teaching pedagogy and content in agricultural education under the supervision of a certified teacher in an approved program. Prerequisites: Senior standing and successful completion of all PS I, PSII and all other pedagogy courses. An application for the experience must be completed and approved.

**AGED 491 - Independent Study Credits: 1-3**

**AGED 494 – Internship Credits: 1-12**

**AGED 496 - Field Experience Credits: (1-12)**

**AGED 497 - Cooperative Education Credits: (1-12)**

**AGED 591 - Independent Study Credits: (1-3)**

**AGED 690 – Seminar Credits: (1-2)**

**AGED 788 - Research Problems in Agricultural Education Credits: 1-2**

## **AHED (Adult Higher Education)**

**AHED 490 - Seminar for Residential Assistants Credits: 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 Credits: 2-5**

**AHED 691 - Independent Study Credits: 1-3**

**AHED 693 – Workshop Credits: 1-3**

**AHED 711 - Assessment and Program Design Credits: 3**

**AHED 720 - Principles of Post Secondary Education Credits: 3**

**AHED 755 - Principles of College Teaching Credits: 3**

**AHED 772 - Administration & Leadership in Student Affairs Credits: 3**

**AHED 788 - Research Problems in Adult Education Credits: 1-2**

**AHED 790 – Seminar Credits: 1-3**

**AHED 794 – Internship Credits: 1-6**

## **AIR (Aerospace Studies)**

**AIR 101-101L - The Foundations of the US Air Force & Lab Credits: 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 & Lab Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 \* Credits: 4**  
An introduction to the Lakota language with emphasis on conversation, language structure, and vocabulary. Notes: \* Course meets SGR #3

**AIS 102 - Introductory Lakota II \* Credits: 4**  
A continued introduction to the Lakota language with emphasis on basic conversation, language structure, and vocabulary. Prerequisites: AIS 101 or LAKL 101. Cross-Listed: LAKL 102 Notes: \* Course meets SGR #3

**AIS 199 - Native American Empowerment Credits: 3**  
This course has been designed to assist students in the transition from high school into college, from home community to the SDSU community, while empowering them to be successful students and community members. Throughout the semester students will become

familiar with the various resources available to them and how to access them. Students will also be exposed to many prominent Native people: scholars, writers, activists, artists and leaders through written texts as well as film, music and art. Students will develop their knowledge base of the many contributions Native Americans have made and continue to make to American society. Students will develop their writing and research skills as they learn about Native American culture and history.

**AIS 201 - Intermediate Lakota I Credits: 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 Credits: 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 Credits: 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\*\* Credits: 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 Cross-Listed: ENGL 256 Notes: \*\*Course meets IGR #2

**AIS 368 - History & Culture of the American Indian\*\* Credits: 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 Credits: 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 Credits: 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. Cross-Listed: POLS 417

**AIS 421 - Indians of North America\*\* Credits: 3**  
Provides prospective teachers and those interested in Indian people with a basic knowledge of Indian heritage and culture. Emphasis on the Dakota Indians. Prerequisites: junior, senior, or graduate student status OR Instructor's written permission Cross-Listed: ANTH 421/521 Notes: This course fulfills teacher education certification requirement for S.D. Indian Studies and meets IGR Goal #2

**AIS 445 - American Indian Literature Credits: 3**  
Concentration of myths and legends of major language groups, particularly the Siouan. Cross-Listed: ENGL 445

**AIS 447 - American Indian Literature of Present Credits: 3**  
Twentieth-century autobiography, fiction, and poetry by Native American authors. Cross-Listed: ENGL 447

**AIS 467 - Geography of the American Indian Credits: 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 issues. Prerequisites: HIST 368 or ANTH 410 or ANTH 421 or GEOG 219 Cross-Listed: GEOG 467

**AIS 491 - Independent Study Credits: 1-3**  
**AIS 492 - Topics Credits: 1-3**  
**AIS 496 - Field Experience Credits: 1-12**

## **AM (Apparel Merchandising)**

**AM 172 - Introduction to Apparel Merchandising Credits: 2**  
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 Lab Credits: 3**  
Analysis of construction, fabric, fit, defects, and pricing of ready-to-wear. Product knowledge, including garment classifications. Examination of consumer attitudes toward product quality. Corequisites: AM 231L-AM 231.

**AM 242-242L - Textiles I and Lab Credits: 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 253 - Socio-Psychological Aspects of Dress Credits: 3**  
Examination of clothing behavior from sociological, psychological and cultural perspectives. Cross-Listed: WMST 253.

**AM 274-274L - Fashion Promotion and Lab Credits: 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 282 - Customer Service Credits: 2**  
Examination of customer service as a tool for business to develop positive interactions with current and potential customers. Discussion of customer service as an integral tool in customer relationship management. Cross-Listed: CS 282

**AM 292 - Topics Credits: 1-3**

**AM 315-315L - Apparel Design and Lab Credits: 3**  
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 352 - History of Dress in the Western World Credits: 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 361-361L - Aesthetics and Lab Credits: 3, 0**  
The study of aesthetics as it applies to our surroundings. Applications of the elements and principles of design to a wide range of disciplines. Laboratory course to accompany AM 361. Corequisites: AM 361L-361

**AM 372-372L - Trending and Buying and Lab Credits: 3**  
Analysis of trends for the purpose of forecasting merchandise procurement. Development of merchandise lines within the forecast model. Study the buying process. Corequisites: AM 372L-372.

**AM 381 - Professional Behavior at Work Credits: 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. Cross-Listed: CS 381

**AM 462 - Retail Management Credits: 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 Lab Credits: 3**  
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 (AW) Credits: 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 477 - Current Issues in the Workplace Credits: 1**  
Discussion of professional practices and current issues in the workplace.

**AM 480 - Travel Studies Credits: 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.

**AM 482 - Trends Analysis (AW) Credits: 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 Credits: 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 - Seminar Credits: 3 Prerequisites: AM 495.**  
**AM 491 - Independent Study Credits: 1-3**  
**AM 492 - Topics Credits: 1-3**  
**AM 495 - Practicum Credits: 3 Prerequisites: CS 377 & AM 477**  
**AM 498 - Undergraduate Research/Scholarship Credits: 1-3**

## **ANAT (Anatomy)**

**ANAT 142 – Anatomy Credits: 3**  
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) Credits: 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

**ANTH 220 - Physical Anthropology \* (COM) Credits: 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

**ANTH 421/521 - Indians of North America \*\* Credits: 3**

Provides prospective teachers and those interested in Indian people with a basic knowledge of Indian heritage and culture. Emphasis on the Dakota Indians. This course fulfills teacher education certification requirement for S.D. Indian Studies. Prerequisites: Junior, senior, or graduate student status OR Instructor's written permission Cross-Listed: AIS 421 Notes: This course fulfills teacher education certification requirement for S.D. Indian Studies & meets IGR Goal 2

**ANTH 491-591 - Independent Study (COM) Credits: 1-3****ANTH 492-592 - Topics Credits: 1-3**

**ANTH 494 - Internship Credits: 1-12** Prerequisites: Consent

**ANTH 496 - Field Experience Credits: 1-12** Prerequisites: Consent

**ARAB (Arabic)****ARAB 101 - Introductory Arabic I \* (COM) (G) Credits: 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

**ARAB 102 - Introductory Arabic II \* (COM) (G) Credits: 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

**ARCH (Architecture)****ARCH 109 - First Year Seminar\*\* Credits: 2**

First-year experience course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\* Course meets IGR #1

**ARCH 131 - Building Thinking Credits: 2**

An introduction to the social art, urbanism, economics, and materiality of making buildings emphasizing the evolution from "master builder" to the highly mediated and digital nature of contemporary building design and construction practices.

**ARCH 151 - Design Practice I Credits: 2**

Introduces students to design studio and culture. Students learn basic concepts of architectural drawing and model making through studying precedents and surroundings. Students are expected to develop craftsmanship in representation as well as communication skills.

**ARCH 152 - Design Practice II Credits: 2**

Continues introducing students to design studio and culture. Students learn basic concepts of architectural drawing and model making through studying precedents and surroundings. Students are expected to develop craftsmanship in representation as well as communication skills.

**ARCH 241 - Building History I Credits: 2**

Studying architecture through the frame of history emphasizing buildings as artifacts of the technological processes of construction. Buildings from across diverse societies and geographies are put into historical context in categories of carving, stacking, framing, skinning, and casting space.

**ARCH 242 - Building History II Credits: 2**

Studying architecture through the frame of history emphasizing building as a professional and disciplinary practice. The course focuses on historical study of the genesis of the profession across time and cultures in Renaissance and Baroque Italy (1350-1650).

**ARCH 251 - Design Practice III Credits: 3**

Continuation of first year Design Practice studios. Students continue to learn drawing and modeling techniques and refine craft. Students begin to examine components in building design and construction systems for structures. Prerequisites: ARCH 152

**ARCH 252 - Design Practice IV Credits: 3**

Students look in-depth at building components and assemblies. Work will focus on component design and construction types. Students will begin to analyze building materials and related assemblies Prerequisites: ARCH 251

**ARCH 321 - Drawing, modeling, & notation Credits: 2**

Introduction to electronic building information modeling and notational drawing in raster and vector technologies. Prerequisites: ARCH 351

**ARCH 331 - Building Shop I Credits: 2**

An introduction to craftsmanship, assembly, and fabrication through hands-on demonstrations and projects. Prerequisites: ARCH 252 - Design Practice IV

**ARCH 332 - Building shop II Credits: 2**

Continuation of ARCH 331 workshop studies in craftsmanship, assembly, and fabrication through hands-on demonstrations and projects. Prerequisites: ARCH 331

**ARCH 341 - Building history III Credits: 2**

Studying architecture through the frame of history emphasizing the 20th century development of the modern culture of architecture. Buildings, both local and global, from across diverse societies put into historical context as cultural, socio-political, and corporate artifacts of the profession. Prerequisites: ARCH 241 and ARCH 242

**ARCH 351 - Preparatory Architecture Studio Credits: 4**

Students design a simple but comprehensive in-fill building project problematizing construction and spatial sequence while introducing foundational issues of place-making and city form in architectural production. Prerequisites: ARCH 252 - Design Practice IV

**ARCH 352 - Architecture studio I Credits: 5**

Building design studio focusing on institutional program projects in masonry construction situated in a landscape or rural site. Prerequisites: ARCH 351

**ARCH 411 - Site, Environment, Urbanism & Public Space Credits: 2**

Lecture and field work in urban design principles, environmental responsibilities, architecture's role in the sustenance of public space in the implementation of site design technologies. Prerequisites: ARCH 341

**ARCH 421 - Building Information Technologies Credits: 2**

Lecture and workshop study on the integration of digital building information technologies in the building process from ideation to maintenance. Prerequisites: ARCH 351

**ARCH 431 - Building Shop III Credits: 2**

Continuation of ARCH 332 workshop studies in craftsmanship, assembly, and fabrication through hands-on demonstrations and projects. Prerequisites: ARCH 332

**ARCH 451 - Architecture Studio II Credits: 5**

Building design studio focusing on commercial program projects in steel construction situated in a small town corner site. Prerequisites: ARCH 352



**ARCH 452 - Architecture Studio III Credits: 5**

Building design studio focusing on housing program projects in concrete construction situated in a big city block infill setting. Prerequisites: ARCH 451

**ARCH 492 - Topics Credits: 3****ARCH 592 - Topics Credits: 3****ARCH 692 - Topics Credits: 3****ART (Art)****ART 110 - First Review Credits: 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 111 - Drawing I \* \*\* (COM) Credits: 3**

Introduces various drawing concepts, media, and processes developing perceptual and technical skills related to accurate observing and drawing. Notes: \* Meets SGR #4 or \*\* IGR Goal #2

**ART 112 - Drawing II \* \*\* (COM) Credits: 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 Goal #2

**ART 121 - Design I 2D \* \*\* (COM) Credits: 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 Goal #2

**ART 122 - Design II Color (COM) Credits: 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) Credits: 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 Goal #2

**ART 192 – Topics Credits: 3****ART 200 - Portfolio Review Jury on Student Progress Credits: 0.5**

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) Credits: 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 instructor's consent Notes: \*\* Course meets IGR Goal #2

**ART 231 - Painting I \*\* (COM) Credits: 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 instructor's consent Notes: \*\* Course meets IGR Goal #2

**ART 241 - Sculpture I \*\* (COM) Credits: 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 Goal #2

**ART 251 - Ceramics I \*\* (COM) Credits: 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 Goal #2

**ART 281 - Printmaking I \*\* (COM) Credits: 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 Goal #2

**ART 292 – Topics Credits: 3****ART 311 - Figurative Drawing-Advanced Credits: 3**

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) Credits: 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 Credits: 3**

Continuation of Painting II. Emphasis on composition and expression. Prerequisites: ART 331.

**ART 341 - Sculpture II (COM) Credits: 3**

Continues Sculpture I as students explore individual concepts through various techniques and materials. Prerequisites: ART 241.

**ART 342 - Sculpture III (COM) Credits: 3**

Continues Sculpture II as students further explore individual concepts through various techniques and materials. Prerequisites: ART 341.

**ART 351 - Ceramics II (COM) Credits: 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 Level Credits: 3**

Continuation of Ceramics II. Emphasis on individual concepts developed through hand-building and/or throwing techniques. Also more advanced glazing and firing techniques, kiln maintenance, and studio operations. Prerequisites: ART 351 (minimum grade of "C", or consent of instructor).

**ART 381 - Printmaking II (COM) Credits: 3**

Continues Printmaking I as students further individualized their application of printing processes and media Prerequisites: ART 281 or consent.

**ART 382 - Printmaking-Intermediate Level Credits: 3**

Continuation of Printmaking II. Creative use of advanced printmaking techniques and processes in relief, intaglio, and serigraphy. Prerequisites: ART 381.

**ART 391 - Independent Study Credits: 1-3****ART 400 - Senior Review Credits: 0.5**

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) Credits: 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.

**ART 441 - Sculpture-Advanced Credits: 3-9**

Continuation of Sculpture III. Advanced exploration of sculpture concepts. Prerequisites: ART 342. Repeatable up to 9 hours.

**ART 451 - Ceramics-Advanced Credits: 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 Credits: 3-9**

A continuation of Printmaking III. Prerequisites: ART 382. Repeatable up to 9 hours.

**ART 482 - Travel Studies Credits: 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) Credits: 1-12****ART 492 - Topics (COM) Credits: 1-9****ART 494 - Internship (COM) Credits: 1-16****ART 592 – Topics Credits: 1-9****ART 599 - Visual Arts Studio Credits: 1-9****ARTD (Art Design)****ARTD 201 - Graphic Design I Credits: 3**

An introduction to graphic design stressing theory and creative development.

**ARTD 202 - Computer Graphics I Credits: 3**

A non-programming introduction to drawing, photo-imaging and page layout design software emphasizing computer-generated design projects.

**ARTD 203 - Introduction to Classical Animation I Credits: 3**

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.

**ARTD 301 - Graphic Design II Credits: 3**

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 Credits: 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 Credits: 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 Credits: 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 Credits: 3**

Introduction to animation and web applications. Prerequisites: ARTD 301. ARTD 302 Corequisites: ARTD 351.

**ARTD 403 - Intermediate Animation Credits: 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 credit.

**ARTD 451 - Visual Communication II: Senior Portfolio Credits: 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 Credits: 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) Credits: 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 Credits: 1-3**

## ARTH (Art History)

### **ARTH 100 - Art Appreciation \* \*\* (COM) (G) Credits: 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 Goal #2

### **ARTH 120 - Film as Art\*\* Credits: 3**

This course introduces and explores concepts of the moving image as an art form. Aspects explored include film history, narrative elements, alternatives to mainstream media and visual compositional elements. Notes: \*\*Course meets IGR Goal #2

### **ARTH 211 - History of World Art I \* \*\* (COM) (G) Credits: 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 Goal #2.

### **ARTH 212 - History of World Art II \* \*\* (COM) (G) Credits: 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. Course meets \*SGR #4 or \*\* IGR Goal #2

### **ARTH 310 - History of United States Art and Architecture (AW) Credits: 3**

From colonial times to present. Prerequisites: ARTH 212

### **ARTH 320 - Modern Art & Architecture Survey (AW) Credits: 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) Credits: 1-3**

### **ARTH 492 - Topics (COM) Credits: 1-6**

## AS (Animal Science)

### **AS 101-101L - Intro to Animal Science and Lab Credits: 3**

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 - Intro to Horse Management & Lab Credits: 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. Note - 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 Lab Credits: 1**

Breeds of horses, gaits, grooming, equipment, diets; basic instruction with suitable equipment. Corequisites: AS 105L-AS 105

### **AS 106-106L - English Horsemanship and Lab Credits: 1**

Breeds of horses, gaits, grooming, equipment, diets; basic instruction with suitable equipment. Corequisites: AS 106L-AS 106

### **AS 109 - First Year Seminar\*\* Credits: 2**

First-year experience course designed to introduce students to academic success strategies including the development of critical

thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1

### **AS 110 - Equine Yearling Halter Training Credits: 1**

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 Animals Credits: 2**

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 Credits: 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 Credits: 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 junior standing

### **AS 202 - Basic Swine Science Credits: 2**

Basic disciplines and concepts involved in swine production including: industry structure, trends and statistics; production phases and buildings; genetic improvement; reproduction; nutrition; health and biosecurity; nutrient management; marketing and meat quality; and career opportunities in the swine industry.

### **AS 203L - Basic Swine Science Lab Credits: 1**

Basic application of concepts presented in basic swine science course. Including: artificial insemination; handling; semen collection; health and biosecurity; financial analysis; pig flow; buildings and ventilation; and feed management.

### **AS 210 - Equine Two-Year-Old Saddle Training Credits: 2**

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 Credits: 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 215 - Introduction to Integrated Ranch Management Credits: 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. Cross-Listed: RANG 215

**AS 220 - Equine Nutrition Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 1-12****AS 301L - Advanced Swine Science Lab Credits: 1**

Advanced application of concepts associated with swine production. Including: semen processing; troubleshooting production efficiency; risk management; marketing; buildings and ventilation; and on farm euthanasia and carcass disposal. Prerequisites: Basic Swine Science Course and Basic Swine Science Lab.

**AS 302 - Swine Environment Management Credits: 1**

Response of swine to thermal environment, ventilation system design and analysis, heating and cooling systems and examples of various designs for all phases of production. Troubleshooting ventilation systems and energy analysis of production units.

**AS 303 - Swine Feed Mill Management Credits: 1**

Principles of feed manufacturing, equipment operation, feed and ingredient quality assurance and regulatory compliance in a modern feed milling operation. Overview of feed mill regulations and safety. Availability and utilization of various equipment available to the feed milling industry.

**AS 304 - Swine Manure and Nutrient Management Credits: 1**

Function, application, and advantages and disadvantages of nutrient management systems. Manure production rates, manure handling systems, storage and manure management planning for land application and odor mitigation strategies. Understanding the connection conscientious manure management provides between livestock and crop production.

**AS 305 - Swine Nutrition Credits: 1**

This course is designed to increase the student's understanding of the principles involved with developing and implementing a swine feeding program, and is part of the Swine Science Online (SSO) program. In this 1 credit course (equivalent to 15 contact hours), students will learn the fundamentals of feeding pigs, including understanding nutrients, factors affecting nutrient recommendations, feeding systems and management, feed ingredients, and formulation of swine diets.

**AS 306 - Swine Breeding and Gestation Management Credits: 1**

Concepts related to: reproductive physiology and endocrinology of boars and sows; genetic selection programs; development programs for future replacement gilts and boars; semen collection, evaluation, and preparation; detection of estrus and artificial insemination; pregnancy diagnosis; feeding and housing programs for gestating sows; environmental management; records; diseases; and development of quality assurance programs for identifying and solving reproductive problems.

**AS 307 - Swine Farrowing Management Credits: 1**

Advanced integration and application of reproductive management concepts during farrowing and lactation. Identification of production trends; formulation of strategies to improve productivity; and parturition and neonatal management.

**AS 308 - Swine Nursery and Finishing Management Credits: 1**

Overview of the critical management, housing, and financial considerations relevant to the successful operation of a swine nursery, grow-finish, and wean to finish enterprise, including: nutrient requirements; building and facility management; and marketing.

**AS 309 - Swine Business and Records Analysis Credits: 1**

Evaluation of swine operations using farm and enterprise records, budgeting, and financial analysis and benchmarks.

**AS 310 - Employee Management for the Swine Industry Credits: 1**

Effective employee management in swine production units. Assist students in understanding the principles, policies, and practices related to recruitment, training, retaining, and managing employees.

**AS 311 - Marketing and Risk Management in the Swine Industry Credits: 1**

A comprehensive view of industry structure and trends and marketing options available in the swine industry. Management of risk between markets and/or contracts.

**AS 312 - Pork Product Quality and Safety Credits: 1**

Pre- and post-harvest factors affecting pork product quality and safety. Overview of the pork harvesting process, and traits and characteristics of quality pork products.

**AS 313 - Swine Health and Biosecurity Credits: 1**

Overview of standard biosecurity protocols and identification of behavior and clinical signs of illness in pigs. Treatment administration and prevention methods. Introduction to immune system function and basic swine disease.

**AS 314 - Pork Export Markets Credits: 1**

Introduction to global markets; cultural preferences and customs associated with the global swine industry. International trade regulations and potential impact of foreign animal diseases and bioterrorism affecting the U.S. swine industry

**AS 315 - Contemporary Issues in the Swine Industry Credits: 1**

Evaluation of issues facing today's swine industry including: welfare, nutrient management, and food safety and security. Development of skills needed for effective community relations such as media interviews and message points.

**AS 322 - Advanced Livestock Evaluation Credits: 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 Credits: 3**

Functions of various nutrients; digestion and metabolism of nutrients by different animal species. Prerequisites: AS 233.

**AS 332 - Livestock Breeding and Genetics Credits: 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 Credits: 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 Credits: 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 Credits: 3**

Feeding, breeding and management principles for horses. Prerequisites: AS 101 or AS 104. Corequisites: AS 365L-AS 365.

**AS 370 - Stable Management Credits: 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 105.

**AS 400 - Judging Team Credits: 1-2**

**Section 1-Meats** - Identifying, judging and grading carcasses and cuts; training in writing reasons; participation in intercollegiate meat judging contests. Prerequisites: 205 or 215 or consent.

**Section 2-Livestock** - Trips to purebred herds; training in Oral Reasons; participation in American Royal and International Livestock Judging contests. Prerequisites: 205 or 215 or consent.

**Section 3-Wool** - Wool judging and grading, training in written reasons, participation in National Western Wool Judging contests. Prerequisites: 205 or 215 or consent.

**AS 420-420L - Equine Reproductive Management & Lab Credits: 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 Credits: 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 441-541 - Advanced Meat Science and Lab Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 485-485L - Advanced Integrated Ranch Management and Lab Credits: 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/AS 215 Corequisites: AS 485L-485

**AS 489 - Current Issues in Animal Science (AW) Credits: 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.

**AS 491-591 - Independent Study Credits: 1-3****AS 492-592 – Topics Credits: 1-6****AS 494 – Internship Credits: 1-12****AS 497 - Cooperative Education Credits: 1-12****AS 711 – Ruminology Credits: 3****AS 712 - Ruminant Nutrition Credits: 3****AS 730 – Endocrinology Credits: 3****AS 732 - Advanced Physiology of Reproduction Credits: 3****AS 733 - Vitamins and Minerals Credits: 3****AS 734 - Protein and Energy Nutrition Credits: 3****AS 736 - Monogastric Nutrition Credits: 3****AS 740 – Metabolism Credits: 3****AS 750 - Animal Growth and Development Credits: 3****AS 753 - Research Topics in Meat Science Credits: 3****AS 790 – Seminar Credits: 1****AS 798 – Thesis Credits: 1-7****AS 898D - Dissertation-PhD Credits: 1-12****AST (Agricultural Systems Technology)****AST 109 - First Year Seminar\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic

planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1

**AST 202-202L - Construction Technology and Materials and Lab Credits: 2**

Wood and concrete building materials; efficient construction procedures; hand tools, portable and stationary power tools; safe working practices. Corequisites: AST 202L-202.

**AST 203-203L - Introduction to Precision Agriculture and Lab Credits: 2, 0**

Introduction to the tools and equipment used in precision farming practices. Topics covered include: Global positioning system, sources of error, correction options and accuracy, GIS, Ag equipment receivers, displays, guidance systems, yield monitors, and utilizing collected field data for optimal production practices. Corequisites: 203L-203

**AST 210 - Intro to Biorenewable Products & Processing Credits: 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: ABS 210 Introduction to Biorenewable Products and Processing

**AST 211-211L - Ag and Outdoor Power for Teachers and Lab Credits: 1, 0**

This course is designed for students majoring in Agricultural Education, Communication and Leadership. Students will obtain a general working knowledge of spark ignition and compression ignition engines Laboratory to accompany AST 311 Applied Electricity for Teachers Corequisites: AST 211L-211 Notes: Credit not allowed for both AST 211-211L and AST 213-213L

**AST 213-213L - Ag, Industrial & Outdoor Power & Lab Credits: 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 273-273L - Microcomputer Applications in Agriculture and Lab Credits: 3**

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 Credits: 1-3**

**AST 303-303L - Design Mngmnt Experience & Lab Credits: 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 311-311L - Applied Electricity for Teachers and Lab Credits: 1, 0**

Basic wiring and electrical circuits. National Electric Code covering residential and farm applications. Laboratory course to accompany AST 311. Corequisites: AST 311L Notes: Credit not allowed for both AST 311-311L and AST 342 – 342L.

**AST 313-313L - Farm Machinery Systems Management and Lab Credits: 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 Lab Credits: 3**

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.

**AST 342-342L - Applied Electricity and Lab Credits: 3**

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 Credits: 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: AST 353L-353

**AST 390 – Seminar Credits: 1**

**AST 412-412L/512-512L - Fluid Power Technology & Lab Credits:3**

Basic fluid mechanics, pneumatics, hydraulics, control systems and common industrial circuits. Corequisites: AST 412L-412/512L-512.

**AST 422-422L/522-522L - Environmental Control in Structures and Lab Credits: 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 Lab Credits: 3**

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 426-426L - Emerging Technologies in Agriculture and Lab Credits: 3**

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 Credits: 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 & Engineering Fundamentals & Lab Credits: 3**

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 463/563 - Agricultural Waste Management (AW) Credits: 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.

**AST 491 - Independent Study Credits: 1-3**

**AST 492 – Topics and Lab, 1-4, 0**

**AST 494 – Internship Credits: 1-12**

**AST 496 - Field Experience Credits: 1-12**

**AST 497 - Cooperative Education Credits: 1-12**

**AST 498 - Undergraduate Research/Scholarship Credits: 1-3**

**AST 791 - Independent Study Credits: 1-3**

**AST 792 – Topics Credits: 1-4**

## **AT (Athletic Training)**

**AT 164 - Introduction to Athletic Training (COM) Credits: 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 Credits: 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 II Credits: 2**

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 Credits: 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 IV Credits: 2**

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 I Credits: 3**

This course is the first of the intermediate athletic training courses designed to meet all of the guidelines and competencies required by the National Athletic Trainers' Association. These courses should be taken in sequence. AT 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 Credits: 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 Credits: 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 IV Credits: 3**

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 Extremity Credits: 2**

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 Extremity Credits: 2**

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 Training Credits: 2**

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 Credits: 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) Credits: 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 – Seminar Credits: 2**

**AT 795 – Practicum Credits: 1**

## **AVIA (Aviation)**

### **AVIA 101 - Introduction to General Aviation Credits: 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 Lab Credits: 2**

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 170 - Fundamentals of Flight Theory Credits: 3**

Basic aviation principles for the beginning aviator are presented in this course. 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. Corequisites: AVIA 171

### **AVIA 171 - Introductory Flight I Credits: 2**

This flight course involves 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, at least the cross country progress check of the private pilot certificate. Corequisites: AVIA 170 Notes: Additional fees apply for aircraft rental and flight instruction.

### **AVIA 180 - Attitude Instrument Theory Credits: 2**

This course begins with a discussion of Aeronautical Decision Making (ADM), airworthiness requirements for flight, and professionalism in aviation. The course proceeds to an in-depth study of instrumentation and glass technologies. Basic attitude flight principles will be enhanced through this course. In addition, students will have a fundamental knowledge of the air navigation systems used to conduct IFR flight. Corequisites: AVIA 181

### **AVIA 181 - Introductory Flight II Credits: 2**

Students will continue learning how to fly aircraft in the VFR and IFR environments. Topics include cross-country flight and flight planning, night operations, lost and emergency procedures, basic instrument flight control, and National Airspace services. 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 and continue on to at least stage I of the instrument commercial 14 CFR 141 requirements. Prerequisites: AVIA 171 Notes: Additional fees apply for aircraft rental and flight instruction. Students enrolled in the program prior to Fall 2012 will take the course as AVIA 273 - Private Pilot Flight II

### **AVIA 189 - Airframe & Powerplant Course Credits: 1-40**

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 Credits: 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 Weather Credits: 2**

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 295 – Practicum Credits: 1** Prerequisites: AVIA 370.

### **AVIA 300 - Human Factors in Aviation Credits: 3**

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 Credits: 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 Administration Credits: 3**

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, 210.

### **AVIA 340 - Advanced Flight Principles Credits: 3**

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 350 - Tail-wheel Transition Credits: 1**

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 370 - Professional Pilot Theory I Credits: 3**

This theory course prepares students for FAA instrument and commercial rating. Topics include navigation principles and procedures, air traffic control procedures, applicable FAA regulations, and meteorological considerations for flight in the airspace system. It also covers departure, arrival and en route considerations as well as terminal operating procedures. Students completing this course will successfully complete the FAA Instrument Pilot written examination as a requirement for course completion. Prerequisites: Instructor consent. Notes: Students enrolled the AVIA program prior to Fall 2012 will take AVIA 371 Instrument Pilot Theory

**AVIA 372 - Professional Flight I Credits: 2**

Individual flight instruction for the FAA instrument and commercial 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 as well as continue building hours towards the commercial certificate. Prerequisites: Instructor consent. Corequisites: AVIA 370 Notes: Additional fees apply for aircraft rental and flight instruction. Students must have their private pilot certificate before enrolling in course. Students enrolled in the AVIA program prior to Fall 2012 will take the course as AVIA 372 Instrument Flight.

**AVIA 375 - Professional Pilot Theory II Credits: 3**

This theory course prepares students to operate multiengine and single engine aircraft professionally through the National Airspace System as a commercial pilot. Federal regulations, complex aircraft performance and operation, high performance aircraft characteristics, and safe operation of commercial aircraft in the US air transportation system will be covered in this course. Student will successfully complete the FAA Commercial Pilot Certificate written examination as a requirement of course completion. Prerequisites: Instructor consent (Students must have their FAA instrument rating as a prerequisite for this course.) Corequisites: AVIA 377 Notes: Additional fees apply for aircraft rental and flight instruction. Students enrolled in the AVIA program prior to Fall 2012 will take the course as AVIA 375 Commercial Pilot Theory.

**AVIA 377 - Professional Flight II Credits: 2**

Professional flight II provides individualized flight instruction in preparation for the FAA Commercial Pilot Certificate. Student will complete, under the supervision of SDSU flight instructors, the FAA commercial practical exam. Prerequisites: AVIA 372 Corequisites: AVIA 375 Notes: Additional fees apply for aircraft rental and flight instruction. Students enrolled in the AVIA program prior to Fall 2012 will take the course as AVIA 376

**AVIA 392 - Special Topics in Aviation Credits: 1-3****AVIA 400 - Air Transportation System Credits: 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 440 - Curriculum Design in Aviation (AW) Credits: 3**

This course will cover the development process of selection, organization and management of instructional content and supplemental materials related to aviation education. Special emphasis will be placed on development of objectives, integration of teaching/learning strategies, and scenario-based training.

**AVIA 450 - Methods of Teaching in Aviation Credits: 3**

This course will feature lesson presentation and methods of delivering instruction in aviation education. This course will equip the student with resources and technology used in the classroom and aircraft to specifically teach content related to aviation. Topics covered include teaching with technology, utilizing instructional aides, motivating students, and marketing a program. Instructional techniques appropriate for aviation education are developed based on models identified in competency-based or performance-based education. Additional support will be provided to help student deliver classroom and aircraft content, assess the content, and provide feedback on the assessment. Students will gain practical experience by utilizing skills learned in class to actively engage the aviation community.

**AVIA 470 - Professional Flight Instructor Theory I Credits: 2**

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 and the FAA Flight Instructor knowledge exam. Prerequisites: Instructor consent (Commercial certificate required) Corequisites: AVIA 474 Notes: Students enrolled in the AVIA program prior to Fall 2012 will take the course as AVIA 470 - Flight Instructor Theory/Flight.

**AVIA 471 - Professional Flight Instructor Theory II Credits: 2**

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 Corequisites: AVIA 475

**AVIA 472 - Certified Flight Instructor Instrument Credits: 1**

This course prepares the flight instructor to teach students in an instrument flight environment Prerequisites: Instructor consent.

**AVIA 473 - Certified Flight Instructor Multi-Engine Credits: 1**

This course prepares the flight instructor to teach students in an aircraft with two or more engines. Prerequisites: Instructor consent.

**AVIA 474 - Certified Flight Instructor I Credits: 2**

Provides the student with a detailed study of the responsibilities and teaching concerns of a flight instructor in a single engine aircraft environment. The course is concerned with the analysis of the flight maneuvers involved with Sport Pilot, Recreational Pilot, Private Pilot, Commercial Pilot and Flight Instructor Certificates. During this course the student is expected to complete the FAA Certified Flight Instructor practical checkride. Prerequisites: Commercial pilot certificate and instructor consent Corequisites: AVIA 470 Notes: Additional fees apply for aircraft rental and flight instruction.

**AVIA 475 - Certified Flight Instructor II Credits: 2**

This course prepares the flight instructor to teach students in an instrument flight environment in both single engine and multiengine aircraft. Learning objectives include an in-depth study of the responsibilities and techniques to be used as an Instrument Flight Instructor in the training environment. This course will also include additional study of instrument flight, multi-engine operations, aerodynamics, single-engine operations, and regulations pertaining to the IFR environment. Supplementary information will help to

develop the instructors' knowledge of Technically Advanced Aircraft (TAA) in a practical environment. The course will place special emphasis on multi-engine aerodynamics and performance, analysis of multi-engine operations, single-engine operations and procedures, flight safety concerns and instrument flight maneuvers in multi-engine airplanes. Prerequisites: Certified Flight Instructor certificate and written consent Corequisites: AVIA 471

**AVIA 488 - Student Flight Instruction Credits: 3**

Supervised flight instruction in a post-secondary setting. Prerequisites: Instructor consent.

**AVIA 489 - Aviation Senior Seminar Credits: 3**

This course will explore contemporary and ethical issues in the aviation industry. Students will examine and solve issues related to global aviation, environmental concerns, technology advances, aviation safety and security practices, labor issues, aviation education, and aviation economics. Students will be required to demonstrate an understanding of information literacy and advanced communications through course work.

**AVIA 494 – Internship Credits: 3**

Prerequisites: Department approval required.

## **BADM (Business Administration)**

**BADM 260 - Principles of Production and Operations Management Credits: 3**

A broad analytical 'systems' viewpoint is used to develop competency in management decision-making and problem solving in operations setting in various businesses and especially manufacturing. This course involves the study of the production end of business, where resources are transferred into goods and services, and the management of operations through effective planning, implementing, and monitoring for continuous improvement. Prerequisites: One Math course except 021, 095, 101, 100T. Cross-Listed: MNET 260

**BADM 280 - Personal Finance (COM) Credits: 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) Credits: 1-4**

**BADM 292 - Topics (COM) Credits: 1-3**

**BADM 293 - Workshop (COM) Credits: 1-3**

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.

**BADM 310 - Business Finance (COM) Credits: 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. Prerequisites: ACCT 211

**BADM 334 - Small Business Management (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 3**

This course involves a thorough study of the law of contracts, sales, product liability, agency, corporations and other selected topics. Prerequisites: BADM 350.

**BADM 360 - Organization and Management (COM) Credits: 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. Cross-Listed: MGMT 360.

**BADM 370 - Marketing (COM) Credits: 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) Credits: 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/ENTR 406-506.

**BADM 411 - Investments (COM) Credits: 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) Credits: 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) Credits: 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 AGE 478.

**BADM 424 - Operations Research (COM) Credits: 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) Credits: 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 457 - Business Ethics Credits: 3**

This course is a study of the ethical implications of managerial decisions. Topics covered include the responsibility of the organization to the individual and society, the role of the individual within the organization, and ethical systems for American business. The course provides an examination and assessment of current American business practices.

**BADM 460 - Human Resource Management (COM) Credits: 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 464 - Organizational Behavior (COM) Credits: 3**

This course is a study of individuals and groups. Traditional organization theory and concepts are presented and study is given to motivation, group dynamics, and methods of coordination, change and adaptation within an organization Prerequisites: BADM 360

**BADM 474 - Personal Selling (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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 & Competition (COM) Credits 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) Credits: 3****BADM 491 - Independent Study (COM) Credits: (1-4)****BADM 492 - Topics (COM) Credits: (1-4)****BADM 493-593 - Workshop (COM) Credits: (1-3)****BADM 494 - Internship (COM) Credits: 1-12****BADM 498 – Undergrad Research/Scholarship (COM) Credits: 1-12****BADM 592 – Topics Credits: (1-3)****BIOL (Biology)****BIOL 101-101L - Biology Survey I and Lab (COM) Credits: 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.

**BIOL 103-103L - Biology Survey II and Lab\* (COM) Credits: 3**

Study of energetics; plant growth; development and reproduction; animal structure and function. Intended for those not majoring in biology. Laboratory experience that accompanies BIOL 103. Prerequisites: Biol 101. Corequisites: BIOL 103L-BIOL 103. Notes: \* Course meets SGR #6. IGR #1

**BIOL 105 - Human Biology \*\* Credits: 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. Notes: \*\* Course meets IGR #2.

**BIOL 109-109L - First Year Seminar and Lab\*\* Credits: 2, 0**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Laboratory course to accompany BIOL 109 Corequisites: BIOL 109-109L Note: \*\*Course meets IGR1

**BIOL 142 - Anatomy (COM) Credits: 3**

Elementary study of the gross structure of the human body.

**BIOL 151-151L - General Biology I and Lab\* (COM) Credits: 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\* Credits: 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. Notes: \*Course meets SGR #6.

**BIOL 190 – Seminar Credits: 2**

**BIOL 200-200L - Animal Diversity and Lab\* Credits: 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 #6.

**BIOL 202-202L - Genetics and Organismal Biology and Lab Credits: 4**

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 204-204 L - Genetics and Cellular Biology and Lab Credits: 3, 1**

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. Laboratory experience that accompanies BIOL 204 Prerequisites: BIOL 202. Corequisites: BIOL 204L-204 Notes: One semester of Organic Chemistry is highly recommended.

**BIOL 210-210L - Human Physiology for Allied Health Professionals and Lab Credits: 4, 0**

Lectures, laboratory work and demonstrations of human physiological processes both normal and abnormal.

**BIOL 221-221L - Human Anatomy and Lab(COM) Credits: 4**

Structures of various systems in the human body are presented as a structural basis for physiology. Laboratory experience that accompanies BIOL 221. Prerequisites: 30 credits registered or completed or written permission Corequisites: BIOL 221L-BIOL 221. Notes: Recommended B or higher in CHEM 106 or overall GPA of 3.0.

**BIOL 290 – Seminar Credits: 1****BIOL 291 - Independent Study (COM)Credits: 1-4****BIOL 311-311L - Principles of Ecology and Lab (COM) Credits: 3, 1**

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. Laboratory experience that accompanies Biol 311 Corequisites: 311L-311

**BIOL 325-325L - Physiology and Lab (COM) Credits: 4**

Basic cell physiology, neural, hormonal and neuroendocrine control systems. Coordinated body functions. Laboratory experience that accompanies BIOL 325. Prerequisites: BIOL 221-221L and 8 credits of chemistry. Corequisites: BIOL 325L-BIOL 325.

**BIOL 371 - Genetics (COM) Credits: 3**

Principles governing the nature, transmission and function of hereditary material with application to plants, animals, humans, and microorganisms. Prerequisites: BIOL 101 OR BIOL 151

**BIOL 373 - Evolution (COM) Credits: 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) Credits: 4**

Ethical, social and policy dilemmas in medicine and biology. Cross-Listed: PHIL 383 Notes: \*\* Course meets IGR #2.

**BIOL 415-415L/515-515L - Mycology & Lab (COM) Credits: 3-4**

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 415-415L/515-515L Prerequisites: BIOL 101 or 151 Corequisites: BIOL 415L-BIOL 415/B IOL 515L-BIOL 515 Cross-Listed: PS 415-415L-515-515L

**BIOL 439-539 - Biology of Aging Credits: 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 440-440L - Restoration Ecology Credits: 4**

Scientific principles involved in restoration of natural ecosystems on degraded and disturbed lands. An understanding of ecological principles is recommended prior to enrollment.

Laboratory to accompany BIOL 440. Corequisites: BIOL 440L-440 Cross-Listed: NRM 440-440L and LA 440-440L

**BIOL 453-553 - Advanced Genetics Credits: 3**

Procedures in genetic studies as they relate to molecular and classical genetic applications. Prerequisites: BIOL 202, or BIOL 204, or BIOL-371 Cross-Listed: PS 453-553

**BIOL 466-566 - Environmental Toxicology and Contaminants Credits: 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. Cross-Listed: NRM 466-566

**BIOL 467-467L/567-567L - Parasitology and Lab Credits: 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 467/B IOL 567L-BIOL 567. Cross-Listed: ZOOL 467.

**BIOL 476-576 - Advanced Mammalian Physiology Credits: 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. Corequisites: BIOL 221 or VET 223 or Instructor written consent Cross-Listed: VET 476/576



**BIOL 483-483L - Developmental Biology and Lab Credits: 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) Credits: 1****BIOL 491 - Independent Study (COM) Credits: 1-4****BIOL 492/592 - 492/592L - Topics and Lab Credits: 1-5****BIOL 494 - Internship (COM) Credits: 1-12****BIOL 496 - Field Experience (COM) Credits: 1-12****BIOL 497 - Cooperative Education (COM) Credits: 1-12****BIOL 498 - Undergraduate Research/Scholarship (COM) Credits: 1-12****BIOL 560 - Landscape Ecology and Lab Credits: 4, 0****BIOL 645L - Microimaging Techniques Lab Credits: 1-3****BIOL 767 - Fire and Ecosystems Credits: 3****BIOL 782 - Epidemiology Credits: 3****BIOL 788 - Biological Research Problem Credits: 1-3****BIOL 790 - Seminar Credits: 1****BIOL 791 - Independent Study Credits: 1-4****BIOL 792 - Topics Credits: 1-6****BIOS (Biological Sciences)****BIOS 662 - Advanced Molecular and Cellular Biology Credits: 6****BIOS 663 - Advanced Concepts in Infectious Disease Credits: 6****BIOS 664 - Molecular Plant Physiology Credits: 6****BIOS 788 - Master's Research Problems Credits: 1-3****BIOS 790 - Seminar Credits: 1****BIOS 791 - Independent Study Credits: 1-6****BIOS 792 - Topics Credits: 1-6****BIOS 793 - Workshop Credits: 1-6****BIOS 794 - Internship Credits: 1-6****BIOS 796 - Field Experience Credits: 1-6****BIOS 798 - Thesis Credits: 1-10****BIOS 890 - Seminar Credits: 1****BIOS 898D - Dissertation PhD Credits: 1-7****BOT (Botany)****BOT 127 - Ethnobotany Credits: 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) Credits: 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: \*Course meets SGR #6.

**BOT 301-301L - Plant Systematics (COM) Credits: 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 & Mgmt & Lab Credits: 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) Credits: 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 that accompanies BOT 327. Corequisites: BOT 327L-BOT 327

**BOT 405-405L/505-505L - Grasses and Grasslike Plants and Lab Credits: 3**

A systematic survey of grasses and grasslike plants 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-BOT 405/BOT 505L-BOT 505.

**BOT 415-415L/515-515L - Aquatic Plants and Lab Credits: 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) Credits: 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 Credits: 1-4**

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. Meetings depending upon the requirements of the topic.

**BOT 492-592 - Topics Credits: 1-5**

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.

**BOT 494 - Internship Credits: 1-12**

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.

**BOT 496 - Field Experience Credits: 1-12**

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 in an internship or practicum course.

**BOT 498 - Undergraduate Research/Scholarship Credits: 1-4**

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.

**BOT 664 - Molecular Plant Physiology Credits: 6****BOT 715-715L - Advanced Plant Ecology and Lab Credits: 4****BOT 788 - Research Problems Credits: 1-3****BOT 791 - Independent Study Credits: 1-4****BOT 792 – Topics Credits: 1-5****CA (Consumer Affairs)****CA 110 - Individual Financial Literacy Credits: 1**

Introduction to personal financial management. Topics covered include banking; budgeting; and financial statements.

**CA 111 - Individual Financial Management Credits: 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 Credits: 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 Credits: 3**

Understanding cultural, economic, social, and psychological conditions that influence the consumer purchase process. Study of diverse types of consumer subcultures. Cross-Listed: CS 230

**CA 289 - Consumers in the Market Credits: 3**

Welfare of the consumer in relation to government regulation, policies, laws, consumer rights and responsibilities, and the economic system.

**CA 291 - Independent Study Credits: 1-3****CA 292 – Topics Credits: 1-3****CA 340 - Work Family Interface (AW) Credits: 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 well-being. Balancing work and family is addressed as an application of family resource management. Prerequisites: ENGL 201.

**CA 345 - Foundations in Financial Management Credits: 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 I Credits: 3**

Principles and practices of insurance needs and selection, investment strategies to realize financial goals and income tax planning to improve financial well-being of families. Technical skills required of family financial planners are emphasized. Prerequisites: CA 345.

**CA 412 - Emerging Issues in Consumer Affairs Credits: 2**

Study of current and emerging consumer issues facing individuals, families, and the global community. Prerequisites: CA 494 & Senior Standing

**CA 430 - Consumer Decision Making Credits: 3**

Study of theories and principles in judgment and decision making and behavioral economics. Barriers and strategies to improve consumer judgment and decision-making will be addressed including heuristics and biases, role of emotion and social forces. Cross-Listed: CS 430

**CA 442 - Family Resource Management Lab Credits: 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 required service 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. Prerequisites: Must be junior or senior standing.

**CA 450 - Family Financial Management II Credits: 3**

Principles and practices of retirement planning, saving and estate planning to improve financial well-being of families. Comprehensive case study will incorporate family financial planning principles addressed in CA 350 (Family Financial Management I). Prerequisites: CA 350.

**CA 480 - Travel Studies Credits: 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.

**CA 487 - Transition to the Professional World Credits: 2**

Students acquire personal and professional skills necessary for success in the workplace. Students will secure an internship and address internship expectations. Prerequisites: CA 150, CA 230, CA 289, CS 377

**CA 490 – Seminar Credits: 1 Prerequisites: CA 494****CA 491 - Independent Study Credits: (1-3)****CA 492-592 – Topics Credits: (1-3)****CA 494 – Internship Credits: 3 Prerequisites: CA 340 - Work Family Interface (AW), CA 345, CA 487****CA 595 – Practicum Credits: 3-6****CA 604 - Family Systems Credits: 3****CA 612 - Financial Counseling Credits: 3****CA 620 - Family Economics Credits: 3****CA 640 - Fundamentals of Family Financial Planning Credits: 3****CA 645 – Military Personal Financial Readiness Credits: 3****CA 660 - Invest for Family's Future Credits: 3****CA 680 - Insurance Planning for Families Credits: 3****CA 704 - Estate Planning for Families Credits: 3**

CA 715 - Housing and Real Estate in FFP Credits: 3  
CA 725 - Family, Employee Benefits and Retirement Planning Credits: 3  
CA 735 - Personal Income Taxation Credits: 3  
CA 745 - Professional Practices in Financial Planning Credits: 3  
CA 755 - Financial Planning Case Study Credits: 3  
CA 791 - Independent Study Credits: 1-3  
CA 792 - Topics Credits: 1-3

## CD (Community Development)

CD 600 - Orientation to Community Development Study Credits: 1  
CD 601 - Organizing for Community Change Credits: 3  
CD 602 - Community and Regional Economic Policy and Analysis Credits: 3  
CD 603 - Community Natural Resource Management Credits: 3  
CD 604 - Community Analysis Credits: 3  
CD 605 - Principles & Strategies of Community Change Credits: 3  
CD 611 - Impact Analysis Credits: 1  
CD 612 - Housing and Development Credits: 3  
CD 613 - Introduction to Native Community Development Credits: 3  
CD 616 - Public and Nonprofit Budgeting Credits: 3  
CD 617 - Role of Tribal colleges in Economic Development Credits: 1  
CD 623 - Ecological Economics Credits: 3  
CD 624 - Building Native Community and Economic Capacity Credits: 3  
CD 626 - Economic Development Strategies Credits: 3  
CD 631 - Evaluation of Organizations and Programs Credits: 3  
CD 633 - Introduction to Environmental Law Credits: 3  
CD 634 - Native American Natural Resource Management Credits: 3  
CD 635 - Sustainable Communities Credits: 3  
CD 636 - Policy and Politics of Coastal Areas Credits: 3  
CD 637 - Immigration and Communities Credits: 3  
CD 638 - Community and Regional Economic Analysis II Credits: 3  
CD 641 - Leadership for Change Credits: 3  
CD 642 - Grant Writing Credits: 3  
CD 643 - Nonprofit Management Credits: 3  
CD 792 - Topics Credits: 3

## CEE (Civil & Environmental Engineering)

**CEE 106-106L - Elementary Surveying and Lab Credits: 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 Credits: 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.

**CEE 216-216L - Materials and Lab Credits: 3**  
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.

**CEE 225 - Principles of Environmental Science and Engineering\*\* Credits: 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 Goal #2

**CEE 282 - Computer-Aided Design Credits: 3**  
Basic drawing techniques will be presented using an industry standard civil engineering software program. Computer-aided design techniques for civil engineers will be presented including topics such as input of surveying data for boundary and topography, creation of a digital terrain models, roadway alignments, earthwork, grading plans, plans and profiles and cross section drawings as they relate to the civil engineering. Prerequisites: GE 109-109L and CEE 106 Notes: A notebook computer is required for this course.

**CEE 304 - Land Surveying Credits: 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.

**CEE 306-306L - Photo Interpretation and Photogrammetry and Lab Credits: 3**  
Engineering evaluation of aerial photographs, including topography, analysis of soils and surface drainage characteristics. Use of aerial photographs for location and design of highways, airports and other construction projects. Prerequisites: CEE 208. Corequisites: CEE 306L-306.

**CEE 311 - Structural Materials Lab Credits: 1**  
Laboratory tests on structural materials and elements, and interpretation of test results. Careful laboratory techniques are emphasized. Prerequisites: CEE 216. Corequisites: EM 321.

**CEE 323-323L - Water Supply and Wastewater Engineering and Lab Credits: 3**  
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.

**CEE 331 - Fluid Mechanics Lab Credits: 1**  
Measurement of properties of common fluids, and tests on fluids in motion Corequisites: EM 331.

**CEE 333 - Hydrology Credits: 3**  
Principles of hydrology. Components of the hydrological cycle including the impact of precipitation, evaporation, infiltration, ground water flow and surface runoff on flow routing, water availability, extreme flows and drainage systems. Prerequisites: STAT 281 or STAT 381.

**CEE 340-340L - Engineering Geology and Lab Credits: 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.

**CEE 346-346L - Geotechnical Engineering (COM) and Lab Credits: 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.

**CEE 353 - Structural Theory (COM) Credits: 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.

**CEE 363 - Highway and Traffic Engineering Credits: 3**

Highway administration, traffic characteristics, highway standards, drainage, geometric design, construction methods. Prerequisites: CEE 106.

**CEE 390 – Seminar Credits: 1**

**CEE 411-411L/511-511L - Bituminous Materials and Lab Credits: 3**

Properties of bituminous materials including their compatibility with various types of aggregates. Asphalt mixes are designed and tested. Standards tests are performed on bituminous materials with emphasis on test results. Asphalt surface evaluation techniques. Prerequisites: CEE 216. Corequisites: CEE 411L-411/511L-511L.

**CEE 422-422L/522-522L - Environmental Engineering Instrumentation and Lab Credits: 3**

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.

**CEE 423/523 - Municipal Water Distribution and Collection System Design Credits: 3**

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.

**CEE 424/524 - Industrial Waste Treatment Credits: 3**

Characteristics and composition of industrial wastes, sampling and methods of analysis of these wastes and remedial measures for treatment and disposal. Prerequisites: CEE 323.

**CEE 429-429L/529-529L - Solid Waste Engineering and Management and Lab Credits: 3**

Solid waste regulation and characterization. Design of disposal facilities, management of collection, transport, transfer, storage and disposal systems. Field trips to various disposal facilities required. Prerequisites: CEE 346. Corequisites: CEE 429L-429/529L-529.

**CEE 432 - Hydraulic Engineering Credits: 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.

**CEE 434/534 Principles of hydrology. Credits: 3**

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.

**CEE 435/535 - Water Resources Engineering Credits: 3**

Topics related to water resources engineering including: multiple purpose river development, economic analysis of flood control measures, aspects of water law, advanced topics related to surface and ground water hydrology and administrative aspects of water resources planning. Prerequisites: CEE 225.

**CEE 443/543 - Matrix Analysis of Structures Credits: 3**

Theory and application of matrix methods in structural analysis. Prerequisites: CEE 353.

**CEE 444/544 - Precast Concrete Structures Credits: 3**

Advantages of precast concrete. Structural and architectural precast elements. Building systems. Design concepts and structural design. Connections, specifications, and detailing. Prerequisites: CEE 456.

**CEE 446/546 - Advanced Geotechnical Engineering Credits: 3**

Development of a fundamental understanding of engineering properties of soils and the factors controlling their magnitude and changes with time and environment. Development of why this knowledge is important and how it can be used in the solution of geotechnical and geoenvironmental problems. Students enrolling in CEE 546 will be held to a higher standard than those enrolling in CEE 446. Prerequisites: CEE 346.

**CEE 447-547 - Foundation Engineering Credits: 3**

Application of the fundamental concepts of soil behavior to evaluation, selection, and design of shallow and deep foundation systems. Related topics such as temporary support systems for excavations and pile driving are also included. Prerequisites: CEE 346 Notes: Students enrolling in CEE 547 will be held to a higher standard than those enrolling in CEE 447.

**CEE 452/552 - Prestressed Concrete Credits: 3**

Theory and design of prestressed concrete including pre-tensioning and post-tensioning. Prerequisites: CEE 456.

**CEE 455-455L - Steel Design and Lab Credits: 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 456 - Concrete Theory and Design (COM) Credits: 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 457 - Indeterminant Structures (COM) Credits: 3**

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 458/558 - Design of Timber Structures Credits: 3**

Gravity and lateral loads, physical and mechanical properties of wood, properties of dimension lumber and glued laminated timber, design of beams and columns, properties of structural wood panels. Design of sheathing, diaphragms and shearwalls. Design of connections. Prerequisites: CEE 353.

**CEE 459-459L/559-559L - Advanced Structural Mechanics and Lab Credits: 3**

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 464 - Civil Engineering Capstone Design I (COM) Credits: 1**

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 465 - Civil Engineering Capstone Design II (COM) (AW) Credits: 2**

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 467/567 - Transportation Engineering Credits: 3**

Engineering principles in various common modes of transportation. Prerequisites: CEE 363.

**CEE 472/572 – Geosynthetics Credits: 3**

Detailed study of the types of geosynthetic materials used in environmental, geotechnical, and transportation engineering as well as how they are used and manufactured. Particular emphasis will be placed on erosion control, landfill, transportation, drainage, 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 482 - Engineering Administration Credits: 3**

Law of contracts, agency, and other legal aspects of engineering. Preparation of specifications. Economic aspects of engineering. Prerequisites: Senior standing Cross-Listed: CM 482

**CEE 483-483L - Municipal Engineering and Lab Credits: 3**

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 490 - Seminar (COM) Credits: 1-3**

**CEE 491 - Independent Study (COM) Credits: 1-3**

**CEE 492/592 - Topics (COM) Credits: (1-3)**

**CEE 494 – Internship Credits: 1-6**

**CEE 496 - Field Experience Credits: 1-6**

**CEE 497 - Cooperative Education Credits: 1-6**

**CEE 623 - Advanced Sanitary Engineering Credits: 3**

**CEE 633 - Open Channel Hydraulics Credits: 3**

**CEE 656 - Advanced Reinforced Concrete Design Credits: 3**

**CEE 664 - Highway Capacity Analysis Credits: 3**

**CEE 692 – Topics Credits: 1-3**

**CEE 702 - 702L Advanced Civil and Environmental Engineering and Lab Credits: 1-13, 0**

**CEE 720-720L - Water Treatment Plant Design & Lab Credits: 3**

**CEE 721 - Environmental Engineering Credits: 3**

**CEE 722-722L - Hazardous/Toxic Waste Disposal Credits: 3**

**CEE 724-724L - Land Treatment of Wastes Credits: 3**

**CEE 725 - Biological Principles of Environmental Engineering Credits: 3**

**CEE 726-726L - Physical/Chemical Principles of Environmental Engineering and Lab Credits: 3**

**CEE 729-729L - Waste Water Treatment Plant Design and Lab Credits: 3**

**CEE 732 - Advanced Foundation Engineering Credits: 3**

**CEE 733 - Water Resources Engineering Credits: 3**

**CEE 734 - Surface Water Quality Model Credits: 3**

**CEE 737 - Hydraulic Design Credits: 3**

**CEE 738-738L - Advanced Hydraulics Credits: 3**

**CEE 749-749L - Geotechnical Testing and Lab Credits: 3**

**CEE 754 - Advanced Design of Steel Structures Credits: 3**

**CEE 755 - Advanced Reinforced Concrete Design Credits: 3**

**CEE 756 - Reinforced Masonry Design Credits: 3**

**CEE 759 - Structural Dynamics Credits: 3**

**CEE 762-762L - Pavement Management & Rehabilitation Credits: 3**

**CEE 765 - Pavement Design Credits: 3**

**CEE 769 - Design Steel and Concrete Bridges Credits: 3**

**CEE 787 – Research Credits: (1-9)**

**CEE 788 - Engineering Research or Design Paper Credits: 1-3**

**CEE 790 – Seminar Credits: 1**

**CEE 791 - Independent Study Credits: 1-3**

**CEE 792 – Topics Credits: 1-3**

**CEE 792L - Topics Lab Credits: 0**

**CEE 798 – Thesis Credits: 1-7**

## **CEX (Center of Excellence)**

**CEX 491 - Independent Study (COM) Credits: 1-4**

**CEX 494 - Internship (COM) Credits: 1-8**

## **CHEM (Chemistry)**

**CHEM 106-106L - Chemistry Survey & Lab\* (COM) Credits: 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) Credits: 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 109 - First Year Seminar\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1

**CHEM 112-112L - General Chemistry I and Lab\* (COM) Credits: 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)  
Credits: 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\*  
Credits: 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. Laboratory course to accompany CHEM 115. Prerequisites: Completion of a high school course in chemistry is required. Corequisites: CHEM 115L-CHEM 115 and MATH 102. Notes: This course is intended for students majoring in chemistry or biochemistry, or those who have been admitted to the honors college. 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. Notes: \* Course meets SGR #6.

**CHEM 120-120L - Elementary Organic Chemistry and Lab\*  
Credits: (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: \* Meets SGR #6.

**CHEM 127-127L - Structure and Function of Organic Molecules and Lab Credits: 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- 127.

**CHEM 229-229L - Transformations of Organic Molecules and Lab Credits: 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 Credits: 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. Prerequisites: CHEM 229-229L

**CHEM 242-242L - Chemical Equilibrium & Thermodynamics & Lab Credits: 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 for CHEM 242.

Prerequisites: CHEM 114 or CHEM 127; MATH 125; PHYS 211. Corequisites: CHEM 242L

**CHEM 326-326L - Organic Chemistry I & Lab (COM) Credits: 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- 326.

**CHEM 328-328L - Organic Chemistry II & Lab (COM) Credits: 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 329 - Organic Chemistry III Credits: 2**

An advanced undergraduate course in organic chemistry, this course builds upon previous organic chemistry training and will include topics of contemporary synthesis, organometallic chemistry, molecular orbital theory, pericyclic reactions, and physical organic chemistry. Prerequisites: CHEM 229 or CHEM 328 Notes: Co-registration in CHEM 329L is not required.

**CHEM 329-320L - Intermediate Organic Chemistry Lab Credits: 2**

Advanced stand-alone laboratory course for advanced undergraduate organic chemistry. The laboratory course focuses on multistep synthetic methodologies to assemble and analyze complex molecules. Prerequisites: CHEM 229L or CHEM 328L. Notes: Co-registration in CHEM 329 is not required.

**CHEM 332-332L - Analytical Chemistry and Lab (COM) Credits: 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. Prerequisites: CHEM 114 (minimum 4 credits.) or CHEM 127 Corequisites: CHEM 332L- 332.

**CHEM 345 - Quantum Mechanics of Chemical Systems Credits: 2**

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 229 or CHEM 114; MATH 125; PHYS 213

**CHEM 347 - Chemical Kinetics Credits: 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; PHYS 213

**CHEM 348-348L - Biophysical Chemistry and Lab Credits: 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 125, CHEM 464.  
Corequisites: CHEM 348L- 348.

**CHEM 382 - Environmental Chemistry (COM) Credits: 3-4**

Examination of the chemistry and chemical processes of the environment, including the role of chemistry in current environmental issues. Prerequisites: CHEM 114 or CHEM 127

**CHEM 432 - Analytical Chemistry II Credits: 2**

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 Chemistry Credits: 2**

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) Credits: 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 & Lab (COM) Credits: 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) Credits: 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 229 or 328

**CHEM 465 - Biochemistry II (COM) Credits: 3**

A continuation of CHEM 464. Prerequisites: CHEM 464.

**CHEM 466 - Laboratory Methods- Biochemistry Credits: 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 484 - Chemical Toxicology Credits: 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 464

**CHEM 491 - Independent Study (COM) Credits: 1-9**

**CHEM 492 - Topics (COM) Credits: 1-4**

**CHEM 494 - Internship (COM)(AW) Credits: 1-4**

**CHEM 498 - Undergraduate Research/Scholarship (COM) (AW) Credits: 1-12**

**CHEM 691 - Independent Study Credits: 1-4**

**CHEM 701 - Advanced Organic Chemistry I Credits: 3**

**CHEM 703 - Advanced Physical Chemistry Credits: 3**

**CHEM 704 - Advanced Inorganic Chemistry Credits: 3**

**CHEM 705 - Principles of Biochemistry Credits: 2-5**

**CHEM 706 - Advanced Analytical Chemistry Credits: 3**

**CHEM 710 - Philosophy of Science Credits: 2**

**CHEM 711 - Chemical Education Research Credits: 2**

**CHEM 713 - Qualitative Research Methods Credits: 2**

**CHEM 714 - Quantitative Research Methods Credits: 2**

**CHEM 715 - Chemistry Instruction in Higher Education Credits: 2**

**CHEM 722 - Synthesis of Natural Products Credits: 3**

**CHEM 724-724L - Structural Determination of Organic Compounds and Lab Credits: 3**

**CHEM 726 - Advanced Organic Chemistry II Credits: 3**

**CHEM 728 - Bioorganic Chemistry Credits: 3**

**CHEM 731 - Advanced Environmental Chemistry Credits: 3**

**CHEM 732 - Aquatic Chemistry Credits: 3**

**CHEM 733 - Atmospheric Chemistry Credits: 3**

**CHEM 734 - Environmental Surface Chemistry Credits: 3**

**CHEM 735 - Analytical Spectroscopy Credits: 3**

**CHEM 736 - Chromatography and Separation Credits: 3**

**CHEM 738 - Electroanalytical Chemistry Credits: 3**

**CHEM 741 - Quantum Chemistry I Credits: 3**

**CHEM 742 - Quantum Chemistry II Credits: 3**

**CHEM 744 - Chemical Thermodynamics Credits: 3**

**CHEM 745 - Statistical Thermodynamics Credits: 3**

**CHEM 748 - Chemical Kinetics Credits: 3**

**CHEM 753 - Organometallic Chemistry Credits: 3**

**CHEM 764 - Biochemistry I Credits: 3**

**CHEM 766 - Biochemistry II Credits: 3**

**CHEM 767 - Biophysical Chemistry Credits: 3**

**CHEM 770 - Atomic Theory & Bonding Credits: 3**

**CHEM 771 - Intermolecular Interactions and Phases of Matter Credits: 3**

**CHEM 772 - Thermodynamics Credits: 3**

**CHEM 773 - Equilibria & Acid-Base Chemistry Credits: 3**

**CHEM 774 - Kinetics, Nuclear, & Electrochemistry Credits: 3**

**CHEM 775 - Organic & Biochemistry Credits: 3**

**CHEM 776 - Laboratory Development Credits: 3**

**CHEM 777 - Action Research in the Secondary Classroom Credits: 2**

**CHEM 778 - Chemistry Teaching Strategies Credits: 3**

**CHEM 781 - Bioinorganic Chemistry Credits: 3**

**CHEM 788 - Research Problems in Chemistry Classroom Credits 1-2**

**CHEM 790 - Seminar Credits: 1**

**CHEM 792 - Topics Credits: 1-6**

**CHEM 798 - Thesis Credits: 1-7**

**CHEM 898D - Dissertation PhD Credits: 1-12**

## CHIN (Chinese)

**CHIN 101 - Introduction to Chinese I Credits: 4**

An opportunity to develop skills in everyday spoken Chinese. Emphasis will be on correct pronunciation, listening skills and fluency.

**CHIN 102 - Introductory Chinese II Credits: 4**

A continuation of Chinese 101, except that 200 new characters will be introduced.

## CHRD (Counseling & Human Resource Development)

**CHRD 301 - Introduction to Rehabilitation Credits: 3**

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 Mngmnt Credits: 3**

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 Populations Credits: 3**

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 Professions Credits: 3**

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 Counseling Credits: 3**

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 Rehabilitation Credits: 3**

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 Therapy Credits: 3**

Family structure, systems, and communication will be examined. Perspectives on family dynamics and therapeutic change will be explored.

**CHRD 471-571 - Gerontology Issues in Counseling Credits: 3**

This course is designed to familiarize helping professionals with psychological aspects of the aging process. Students will gain skills in establishing rapport and interacting in a professional, caring manner with older adults and learn about appropriate resources and techniques to assist older clients.

**CHRD 475 - Wellness Counseling Credits: 2**

This course will introduce students to interventions designed to enhance individual wellness including behavioral and motivational strategies. Change processes and strategies will be examined along with signs and symptoms of mental health states.

**CHRD 601 - Introduction to Professional Issues & Ethics Credits: 1****CHRD 602 - Research and Evaluation in Counseling and Human Development Credits: 3****CHRD 610 - Developmental Issues in Counseling Credits: 3****CHRD 661 - Theories of Counseling Credits: 3****CHRD 690 – Seminar Credits: 1-3****CHRD 691 - Independent Study Credits: 1-3****CHRD 692 – Topics Credits: 1-3****CHRD 693 – Workshop Credits: 1-3****CHRD 701 - Professional Issues & Ethics II Credits: 1****CHRD 706 - Counseling the Victim Credits: 3****CHRD 713 - Administration and Management of Mental Health Organizations Credits: 3****CHRD 716 - Human Resource Management in Business and Industry Credits: 3****CHRD 721 - School Counseling Credits: 3****CHRD 722 - Administration and Management of School Counseling Programs Credits: 3****CHRD 723 - Counseling the Family Credits: 3****CHRD 731 - Multicultural Counseling and Human Relations Credits: 3****CHRD 736 - Appraisal of the Individual Credits: 3****CHRD 742 - Career Counseling and Planning Credits: 3****CHRD 751 - Overview of Rehabilitation & Mental Health Counseling Credits: 3****CHRD 752 - Medical and Psychological Aspects of Disability Credits: 3****CHRD 753 - Case Management Principles and Plan Development Credits: 3****CHRD 755 - Clinical Diagnosis and Treatment Planning Credits: 4****CHRD 756 - Counseling the Addictive Client Credits: 3****CHRD 757 - Advanced Testing Intellectual Assessment Credits: 3****CHRD 759 - Advanced Testing: Personality Assessment Credits: 3****CHRD 766 - Group Counseling Credits: 3****CHRD 770 - Student Development Theory & Practice Credits: 3****CHRD 771 - Student Personnel Services Credits: 3****CHRD 772 - Admin and Leadership in Student Affairs Credits: 3****CHRD 785 - Pre-Practicum Credits: 3****CHRD 786 - Counseling Practicum Credits: 3-5****CHRD 788 - Research Problems in Counseling Credits: 1-3****CHRD 791 - Independent Study Credits: 1-3****CHRD 794 – Internship Credits: 2-6****CHRD 798 – Thesis Credits: 1-6****CJUS (Criminal Justice)****CJUS 201 - Introduction to Criminal Justice \* (COM) Credits: 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

**CJUS 203 - Policing in a Free Society (COM) Credits: 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.

**CJUS 330 - Civil Rights and Liberties Credits: 3**

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: POLS 330

**CJUS 412 - Criminal Prosecution and Defense (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 1-3****CJUS 492-592 - Topics (COM) Credits: 3****CM (Construction Management)****CM 101 - Introduction to Construction**

Credits: 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 124 - Construction Graphics Credits: 2**

Introduction to graphic communications used in construction including civil, architectural, structural, mechanical and electrical drawings, plans, and schematics; creating and editing plans; symbols, terminology, and layout. Prerequisites: GE 121.

**CM 210-210L - Construction Surveying and Lab Credits: 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, ID 122 or LA 120; MATH 102 Corequisites: CM 210L-210

**CM 216 - Construction Materials Credits: 3**

Source, processing, and applications of construction materials. Prerequisites: MATH 102

**CM 230 - Applied Construction Credits: 1-3**

The supervised application of construction principles to the actual building of a whole or part of a structure. Prerequisites: CM 101 Notes: May be repeated for up to 3 credits.

**CM 232-232L - Cost Estimating and Lab Credits: 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: CM 124, CM 216, or consent Corequisites: CM 232L- 232.

**CM 291 - Independent Study Credits: 1-3****CM 292 – Topics Credits: 1-3****CM 320-320L - Construction Soil Mechanics and Lab Credits: 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 Systems Credits: 3**

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 Credits: 3**

The study of mechanical, electrical, plumbing, and fire protection systems, design considerations, and system components in a modern building.

**CM 352 - Advanced Cost Estimating Credits: 3**

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 Credits: 3**

The study of the structural design process in the built environment. Prerequisites: Any PHYS course or GE 241 Corequisites: CM 353L-353

**CM 360 - Building Design and Evaluation Concepts Credits: 3**

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 Systems Credits: 3**

The study of the systems involved in heavy construction and the equipment and methods required to implement them. Prerequisites: CM 216

**CM 400-500 - Risk Management and Construction Safety Credits: 3**

Construction safety and health and effective management of risk.

**CM 410 - Construction Project Management and Supervision Credits: 3**

The study of the ethical, procedural, and supervisory concepts involved with the execution of a construction project. Prerequisites: CM 332

**CM 420 - Construction Student Competitions Credits: 1-3**

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 Checking Credits: 3**

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 Certification Credits: 3**

Preparation for accreditation by a recognized authority in the efficient construction of buildings.

**CM 443 - Construction Planning and Scheduling Credits: 3**

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 Credits: 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 Lab Credits: 3**

The study of the residential construction process including design, documentation, and construction. Corequisites: CM 455L-455

**CM 460 - Sustainable Building Systems Concepts and Analysis Credits: 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) Credits: 3**

The study of the application of legal, contractual, and generally accepted accounting principles to the construction industry. Prerequisites: ACCT 210 Notes: Registration Restriction: Senior Standing or instructor approval.

**CM 482 - Engineering Administration Credits: 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 Lab Credits: 3**

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 Credits: 1-3****CM 492 – Topics Credits: 1-3****CM 493 – Workshop Credits: 1-3****CM 494 – Internship Credits: 1-3****CM 497 - Cooperative Education Credits: 1-3****CS (Consumer Science)****CS 230 - Consumer Behavior Credits: 3**

Understanding cultural, economic, social, and psychological conditions that influence the consumer purchase process. Study of diverse types of consumer subcultures.

**CS 282 - Customer Service Credits: 2**

Examination of customer service as a tool for business to develop positive interactions with current and potential customers. Discussion of customer service as an integral tool in customer relationship management. Cross-Listed: AM 282

**CS 377 - Professional Documents Credits: 1**

Organization and preparation of professional documents

**CS 381 - Professional Behavior at Work Credits: 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. Cross-Listed: AM 381

**CS 430 - Consumer Decision Making Credits: 3**

Study of theories and principles in judgment and decision making and behavioral economics. Barriers and strategies to improve consumer judgment and decision-making will be addressed including heuristics and biases, role of emotion and social forces. Cross-Listed: CA 430

**CSC (Computer Science)****CSC 105 - Introduction to Computers (COM) Credits: 3**

Overview of computer applications with emphasis on word processing, spreadsheets, database, presentation tools and internet-based applications.

**CSC 112 - Principles of Internet Applications Credits: 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) Credits: 3**

Fundamentals of programming using Visual Basic. Focus on problem solving, visual design, and programming concepts. Topics include sequence, selection, repetition, procedures, and functions.

**CSC 150-150L - Computer Science I (COM) Credits: 3**

An introduction to computer programming. Focus on problem solving, algorithm development, design, and programming concepts. Topics include sequence, selection, repetition, functions, and arrays. Corequisites: CSC 150L-150

**CSC 205 - Advanced Computer Applications (COM) Credits: 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.

**CSC 218 - Introduction to C/C++/Unix for Engineers Credits: 3**

This is an introductory course on the topics of structured programming using C/C++. Topics covered will be top-down design, step-wise refinement, functions, and decisions statements, loops, arrays, pointers, dynamic allocation of memory, use of external files, character strings, macros, introduction to objects and structures.

**CSC 250 - Computer Science II (COM) Credits: 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.

**CSC 291 - Independent Study (COM) Credits: 1-3****CSC 292 - Topics (COM) Credits: 1-3****CSC 294 – Internship Credits: 1-6****CSC 300 - Data Structures (COM) Credits: 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.

**CSC 303 - Ethical & Security Issues in Computing (G) Credits: 2**

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.

**CSC 314 - Assembly Language (COM) Credits: 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.

**CSC 317 - Computer Organization & Architecture (COM) Credits: 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.

**CSC 325 - Management Information Systems (COM) Credits: 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.

**CSC 330 - Cobol I (COM) Credits: 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.

**CSC 331 - Cobol II (COM) Credits: 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.

**CSC 346 - Object Oriented Programming (COM) Credits: 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.

**CSC 354 - Introduction to Systems Programming Credits: 3**  
The study of macros, subroutines, subroutine linkage, conditional assembly, input-output, interrupt processing, assemblers, loaders and linkers. Prerequisites: CSC 300, CSC 314.

**CSC 391 - Independent Study (COM) Credits: 1-3**  
**CSC 392 - Topics (COM) Credits: 1-3**

**CSC 422/522 - GUI Programming (COM) Credits: 3**  
This course is event-driven graphical user interface (GUI) programming will cover topics such as C++ programming for Windows. Prerequisites:

**CSC 433/533 - Computer Graphics (COM) Credits: 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.

**CSC 445 - Intro to Theory of Computation (COM) Credits: 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.

**CSC 446 - Compiler Construction Credits: 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.

**CSC 447/547 - Artificial Intelligence (COM) Credits: 3**  
Concepts in Artificial intelligence: programming in languages such as Prolog or LISP; knowledge representation; search algorithms. Prerequisites: CSC 250.

**CSC 450/550 - Game Programming Credits: 3**  
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.

**CSC 456 - Operating Systems (COM) Credits: 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) Credits: 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) Credits: 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 Credits: 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 Credits: 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) Credits: 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) Credits: 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) Credits: 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.

**CSC 490 - Seminar (COM) Credits: 1-3**  
**CSC 491 - Independent Study (COM) Credits: 1-3**

**CSC 492/592 - Topics (COM) Credits: 1-3**  
**CSC 494 - Internship (COM) Credits: 1-8**  
**CSC 496 - Field Experience (COM) Credits: 1-3**  
**CSC 497 - Cooperative Education Credits: 1-3)**  
**CSC 498 - Undergraduate Research/Scholarship (COM) Credits: 1-6**  
**CSC 601 - Accelerated Computer Science Fundamentals Credits: 3**  
**CSC 630 - Principles of Data Base System Design Credits: 3**  
**CSC 705 - Design and Analysis of Computer Algorithms Credits: 3**  
**CSC 710 - Structure & Design of Programming Languages Credits: 3**  
**CSC 720 - Theory of Computation Credits: 3**  
**CSC 740 - Management Information Systems Credits: 3**  
**CSC 750 - Recent Advances in Parallel Process Credits: 3**  
**CSC 770 - Software Engineering Management Credits: 3**  
**CSC 788 - Research Report/Design Paper Credits: 1-2**  
**CSC 790 – Seminar Credits: 1**  
**CSC 791 - Independent Study Credits: 1-3**  
**CSC 792 – Topics Credits: 1-3**  
**CSC 798 – Thesis Credits: 1-7**

## **CSCA (Computer Science Application)**

**CSCA 120 - Introduction to Microsoft Windows Credits: 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.

**CSCA 292 - Topics (COM) Credits: 1-5**

## **CSS (Computational Science & Statistics)**

**CSS 890 - Seminar in Computational Science and Statistics (COM) Credits: 1**  
**CSS 891 - Independent Study Computational Science and Statistics (COM) Credits: 1-3**  
**CSS 892 - Topics in Computational Science and Statistics (COM) Credits: 1-3**  
**CSS 898D - Dissertation Research (COM) Credits: 1-36**

## **CTE (Career & Technical Education)**

**CTE 105 - Principles of Career & Technical Ed Credits: 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: Credits: (1-32)**  
 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 Credits: 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 Credits: 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 Credits: 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 Credits: 1-3**  
 An analysis breakdown of a trade or occupation to determine units for instruction.

**CTE 301 - Mentorship/Practicum III Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 & Management Credits: 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 Credits: 5-6**

(Registration is initiated by submitting CTE Form No. 149 to the Coordinator of Vocational Technical Teacher Education.) Manufacturers, industries, and service firms offer many special technical courses that are available to vocational trade, industrial and technical instructors or prospective instructors. Some of these courses are suitable for college credit, and upon approval credit may be granted. The following guidelines are used to award such credit: 1. The student must submit CTE Form No. 149 to receive approval for registration. 2. The student must make all the necessary arrangements with the industrial firm offering the industrial training session. 3. Credit is awarded on the basis of one-half credit for twenty hours of attendance.

**CTE 405 - Philosophy of Career and Technical Ed Credits: 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 Credits: 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 420/520 - Entrepreneurship in Career and Technical Education Credits: 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 Practice Credits: 3**

Philosophy, origins, and development of vocational, technical and practical arts, educations at adult, postsecondary, secondary, and pre-vocational levels. Current and emerging principles, practices, and issues are stressed.

**CTE 430/530 - Cooperative Education Coordination Techniques Credits: 3**

This course emphasizes the organization of cooperative work experience in vocational education programs: agriculture, marketing education, health occupations, family consumer sciences education, business education, and trade and industrial. Emphasizes strategies

and techniques for coordinating classroom instruction with on-the-job work experience. Topics include: program organization, coordinator responsibilities, student selection, placement, advisory councils, public relations, training stations, training plans, legal aspects, and program and student evaluation.

**CTE 438 - Industrial Safety Credits: 2**

Industrial accident prevention considering the nature and extent of the accident problem. Emphasis upon the development of a safety program for instructional programs and industrial management.

**CTE 457 - Instructional Technology Credits: 2**

Visual aids used in vocational and technical education and their relationship to the various occupational areas.

**CTE 463/563 - Technical and Industrial Experience Credits: (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 Credits: 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 Credits: (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 Credits: (1-3)**

Methods of establishing organizations at the local level.

**CTE 477 - Job Analysis and Employee Evaluation Credits: 3**

Analyzing jobs and evaluating employee performance for purposes of training, promotion, salary adjustments, and establishing hiring criteria.

**CTE 488 - Student Teaching Credits: 8**

Full time off-campus supervised teaching in a secondary or post-secondary Vocational Technical setting for 10 weeks. Student teaching fee assessed.

**CTE 490 - Seminar Credits: 2-3****CTE 491/591 - Independent Study Credits: 1-4****CTE 492/592 - Topics Credits: 1-3****CTE 519 - Methods of Teaching Credits: 3****CTE 540 - Curriculum Design in Career and Tech Ed Credits: 3****CTE 700 - Technology in Career Education Credits: 3****CTE 720 - Entrepreneurship Career Education Credits: 3****CTE 731 - Administration & Supervision of Career Ed Credits: 3****CTE 788 - Research Problems Credits: 1-2****CTE 790 - Seminar Credits: 1-3****CTE 791 - Independent Study Credits: 1-3****CTE 792 - Topics Credits: 1-3****CTE 794 - Internship Credits: 1-3****CTE 798 - Thesis Credits: 5**



## DANC (Dance)

### **DANC 130 - Dance Fundamentals Credits: 1**

Basic skills course required of all physical education and public recreation majors. Includes analysis, skill development, and leadership of round, folk, square and social dances, traditional and contemporary.

### **DANC 131 - Movement 1 Credits: 2**

The basic principles of human movement as they apply to the individual, the actor, the dancer and the musician.

### **DANC 132 - Movement 2 Credits: 2**

The advanced principles of human movement as they apply to the individual, actor, dancer and the musician. Prerequisites: DANC 131.

### **DANC 230 - Technique 1 Credits: 1**

Technical dance training in basic structures of Classical Ballet and Jazz.

### **DANC 231 - Technique 2 Credits: 1**

Technical dance training in basic structures of Modern and Tap dance.

### **DANC 240 - Multicultural Dance Activities Credits: 1**

Folk dances from around the world, including cultural background, costumes, skill differences for elementary, middle and high school, or adults.

### **DANC 241-241L - Creative Movement for Children and Lab Credits: 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- 241

### **DANC 330 - Technique 3 Credits: 1**

Technical dance training in intermediate and advanced structures of Classical Ballet and Jazz. Prerequisites: DANC 230 or Instructor Consent.

### **DANC 331 - Technique 4 Credits: 1**

Technical dance training in intermediate and advanced structures of Modern and Tap Dance. Prerequisites: Technique 2 or Instructor Consent.

### **DANC 420 - Techniques of Teaching Dance Credits: 2**

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 Choreography Credits: 1**

Methods of creating dance choreography. Prerequisites: DANC 230 and 231, or DANC 330 and 331, or Instructor Consent.

### **DANC 431 - Dance for the Musical Theatre Credits: 1**

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 Credits: 1-3** Prerequisites: Consent.

**DANC 492 – Topics Credits: 1-5**

## DS (Dairy Science)

### **DS 109 - First Year Seminar\*\* Credits: 2**

First-year experience course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1

### **DS 130-130L - Introduction to Dairy Science and Lab Credits: 3**

Essentials of successful dairy farm operation, production testing, feeding, and management of dairy herd. Composition of milk; testing of milk for milk fat, milk solids and quality; and an examination of nutritive value of dairy products. Fall and Spring. Corequisites: DS 130L-DS 130.

### **DS 202 - Dairy Products Judging Credits: 1**

Quality of milk, cheddar cheese, ice cream, and cottage cheese. Spring.

### **DS 212 - Dairy Cattle Evaluation Credits: 2**

Fundamental aspects of evaluation of dairy cattle for type; type classification of dairy cattle. Spring

### **DS 231 - Dairy Foods Credits: 3**

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 Lab Credits: 3**

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 Judging Credits: 1**

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 Lab Credits: 3**

Fundamental properties of milk and its products as they affect testing. Common laboratory tests for procurement and grading milk. Compositional tests for control of dairy products during processing. Fall. Prerequisites: DS 130, CHEM 106 or CHEM 112. Corequisites: DS 313L-DS 313.

### **DS 321-321L - Dairy Product Processing I and Lab Credits: 5**

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 Lab Credits: 5**

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 Credits: 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 Lab Credits: 3**

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 Lab Credits: 4**

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. Corequisites: DS 412L- 412.

**DS 413-513 - Physiology of Lactation Credits: 3**

Anatomy, physiology, and biochemistry of mammary glands. Factors affecting quality and quantity of milk. Even Spring.

**DS 421 - Dairy Plant Management Credits: 3**

General costs, buildings, equipment, merchandising, personnel, other management factors of dairy processing plants. Prerequisites: Junior standing or consent.

**DS 422-422L - Technical Control of Dairy Products II and Lab Credits: 4**

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 Feeding Credits: 3**

Practical considerations involved in feeding dairy cattle. Even Fall. Prerequisites: AS 233.

**DS 442-542 - Dairy Product and Process Development Credits: 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) Credits: 1****DS 491 - Independent Study Credits: 1-3****DS 492 – Topics Credits: 1-4****DS 494 – Internship Credits: 3-12****DS 496 - Field Experience Credits: 3-12****DS 497 - Cooperative Education Credits: 3-12****DS 498 - Undergraduate Research/Scholarship Credits: 1-6****DS 711 – Ruminology Credits: 3****DS 722-722L - Advanced Dairy Microbiology and Lab Credits: 3****DS 731 - Lab Techniques in Dairy Science Credits: 3****DS 790 – Seminar Credits: 1-3****DS 791 - Independent Study Credits: 1-4****DS 792 – Topics Credits: 1-4****DS 798 – Thesis Credits: 1-7****DS 898D - Dissertation-Ph.D. Credits: 1-12****ECE (Early Childhood Education)****ECE 150-150L - Early Experience and Lab Credits: 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: ECE 150L-ECE 150.

**ECE 228-228L - Guidance with Young Children and Observation and Participation in Early Childhood Lab (COM) Credits: 1-2, 1**

Observation and guidance in preschool under supervision of professional practitioners. Laboratory that accompanies ECE 228. Prerequisites: Admission into PSI, ECE 150; ECE-372-372L Corequisites: ECE 228L-228 & department written consent Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 228 - Guidance with Young Children and ECE 228L - Observation and Participation in Early Childhood Lab (COM).

**ECE 292 – Topics Credits: 1-3****ECE 361-361L - Methods and Materials/Early Childhood Education and Lab (AW) Credits: 2, 1**

Applications for early childhood classrooms will be studied. Inquiry-based, hands-on methods to address materials exploration, creative and affective development, anti-bias and culturally responsive curriculum which are both developmentally appropriate and inclusive for all children from ages three to eight. Prerequisites: Admission to PS I, ECE 150, ECE 371, and ECE 372 Corequisites: ECE 361L-361, 228/228L, ECE 362/362L, ECE 363/363L Notes: Students enrolled in ECE prior to Fall 2012 will take ECE 361/362 as ECE 361-361L - Methods and Materials/Early Childhood Education and Lab (AW) and ECE 362-362L - Early Childhood Education Curriculum and Lab

**ECE 362-362L - Early Childhood Curriculum & Assessment and Lab Credits: 2, 1**

This course will focus on curriculum models and assessment protocols that have evolved from historical and theoretical perspectives. Rules and regulations, ethical standards, as well as principles of developmentally appropriate curriculum and assessment practices, that are inclusive for all children from ages three to eight, will be practiced. An emphasis will be placed on inquiry-based practices and multicultural perspectives, and connection between curriculum and assessment will be learned. Prerequisites: Admission to PS I Corequisites: ECE 228-228L, ECE 361-361L, ECE 363-363L Notes: Students enrolled in ECE prior to Fall 2012 will enroll in the course will take the course as ECE 362-362L - Early Childhood Education Curriculum and Lab.

**ECE 363-363L - Emergent Literacy and Numeracy and Lab Credits: 3, 0**

This course will focus on language and math learning and emergent literacy and math 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 and literacy and math lessons/activities 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 to home literacy and math. Laboratory course to accompany ECE 363. Prerequisites: Acceptance into PSI Corequisites: ECE 363L-363, ECE 228-228L, ECE 361-361L, ECE 362-362L Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 365-365L - Emergent Literacy in Birth to Eight Education and Lab.

**ECE 365-365L - Emergent Literacy in Birth to 8 Education and Lab Credits: 3**

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, and completed or currently enrolled in ECE 228. Corequisites: ECE 365L-ECE 365.

**ECE 371-371L - Infant and Toddler: Developmentally Appropriate Practices and Lab (COM) Credits: 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 372 -Preschool to Middle Childhood Development Credits: 2**

This is a beginning level development course focused on the study of human growth and development from age three to twelve. This is one of two foundational development courses for the Early Childhood Education curricula. The curriculum for this course includes historical and modern view of child development, biological, cognitive and socio-emotional processes and periods of development from preschool to middle childhood and theories of development.

**ECE 412/512 - Kindergarten Education Credits: 3**

Course designed for students and teachers interested in work with kindergarten-age children. Issues, activities, and materials specific to kindergarten will be emphasized.

**ECE 420 - Health, Safety and Nutrition of Young Children Credits: 2**

Exploration of school health, safety, disease control and nutrition; development of health and nutrition policies and standards in early childhood settings based on current public policy; creating a healthy and safe school environment for young children; exploration of materials and methods for teaching health, safety and nutrition in early childhood. Prerequisites: ECE 488, ECE 465, ECE 364, ECE 470 Notes: Students enrolled in ECE prior to Fall 2012 will enroll in the course as ECE 220 - Health, Safety and Nutrition of Young Child.

**ECE 441 - Professional Issues in Child and Family Studies Credits: 2**

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. Prerequisites: PS II, ECE 488 Corequisites: PSIII Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 441 - Professional Issues in Child and Family Studies.

**ECE 455 - Admin and Supervision of Early Childhood Setting Credits: 2**

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 488; PSIII Admission Corequisites: ECE 495 Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 455 - Administration and Supervision of Early Childhood Setting.

**ECE 464 - Parent/Child Relationships in a Professional Context Credits: 2**

The focus of this course includes home-based, school-based, and community-based communication and involvement strategies with families. Students will learn about the diversity of families within society today. Theoretical, international, and other diverse perspectives on partnerships between families and professionals will be explored. Prerequisites: Admission into PSII; ECE 228/228L, ECE 362/362L, ECE 363/363L, ECE 361-361L Corequisites: ECE 488 Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 364 - Parent/Child Relationships in a Professional Context.

**ECE 465 - Documentation, Inquiry and Teacher Research Credits: 2**

Methods of documentation, inquiry and teacher research will be explored. Students will engage students in the process of inquiry with young children and participate in teacher research on specific topics of interest as applied to work with children in a preschool setting. Prerequisites: ECE 228/228L, ECE 361/361L, ECE 362/362L, and ECE 363/363L Notes: Admission into PS II. Students enrolled in ECE prior to Fall 2012 will take the course as ECE 465 - Introduction to Developmental Assessment and Teacher-Research with Young Children

**ECE 468 - Early Intervention in Family-Centered Practices Credits: 3**

An overview of current theories, issues and practices in early intervention including: historical, philosophical and attitudinal attributes, early intervention legislation, and service delivery models. Teaming with families and other professionals will be emphasized with attention to cultural sensitivity and family-centered practices. Prerequisites: HDFS 241, ECE 361, ECE 362, ECE 364.

**ECE 470 - Early Childhood Inclusion Strategies Credits: 3**

An introduction to teaching strategies and curriculum adaptations to include children who have disabilities in 0-5 early childhood educational settings. An overview of the following current early childhood intervention issues will be covered: risk determinants, disability characteristics, medical issues, assistive technology, and other resources both online and traditional. Family-centered practices will be emphasized. Prerequisites: ECE 228/228L, ECE 361/361L, ECE 362/362L, ECE 363/363L; PS II Admission Corequisites: ECE 488 Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 470 - Early Childhood Inclusion Strategies

**ECE 473 - Orientation to K-3 Student Teaching Credits: 2**

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.

**ECE 475 - Pedagogy and Guidance in Primary Grade Classrooms Credits: 2**

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. Corequisites: ECE 495 Practicum (for K-3)

**ECE 478-478L - Integrated Curriculum in Birth-to-Age Eight Education and Lab Credits: 4**

his course supports teacher candidates in the semester immediately preceding the K-Grade 3 student teaching semester. Topics of study include 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: PS III admission & consent Corequisites: ECE 478L-478, ECE 495 (K-3)

**ECE 480 - Travel Studies Credits: 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.

**ECE 487 - Orientation to Child and Family Studies Practicum Credits: 1**

Orientation to Child and Family Services Practicum will identify expectations of the experience. Students will develop written and verbal communication skills necessary to obtain a practicum and work site. Students will investigate and locate an appropriate practicum site and set professional and educational goals for the practicum experience. Prerequisites: ECE 488; PS III admission Corequisites: ECE 495 Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 487 - Orientation to Child and Family Services Practices

**ECE 488 - Student Teaching (COM) Credits: 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. Corequisites: ECE 420, ECE 465, ECE 464, ECE 470 Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 488 - Student Teaching (COM).

**ECE 491-591 - Independent Study Credits: 1-3**

**ECE 492-592 – Topics Credits: 1-3**

**ECE 495 - Practicum (COM) Credits: 8**

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. Corequisites: ECE 455, ECE 441, ECE 487 Notes: Students enrolled in ECE prior to Fall 2012 will take the course as ECE 495 - Practicum (COM).

**ECE 543 - Child Inquiry Credits: 2**

**ECE 601 - Orientation in Graduate Study Credits: 1**

**ECE 645 - Contemporary Perspectives in Early Childhood Education Credits: 3**

**ECE 665 - Parent Education: Theory and Issues Credits: 3**

**ECE 676 - Early Childhood Education Administration and Practicum Credits: 1-4**

**ECE 700-700L - Research Methods and Lab Credits: 4**

**ECE 711 - Child Development Theory and Application Credits: 3**

**ECE 788 - Individual Research and Study Credits: 1-7**

**ECE 790 – Seminar Credits: 1-3**

**ECE 791 - Independent Study Credits: 1-3**

**ECE 792 – Topics Credits: 1-3**

**ECE 794 – Internship Credits: 1-7**

**ECE 795 – Practicum Credits: 1-6**

**ECE 798 – Thesis Credits: 1-7**

## **ECON (Economics)**

**ECON 101 - Global Economy \* (G) Credits: 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: \* meets SGR #3.

**ECON 201 - Principles of Microeconomics \* \*\* (COM) Credits: 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: \* meets SGR #3 and \*\* IGR #2

**ECON 202 - Principles of Macroeconomics\* (COM) (G) Credits: 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: \* meets SGR #3

**ECON 292 – Topics Credits: 1-4**

**ECON 301 - Intermediate Microeconomics (COM) Credits: 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 123 or 125.

**ECON 302 - Intermediate Macroeconomics (COM) Credits: 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) Credits: 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 Credits: 3**

Marketing; market organization and cooperative marketing functions; pricing; efficiency, and role and management of marketing activities. Prerequisites: ECON 201 or 202 Cross-Listed: BADM 370.

**ECON 372 - Introduction to Resource and Environmental Economics Credits: 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. Cross-Listed: AGECE 372

**ECON 403-503 - History of Economic Thought (COM) Credits: 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) Credits: 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 Sector Credits: 3**  
Governmental operations, policies, and revenues as related to employment, productivity and economic welfare. Alternatives that would affect social services, education, commerce and trade, fiscal policies, and quality of life. Prerequisites: ECON 201 or consent.

**ECON 423 - Introduction to Econometrics (COM) Credits: 3**  
Introduction to econometrics 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 Credits: 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 Economics Credits: 3**  
Applications of microeconomic theory, statistics and other quantitative methods to analysis and solution of decision making problems confronted by managers of agribusiness, commercial and manufacturing enterprises. Topics include economic analysis of demand, production, cost, market structure, government regulation, risk, and capital budgeting. Prerequisites: ECON 301, STAT 281.

**ECON 433 - Public Finance (COM) (AW) Credits: 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 Sector Credits: 3**  
International flow of trade and balance of payments. Monetary and fiscal policies. Trade controls and their effect upon the agricultural and domestic economies. Significant current developments in trade and finance. Prerequisites: ECON 201, ECON 202, ECON 330 or consent.

**ECON 450-550 - Industrial Organization (COM) Credits: 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 Business Credits: 3**  
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) Credits: 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. Notes: \*\* Course meets IGR #2.

**ECON 467 - Labor Law and Economics Credits: 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) Credits: 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

**ECON 476-576 - Marketing Research Credits: 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 482 - Labor Economics (COM) Credits: 3**  
Labor economics studies the functioning of labor markets. Topics include the theory of labor supply, unions, discrimination, and the government role in labor markets. Prerequisites: ECON 201 and 202

**ECON 490 - Seminar (COM) Credits: 1-3**  
**ECON 491-591 - Independent Study (COM) Credits: 1-4**  
**ECON 492 - Topics (COM) Credits: 1-4**  
**ECON 493-593 - Workshop Credits: 1-3**  
**ECON 494 - Internship (COM) Credits: 1-6**  
**ECON 496 - Field Experience Credits: 1-3**  
**ECON 498 - Undergraduate Research/Scholarship (COM) Credits: 1-12**

**ECON 601 - Economics Study in Industrial Management Credits: 3**  
**ECON 610 - Financial Management Credits: 3**  
**ECON 660 - Operations Management Credits: 3**  
**ECON 662 - Bio-Energy Economics and Sustainability Credits: 3**  
**ECON 663 - Bio-Energy Feasibility & Commercialization Credits: 3**  
**ECON 672 - Bioenergy and Resource Economics Credits: 3**  
**ECON 691 - Independent Study Credits: 1-3**  
**ECON 692 - Topics Credits: 1-4**  
**ECON 703 - Advanced Macroeconomics Credits: 3**  
**ECON 704 - Advanced Microeconomics Credits: 3**  
**ECON 705 - Econometrics Credits: 3**  
**ECON 707 - Research Methodology in Applied Economics Credits: 2**  
**ECON 740 - Investment Science Credits: 3**  
**ECON 788 - Research Paper Credits: 1-3**  
**ECON 792 - Topics Credits: 1-4**  
**ECON 798 - Thesis Credits: 1-7**

## **EDAD (Educational Administration)**

**EDAD 695 - Practicum Credits: 1**  
**EDAD 700 - Introduction to School Administration Credits: 2**  
**EDAD 701 - Introduction to Educational Administration Credits: 3**  
**EDAD 707 - The Principalship Credits: 2**  
**EDAD 708 - Elementary Principalship Practicum Credits: 1**  
**EDAD 709 - Secondary Principalship Practicum Credits: 1**  
**EDAD 715 - Supervision Credits: 3**  
**EDAD 730 - School Finance Credits: 2**  
**EDAD 735 - School Law Credits: 3**  
**EDAD 741 - Community and Public Relations Credits: 2**  
**EDAD 788 - Research Problems in Educational Admin Credits: 1-2**  
**EDAD 790 - Seminar Credits: 1-3**  
**EDAD 791 - Independent Study Credits: 1-3**  
**EDAD 792 - Topics Credits: 1-3**  
**EDAD 793 - Workshop Credits: 1-3**  
**EDAD 794 - Internship Credits: 1-6**

## **EDER (Education Evaluation & Research)**

### **EDER 415 - Educational Assessment Credits: 2**

A study of educational measurements covering both the elementary and secondary fields.

### **EDER 492-592 - Topics Credits: 1-3**

#### **EDER 691 - Independent Study Credits: 1-3**

#### **EDER 711 - Educational Assessment Credits: 3**

#### **EDER 760 - Informational Literacy Credits: 3**

#### **EDER 788 - Research Problems in Education Credits: 1-2**

#### **EDER 792 - Topics Credits: 1-3**

## **EDFN (Education Foundations)**

### **EDFN 193 - Workshop Credits: 1**

### **EDFN 293 - Workshop Credits: 1**

### **EDFN 338 Foundations of American Education (COM) Credits 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) Credits: 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) Credits 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) Credits: 1

### **EDFN 427-527 - Middle School: Philosophy and Application Credits: 2**

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: Consent (admission into teacher education program, junior standing, an adolescent psychology/development course)

### **EDFN 428-528 - Middle School Curriculum & Instruction Credits: 3**

The essential methods and materials of judging high/middle school instruction. Methods and topics included are the middle school concept, team teaching, mastery learning, exploratories, classroom management, and grouping strategies. Representative curriculum materials, appropriate to the transescent learner, are examined and utilized in multi-disciplinary team planning projects. Prerequisites: Consent (admission into teacher education program, junior standing, an adolescent psychology/development course)

### **EDFN 452-552 - Foundations of Reading Credits: 3**

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. Prerequisites:

### **EDFN 460-560 - Applied Linguistics for Teaching English as a Second Language Credits: 3**

The study of social and linguistic structures which undergird different discourse forms. Emphasis will be on discourse forms which are particularly important for full participation in US culture such as the rhetoric of public and school interactions.

### **EDFN 461-561 - Cultural and Psychological Perspectives in the Acquisition of English as a Second Language Credits: 3**

Addresses the social and cognitive processes involved in the acquisition of a second language including developmental influences. Prerequisites: EDFN 460/560

### **EDFN 462-562 - Teaching Language Arts for English as Second Language Across the Curriculum Credits: 3**

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. Prerequisites: EDFN 460/560

### **EDFN 463-563 - Methods of Teaching English as Second Language Credits: 3**

Develops the central concepts, tools of inquiry, and structure of teaching English to students with limited English proficiency. Includes the evaluation of instructional processes, learning resources, curriculum, and programs. Emphasis will be on teaching students to use English in educational and public settings. Prerequisites: EDFN 460/560

### **EDFN 466-566 - Literacy in Primary Grades Credits: 3**

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 Lab Credits: 0 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) Credits: 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 Education Credits: 1**

### **EDFN 490-590 - Seminar (COM) Credits: 1-3**

### **EDFN 492-592 - Topics (COM) Credits: 1-3**

### **EDFN 496 - Field Experience Credits: 1**

### **EDFN 691 - Independent Study Credits: 1-3**

### **EDFN 700 - Exceptional Learners Credits: 3**

### **EDFN 725 - Education in a Pluralistic Society Credits: 3**

### **EDFN 727 - Group Processes Credits: 3**

### **EDFN 730 - Current Issues in Education Credits: 3**

### **EDFN 745 - Effective Teaching: Theory into Practice Credits: 3**

### **EDFN 747 - Curriculum: Theory and Practice Credits: 2**

### **EDFN 750 - Technology in Education Credits: 3**

### **EDFN 751 - Teaching Reading Across Disciplines Credits: 3**

### **EDFN 790 - Seminar (COM) Credits: 1-3**

### **EDFN 792 - Topics (COM) Credits: 1-3**

### **EDFN 794 - Internship Credits: 1-6**

## **EE (Electrical Engineering)**

### **EE 102 - Introduction to Electrical Engineering II Credits: 1**

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) Credits: 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) Credits: 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. Laboratory experience to accompany EE 221. Prerequisites: MATH 321 and "C" or better in EE 220.

**EE 222-222L - Circuits and Machines and Lab Credits: 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 224L - EE Software Tools Lab Credits: 1**

Introduction to software application tools used in a majority of electrical engineering courses. Two primary applications tools studied are PSpice (circuit simulation) and MATLAB (matrix-based mathematics software). The course enables rapid mastery of each application's syntax and provides an ability to apply each tool to analyze and/or solve electrical engineering problems. The course is taught concurrently with EE 222 (Circuits and Machines) allowing for several circuit applications to be explored while learning the fundamentals of each tool. Prerequisites: "C" or better in EE 220 or consent Corequisites: EE 222.

**EE 245-245L - Digital Systems and Lab Credits: 4**

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 Materials Credits: 3**

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 Credits: 1-3**

**EE 292 - Topics (COM) Credits: 1-3**

**EE 300-300L - Basic Electrical Engineering I and Lab Credits: 3**

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- 300.

**EE 302-302L - Basic Electrical Engineering II and Lab Credits: 3**

Introduction to analog and digital electronic devices and applications. For non-EE students. Prerequisites: EE 300, EE 300L.

**EE 310 - Probabilistic Methods in Electrical Engineering Credits: 3**

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.

**EE 315 - Linear Control Systems Credits: 3**

Feedback control systems by operational and differential methods. Topics include differential and Laplace system modeling, Nyquist and Routh-Hurwitz stability analysis, and cascade PID/lead/lag and state-space feedback compensation design using root-locus, Bode and Ackermann's pole-placement methods. Prerequisites: EE 316.

**EE 316 - Signals and Systems I (COM) Credits: 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.

**EE 317 - Signals and Systems II (COM) Credits: 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.

**EE 320-320L - Electronics I (COM) Credits: 4**

resents 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.

**EE 321-321L - Electronics II and Lab Credits: 4**

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.

**EE 347-347L - Microcontroller Systems Design & Lab Credits: 3**

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.

**EE 360 - Electronic Devices Credits: 3**

Introduction to microelectronic devices, semiconductor and junction theory, semiconductor devices, other solid-state devices. Prerequisites: EE 260. Corequisites: EE 320.

**EE 385 - Electromagnetics Credits: 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.



**EE 420-420L/520-520L - Electronics III and Lab Credits: 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.

**EE 422 - Engineering Economics and Management Credits: 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.

**EE 424-524 - RF Electronics Credits: 3**

Performance analysis and design methods for the functional blocks of radio frequency systems operating below the microwave bands. Prerequisites: EE 321, EE 316.

**EE 430-430L - Electromechanical Systems and Lab Credits: 4**

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.

**EE 433-533 - Computer Analysis Power Systems Credits: 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.

**EE 434-434L - Power Systems and Lab Credits: 4**

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

**EE 436-436L/536-636L - Applied Photovoltaics & Lab Credits: 3, 1**

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. This lab provides practical experience in the design of hybrid photovoltaic power systems. Prerequisites: EE 320 & EE 360 Corequisites: EE 436/536L - 436/536

**EE 438 - Power Technology Tour Credits: 1**

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.

**EE 440-440L/540-540L - VLSI Design and Lab (COM) Credits: 3**

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.

**EE 450-550 - Biomedical Signal Processing Credits: 3**

Methods and techniques for the analysis and processing of physiological signals. Off-line and real-time digital signal processing using time and frequency domain techniques. Emphasis on signal processing of electrocardiographic signals. Prerequisites: EE 317.

**EE 454-554 - Biomedical Instrumentation and Electrical Safety Credits: 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 460-460L/560-560L - Sensor and Measurements Laboratory Credits: 2, 1**

Introduction to the operation, design, testing and applications of modern sensors in use and under development. Signal conditioning and system integration are also reviewed; Laboratory to accompany EE 460-560. Prerequisites: EE 360 Corequisites: EE 460L-460/560L-560.

**EE 462L-562L - Electronic Materials Lab Credits: 1**

An introduction to microelectronic fabrication techniques including evaporative and sputter deposition, photolithography, mask design, and packaging. Prerequisites: Instructor consent.

**EE 464-464L - Senior Design I and Lab(COM) Credits: 2**

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- 464.

**EE 465-465L - Senior Design II and Lab(COM) (AW) Credits: 2**

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 470 - Communications Engineering Credits: 3**

Modulation and detection methods including circuit analysis and design for digital and analog communication systems are presented. Prerequisites: EE 316, EE 320.

**EE 471-471L/571-571L - Fiber Optic Communications and Lab Credits: 4**

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 475-575 - Digital Image Processing Credits: 3**

Introduction to the fundamentals of digital image processing. Topics include image formation, transforms, enhancement, restoration, compression, and analysis. Prerequisites: EE 317

**EE 491 - Independent Study (COM) Credits: 1-3**

**EE 492-592 - Topics (COM) Credits: 1-3**

**EE 492L-592L - Topics in Laboratory Experience Credits: 1**

**EE 494 – Internship Credits: 1-3**

**EE 497 - Cooperative Education Credits: 1-3**

**EE 498 - Undergraduate Research/Scholarship Credits: 1-3**

**EE 570 - Digital Communication Systems Credits: 3**

**EE 615 - Linear Systems Theory Credits: 3**

**EE 620 - Advanced Digital Hardware Credits: 3**

**EE 636 – Photovoltaics Credits: 3**

**EE 637 - Organic Photovoltaics Credits: 3**

**EE 660 - Electric Properties of Materials Credits: 3**

**EE 670 - Information and Signal Processing Credits: 3**

**EE 685 - Microwave Theory Credits: 3**

**EE 691 - Independent Study Credits: 1-3**

**EE 692 – Topics Credits: 1-3**

**EE 736 - Advanced Photovoltaics Credits: 3**

**EE 760 - Advanced Electronic Materials Credits: 3**

**EE 788 - Engineering Research or Design Paper Credits: 1-2**

**EE 790 – Seminar Credits: 1**

**EE 791 - Independent Study Credits: 1-9**

**EE 792 – Topics Credits: 1-3**

**EE 798 – Thesis Credits: 1-7**

**EE 898D – Dissertation Credits: Variable**

## EES (Ecology and Environmental Science)

**EES 275 - Introduction to Environmental Science\*\* (G) Credits: 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 AND BIOL 101, 103, 151, or 153. Notes: \*\* meets IGR #2

**EES 425-425L/525-525L - Disturbance Ecology & Lab Credits: 4**

Introduction to basic concepts of disturbance ecology. Demonstration and discussion of linkages between basic biology and management of natural resources. Introduction to field and laboratory techniques for monitoring and assessment of ecological responses to pollution and other forms of disturbance. Prerequisites: BIOL 153, BIOL/NRM 311 Corequisites: EES 425L-425/525L-525.

**EES 491 - Independent Study Credits: 1-3**

**EES 494 – Internship Credits: 1-12**

**EES 496 - Field Experience Credits: 1-12**

**EES 498 - Undergraduate Research/Scholarship Credits: 1-4**

**EES 592 – Topics Credits: 1-7**

**EES 692 – Topics Credits: 1-7**

## EHS (Education and Human Sciences)

**EHS 140-140L - Enhancing Human Potential and Lab Credits: 2**

This course is designed to empower students as they transition to SDSU and to further explore major and minor programs of study in the College of Education and Human Sciences. Emphasis will be placed on succeeding at the university, developing healthy lifestyles, enhancing leadership skills and, appreciating that professionals can

better enhance human potential as they work within interdisciplinary teams. Corequisites: EHS 140L-140

**EHS 292 – Topics Credits: 1-3**

**EHS 310 - Leadership for Families & the Food System Credits: 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.

**EHS 480/580 - Travel Studies Credits: 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.

**EHS 491/591 - Independent Study Credits: 1-3**

**EHS 492/592 – Topics Credits: 1-3**

**EHS 495 – Practicum Credits: 2-6**

## ELED (Elementary Education)

**ELED 488 - K-8 Student Teaching (COM) Credits: 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 Credits: 1-3**

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.

**ELED 495 - Practicum (COM) Credits: 1-12**

**ELED 592 – Topics Credits: 1-3**

**ELED 748 - Elementary Curriculum Practicum Credits: 1**

## EM (Engineering Mechanics)

**EM 214 - Statics (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 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 Medium Credits: 3**

General theory of a continuous medium. Kinematics of deformation and flow; stress tensors; conservation of mass, momentum and energy; invariance requirements; constitutive equations for solids and fluids; applications for special problems. Prerequisites: EM 331, MATH 331.

**EM 422/522 - Theory of Elasticity Credits: 3**

Analysis of stress and strain; equilibrium and compatibility equations; Hooke's law; fundamental problems in the theory of elasticity; plane-stress and plane-strain problems of the narrow beam, rotating discs and a plate with a circular hole. Prerequisites: EM 321, MATH 331.

**EM 423/523 - Theory of Plasticity Credits: 3**

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: 422/522 or consent.

**EM 624 - Theory of Plates and Shells Credits: 3****EM 731 - Advanced Fluid Mechanics Credits: 3****EM 741 - Finite Element Analysis Credits: 3****ENGL (English)****ENGL 3 - English as a Second Language: Grammar Review and Intermediate Composition Credits: 3**

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 Composition Credits: 3**

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 Credits: 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 I Credits: 1**

Intensive work in grammar and usage, punctuation, and paragraph development. Does not count toward graduation. (Taught as needed.)

**ENGL 32 - Basic Writing II Credits: 2**

Intensive work in grammar and usage, punctuation, and paragraph development. Does not count toward graduation.

**ENGL 33 - Basic Writing III Credits: 3**

Intensive work in grammar and usage, punctuation, and paragraph development. Does not count toward graduation.

**ENGL 101 - Composition I \* Credits: 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 125 - Intro to Peace & Conflict Studies\*\* Credits: 3**

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 Studies Credits: 3**

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 \* Credits: 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 \* \*\* Credits: 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 Goal #2

**ENGL 211 - World Literature I \* \*\* (G) Credits: 3**

Selected works of world literature in translation from ancient times through the Renaissance Prerequisites: ENGL 101. Notes: \* Course meets SGR #4 and \*\* IGR Goal #2

**ENGL 212 - World Literature II \* (G) Credits: 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

**ENGL 221 - British Literature I \* \*\* (G) Credits: 3**

A chronological survey of British literature from Old English through the 18th century. Prerequisites: ENGL 101. Notes: \* Course meets SGR #4 or \*\* IGR Goal #2

**ENGL 222 - British Literature II \* \*\* (G) Credits: 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: \* meets SGR #4 or \*\* IGR Goal #2

**ENGL 240 - Juvenile Literature \* \*\* Credits: 3**

A survey of the history of literature written for children and adolescents, and a consideration of the various types of juvenile literature. Notes: \* meets SGR #4 or \*\* IGR Goal #2

**ENGL 241 - American Literature I \* \*\* Credits: 3**

Background to and survey of major works from the beginnings to the Civil War. Prerequisites: ENGL 101. Notes: \* meets SGR #4 or \*\* IGR #2

**ENGL 242 - American Literature II \* \*\* Credits: 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: \* meets SGR #4 or \*\* IGR #2

**ENGL 248 - Women in Literature \* \*\* Credits: 3**

Study of literature by and about women from early times to the present. Prerequisites: ENGL 101 Cross-Listed: WMST 248 Notes: \* Course meets SGR #4 or \*\* IGR Goal #2

**ENGL 249 - Literature of Diverse Cultures \* \*\* Credits: 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 Goal #2

**ENGL 250 - Science Fiction Credits: 3\***

A survey of short stories and novels from the 19th century to the present. Notes: \* Course meets SGR #4

**ENGL 256 - Literature of the American West \* \*\* Credits: 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 Cross-Listed: AIS 256 Notes: \* Course meets SGR #4 or \*\* IGR #2

**ENGL 268 - Literature \* (COM) Credits: 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

**ENGL 277 - Technical Writing in Engineering\* Credits: 3**

Study and practice of technical writing in Engineering and related disciplines Prerequisites: ENGL 101 and GE 109 or PHYS 109 or consent Notes: \* Course meets SGR #1.

**ENGL 283 - Creative Writing I \* \*\* Credits: 3**

Study and practice in the techniques of writing fiction, poetry and/or drama. Prerequisites: ENGL 101. Notes: \* Course meets SGR #1, SGR #7, and \*\*IGR #2

**ENGL 330 – Shakespeare Credits: 3**

Representative comedies, tragedies, and histories of Shakespeare Prerequisites: ENGL 101

**ENGL 334 - English Drama: Credits: 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: Credits: 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: Credits: 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: Credits: 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: Credits: 3**

Course content can be any period or type of American novel; the period or type will be identified each semester as, for example, "American Novel: Contemporary" or "American Novel: Gothic," etc. May be repeated with different name and content.

**ENGL 379 - Technical Communication (AW) Credits: 3**

Study of and practice in writing of a technical nature Prerequisites: ENGL 201.

**ENGL 380 - Futuristic Communications Credits: 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: GLST 380.

**ENGL 383 - Creative Writing Credits: 3**

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) Credits: 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 Chaucer Credits: 3**

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 Credits: 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) Credits: 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. Prerequisites: Acceptance into PSII

**ENGL 427-527 - Advanced Shakespeare Credits: 3**

Selected plays of Shakespeare and significant Shakespearean criticism.

**ENGL 428-528 - English Renaissance/16th Century Literature Credits: 3**

Major writers of the 16th and early 17th centuries, excluding Shakespeare.

**ENGL 434-534 - 18th Century English Literature Credits: 3**  
British poetry, prose, drama, fiction, and criticism, 1660-1800.

**ENGL 437-537 - English Romantic Literature Credits: 3**  
English literature of the Romantic movement (1789-1832).

**ENGL 438-538 - English Victorian Literature Credits: 3**  
English literature of the Victorian period (1830-1900).

**ENGL 439-539 - Modern English Literature Credits: 3**  
English literature from 1900 to 1945.

**ENGL 440-540 - Contemporary English Literature Credits: 3**  
English literature since WWII.

**ENGL 445 - American Indian Literature Credits: 3**  
Traditional oral literature and autobiographies of American Indians.  
Cross-Listed: AIS 445

**ENGL 447 - American Indian Literature of the Present Credits: 3**  
Twentieth-century autobiography, fiction, and poetry by Native American authors. Cross-Listed: AIS 447

**ENGL 453-553 - American Renaissance Credits: 3**  
An analysis of the major American writers from 1820-1865.

**ENGL 454-554 - American Realism and Naturalism Credits: 3**  
American literature of the realist and naturalist movements of the late 19th and early 20th centuries.

**ENGL 459-559 - American Literature Between the Wars Credits: 3**  
American literature of the modernist movement from 1917 to 1945.

**ENGL 460-560 - Contemporary American Literature Credits: 3**  
American literature since WWII.

**ENGL 470 - Capstone in Peace and Conflict Studies Credits: 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) Credits: 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; Senior Standing.

**ENGL 481-581 - Travel Studies Credits: 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 Writing Credits: 3**  
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 Criticism Credits: 3**  
The theory and practice of various critical approaches to literature. Prerequisites: ENGL 101.

**ENGL 490 – Seminar Credits: 1-4**

**ENGL 491-591 - Independent Study Credits: 1-5**

**ENGL 492-592 – Topics Credits: 1-5**

**ENGL 494 – Internship Credits: 1-12**

**ENGL 704 - Introduction to Graduate Studies Credits: 3**

**ENGL 705 - Seminar in Teaching Composition Credits: 3**

**ENGL 710 - Seminar in Rhetoric Credits: 3**

**ENGL 724 - Seminar in English Literature to 1660 Credits: 3**

**ENGL 725 - Seminar in English Literature since 1660 Credits: 3**

**ENGL 728 - Seminar in American Literature to 1900 Credits: 3**

**ENGL 729 - Seminar in American Literature since 1900 Credits: 3**

**ENGL 742 - Seminar in American Indian Literature Credits: 3**

**ENGL 755 - Seminar in Minority Literature Credits: 3**

**ENGL 791 - Independent Study Credits: 1-3**

**ENGL 792 – Topics Credits: 1-4**

**ENGL 798 – Thesis Credits: 1-7**

## **ENTR (Entrepreneurship)**

**ENTR 202 - Human Resource Operations in Entrepreneurship Credits: 1**

Study of human resource issues and regulations and how they impact operations and work flow efficiencies.

**ENTR 203 - Intellectual Property in Entrepreneurship Credits: 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 Credits: 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 Credits: 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 Credits: 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 Credits: 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 Entrepreneurship Credits: 1**

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 & Creativity Credits: 3**

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 237 - ENTR II: Entrepreneurship Development Credits: 3**  
Students will learn and understand the concepts of what it takes to be an entrepreneur by understanding entrepreneurial characteristics, forms of business, and business finances. Students will learn the value of doing a feasibility analysis, developing goals and objectives, and a vision and mission for a business. Students will also develop a strategic business plan and implement the business plan by starting a team business. Prerequisites: ENTR 236.

**ENTR 301 - Marketing/Promotion in Entrepreneurship Credits: 1**  
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 and Global Marketing in Entrepreneurship Credits: 1**  
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 Entrepreneurship Credits: 1**  
Students will learn concepts and theories in marketing strategies; the techniques used for pricing products based on development costs and market demand, and the effects of location on sales, strategy and development.

**ENTR 305 - Selling in Entrepreneurship Credits: 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 Entrepreneurship Credits: 1**  
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 Credits: 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) Credits: 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 338 - ENTR III: New Venture Creation Credits: 3**  
Students will build on entrepreneurial concepts by discovering methods to structure and harvest a business, evaluate growth opportunities and challenges, understand advanced market research, business planning, learn financial concepts, ratio trend analysis, and business ethics. Students will apply the knowledge by writing individual business and marketing plans. Prerequisites: ENTR 237.

**ENTR 406-506 - Accounting for Entrepreneurs (COM) Credits: 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/BADM 406/506.

**ENTR 410 - Financing Innovative Ideas Credits: 3**  
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) Credits: 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 Consulting Credits: 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.

**ENTR 488 - Entrepreneurial Studies Capstone Credits: 1**  
Students will complete and fine tune their business plan and learn how to effectively present their business plan. By this time the students will be accumulating resources and have determined potential financing for the business. Upon completion of the course, students will have an investment-ready business plan and be prepared to present their plan to financiers and/or investors. Prerequisites: ENTR 338.

**ENTR 489 - Business Plan Writing and Competition (COM) Credits: 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 – Internship Credits: 3**

## **EPSY (Educational Psychology)**

**EPSY 302 - Educational Psychology (COM) Credits: 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) Credits: 3**  
A study of the behavior and development of middle and secondary level students.

**EPSY 526 - Psychology of the Early Adolescent Learner Credits: 3**  
**EPSY 723 - Adolescent Psychology Credits: 3**  
**EPSY 740 - Advanced Educational Psychology Credits: 3**

## **ET (Electronics Technology)**

**ET 100-100L - Survey of Electronics and Lab Credits: 4**  
Nonmathematical survey of fundamental electronic components and circuits. Corequisites: ET 100L-ET 100.

**ET 114-114L - DC Concepts and Lab Credits: 4**

Direct Current Circuits. Topics covered are basic laws and theorems directed toward resistive circuits. Kirchhoff's Laws, series and parallel circuits. Corequisites: ET 114L-ET 114.

**ET 116-116L - AC Concepts and Lab Credits: 4**

Alternating Current Circuits. Study of series and parallel circuits, network analysis, capacitance, inductance, and impedance. Prerequisites: ET 114 Corequisites: ET 116L-ET 116.

**ET 118-118L - DC and AC Concepts and Lab Credits: 6**

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: ET 118L-ET 118.

**ET 122-122L - Introductory Circuits and Lab Credits: 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: ET 114 or 118. Corequisites: ET 122L-ET 122.

**ET 210-210L - Introduction to Electronic Systems Credits: 4**

Introduction to electronic systems and circuits. Direct current and alternating current circuits including Ohm's law and Kirchhoff's laws. Measurement and characterization of electronic systems at the block diagram level. Introduction to semiconductors, including diodes, BJTs and MOSFETs. Introduction to digital circuitry, including basic logic gates. Laboratory practice includes the proper use of standard test instruments in troubleshooting. 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: MATH 102 Corequisites: ET 210L-210

**ET 222-222L - Radio Frequency Systems I and Lab Credits: 4**

Radio wave propagation, transmission line theory, and antennas, and practical applications of each. Emphasis is placed on conduction of radio waves from a source to a load and its propagation through space. Prerequisites: ET 220. Corequisites: ET 222L- 222.

**ET 230-230L - Introductory Digital and Lab Credits: 4**

Binary and hexadecimal number systems, switching theory, Boolean Algebra, logic diagrams, Karnaugh mapping, counter circuits, and pulse circuits. Prerequisites: ET 114 Corequisites: ET 230L- 230.

**ET 232-232L - Digital Electronics and Microprocessors and Lab Credits: 3**

Development of digital logic and circuit building blocks, number systems, Boolean algebra, combinational and sequential logic, and integrated logic families. Introduction to the architecture, programming, application and troubleshooting of programmable logic device (PLD) electronic systems, including VHDL programming. Exploration of the basic architecture of microprocessors and applications. Laboratory practice includes digital circuit measurement and troubleshooting techniques. Laboratory to accompany ET 232. Prerequisites: ET 210-210L Corequisites: ET 232L-232.

**ET 240 - Techniques of Servicing Credits: 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: ET 210-210L.

**ET 251-251L - Electricity and Electronics I and Lab Credits: 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. Lab for ET/MNET 251 Prerequisites: 1 course from subject MATH, except courses MATH 021, 101, 100T, or 102. Corequisites: ET/MNET 251L-251 Cross-Listed: MNET 251-251L

**ET 252-252L - Electricity and Electronics II and Lab Credits: 3**

This course is the continuation of 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: ET/MNET 251-251L Corequisites: ET/MNET 252-252L Cross-Listed: MNET 252-252L

**ET 291 - Independent Study Credits: 1-3****ET 292 – Topics Credits: 1-3****ET 293 – Workshop Credits: 1-3****ET 296 - Field Experience Credits: 1-3****ET 320-320L - Analog Electronics and Lab Credits: 3**

Introduction to analog circuits, including amplifiers, oscillators, and filters, using diodes, bipolar transistors, field-effect transistors, and operational amplifiers. Laboratory practice includes analog circuit measurement techniques and troubleshooting techniques. Prerequisites: ET 210 Corequisites: ET 320L-320.

**ET 325-325L - Advanced Analog Electronics and Lab Credits: 3**

Active devices and their applications. Detailed analysis of power supplies, audio amplifiers, and phase-locked loops. Emphasis on test system design & practice. Lab practice includes measurement, troubleshooting, and fabrication. Prerequisites: ET 320

**ET 330-330L - Microprocessors and Networks & Lab Credits: 3, 0**

Introduction to the architecture, programming, application and troubleshooting of single-chip microcontroller electronic systems; includes programming in microcontroller-specific BASIC language; interface of the microcontroller for practical applications, measurement techniques and instrumentation; network components: hardware, software, protocols (TCP/IP), topologies, and cabling. Laboratory practice includes the use of in-circuit emulation, personal computer hardware and software installation and troubleshooting techniques. Prerequisites: ET 210 Corequisites: ET 330L-330

**ET 332-332L - Advanced Digital Electronics and Lab Credits: 3**

Advanced digital logic at a component and systems level, using VHDL programming. Memory mapping and state machine operations. Differentiation of logic family device specifications and small system design. Prerequisites: ET 232

**ET 345-345L - Power Systems and Lab Credits: 3**

Basics of electrical power and wiring, including panel board, conductor and over-current protection sizing, 3-phase power, grounding, commercial and industrial power systems installation, and power monitoring and reporting. Current National Electric Code will be reviewed. Prerequisites: ET 320

**ET 370-370L - Computer Systems and Lab Credits: 4**

A course to familiarize students with hardware/software configurations, installations, usage, and basic troubleshooting techniques of past and current personal computers. Prerequisites: ET 330. Corequisites: ET 370L-ET 370.



**ET 380-380L - Circuit Boards and Design and Lab Credits: 3, 0**

A course to acquaint the student with procedures used to prototype and construct circuits used in electronics manufacturing. Topics include pre-fabrication planning, component specification, printed circuit board layout and production, customer interfacing, assembly and soldering, and final test procedures. State-of-the-art circuit board layout software will be used in the design of an electronics circuit project. Project management techniques introduced. Prerequisites: ET 320 Corequisites: ET 380L-380

**ET 426-426L - Communication Systems and Lab Credits: 4**

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: ET 320 Corequisites: ET 426L-426

**ET 428-428L - Advanced Communication Systems and Lab Credits: 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: ET 426. Corequisites: ET 428L-ET 428.

**ET 451-451L - Industrial Controls & PLCs & Lab Credits: 3, 0**

The course is designed to provide students with the fundamentals of industrial control systems, control system classifications and control operations including programmable logic controllers, process control and common detection sensors, motion control systems, and motors and motor drive systems. Prerequisites: ET 210 Corequisites: ET 451L-451

**ET 453-453L - Manufacturing Automation and Lab Credits: 3**

The course offers advanced topics in manufacturing automation including automation hardware/software, system design and integration, and management techniques for improving design and manufacturing operations. Hands-on lab activities provide the students the opportunity to develop and program automated systems. Corequisites: ET 453L-ET 453. Cross-Listed: MNET 453.

**ET 471-471L - Capstone Experience and Lab (CI) (AW) Credits: 1**

Technical projects developed in Project Management are completed. Student teams present results in a public venue. Prerequisites: OM 469 or GE 469. Corequisites: OM/MNET/ET 471L-471 Cross-Listed: OM/MNET 471-471L

**ET 472-472L - Networking I and Lab Credits: 4**

The study of personal computer systems, concentrating on Intel-type personal computers, networking and data connections from a software and management point of view. Microsoft NT and Novell are explored. Prerequisites: ET 370 Corequisites: ET 472L- 472.

**ET 474-474L - Networking II and Lab Credits: 4**

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: ET 472. Corequisites: ET 474L- 474.

**ET 491 - Independent Study Credits: (1-3)****ET 492 – Topics Credits: (1-3)****ET 493 – Workshop Credits: 1-3****ET 494 – Internship Credits: (1-8)****ET 496 - Field Experience Credits: (1-3)****ET 497 - Cooperative Education Credits: (1-8)****EURO (European Studies)****EURS 300 - Topics in European Culture Credits: 3**

Topics in European culture as expressed in literature, art, music, philosophy, and religion. The topic may be limited to a theme, for example, Death, War, or Justice, or to a period in history, for example, Women in the Renaissance, Love in the Seventeenth

Century, or Solitude in the Romantic Period. (May be repeated for credit when the topic is different).

**EURS 301 - Topics in European Society Credits: 3**

An interdisciplinary examination of a topic in European social life. Examples include, among others, Ethnicity and Nationality, Aging, Revolution, European Unification, Political Parties and Economic Development, or Migrant Workers. (May be repeated for credit when the topic is different.)

**EURS 311 - European Exchange Orientation Credits: 1**

This course is designed to prepare students to live and study in a European setting. The course will combine an overview of historical, political, social, and cultural topics with a preparation for daily life. This will facilitate adaptation to the exchange experience in the hosting European nation. 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 Credits: 1-3****EXCH (Exchange Programs)****EXCH 389-489 - Student Exchange – International Credits: 0-18**

This course allows students to register as full- time students while taking part in an Exchange Program. Students will register on their home campus for the number of credit hours they intend to take while enrolled at another campus.

**EXPL (Experiential Learning)****EXPL 187 - Study Abroad: Global Learning Credits: 1-4**

The course will introduce students to studying abroad during college and will discuss topics related to cross-cultural experiences.

**EXPL 287 - Study Abroad: Global Learning Credits: 1-4**

The course will introduce students to studying abroad during college and will discuss topics related to cross-cultural experiences.

**EXPL 287 - Study Abroad: Global Learning Credits: 1-4****EXPL 299- Student Exchange - Domestic Credits: 0-18**

Students enroll in coursework from approved consortia or tuition reciprocity agreements enabling them to benefit from richer, more specialized, and relevant course and program options. This course tracks enrollment, allows students to retain an active status, and qualifies them for financial aid at SDSU.

**EXPL 384 - National Student Exchange (COM) Credits: 0-16**

Qualified students enroll in an exchange with an NSE member school to enhance and expand their academic horizons and meet personal needs and interests. Students attend courses for a semester or a year, choosing classes that complement or supplement their majors at their home institution.

**EXPL 387 - Study Abroad: Global Learning Credits: 1-4**

The course will introduce students to studying abroad during college and will discuss topics related to cross-cultural experiences.

**EXPL 487-587 - Study Abroad Credits: 0-18**

The goal of the course is to track student enrollment in a study abroad experience as well as to award credit for the time and effort necessary in the preparation, culture-learning, and re-entry processes of study abroad.

**FCS (Family and Consumer Sciences)****FCS 230 - Consumer Behavior Credits: 3**

Understanding cultural, economic, social, and psychological conditions that influence the consumer purchase process. Study of diverse types of consumer subcultures.

## **FCSE (Family and Consumer Sciences Education)**

**FCSE 292 – Topics Credits: 1-3**  
**FCSE 295 – Practicum Credits: 1**

**FCSE 331 - Work Force Preparation in Family and Consumer Sciences Credits: 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 405 - Philosophy of Career and Technical Education Credits: 2**

Overview of career and technical education, including history and role and purpose in schools, communities and society; organization and characteristics of instructional programs at secondary, post-secondary and adult levels; career education; funding; and current trends and issues in career and technical education. Prerequisites: Sophomore status in education program. Corequisites: FCSE 295

Cross-Listed: AGED 405 Notes: For prospective teachers in agriculture or family and consumer sciences education.

**FCSE 411 - Philosophy and Methods Family and Consumer Sciences (AW) Credits: 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 in FSCE and Lab Credits: 4, 0**

Planning and developing instruction to meet the needs of selected age groups in formal and informal settings. Classroom/laboratory management, integration of core academics into career and technical education, assessment, advisement of student organizations, professional issues, and current topics in education will be addressed in preparation for a career in an educational setting. Prerequisites: Senior Standing, FCSE/AGED 295, FCSE/AGED 405, EPSY 302, EDFN 475, SEED 314, SEED 450, FCSE/AGED 404 Corequisites: FCSE 412-412L Cross-Listed: AGED 412L-412.

**FCSE 421 - Adult Education Credits: 3**

Theories, strategies and trends related to working with diverse adult audiences within the context of family and consumer sciences. Experience in working with adults will be included. Open to all majors.

**FCSE 480 - Travel Studies Credits: 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 488 - 7-12 Student Teaching FCSE Credits: 1-6**

An experiential application of teaching pedagogy and content in family and consumer sciences education under the supervision of a certified teacher in an approved program. Prerequisites: Admittance into the Teacher Education Program and PSIII, Senior Class Standing, and FCSE 412

**FCSE 491/591 - Independent Study Credits: (1-3)**

**FCSE 492/592 – Topics Credits: (1-3)**

**FCSE 496 - Field Experience Credits: (1-12)**

**FCSE 595 – Practicum Credits: (1-3)**

**FCSE 611 - History and Philosophy of Family and Consumer Sciences Credits: 3**

**FCSE 673 - Supervised Student Teaching in Family and Consumer Sciences Education Credits: 6-9**

**FCSE 721 - Occupational Programs in Family and Consumer Sciences Credits: 3**

**FCSE 741 - Supervision of Family and Consumer Sciences Education Credits: 2**

**FCSE 751 - Curriculum of Family and Consumer Sciences Education Credits: 3**

**FCSE 761 - Advanced Methods and Assessment in Family and Consumer Sciences Education Credits: 3**

**FCSE 788 - Action Research Project Credits: 1-3**

**FCSE 791 - Independent Study Credits: 1-3**

**FCSE 792 – Topics Credits: 1-3**

## **FREN (French)**

**FREN 101 - Introductory French I \* (COM) (G) Credits: 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

**FREN 102 - Introductory French II \* (COM) (G) Credits: 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: Mmeets \*SGR #4

**FREN 201 - Intermediate French I \* \*\* (COM) Credits: 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. Notes: Course meets \*SGR 4 and \*\*IGR 2

**FREN 202 - Intermediate French II \* \*\* (COM) Credits: 4**

Continues FREN 201. Laboratory as required. Prerequisites: FREN 201. Notes: meets \*SGR #4 and \*\* IGR #2

**FREN 211 - Intermediate Oral Practice I Credits: 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 201 or with another course above 201. Prerequisites: FREN 102

**FREN 212 - Intermediate Oral Practice II Credits: 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

**FREN 296 - Field Experience Credits: 1-6**

**FREN 310 - French Language Skills (COM) (AW) Credits: 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) Credits: 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 - Intermediate French II \* \*\* (COM)

**FREN 350 - Business Communications in French (COM) Credits: 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) Credits: 3**  
Study of literary texts from throughout the French-speaking world. Prerequisites: FREN 202.

**FREN 385 - Travel Study Abroad Francophone (COM) (G) Credits: 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 392 – Topics Credits: 1-3**

**FREN 433 - French Culture and Civilization (AW) Credits: 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) Credits: 1-3**  
**FREN 492 - Topics (COM) Credits: 1-3**  
**FREN 493 - Workshop (COM) Credits: 1-6**  
**FREN 496 - Field Experience Credits: 1-6**  
**FREN 591 - Independent Study Credits: 1-3**

## GE (General Engineering)

**GE 101 - Introduction to Engineering and Technology Credits: 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 109-109L - First Year Seminar and Lab\*\* Credits: 1, 1**  
First-year experience course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Laboratory to accompany GE109 Corequisites: GE 109-109L Notes: \*\*Course meets IGR #1

**GE 120-120L - Engineering Drawing/CAD and Lab Credits: 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 I Credits: 1**  
A course in graphical communication, expression and interpretation. The ability to visualize in three dimensions is developed through shape description, sketching and multi-view projection exercises. The emphasis is on visualization and free hand sketching. Also includes Engineering, Mechanical, and Architectural scales, geometric constructions, use of instruments, dimensioning, and sectional views. Corequisites: One MATH course except for 021, 101, 100T.

**GE 122 - Engineering Design Graphics II Credits: 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 Drawing Credits: 1**  
A course with Major emphasis on 2-dimensional drafting skills and 3 dimensional solid modeling utilizing microcomputer software. All work requires a "hands-on" approach. Prerequisites: GE 121 or ID 150 or LA 120.

**GE 225 - Survey of Machine Tool Applications Credits: 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, Society, and Ethics\*\* Credits: 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. Notes: \*\*Course meets IGR #2

**GE 241 - Applied Mechanics Credits: 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; 1 course from subject PHYS Cross-Listed: MNET 241

**GE 291 - Independent Study Credits: 1-3**  
**GE 292 – Topics Credits: 1-3**  
**GE 293 – Workshop Credits: 1-3**  
**GE 294 – Internship Credits: 1-3**  
**GE 296 - Field Experience Credits: 1-6**

**GE 310 - Geometric Dimensioning and Tolerancing Credits: 2**  
Study and application of ANSI Y14.5M standards for GD&T as variation in part tolerances in the design of products and components for assembly; applications relative to product design, production, testing, and inspection are covered.

**GE 410-510 - Human Factors in Design Credits: 3**  
Human factors engineering (HFE), sometimes called ergonomics, deals with optimizing working and living conditions through design for human use. This course will explore design methods to enhance the effectiveness and efficiency of work and to enhance product user's comfort, safety, health and satisfaction. Prerequisite: MATH 102.

**GE 425-525 - Occupational Safety & Health Management Credits: 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.

**GE 469 - Project Management Credits: 3**  
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. Prerequisites: consent Cross-Listed: MNET/ET 469

**GE 491 - 591 - Independent Study Credits: 1-3**  
**GE 492 - 592 - Topics Credits: 1-3**  
**GE 493 - 593 - Workshop Credits: 1-3**  
**GE 494 - Internship Credits: 1-3**  
**GE 496 - Field Experience Credits: 1-6**

**GE 603 - Designing the Work Place for Production Credits: 3**  
**GE 650 - Manufacturing Systems Management Credits: 3**  
**GE 667 - Decision Theory Credits: 3**  
**GE 690 - Seminar Credits: 1-3**  
**GE 691 - Independent Study Credits: 1-3**  
**GE 692 - Topics Credits: 1-3**  
**GE 693 - Workshop Credits: 1-3**  
**GE 696 - Field Experience Credits: 1-6**  
**GE 788 - Research Problems/Projects Credits: 1-2**  
**GE 791 - Independent Study Credits: 1-9**  
**GE 792 - Topics Credits: 1-3**  
**GE 798 - Thesis Credits: 1-7**

## **GEOG (Geography)**

### **GEOG 101 - Introduction to Geography \* (COM) Credits: 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 Lab\* Credits: 4**

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: \* meets SGR #6.

### **GEOG 132-132L - Physical Geography: Natural Landscapes and Lab\* Credits: 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) Credits: 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 and \*\* IGR Goal #2

### **GEOG 210 - World Regional Geography\*\* (COM) (G) Credits: 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 Goal #2

### **GEOG 212 - Geography of North America \* (COM) Credits: 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

### **GEOG 219 - Geography of South Dakota \* (G) Credits: 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

### **GEOG 310-310L - Soil Geography and Land Use Interpretation and Lab\*\* (G) Credits: 3**

Relationship of soil characteristics and soil classification to land use interpretations. Laboratory exercises involve field and laboratory procedures used in soil survey investigations; Studio to accompany PS/GEOG 310 Prerequisites: GEOG 132-132L, or PS 213-213L, or consent of instructor. Corequisites: GEOG 310L-310. Cross-Listed: PS 310-310L Notes: \*\*Course meets IGR #2

### **GEOG 320 - Regional Geography: Credits: 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 Sciences Credits: 3**

Systematic methodological investigation of the meteorological elements (weather, climate, altitude, etc.) and their effects on geographic features.

### **GEOG 339 - Geomorphology Credits: 3**

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 Hazards Credits: 3**

An in-depth examination of various geophysical events (earthquakes, volcanic eruptions, tsunamis, earth failures), meteorological events (floods, severe storms – tornados, hurricanes, blizzards, lightning) and human induced disasters (technological failures involving dams, nuclear power plants, etc.). Attention given to people's responses and their interactions with the environment plus prevention and amelioration efforts.

### **GEOG 351 - Economic Geography Credits: 3**

Worldwide 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 Credits: 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 363 - Rural Geography Credits: 3**

Character of American countryside as shaped by private and public decision-making processes. Case studies of major U.S. and European rural planning efforts to understand the present landscape and the problems of rural populations.

### **GEOG 365 - Land Use Planning\*\* Credits: 3**

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. Notes: \*\* meets IGR Goal #2

### **GEOG 382 - Geographic Research Methods (AW) Credits: 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 Credits: 3**

History and principles of cartography. Emphasis on field mapping; map projections; cartographic design; map interpretations; and exercises in map making. Corequisites: GEOG 383L- 383.

**GEOG 384-384L - Advanced Cartography and Lab Credits: 3**

This course provides advanced cartographic training techniques as applied to practical applications in field mapping, the production of map projections, cartographic design, and map making. Prerequisites: GEOG 383. Corequisites: GEOG 384L- 384.

**GEOG 400 - Cultural Geography (COM) Credits: 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 Geography Credits: 3**

Historical periods portrayed against geographical background.

**GEOG 415-515 - Environmental Geography\*\* Credits: 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. Notes: \*\*Meets IGR Goal #2

**GEOG 425 - Population Geography Credits: 3**

Geographic analysis of such population characteristics as: numbers and distribution; growth and change; composition; mortality, fertility, and theories of population change; policy and family planning; migration and mobility; population, environment, food supply, and human wellbeing. Problems and prospects are considered in the context of each topic.

**GEOG 447 - Geography of the Future Credits: 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 Credits: 3**

Analysis of geographic factors involved in selection of locations and sites for manufacturing, commercial and agricultural enterprises.

**GEOG 459-559 - Political Geography \*\* Credits: 3**

Spatial perspectives of political phenomena from the local to the global scales. Issues include ethnicity, nationalism, boundaries, territory, power, electoral geography, and impacts on the natural environment. Notes: Course meets IGR Goal #2

**GEOG 460-560 - Geopolitics Credits: 3**

An introduction to geopolitics that addresses the fundamental links between power and space at the global, national, and local scales. Focuses on classical geopolitics, critical geopolitics, political-economic approaches to geopolitics, world orders and hegemonic cycles, historical development of the international state system, and geography of imperialism.

**GEOG 461 - Urban Geography Credits: 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 Credits: 3**

Regional planning with particular reference to the upper Mid-West.

**GEOG 467 - Geography of the American Indian Credits: 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. Prerequisites: HIST 368 or ANTH 410 or ANTH 421 or GEOG 219 Cross-Listed: AIS 467

**GEOG 472 - Introduction to GIS Credits: 3**

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 Credits: 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 Credits: 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 Applications Credits: 3**

This course explores the latest software and its applications in Geographic Information Sciences.

**GEOG 481-581 - Field Geography Credits: 3**

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 Credits: 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 Lab Credits: 3**

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. Corequisites: GEOG 483L.

**GEOG 484-484L - Remote Sensing and Lab Credits: 3**

Applications of remote sensing. Development of remote sensing; instrumentation; and techniques and methodology that will aid in the determination of need and proper utilization of our physical and cultural resources. Hands-on experience using various software and the application of methods and principles of remote sensing. Corequisites: GEOG 484L-GEOG 484.

**GEOG 485-485L - Quantitative Remote Sensing & Lab Credits: 3**

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 Credits: 1-4****GEOG 491 - 491L - Independent Study & Lab (COM) Credits: 1-4****GEOG 492 - Topics (COM) Credits: 1-5****GEOG 494 - Internship Credits: 1-12****GEOG 495 - GISc-CE Practicum Credits: 3****GEOG 496 - Field Experience Credits: 1-12****GEOG 692 - Topics Credits: 1-4****GEOG 710 - Evolution of Geographic Thought Credits: 3****GEOG 714 - Research and Writing Credits: 3****GEOG 732 - Geomorphology Credits: 3****GEOG 734 - Climatology Credits: 3****GEOG 741 - Quantitative Remote Sensory for Terrestrial Monitoring Credits: 3****GEOG 742 - Cultural Geography Credits: 3****GEOG 743 - Geospatial Analysis Credits: 3****GEOG 760 -Advanced Methods in Geospatial Modeling Credits 3****GEOG 765 - Advanced Studies in Land Utilization Credits: 1-4****GEOG 766 - Advanced Remote Sensing Application Credits: 3****GEOG 767 - Fire and Ecosystems Credits: 3****GEOG 770 - Advanced Geographic Techniques Credits: 1-4****GEOG 785 - Quantitative Methods in Geography Credits: 3****GEOG 786 - Geographic Information Systems Credits: 3****GEOG 788 - Research Paper in Geography Credits: 1-3****GEOG 790 - Seminar Credits: 1-4****GEOG 791 - Independent Study Credits: 1-4****GEOG 792 - Topics Credits: 3****GEOG 794 - Internship Credits: 1-3****GEOG 798 - Thesis Credits: 1-7****GER (German)****GER 101 - Introductory German I \* (COM) (G) Credits: 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

**GER 102 - Introductory German II \* (COM) (G) Credits: 4**

Continued emphasis on authentic listening, speaking, reading, writing, and culture skills at the elementary level. Prerequisites: GER 101. Notes: Course meets \*SGR #4

**GER 201 - Intermediate German I \* \*\* (COM) Credits: 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. Notes: Course meets \*SGR #4 and \*\* IGR #2

**GER 202 - Intermediate German II \* \*\* (COM) Credits: 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. Notes: \* Course meets SGR #4 and \*\* IGR #2

**GER 211 - Intermediate Oral Practice Credits: 2-3**

Intensive conversational work to develop interpersonal, interpretive, and presentational modes of communication in German. Prerequisites: GER 102 - Introductory German II \* (COM) (G)and GER 201 - Intermediate German I \* \*\* (COM) Notes: With instructor's permission, may be taken concurrently with GER 201 - Intermediate German I \* \*\* (COM) or with courses above

**GER 296 - Field Experience Credits: 1-6****GER 310 - Practical German Language Skills Credits: 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) Credits: 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) Credits: 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 330 - Reading and Writing for Communication Credits: 3**

Development of reading, writing, and speaking proficiency through examination of writings from the German-speaking world. Emphasis on vocabulary needed to read and discuss literary and authentic texts. Prerequisites: GER 201\* \*\* and GER 202\* \*\*

**GER 353 - Introduction to German Literature Credits: 3**

Introduction to German Literature through reading and discussion. Prerequisites: GER 201 - Intermediate German I \* \*\* (COM) and GER 202 - Intermediate German II \* \*\* (COM)

**GER 380 - Deutschland Heute (COM) Credits: 3**

An examination of contemporary German society, politics, country and people, taught in German. Prerequisites: GER 311, 312.

**GER 392 - Topics (COM) Credits: 2-3****GER 396 - Field Experience Credits: 1-6****GER 411 - Advanced Composition and Conversation I (COM) Credits: 3**

Conversational work, oral reports, discussion, diction. Maybe taken concurrently with GER 311. Prerequisites: GER 202.

**GER 412 - Advanced Composition and Conversation II (COM) Credits: 3**

Conversational work, oral reports, discussion, diction. Maybe taken concurrently with GER 312. Prerequisites: GER 202.

**GER 433 - German Civilization I (COM) (AW) Credits: 3**

The culture of the German-speaking countries form 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) Credits: 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) Credits: 3**

Main currents of German literature from the earliest times to the age of Goethe.

**GER 454 - Survey of German Literature II (COM) Credits: 3**

The main currents of German literature from Romanticism to the present.

**GER 491 - Independent Study (COM) Credits: 1-3****GER 492 - Topics (COM) Credits: 2-3****GER 496 - Field Experience Credits: 1-6****GER 591 - Independent Study (COM) Credits: 1-3****GERO (Gerontology)****GERO 201 - Introduction to Gerontology Credits: 3**

Introduction and overview of the field of gerontology. Interdisciplinary focus on aging process, community resources, diversity, health care and caregiving, retirement, death and bereavement, public policy and professional issues. Required course for gerontology minors.

**GERO 415/515 - Intergenerational Issues Credits: 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.

**GERO 486/586 - Service Learning Credits: 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 Credits: 1-3****GERO 492/592 – Topics Credits: 1-3****GLST (Global Studies)****GLST 125 - Intro to Peace and Conflict Studies\*\* Credits: 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 Course meetings IGR # 2

**GLST 201 - Global Studies I \* \*\* (G) Credits: 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 Goal #2

**GLST 380 - Futuristic Communications Credits: 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) (AW) Credits: 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. Prerequisites: GLST 201 Notes: Study abroad prior to enrolling in GLST 401 is recommended

**GLST 480 - Ethics of Globalization Credits: 3**

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 Credits: 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

**GLST 490 – Seminar Credits: 3****GLST 491 - Independent Study Credits: 1-3****GLST 492 – Topics Credits: 3****GLST 494 – Internship Credits: 1-6****GS (General Studies)****GS 486 - Service Learning (COM) Credits: 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.

**GSE (Geospatial Science and Engineering)****GSE 740 - Introduction to Geospatial Science Engineering Credits: 3****GSE 741 - Quantitative Remote Sensing for Terrestrial Monitoring Credits: 3****GSE 743 - Geospatial Analysis Credits: 3****GSE 760 - Advanced Methods in Geospatial Modeling: Topical Credits: 3****GSE 766 - Advanced Remote Sensing Application Credits: 3****GSE 767 - Fire and Ecosystems Credits: 3****GSE 790 – Seminar Credits: 1-3****GSE 791 - Independent Study Credits: 1-3****GSE 792 – Topics Credits: 1-3****GSE 898D - Dissertation PhD Credits: 1-12****GSR (Graduate School & Research)****GSR 591 - Independent Study Credits: 1-3****GSR 601 - Research Regulations Compliance Credits: 1****GSR 691 - Independent Study Credits: 1-3****HDFS (Human Development & Family Studies)****HDFS 141 - Individual and the Family \* Credits: 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 Credits: 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 \* Credits: 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 Credits: 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. Crosslisted with ECE 227.

**HDFS 241 - Family Relations Credits: 3**

A survey course of family development across the lifespan including the study of the family as a system, family interaction and family roles. Consideration is given to the cultural diversity and heritage of families.

**HDFS 250 - Development of Human Sexuality Credits: 3**

A basic course which explores the biological, behavioral, and cultural aspects of human sexuality. Focuses on individual sexual development, interpersonal aspects of sexual behavior and social/cultural values and beliefs about sexuality and sex roles throughout the lifespan. Crosslisted with WMST 250.

**HDFS 292 – Topics Credits: 1-3****HDFS 337 - Human Development II: Adolescence Credits: 3**

Knowledge and understanding of adolescence within the developmental framework. Dimensions of physical growth, biological changes, social, intellectual and emotional development will be considered, as well as the impact of interaction of these forces on the individual. Emphasis is upon normal developmental patterns.

**HDFS 341 - Family Theories Credits: 3**

Various theoretical approaches to marriage and family. Explores strengths and weaknesses, similarities and differences among theories. How each theoretical framework influences views and approaches to marriage and family issues. Prerequisites: HDFS 150 and HDFS 241 or by permission.

**HDFS 347 - Human Development III: Adulthood Credits: 3**

Developmental approach to Human Development across adulthood. Emphasis on the physical, biological, intellectual and emotional changes. Impact of change upon the personality, self-concept of the individual and their effects upon social behavior, productivity and personal relationships.

**HDFS 355 - Program Design, Implementation and Evaluation Credits: 3**

Principles and application of methods used in the design of programs to enhance the development of individuals and families. Strategies used in program evaluation examined. Consideration of model programs currently developed. Prerequisites: HDFS 341 or by permission.

**HDFS 410/510 - Parenting Credits: 3**

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 425-525 - Family Resiliency Credits: 3**

Literature on stress experienced by individuals and families with an emphasis on a systemic analysis of the conceptual/clinical literature of individual and family resilience will be examined. Individual and family characteristics of resilient families and prevention and solution-based principles will be explored in order to understand and promote family resilience in a developmental and ecological context. Students in counseling and human development as well as education, nursing, and other behavioral, social, and health sciences may benefit from the course.

**HDFS 435-535 - Family Policy Credits: 3**

This course examines the impact of family policies, government laws, and programs related to family life. The course will emphasize the current state of families—or family trends—and the implications of such trends for family policy. The varied effects that policies and programs have on different types of families and different aspects of family functioning and well-being will be explored.

**HDFS 441 - Professional Issues in Human Development and Family Studies Credits: 3**

Study of professional issues in the Child and Family Studies field. Course materials are inclusive of public policy, advocacy, leadership, professional development and ethics and workplace issues. Prerequisites: HDFS major with senior standing

**HDFS 480 - Travel Studies Credits: 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 Credits: 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 Practicum Credits: 1**

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.

**HDFS 491/591 - Independent Study Credits: 1-3****HDFS 492/592 – Topics Credits: 1-3****HDFS 495 - Practicum Credits: 6**

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 501 - Foundations & Principles of Community Service Credits: 3****HDFS 601 - Orientation in Graduate Study Credits: 1****HDFS 602 - Research and Evaluation in Counseling and Human Development Credits: 3**

**HDFS 605 - Program Administration & Management Credits: 3**  
**HDFS 610 - Family Resource Management Credits: 3**  
**HDFS 614 - Adult Development Credits: 3**  
**HDFS 620 - Family Dynamics Credits: 3**  
**HDFS 630 - Lifespan Development Credits: 3**  
**HDFS 635 - Crises Across the Lifespan Credits: 3**  
**HDFS 640 - Interpersonal Relationships Credits: 3**  
**HDFS 665 - Parent Education: Theory and Issues Credits: 3**  
**HDFS 700-700L - Research Methods and Lab Credits: 4**  
**HDFS 710 - Program Design, Eval, & Implementation Credits: 3**  
**HDFS 711 - Child Development Theory & Application Credits: 3**  
**HDFS 730 - Grant Writing Credits: 3**  
**HDFS 742 - Family Theory and Research Credits: 3**  
**HDFS 745 - Work and Family Credits: 3**  
**HDFS 753 - Family Public Policy Credits: 3**  
**HDFS 788 - Individual Research and Study Credits: 1-7**  
**HDFS 790 – Seminar Credits: 1-3**  
**HDFS 791 - Independent Study Credits: 1-3**  
**HDFS 792 – Topics Credits: 1-3**  
**HDFS 794 – Internship Credits: 1-7**  
**HDFS 798 – Thesis Credits: 1-7**

## **HIST (History)**

### **HIST 111 - World Civilizations I \* \*\* (COM) Credits: 3**

A survey of the history, culture, religion and society of the principal civilizations of the world to 1500. Notes: \*Meets SGR 4 and \*\*IGR 2

### **HIST 112 - World Civilizations II \* \*\* (COM) (G) Credits: 3**

A survey of the history, culture, religion and society of the principal civilizations of the world since 1500. Notes: \* Course meets SGR #4 and \*\*IGR Goal #2

### **HIST 121 - Western Civilization I \* \*\* (COM) Credits: 3**

Surveys the evolution of western civilization from its beginnings into the Reformation and religious wars. Notes: \* Course meets SGR #4 or \*\* IGR Goal #2

### **HIST 122 - Western Civilization II \* \*\* (COM) (G) Credits: 3**

Surveys the development of western civilization from the Reformation era to the present. Notes: \* Course meets SGR #4 or \*\* IGR Goal #2

### **HIST 151 - United States History I \* \*\* (COM) Credits: 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 Goal #2

### **HIST 152 - United States History II \* \*\* (COM) Credits: 3**

Surveys development of the United States since the Civil War and Reconstruction. Notes: \* Course meets SGR #3 or \*\* IGR Goal #2

### **HIST 280 - Writing History Credits: 3**

Study and practice in the major types of historical writing, including research papers, critical book reviews, and essays.

### **HIST 292 - Topics (COM) Credits: 1-3**

### **HIST 311 - Chinese History Credits: 3**

A survey of Chinese history to 1840.

### **HIST 312 - History of Modern Asia (COM) Credits: 3**

Focuses on the history of modern Chinese and Japanese civilizations.

### **HIST 313 - History of the Middle East (COM) Credits: 3**

Surveys the history of the Middle East from Muhammad to the present, emphasizing the political development of the last 200 years.

### **HIST 314 - History of Modern Japan Credits: 3**

Focuses on the history of modern Japan from 1853 to the present, with emphasis on economic, social, and political changes.

### **HIST 316 - Pre-Modern Japan Credits: 3**

This course will cover the history and culture of Japan from ancient times to the coming of the Europeans in 1853.

### **HIST 322 - Ancient Greece and Rome (COM) Credits: 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.

### **HIST 326 - Renaissance and Reformation (COM) Credits: 3**

A study of the major European political powers in the 14th-16th centuries. The course will examine the dramatic changes in politics, society, religion, economics and world view occasioned by the phenomena known as the Renaissance and the Reformation.

### **HIST 329 - French Revolution and Napoleon, 1789-1815 (COM) Credits: 3**

A study of the major changes in the European political powers due to the French Revolution and the emergence of Napoleon. The effects of the Congress of Vienna will also be evaluated.

### **HIST 330 - Nineteenth Century European History (COM) Credits: 3**

A study of developments in Western Europe from the Congress of Vienna to the outbreak of the Great War.

### **HIST 331 - Europe in the Age of Louis XIV, 1648-1789 Credits: 3**

A study of the emergence of the modern nation states of both Eastern and Western Europe, concentrating on the development of the French, English and Russian nations. The role of absolutism, mercantilism and militarism will be considered.

### **HIST 341 - English History to 1688 (COM) Credits: 3**

Presents English History from the earliest times through the Glorious Revolution of 1688.

### **HIST 345 - History of Russia Credits: 3**

From the earliest times to present. Treats cultural and social as well as political aspects.

### **HIST 346 - Canada: History and Geography (COM) Credits: 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.

### **HIST 349 - Women in American History Credits: 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: WMST 349.

### **HIST 350 - Women in World History Credits: 3**

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.

### **HIST 352 - Revolution & Early National United States Credits: 3**

Causes of the American Revolution, War for Independence, Articles of Confederation, Constitutional Convention of 1787, establishment of the Federal Union and early years of the Republic.

### **HIST 354 - Jefferson and Jackson 1800-1840 Credits: 3**

Early Presidential administrations through the Mexican War of 1846-48.

**HIST 356 - Gilded Age America and American Empire Credits: 3**  
Examination of political, economic, social and cultural developments in the US from 1877-1914.

**HIST 357 - America from WWI to the Great Depression: The Perils of Prosperity, 1914-1941 Credits: 3**  
Major political, social, economic, and cultural developments from 1914 to 1941, including WWI, the “Roaring” 20s, the Great Depression, and movement toward WWII.

**HIST 358 - The U.S. Since 1941 (COM) Credits: 3**  
Social, economic, and political change. The consequences, domestic and foreign, of global power and rising affluence.

**HIST 368 - History and Culture of the American Indian (COM)\*\* Credits: 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.

**HIST 377 - Economic History of U.S. (COM) Credits: 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.

**HIST 378 - Social and Cultural History of the US Credits: 3**  
Aspects of social development, with major emphasis on the period since the Civil War. Themes include gender, class, race, family, education, religion, leisure, music, arts, and values.

**HIST 379 - Environmental History of the U.S. (COM) Credits: 3**  
Examines the relationship between the natural environment and the historical movements of humans by tracing U.S. environmental changes, beginning 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 Credits: 3**  
This course surveys important issues in western religious thought from first century Christian origins through the “great medieval synthesis” of the thirteenth century. While both Jewish and Islamic developments are examined, emphasis is placed upon emergence and growth of Christian doctrine and ecclesiology. Crosslisted: REL 401

**HIST 402 - History of Western Religious Thought II Credits: 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. Crosslisted: REL 402

**HIST 415 - Women in Antiquity (COM) Credits: 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) Credits: 3**  
Examines the political, social, and economic developments in Latin America for the pre-Columbian period to the present.

**HIST 425 - Medieval Europe (COM) Credits: 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) Credits: 3**  
Examines the chief political, cultural, economic, and social developments of England, Scotland, Wales, and Ireland from 1688 to the present.

**HIST 442 - Europe in the Age of Dictators 1914-1945 Credits: 3**  
Examines the political, social and cultural history of Europe from the outbreak of the Great War to the fall of the Third Reich.

**HIST 445 - Cold War Europe Credits: 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) Credits: 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) Credits: 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) Credits: 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 & Reconstruction (COM) Credits: 3**  
Explores the economic, political, military, and social aspects of the Civil War and Reconstruction era.

**HIST 460 - American Military History (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 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 Credits: 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) Credits: 1-3**

**HIST 492-592 - Topics (COM) Credits: 1-4**

**HIST 494 - Internship (COM) Credits: 1-12**

## **HLTH (Health)**

### **HLTH 120 - Community Health Credits: 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. Cross-Listed: HSC 120.

### **HLTH 200 - Complementary & Alternative Health Care Credits: 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 Problems Credits: 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 Life Credits: 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.

### **HLTH 250-250L - Pre-Professional First Aid and CPR and Lab (COM) Credits: 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.

### **HLTH 251 - First Aid and CPR (COM) Credits: 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 Training Credits: 20-48**

Designed to facilitate transfer of students who have completed a one or two year regionally or nationally accredited or certified program in an allied health area. The purpose is to provide transfer of previous work into an upward mobility option for students who have a commitment to an allied health profession.

### **HLTH 302 - Wellness and the Family Credits: 2**

Overview of health promotion as applied to the family throughout all stages of development. Planning for promotion of family health. Cross-Listed: HSC 302.

### **HLTH 315 - Human Nutrition Credits: 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.

### **HLTH 322 - Public Health Law Credits: 3**

Will investigate issues across a range of specific contexts in public health such as communicable disease control, public health class action litigation and medical care e.g., the right to have and refuse medical care, confidentiality and privacy). Issues include how health policies are developed; the impact current and potential policies have and will have on public health; the courts role and interpretations of public health law; and the interaction of national, state, local, and interest group politics in the formation of policies. The course will focus on the states' roles and the constitutions of the states as well as the Tenth Amendment of the United States Constitution.

### **HLTH 364-364L - Emergency Medical Technician and Lab (COM) Credits: 4**

This course provides the knowledge and skill base for an individual to become a Nationally Registered EMT. The course follows the curriculum set by the National Emergency Medical Services Educational Standards. Students are expected to learn the skills necessary to recognize numerous medical and trauma related emergencies. Students will learn vital signs monitoring, Basic Life Support interventions and patient moving/packaging skills. Students will apply learned skills to patients in scenario-based training. 10 hours of in-hospital observation and training are required. Laboratory course to accompany HLTH/HSC 364 Prerequisites: Written Consent (Current CPR certification at the level of BLS Healthcare Provider (American Heart Association)) Corequisites: HLTH/HSC 364-364L Notes: This course does not certify students as an EMT; they must pass the National Registry exams.

### **HLTH 420/520 - Methods of Health Instruction (COM) Credits: 2**

Curriculum content at elementary and secondary levels. Methods of presentation including direct, correlated, and integrated health instruction. Organization of health and safety education. Prerequisites: Consent

### **HLTH 443 - Public Health Science (G) Credits: 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 Credits: 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 Lab Credits: 2**

Practical skills of a worksite and community wellness professional will be investigated. Topics include a definition of \worksite wellness, rationale for programs, types of programs, design, promotion, evaluation, marketing. Corequisites: HLTH 479L-479.

**HLTH 490 – Seminar Credits: 1-4**

**HLTH 494 – Internship Credits: 1-12**

**HLTH 496 - Field Experience Credits: 1-12**

## **HMGT (Hospitality Management)**

**HMGT 171 - Introduction to Hospitality Industry Credits: 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 Credits: 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 Credits: 1-3**

**HMGT 361 - Hospitality Industry Law Credits: 3**

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. Techniques for industry professionals to research current laws and to identify tools and develop strategies to keep ahead of the ever- changing hospitality legal environment will be explained. At the completion of the course the student will be certified to serve alcoholic beverages in South Dakota.

**HMGT 370 - Lodging Operations & Purchasing Management Credits: 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 & Lab Credits: 3**

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 & Design Credits: 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 Management Credits: 3**

A managerial and systems approach to foodservice operations and purchasing. Cross-Listed: NFS 380.

**HMGT 381-381L - Quantity Food Production and Service and Lab Credits: 4**

Application of foodservice management principles in quantity food production, purchasing, and service. Lab to accompany HMGT/NFS 381. Prerequisites: NFS 141-141L, HMGT 251 (or concurrently), HMGT 380. Corequisites: HMGT/NFS 381L-381. Cross-Listed: NFS 381-381L.

**HMGT 455 - Meeting and Convention Management Credits: 3**

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 - Hospitality Managerial Accounting Credits: 3**

This course is designed for hospitality students to learn how to make effective managerial and operational decisions based on an examination of the accounting and financial analysis. Topics includes general accounting practices, the analysis of financial statements, costs and pricing practices, budgeting and other related topics. Prerequisites: ACCT 210 & 211

**HMGT 480/580 - Travel Studies Credits: 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 482 - Hospitality Marketing Credits: 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 Study Credits: 1-3**

**HMGT 492 – Topics Credits: 1-3**

**HMGT 495 – Practicum Credits: 1-3**

**HMGT 788 - Individual Research and Study Credits: 1-7**

**HMGT 791 - Independent Study Credits: 1-3**

**HMGT 792 – Topics Credits: 1-3**

**HMGT 798 – Thesis Credits: 1-7**

## **HNS (Health and Nutritional Science)**

**HNS 592 – Topics Credits: 1-3**

**HNS 788 - Master's Research Problems/Project Credits: 1-7**

**HNS 790 – Seminar Credits: 1**

**HNS 791 - Independent Study Credits: 1-3**

**HNS 792 – Topics Credits: 1-3**

**HNS 793 – Workshop Credits: 1-3**

**HNS 794 – Internship Credits: 1-7**

**HNS 795 – Practicum Credits: 1-9**

**HNS 796 - Field Experience Credits: 1-9**

**HNS 798 – Thesis Credits: 1-7**

**HNS 890 – Seminar Credits: 1**

**HNS 898D – Dissertation Credits: 1-12**

## **HO (Horticulture)**

**HO 100 - Survey of Horticulture Credits: 1**

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 Credits: 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 Credits:3**

Introduction to basic maintenance and culture of turfgrass for utility turf, home lawns, and commercial grounds. Prerequisites: HO 111-111L or PS 103-103L or consent Corequisites: HO/PS 222L-222. Cross-Listed: PS 222-222L

**HO 231 - Greenhouse Crop Production Credits: 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 Lab Credits: 3**

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- 250.

**HO 260 - Woody Plants: Shrubs and Vines Credits: 2**

Nomenclature, identification, and classification of shrubs and vines hardy for the Northern Plains. Prerequisites: HO 250.

**HO 290 - Professionalism in Horticulture Seminar Credits: 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 Credits: 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 Lab Credits: 3**

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 Credits: 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: HO/PS 222-222L & HO/PS 223-223L Corequisites: HO/PS 332L-332. Cross-Listed: PS 332-332L

**HO 327-327L - Golf Course Design and Management and Lab Credits: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. Cross-Listed: LA 327-327L.

**HO 330 – Arboriculture Credits: 2**

The establishment and care of woody plants: vines, shrubs and trees. Prerequisites: BOT 201-201L or BIOL 153-153L.

**HO 331 - Arboricultural Operations Credits: 1**

The techniques used in the safe and efficient pruning, cabling and removal of woody plants. Prerequisites: HO 330.

**HO 350 - Environmental Stewardship in Horticulture Credits: 3**

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 Lab Credits: 2, 1**

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 demonstrations. 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-383. Cross-Listed: PS 383-383L

**HO 411-511 - Fruit Crop Systems Credits: 1-6**

Studies in perennial fruit crop production and management systems. 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 Lab Credits: 3**

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 Management Credits: 3**

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 422 - Current Issues in Turfgrass Science Credits: 1**

Presentation of selected topics not covered in other turfgrass management courses.

**HO 423-523 - Turfgrass Stress Physiology Credits: 3**

The focus of this course is the physiological response to abiotic stress in perennial grass systems, including environmental, cultural, and traffic stress. Prerequisites: Senior or graduate student status or consent Cross-Listed: PS 423-523

**HO 440-540 - Vegetable Crop Systems Credits: 1-6**

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) Credits: 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) Credits: 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 Credits: 1-2****HO 492-592 - Topics Credits: 1-4**

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.

**HO 494 - Internship Credits: 1-12****HO 496 - Field Experience Credits: 1-12****HO 497 - Cooperative Education Credits: 1-12****HO 498 - Undergraduate Research/Scholarship Credits: 1-3****HO 746 - Plant Breeding Credits: 3****HON (Honors)****HON 100 - Honors College Orientation Credits: 1**

Opportunities and requirements associated with continued participation in the SDSU Honors College will be emphasized along with general university orientation materials.

**HON 109 - First Year Seminar - Honors\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1

**HON 299 Text and Context of Human Thought Credits: 3**

This course introduces students to a selection of seminal works of literature, history and philosophy and explores how the ideas expressed in them have influenced a range of thought traditions. Topics to be explored include: the public university, government, human perception and consciousness, wealth and poverty, nature, gender, culture, ethics and morality. Topics will be examined in multiple ways, through reading and writing, discussion, faculty lectures and guest speakers.

**HON 301 - Honors Colloquium Credits: 1-4**

History of ideas. Notes: May be repeated once.

**HON 302 - Honors Colloquium Credits: 1-4**

The Arts. Notes: May be repeated once.

**HON 303 - Honors Colloquium\*\* Credits: 1-4**

The Social Science. Notes: May be repeated once. \*\*Meets IGR #2

**HON 304 - Honors Colloquium Credits: 1-4** History and/or Philosophy of Science. Notes: May be repeated once.**HON 399 - Introduction to Independent Study Credits: 1**

An introduction to the Honors Independent Study experience, this course is designed to prepare students for successful execution of the Honors Independent Study project. Students will learn project parameters and requirements and be guided through the process of identifying a topic, connecting with a faculty member, interdisciplinary research methodologies and public presentation of their project in written, oral and poster formats. Credit may be used to fulfill a portion of students' upper division Honors requirements.

**HON 490 - Seminar (COM) Credits: 1-3****HON 491 - Independent Study (COM) Credits: 1-3****HPER (Health, Physical Education & Recreation)****HPER 742 - Psychological Aspects of Sport & Exercise Credits: 3****HPER 745 - Sports Medicine Credits: 2****HPER 760 - Motor Learning and Development Credits: 3****HPER 780 - Introduction to Graduate Study and Research Credits: 1****HPER 783 - Research Methods in HPER Credits: 3****HSC (Health Science)****HSC 100 - First Year Seminar for Health Professionals in the Learning Community Credits: 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 Health Credits: 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. Cross-Listed: HLTH 120.

**HSC 200 - Complementary & Alternative Health Care Credits: 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 Credits: 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.

**HSC 230 - Stress Management for Life Credits: 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.

**HSC 253 - Disaster Preparedness Credits: 2**

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 Credits: 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 Family Credits: 2**

Overview of health promotion as applied to the family throughout all stages of development. Planning for promotion of family health. Cross-Listed: HLTH 302.

**HSC 364-364L - Emergency Medical Technician & Lab Credits: 4**

This course provides the knowledge and skill base for an individual to become a Nationally Registered EMT. The course follows the curriculum set by the National Emergency Medical Services Educational Standards. Students are expected to learn the skills necessary to recognize numerous medical and trauma related emergencies. Students will learn vital signs monitoring, Basic Life Support interventions and patient moving/packaging skills. Students will apply learned skills to patients in scenario-based training. 10 hours of in-hospital observation and training are required; Laboratory course to accompany HLTH/HSC 364 Prerequisites: Written consent (Current CPR certification at the level of BLS Healthcare Provider (American Heart Association)) Corequisites: HCS/HLTH 364L-364 Notes: This course does not certify students as an EMT; they must pass the National Registry exams.

**HSC 420/520 - Methods of Health Instruction Credits: 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 Health Credits: 3**

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) Credits: 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 Credits: 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) Credits: 1-4****HSC 492 – Topics Credits: 1-4****HSC 493 – Workshop Credits: 1-4****HSC 494 - Internship (COM) Credits: 1-12****HSC 496 - Field Experience Credits: 1-12**

Prerequisites: PE 400, PE 450 and HSC 494

**HSC 497 - Cooperative Education Credits: (-12)****HSC 631 - Biostatistics I Credits: 3****HSC 731 - Biostatistics II Credits: 3****HSC 782 – Epidemiology Credits: 3****ID (Interior Design)****ID 150-150L - Introduction to Interior Design I & Lab Credits: 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.

Studio associated with ID 150 Corequisites: ID 150L-150

**ID 151-151L - Introduction to Interior Design II & Lab Credits: 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 Credits: 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-215.

**ID 222 - Interior Design Studio I Credits: 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. Notes: Interior Design majors and minors must achieve a "C" or better in ID 222 to progress to ID 223

**ID 223 - Interior Design Studio II Credits: 4**

Exploring single- and multi-family residential spaces using the design process. Visual communication and computer software skills will be expanded to be presentation-appropriate for clients and other professionals. Prerequisites: "C" or better in ID 222

**ID 224 - History of Interior Design I Credits: 2**

Historical backgrounds in architecture and interiors: Antiquity to Industrial Revolution

**ID 225 - History of Interior Design II Credits: 2**

History of Interior Design from the Industrial Revolution to the present. Prerequisites: ID 224.

**ID 292 - Topics Credits: 1-3****ID 317 - Professional Practices in Interior Design Credits: 2**

Study of professional practices of interior design firms and review of practicum manual.

**ID 319-319L - Building Systems I and Lab Credits: 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 Credits: 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) Credits: 4**

Experience in solving hospitality, retail, and/or healthcare design problems using the design process. Prerequisites: "C" or better in ID 223.

**ID 323 - Interior Design Studio IV Credits: 4**

Experience in solving commercial design problems using the design process and course content taught in previous courses. Prerequisites: "C" or better in ID 322.

**ID 329-329L - Building Systems II and Lab Credits: 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 Credits: 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 Credits: 4**

Experience in solving design problems related to socio-economic or cultural issues, and research thesis topic using evidence-based design methods. Prerequisites: ID 329-329L, ID 495, and "C" or better in ID 323

**ID 423 - Interior Design Studio VI Credits: 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 Credits: 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.

**ID 490-590 – Seminar Credits: 1-3****ID 491-591 - Independent Study Credits: 1-3****ID 492-592 – Topics Credits: 1-3****ID 495 – Practicum Credits: 3**

Prerequisites: ID 317, ID 323, 2.2 GPA, 90 credits.

**ID 498 - Undergraduate Research/Scholarship Credits: 1-3****IDL (Interdisciplinary Studies)****IDL 100 - Concepts in Sustainability\*\* Credits: 3**

This course will provide an overview of what sustainability is and how to measure sustainable actions. Students will learn sustainability concepts, such as systems thinking, sustainable design principles, and resource utilization. Students will learn the complex interactions between social systems, environmental ethics, and ecological literacy. Applications of sustainability in the arts and humanities and social, physical, and natural sciences will be presented. Notes: \*\*Meets IGR #2.

**IDL 262 - Foundations of Interdisciplinary Studies Credits: 3**

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.

**IDL 362 - Interdisciplinary Inquiry and Integration Credits: 2**

This course builds on the foundational knowledge base of IDL 262, Foundations of Interdisciplinary Studies through application and integration of interdisciplinary insights into complex problem-solving. Students will develop critical research and writing skills. Prerequisites: IDL 262 - Foundations of Interdisciplinary Studies

**IDL 479 - Interdisciplinary Studies Capstone (AW) Credits: 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. Prerequisites: IDL 362 - Interdisciplinary Inquiry and Integration

**INFO (Informatics)****INFO 101 - Introduction to Informatics Credits: 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 Credits: 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 Informatics Credits: 3**

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 Graphics Credits: 2**

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 Design Credits: 3**

A survey of the field of Landscape Design and Environmental Planning. Introduction to conceptual aspects of the discipline with a focus on landscape appreciation, environmental problems of land use, conservation, landscape design and planning, and land ethics and stewardship.

**LA 231 - Computer Applications in Landscape Architecture Credits: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 Credits: 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 Credits: 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 289 - Travel Studies in Landscape Architecture Credits: 1**

Topics will cover landscape themes, design challenges, etc. of the sites to be traveled to in LA 289L. Prerequisites: LA 314 Notes: This course is a required class for landscape architecture majors in the spring semester of their sophomore year. Students will take LA 289 (1 credit) course during the spring semester which will meet five times in preparation for the travel trip (LA 289L) in the week following finals. Maybe repeated for credit twice.

**LA 289L - Travel Studies in Landscape Architecture Lab Credits: 2**

Travel experience in landscape architecture, is intended to expose students to the breadth of the discipline of landscape architecture by making first hand site visits to regional and national cities and sites. In addition to site visits, tours, and presentations, students will have a chance to network with design professionals, experience different cultural impacts, and gain exposure to the types of landscape architecture projects not readily available in and around Brookings and the campus of SDSU. Prerequisites: LA 289 Notes: Maybe repeated for credit twice.

**LA 314 - Landscape Design Studio Credits: 4**

Basic landscape design problem solving on smaller scale sites (residential, small commercial, rural and urban). Development of aesthetic sensitivity and awareness of site problems. Site analysis, programming, concept formation, master plan development and plan presentation. Prerequisites: LA 284.

**LA 322 - Landscape Site Engineering Credits: 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 Credits: 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 Lab Credits: 3**

Contemporary problems in the design of public properties such as parks and civic areas. Complexities of functional use, pedestrian and vehicular circulation, and land use are addressed. Prerequisites: LA 314. Corequisites: LA 324L-LA 324.

**LA 327-327L - Golf Course Design & Management & Lab Credits: 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 Specifications Credits: 4**

Preparation of planting designs, plans, and specifications for projects of increasing complexity. Emphasis on northern plains landscapes. Focus on use of native plants and sustainable design. Projects from small residential scale to larger regional scale. Design applications emphasizing the space forming potential and functional use of natural and man-made plant groups. Prerequisites: LA 314; HO 250.

**LA 421-421L - City Planning and Lab Credits: 3**

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 Credits: 3**

Design of public and private recreational facilities including parks, resorts, golf courses, trails, and ecosystems. Planning and design of facilities, and their function, operation, and maintenance will be emphasized. P: LA 421-421L. Corequisites: LA 424L-LA 424.

**LA 440-440L - Restoration Ecology and Lab Credits: 4**

Scientific principles involved in restoration of natural ecosystems on degraded and disturbed lands. An understanding of ecological principles is recommended prior to enrollment. Laboratory to accompany LA 440. Corequisites: LA 440L-440. Cross-Listed: BIOL/NRM 440-440L.

**LA 464 - Landscape Professional Practicum Studio Credits: 4**

An advanced design studio with an emphasis on environmental design, land use ethics, current issues in landscape design and professional practice. Senior exit examination requirement is completed during this class. Prerequisites: Senior standing.

**LA 491 - Independent Study Credits: 1-2****LA 492 – Topics Credits: 1-4****LA 494 – Internship Credits: 1-12****LA 497 - Cooperative Education Credits: 1-12****LA 498 - Undergraduate Research/Scholarship Credits: 1-3****LA 560-560L - Landscape Ecology and Lab Credits: 4****LAKL (Lakota)****LAKL 101 - Introductory Lakota I \* (COM) Credits: 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: \* Meets SGR #4.

**LAKL 102 - Introductory Lakota II \* (COM) Credits: 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. Prerequisites: AIS 101 OR LAKL 101 or consent of instructor. Cross-Listed: AIS 102. Notes: \* Course meets SGR #3.

**LAKL 201 - Intermediate Lakota I (COM) Credits: 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) Credits: 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 Cultures Credits: 2-3

A broad view of a country, region, epoch or theme concerning Latin America. A multidisciplinary and multimedia approach. Prerequisites: Sophomore standing or consent Notes: May be repeated with consent of the coordinator of the LAS program.

### LAS 302 - Latin American Societies Credits: 3

A broad view of the society of a country, region, epoch or theme concerning Latin America. A multidisciplinary and multimedia approach. Prerequisites: Sophomore standing or consent Notes: May be repeated for credit with consent of the LAS Coordinator.

### LAS 491 - Independent Study Credits: 1-3

## LEAD (Leadership)

### LEAD 210 - Foundations of Leadership\*\* Credits: 3

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. Notes:\*\*Course meets IGR #2.

### LEAD 310 - Leadership in Context \*\* Credits: 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 Seminar Credits: 1

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 Organizations Credits: 3

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 435 - Organizational Leadership & Team Development Credits: 3

This course focuses on leadership and team development in organizational structures. Students will study organizations and teams through the lens of leadership to better apply theory to practice in different organizations including nonprofit organizations. Topics include leadership intelligence, organizational alignment and vision, leadership values, creating a civil work climate, leading teams, follower engagement, personality and skills performance management, and leading change. Cross-Listed: LMNO 435

### LEAD 494 – Internship Credits: 3

### LEAD 496 - Field Experience: Leadership in Action Credits: 2

## LING (Linguistics)

### LING 203 - English Grammar Credits: 3

Instruction in the theory and practice of traditional grammar including the study of parts of speech, parsing, and practical problems in usage.

### LING 420-520 - The New English Credits: 3

Diverse new theories and applications in English linguistics: lexicography, pragmatics, stylistics, socio-semantics, semiotics, and discourse theory.

### LING 425-525 - The Structure of English Credits: 3

Structures of modern English through analyses that are primarily traditional, structural, and transformational.

### LING 443-543 - Development of the English Language Credits: 3

Historical survey of phonology, grammar, syntax, and lexicon of English leading to an understanding of the present state of the language and future developments.

### LING 452-552 - General Semantics Credits: 3

Relations between symbols; human behavior in reaction to symbols including unconscious attitudes, linguistics assumptions; and the objective systematization of language.

## LMNO (Leadership and Management of Nonprofit Organizations)

### LMNO 201 - Introduction to Leadership and Management of Nonprofit Organizations Credits: 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 Credits: 1-3

### LMNO 292 – Topics Credits: 1-3

### LMNO 435 - Organizational Leadership and Team Development Credits: 3

This course focuses on leadership and team development in organizational structures. Students will study organizations and teams through the lens of leadership to better apply theory to practice in different organizations including nonprofit organizations. Topics include leadership intelligence, organizational alignment and vision, leadership values, creating a civil work climate, leading teams, follower engagement, personality and skills performance management, and leading change. Cross-Listed: LEAD 435

### LMNO 486-586 - Service Learning Credits: 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 Credits: 1-3

### LMNO 492 – Topics Credits: 1-3

### LMNO 495 – Practicum Credits: 1-8

## MATH (Mathematics)

### MATH 21 - Basic Algebra (COM) Credits: 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 095 - Pre-College Algebra Credits: 3**

This course prepares students for college level mathematics. Topics include basic properties of real numbers, exponents & radicals, rectangular coordinate geometry, solutions to linear and quadratic equations, systems of equations, inequalities, polynomials, factoring, rational expressions and equations, radical expressions and equations, and an introduction to functions such as polynomial, exponential and logarithmic functions. Notes: This is remedial level course. No credit for MATH 095 will be granted for graduation.

**MATH 101 - Intermediate Algebra (COM) Credits: 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) Credits: 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 Credits: 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. Corequisites: MATH 103L-103. Notes: \* Course meets SGR #5.

**MATH 104 - Finite Mathematics \* (COM) Credits: 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) Credits: 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) Credits: 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: \*meets SGR #5

**MATH 121-121L - Survey of Calculus & Lab\* (COM) Credits: 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) Credits: 4**

The study of limits, continuity, derivatives, applications of the derivative, anti-derivatives, 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: \* Meets SGR #5.

**MATH 123L - Calculus I Lab (COM) Credits: 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) Credits: 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: \* Meets SGR #5.

**MATH 141 - Survey of Mathematics Credits: 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 Credits: 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 199L - College Algebra Lab Credits: 2**

This co-requisite course will provide students with an opportunity to strengthen pre-college algebra skills as they are needed in College Algebra to increase the opportunity for success in Math 102, College Algebra. Prerequisites: Department consent Corequisites: Math 102

**MATH 215 - Matrix Algebra Credits: 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) Credits: 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 Credits: 3**

Topics include logical connectives, quantifiers, and arguments; set operations, index sets, relations, functions, cardinality, and proof techniques. These topics will be introduced with an emphasis on using them to read, understand, evaluate, and create Mathematical Proofs. Prerequisites: Math 123 Corequisites: MATH 125

**MATH 261 - Geometry for Teachers Credits: 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 Credits: 1-4****MATH 292 - Topics (COM) Credits: 1-5**

**MATH 315 - Linear Algebra (COM) Credits: 4**

Course topics include: the theory and applications of systems of linear equations, matrices, determinants, vector spaces, linear transformations and applications. Prerequisites: MATH 253

**MATH 316 - Discrete Mathematics (COM) Credits: 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) Credits: 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 Mathematics Credits: 3**

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 Credits: 3, 1**

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 & 261, EDFN 338. Corequisites: MATH 355L-MATH 355.

**MATH 361 - Modern Geometry (COM) Credits: 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 Credits: 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) Credits: 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 Credits: 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 150-150L and MATH 125 Corequisites: MATH 215

**MATH 392 - Topics (COM) Credits: 1-5****MATH 401 - Senior Capstone & Advanced Writing (AW) Credits: 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) Credits: 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) Credits: 3**

Introduction to the theory and applications of algebraic structures including groups, rings, and fields. P: MATH 315.

**MATH 414 - Abstract Algebra II (COM) Credits: 3**

Continuation of topics from MATH 413. Prerequisites: MATH 413.

**MATH 425 - Real Analysis I (COM) Credits: 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) Credits: 3**

This is continuation of MATH 425. Prerequisites: MATH 425.

**MATH 433 - Capstone: Mathematics Education Credits: 3**

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 - Complex Variables I Credits: 3**

Algebra of complex numbers, classifications of functions, differentiation, integration, mapping, transformations, infinite series. Prerequisites: MATH 225.

**MATH 440-540 - Mathematics of Finance Credits: 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: STAT 381.

**MATH 441-541 - Applied Probability Theory Credits: 3**

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 STAT 381.

**MATH 450 - History of Mathematics (COM) Credits: 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 461-561 - Introduction to Topology (COM) Credits: 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) Credits: 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 Credits: 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. Prerequisites: MATH 321 and MATH 374 Notes: Spring semester only.

**MATH 475-575 - Operations Research Credits: 3**

An introductory overview of the field of operations research including topics from linear programming, simplex methods, network models, nonlinear programming, game theory, Markov Chains, introduction to dynamic programming, queuing theory and simulation. Prerequisites: MATH-315 or 281 and MATH-125

**MATH 490-590 - Seminar (COM) Credits: 1****MATH 491-591 - Independent Study (COM) Credits: 1-4****MATH 492-592 - Topics (COM) Credits: 1-3****MATH 494 - Internship (COM) Credits: 1-3****MATH 496 - Field Experience Credits: 1-3****MATH 497 - Cooperative Education Credits: 1-3****MATH 498 - Undergraduate Research/Scholarship (COM) Credits: 1-3****MATH 541 - Applied Probability Theory Credits: 3****MATH 559 – Bioinformatics Credits: 3****MATH 716 - Theory of Algebraic Structures I Credits: 3****MATH 717 - Theory of Algebraic Structures II Credits: 3****MATH 725 - Advanced Calculus I Prerequisites: MATH 425****MATH 732 - Ordinary Differential Equations Credits: 3****MATH 733 - Complex Variables I Credits: 3****MATH 741 - Measure and Probability Credits: 3****MATH 742 - Partial Differential Equations Credits: 3****MATH 771 - Numerical Analysis II Credits: 3****MATH 774 - Advanced Scientific Computation Credits: 3****MATH 775 - Operations Research II Credits: 1****MATH 788 - Research Paper Credits: 1-2****MATH 790 – Seminar Credits: 1****MATH 791 - Independent Study Credits: 1-3****MATH 792 – Topics Credits: 1-3****MATH 798 – Thesis Credits: 1-7****MCOM (Mass Communication)****MCOM 109 - First Year Seminar\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1.

**MCOM 144 - Media Production Environments I Credits: 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 Credits: 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) Credits: 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 Credits: 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 \*\*\* Credits: 3**

Film as art; themes and inventions; films and society; introduction to the camera. Notes: \* Course meets SGR #4 and \*\* IGR #2

**MCOM 161-161L - Fundamentals of Desktop Publishing and Lab (COM) Credits: 3**

Fundamental design principles, techniques, and technology of electronic layout and production. Accompanies MCOM 161.

**MCOM 210-210L - Basic News Writing & Studio (COM) Credits: 3**

Introduces students to gathering, evaluating and writing news. Accompanies MCOM 210. Prerequisites: ENGL 101.

**MCOM 215 – Sports writing Credits: 3**

Interviewing, reporting, writing, and editing sports stories combined with an exploration of sports writing as a career.

**MCOM 220-220L - Introduction to Digital Media & Lab Credits: 3**

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-220

**MCOM 225-225L - Introduction to Digital Production and Lab Credits: 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 Credits: 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) Credits: 2**

Beginning camera and darkroom techniques, including processing, printing, and digitizing black and white photographs. Survey of the field of photography and its uses.

**MCOM 266-266L - Photojournalism & Studio (COM) Credits: 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, and Lab to Accompany MCOM 266. Prerequisites: MCOM 265, or MCOM 161 and MCOM 210.

**MCOM 311-311L - News Editing and Editing Lab (COM) Credits: 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 lab 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.



**MCOM 316 - Magazine Writing and Editing Credits: 3**

Includes overview of the magazine industry, how to write and submit freelance articles. Students write and submit articles for publication and edit a departmental magazine

**MCOM 317 - News Gathering Credits: 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

**MCOM 331-331L - Video Production and Lab(COM) Credits: 3**

Includes preparation and presentation of talks, interviews, discussion and extension and community services for broadcast. Accompanies MCOM 331.

**MCOM 332-332L - Broadcast Writing and Reporting and Studio Credits: 3**

Radio news reporting, writing, editing and producing. Lab practice in writing, audio tape, and delivery. Prerequisites: MCOM 210  
Corequisites: MCOM 332L-MCOM 332.

**MCOM 333-333L - Television News Reporting and Studio Credits: 3**

TV news videography, reporting, writing and video editing. Lab practice with videotape. Prerequisites: MCOM 210, MCOM 332.  
Corequisites: MCOM 333L-MCOM 333.

**MCOM 339-339L - Publication Design and Lab Credits: 3,0**

This course covers the principles of page design including the editing of photos, typography and graphics for print and online publications. Prerequisites: MCOM 161 or 220 or 265. Corequisites: MCOM 339L-339.

**MCOM 340-340L - Broadcast Announcing and Performance and Lab Credits: 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. Corequisites: MCOM 340L-MCOM 340.

**MCOM 343 - Strategies for Public Relations Credits: 3**

Problem-solving strategies and principles of message design for developing public relations campaigns. Students will explore ways to create strategy-driven public relations plans that enable organizations to reach specific audiences with both traditional and new media. Prerequisites: MCOM/ADV 243 Cross-Listed: ADV 343

**MCOM 344 - Media Production Environments II Credits: 1**

Credit earned by active participation in media production activities. Prerequisites: Consent. – Section I: Radio – Section II: Television – Section III: Film.

**MCOM 359-359L - Desktop Publishing Projects & Lab Credits:3**

This course applies desktop publishing principles to a series of increasingly complex projects. Prerequisites: MCOM 161 or 220. Corequisites: MCOM 359L-359.

**MCOM 365-365L - Advanced Photography and Studio (COM) Credits: 2-3**

Exploration of photojournalism and electronic photojournalism. Emphasis on putting together a professional photojournalism portfolio including black and white and color, and Lab to Accompany MCOM 365. Prerequisites: MCOM 265.

**MCOM 366 - Film Narrative Credits: 3**

Myths, values and beliefs as expressed in selected films; forms, styles, and directors.

**MCOM 375-375L - Intermediate Media Production & Lab Credits:3**

Concepts, theories and technical skills of digital media production. Corequisites: MCOM 375L-MCOM 375.

**MCOM 410 - Advanced Reporting (COM) Credits: 3**

Political, scientific, and social issues in in-depth reporting for magazines and newspapers.

**MCOM 413-513 - International Media (COM) Credits: 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.

**MCOM 415 - Opinion Writing Credits: 3**

Opinion function of periodicals; great editorials and editorial writers; writing editorials; shaping policy.

**MCOM 416 - Mass Media in Society (G) Credits: 3**

Rights and responsibilities of the press; relation of the media to individuals and society; role of media in a free society.

**MCOM 417 - History of Journalism (G) Credits: 3**

Development, impact and importance of individual journalists and media in U.S.

**MCOM 419-519 - Women in Media Credits: 3**

This course examines contributions of women to the mass media from colonial era to present. It also studies the portrayal of women by the news media and by advertising, and it studies the roles currently played by women in the media and in supporting areas of advertising and public relations. Cross-Listed: WMST 419.

**MCOM 420-520 - International Women's Issues Credits: 3**

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) Credits: 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 & Lab Credits: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) Credits: 3**

In-depth analysis of television news reporting, writing, videography and video editing techniques. Major emphasis on out of class assignments. Prerequisites: MCOM 331 or 332 or 333, or consent. Corequisites: MCOM 433L-MCOM 433.

**MCOM 438-438L - Public Affairs Reporting and Studio (COM) (AW) Credits: 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. Lab -Accompanies MCOM 438. Prerequisites: MCOM 210. Corequisites: MCOM 438.

**MCOM 453 - Mass Communication Teaching Methods Credits: 3**  
Techniques, materials and resources for teaching mass communication in the classroom and supervising student media for secondary school or college instructors and publication advisors.  
MCOM 474-574 - Media Administration and Management (COM)  
Credits: 3 Business practices, newspaper, magazine, and broadcast management.

**MCOM 482 - Travel Studies Credits: 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 485-585 - Science Writing Credits: 3**  
This class explores the process of science writing and examines various kinds of science writing through readings, guest speakers, and writing assignments. A key emphasis is how to present scientific information to a lay audience.

**MCOM 490 - Seminar (COM) Credits: 1**  
**MCOM 491 - Independent Study (COM) Credits: 1-4**  
**MCOM 492-592 - Topics (COM) Credits: 1-5**  
**MCOM 494 - Internship (COM) Credits: 1-12**  
**MCOM 505 - Theories of Communication Credits: 3**  
**MCOM 615 - Opinion Writing Credits: 3**  
**MCOM 616 - Mass Media in Society Credits:**  
**MCOM 617 - History of Journalism Credits: 3**  
**MCOM 653 - Mass Communication Teaching Methods Credits: 1-4**  
**MCOM 682 - Travel Studies Credits: 3**  
**MCOM 692 - Topics Credits: 1-3**  
**MCOM 693 - Workshop Credits: 1-4**  
**MCOM 787 - Research Methods in Communications Credits: 3**  
**MCOM 788 - Master's Research Problems/Projects Credits: 2-3**  
**MCOM 791 - Independent Study (COM) Credits: 1-3**  
**MCOM 798 - Thesis (COM) Credits: 1-6**

## **ME (Mechanical Engineering)**

**ME 240 - Introduction of Mechanical Design Credits: 3**  
Introduction to the design process, statement of problem, modeling, research, interaction of system components. Economic, social, environmental and manufacturing constraints. Factors of safety, reliability. Utilization of graphics and vector methods in mechanical design. Design project. Prerequisites: EM 214, GE 225, or consent.

**ME 241 - Engineering Materials Credits: 3**  
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 Credits: 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) Credits: 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 - Thermodynamics Credits: 3**  
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 Thermodynamics Credits: 3**  
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 Design Credits: 3**  
Analysis of motion and design of linkages, cams, gears, gear trains, planetary gear trains. Analytic and graphical solution of positions, velocities, accelerations, static and dynamic forces. Balancing of engine mechanism, flywheels analysis. Synthesis of planar mechanisms and introduction to spatial mechanisms. Computer applications. Prerequisites: EM 215, ME 240.

**ME 323 - Vibrations Credits: 3**  
Free and forced vibration of single-degree-of-freedom system. Vibration measurement. Vibration transmission and isolation. Multi-degree-of-freedom systems, matrix methods, vibration control and damping treatments. Introduction to continuous systems. Prerequisites: EM 215, EM 321, MATH 321.

**ME 341-341L - Metallurgy and Lab Credits: 3**  
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 & Work Measurement Credits: 2**  
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 Credits: 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 & Instrumentation & Lab Credits: 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 Buildings Credits: 3**  
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 Engineering Credits: 3**  
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 Engines Credits: 3**

Theory, design and operation of spark ignition and compression-ignition engines. Performance characteristics and efficiencies; combustion and thermochemistry of fuel-air mixture exhaust emissions as they pertain to air pollution. P: ME 312, EM 331.

**ME 413 - Turbomachinery Credits: 3**

Theory, design, operation and energy transfer in Turbo-machines. Steam, gas and hydraulic turbines. Pumps, fans and centrifugal and axial flow compressors. Prerequisites: ME 312, EM 331.

**ME 414/514 - Air Pollution Control Credits: 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: ME 311

**ME 415 - Heat Transfer Credits: 3**

Basic principles of steady and unsteady conduction, convection of heat and mass transfer and thermal radiation. Computational methods of heat transfer. Prerequisites: ME 311, EM 331, or MATH 321.

**ME 417-417L/517-517L - Computer-Aided Engineering and Lab Credits: 3**

Introduction to applied structural and thermal design and analysis using the ANSYS finite element software package. One-, two- and three-dimensional static structural problems modeled using the direct generation method as well as solid modeling techniques. Steady-state and transient thermal analysis are performed. Thermally-induced stresses and displacements that occur in non-uniform temperature structures, solutions of two- or three-dimensional fluid mechanics problems, and optimization techniques are discussed. Prerequisites: Competence in Fortran programming or consent. Corequisites: ME 417L-417.

**ME 418 - Design of Thermal Systems Credits: 3**

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 Elements Credits: 3**

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 - Aerodynamics Credits: 3**

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 437/527 - Gas Dynamics I Credits: 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 Credits: 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 Credits: 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 Design Credits: 3**

The use of digital computer as a design tool. Techniques and algorithms which increase the rationality of the design process. Design principles and optimization theory. General approach to constrained optimization. Probabilistic approaches to design. Computer-aided design to reliability specification. Application of computer graphics to engineering design. The emphasis is on extending the designer's potential and not on automating those activities. Prerequisites: Competence in FORTRAN programming and consent.

**ME 451 - Automatic Controls Credits: 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 Credits: 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 Systems Credits: 3**

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 Lab Credits: 1**

Experiments in fluid mechanics, thermodynamics and heat transfer. Single and multi-stage compressors. Heat pumps and air conditioning. Blowers and flow measurements in ducts. Prerequisites: ME 376, ME 312, EM 331, ME 415.

**ME 478 - Mechanical Systems Design I Credits: 2**

A systems approach to design, covering need analysis, design phases, design processes, economics, optimization, and success criteria. Students will design, build, and test an independent project which must be different than any previous design they have attempted. Prerequisites: ME 421, MATH 331 or MATH 471.

**ME 479-479L - Mechanical Systems Design II and Lab (COM) (AW) Credits: 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.

**ME 490/590 - Seminar Credits: 1-2**

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 graduate levels. Enrollment is generally limited to few than 20 students.

**ME 491 - Independent Study Credits: 1-5****ME 492/592 – Topics Credits: 1-5****ME 493 – Workshop Credits: 1-3****ME 494 – Internship Credits: 1-3****ME 496 - Field Experience Credits: 1-3****ME 497 - Cooperative Education Credits: 1-3****ME 498 - Undergraduate Scholarship/Research (COM)Credits:1-3**

**ME 690 – Seminar Credits: 0**  
**ME 691 - Independent Study Credits: 1-5**  
**ME 692 – Topics Credits: 1-3**  
**ME 700 - Graduate Colloquium Credits: 0**  
**ME 703 - Thermo-Fluid Energy Systems Credits: 3**  
**ME 706 - Statistical Thermodynamics Credits: 3**  
**ME 711 - Advanced Heat Transfer I Credits: 3**  
**ME 712 - Convection Heat Transfer Credits: 3**  
**ME 721 - Viscous Flow I Credits: 3**  
**ME 728 - Gas Dynamics II Credits: 3**  
**ME 731 - Advanced Analytical Methods Credits: 3**  
**ME 735-735L - Modeling and Simulation and Lab Credits: 3**  
**ME 739 - Advanced Metallurgy Credits: 3**  
**ME 741 - Advanced Stress Analysis in Mechanical Design Credits: 3**  
**ME 745 - Advanced Machine Design Credits: 3**  
**ME 761 - Operations Research Credits: 3**  
**ME 762 - Quality Control Credits: 3**  
**ME 763 - Topics in Reliability Engineering Credits: 3**  
**ME 765 - Systems Analysis Credits: 3**  
**ME 767 - Decision Theory Credits: 3**  
**ME 787 – Research Credits: 1-9**  
**ME 788 - Research or Design Paper Credits: 1-2**  
**ME 790 – Seminar Credits: 1**  
**ME 791 - Independent Study Credits: 1-3**  
**ME 792 – Topics Credits: 1-3**  
**ME 798 – Thesis Credits: 1-7**

## MFL (Modern Foreign Languages)

**MFL 101 - Introduction to Foreign Language and Culture I \* (COM) (G) Credits: 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.

**MFL 102 - Introduction to Foreign Language and Culture II \* (COM) (G) Credits: 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.

**MFL 196 - Field Experience Credits: 1-3**

**MFL 292 -292L -Topics and Lab Credits: 1-5, 0**

**MFL 296 - Field Experience Credits: 1-12**

**MFL 396 - Field Experience (G) Credits: 1-12**

**MFL 399 - Orientation for Study Abroad Credits: 1**

This course will have the purpose to prepare students who plan to study abroad with an SDSU program or independently. The course will be country (or at least language)-specific and will cover: socio-historical background on the target country, cross-cultural communication issues, culture-shock, practical issues involved in travel abroad (such as what to pack, visa requirements etc), as well as safety rules and behavioral expectations for students as representatives of SDSU abroad.

**MFL 420 - K-12 Foreign Language Methods (COM) Credits: 3**

Methods and materials for teaching modern languages in high school.

**MFL 460-560 - Topics in French, German, or Spanish Literature Credits: 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 Credits: 1-3**

**MFL 491-591 - Independent Study Credits: 1-3**

**MFL 492-592 - Topics (COM) Credits: 3**

**MFL 494 - Internship (COM) Credits: 1-12**

**MFL 496-596 - Field Experience (G) Credits: 1-12**

**MFL 595 – Practicum Credits: 1-3**

## MGMT (Management)

**MGMT 310 - Business Finance Credits: 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. Prerequisites: ACCT 211 Cross-Listed: BADM 310

**MGMT 325 - Management Information Systems Credits: 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. Cross-Listed: CSC 325

**MGMT 360 - Organization and Management Credits: 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. Cross-Listed: BADM 360

**MGMT 460 - Human Resource Management Credits: 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: BADM 460

**MGMT 464 - Organizational Behavior (COM) Credits: 3**

This course is a study of individuals and groups. Traditional organization theory and concepts are presented and study is given to motivation, group dynamics, and methods of coordination, change and adaptation within an organization. Prerequisites: BADM/MGMT 360

## MICR (Microbiology)

**MICR 231-231L - General Microbiology & Lab (COM) Credits:4**

Principles of basic and applied microbiology, and laboratory experience that accompanies MICR 231. Prerequisites: CHEM 106 or CHEM 112. Corequisites: MICR 231L-MICR 231.

**MICR 233-233L - Introductory Microbiology & Lab Credits: 4, 0**

Introductory microbiology course for biology, microbiology and biotechnology majors. Basics of microbial cell structure and function; viral structure; microbial diversity and evolution; interactions between microbes and plants/animals; biogeochemical cycling; microbial growth; and control of microorganisms. The laboratory will include aseptic technique; use of bright-field microscopes; common staining techniques; cultivation of various microbes; investigations of diversity; metabolic characteristics; microbial growth and control of microbial growth/metabolism. Prerequisites: Completion of BIOL151 AND 6 credits college chemistry Corequisites: MICR 233L-233

**MICR 290 - Seminar Credits: 1**

**MICR 310-310L - Environmental Microbiology & Lab Credits: 4**

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 Lab Credits: 4**

Microbiology of fresh and processed meats, dairy products, vegetables and modern convenience foods. Laboratory quality study of food preservation, processing and spoilage, and laboratory experience that accompanies MICR 311. Prerequisites: MICR 231. Corequisites: MICR 311L-MICR 311.

**MICR 332 - Microbial Physiology Credits: 2**

Cytology, nutrition, metabolism, and growth of microorganisms. Prerequisites: MICR 231.

**MICR 332L - Microbial Physiology Lab Credits: 2**

Media preparation, sterilization, microscopy, assay of microbial enzymes, DNA purification.

**MICR 414-414L/514-514L - Anaerobic Microbiology and Lab Credits: 3**

Anaerobic metabolism and ecology of bacteria, culturing techniques for anaerobic microorganisms, and 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 & Lab Credits: 3**

Microbial species of agricultural soils, environmental factors affecting their numbers and activity, and biochemical changes brought about by these organisms, and laboratory course to accompany 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 Virology Credits: 3**

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) Credits: 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 Genetics Credits: 4**

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 438L - Techniques in Molecular Biology Laboratory Credits: 2**

This laboratory course will provide hands-on experience for the students interested in basic molecular biology techniques, including gene amplification by polymerase chain reaction (PCR), DNA isolation and modification, bacterial transformation, protein expression and detection (Western Blot). Prerequisites: Completion of MICR 436 or enrollment in the course

**MICR 439-539 - Medical and Veterinary Immunology Credits: 3**

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 Lab Credits: 3**

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 Credits: 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) Credits: 1****MICR 491 - Independent Study Credits: 1-3****MICR 492-592 - Topics Credits: 1-4****MICR 492L-592L - Topics Lab (COM) Credits: 0****MICR 494 - Internship Credits: 1-12****MICR 497 - Cooperative Education (COM) Credits: 1-12****MICR 498 - Undergraduate Research/Scholarship Credits: 1-4****MICR 788 - Research Problems Credits: 1-3****MICR 790 - Seminar Credits: 1****MICR 791 - Independent Study Credits: 1-4****MICR 792 - Topics Credits: 1-4****MICR 798 - Thesis Credits: 1-7****MLED (Middle Level Education)****MLED 593 - Workshop Credits: 1-3****MLS (Medical Laboratory Sciences)****MLS 201 - Understanding Medical Laboratory Science Credits: 2**

Provides an overview of the allied Health profession in Medical Laboratory Science including an introduction to the interdisciplinary emphasis in Hematology, Microbiology, Immunohematology, Chemistry, Urinalysis, Molecular, Hemostasis, Hematology and Laboratory Practice. Provides an introduction into the professional levels of practice within the medical laboratory science field. Prerequisite: Acceptance into MLS professional program.

**MLS 301-301L - Hematology I and Lab Credits: 3**

Normal maturation, morphology, and function of blood cells. Application of manual and automated methods/techniques in hematology. Corequisites: MLS 301L-MLS 301. Prerequisite: Acceptance into MLS professional program.

**MLS 311-311L - Clinical Chemistry I and Lab Credits: 3, 1**

Basic principles and theory of laboratory diagnostics in clinical chemistry. Prerequisites: CHEM 108-108L or equivalent Corequisites: MLS 311L-311. Prerequisite: Acceptance into MLS professional program.

**MLS 321 - Hemostasis Credits: 1**

Mechanisms of hemostasis and clotting; hereditary and acquired defects of the hemostatic mechanism. Prerequisite: Acceptance into MLS professional program.

**MLS 341-341L - Diagnostic Microbiology I and Lab Credits: 3, 2**

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-341

**MLS 368 - Medical Laboratory Science Technical Training Credits: 20-40**

Designed to facilitate transfer of students who have completed a one or two year regionally or nationally accredited or certified program in medical laboratory science, clinical laboratory science and /or technician. The purpose is to provide transfer of previous work into an upward mobility option for students who have a commitment to medical laboratory science. Notes: Applies only to students accepted into MLS professional program as an upward mobility student or according to specific articulation agreements with the MLS program. Prerequisite: Acceptance into MLS professional program.

**MLS 401 - Hematology II Credits: 2**

Advanced study of the hematopoietic system and blood cells, including morphology on a disease states, such as leukemias, lymphomas, and myeloproliferative disorders. Prerequisite: Acceptance into MLS professional program.

**MLS 402L - Advanced Hematology & Hemostasis Lab Credits: 1**

Fundamentals of examining blood and bone marrow slides. Laboratory methods for evaluating hemostatic function. Prerequisites: Acceptance into MLS professional program Corequisites: MLS 401.

**MLS 403 - Diagnostic Immunology Credits: 3**

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. Prerequisite: Acceptance into MLS professional program.

**MLS 411-411L - Clinical Chemistry II and Lab Credits: 3, 1**

The principle and theory of clinical chemistry including clinical endocrinology, clinical toxicology, therapeutic drug monitoring, and assessment of metabolic disease/dysfunction using clinical analysis. Methods of analysis in the clinical laboratory; instrumentation, quality control, and quality assurance. Prerequisite: Acceptance into MLS professional program. Corequisites: MLS 411L-411

**MLS 412-412L - Laboratory Methods and Lab Credits: 2, 1**

Anatomy and physiology of vascular system; and techniques for obtaining blood specimens (phlebotomy) including dermal, syringe and vacutainer systems. In addition the course will include specimen processing, infection control, laboratory safety and instruction in good general laboratory practices required within the medical laboratory science field, and laboratory course to accompany MLS 412. Acceptance into MLS professional program required.

**MLS 431-431L - Principles of Immunohematology and Laboratory Credits: 2, 1**

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; Supervised laboratory experience in the principles and methods for the study of red blood cell antigens and antibodies, includes blood grouping and typing, antibody detection and compatibility testing and blood donor screening. Prerequisites: MLS 403 or equivalent; acceptance into MLS professional program required. Corequisites: MLS 431-431L

**MLS 441-441L - Diagnostic Microbiology II & Lab Credits: 2, 1**

Focuses on the principles and methodologies for the recovery of bacteria, fungal, parasitic and viral agents from complex biological specimens, biochemical identification, and advanced principles in clinical sensitivity and specificity. Supervised laboratory instruction

in the principles and methods for the analysis and identification of bacterial, fungal, parasitic and viral agents from complex biological specimens utilizing various technical applications, instrumentation and applications in quality control and quality assurance. Prerequisites: acceptance into MLS professional program required; Corequisites: MLS 441L- 441.

**MLS 451-451L - Immunohematology II Credits: 2, 1**

Advanced laboratory in immunohematology including complex incompatibilities, trouble shooting, transfusion medicine, clinical correlations and advanced laboratory methods in immunohematology. Prerequisite: acceptance into MLS professional program required. Notes: Students enrolled in MLS prior to Fall 2012 will take MLS 451 - Urine and Body Fluid Analysis

**MLS 461 - Introduction to Management and Education (AW) Credits: 2**

Basic concepts in laboratory management and education. Building critical thinking, problem solving, and professional skills. Prerequisites: acceptance into MLS professional program required.

**MLS 468-Advanced Supervised Clinical Experience I Credits: 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 Credits: 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.

**MLS 471-471L - Advanced Medical Diagnostics Credits: 2, 1**

Advanced laboratory including clinical correlations, total quality management, general operations, and analysis of patient samples in complex disease states utilizing a simulated laboratory experience. Prerequisites: MLS 371L-371 Notes: Students enrolled in the MLS program prior to Fall 2012 will take the course as MLS 471 - Molecular Diagnostics

**MLS 480 - Molecular Diagnostics Clinical Practice Credits: 1**

Supervised clinical practice in molecular diagnostics to include nucleic acid purifications, amplifications and interpretation of clinical results. Prerequisites: Senior status in MLS program and clinical placement.

**MLS 481 - Chemistry, Urinalysis and Body Fluid Analysis Clinical Practice Credits: 4**

Supervised clinical practice in chemistry, urinalysis and body fluid analysis. Prerequisites: Senior status in MLS program and clinical placement.

**MLS 482 - Hematology & Hemostasis Clinical Practice Credits: 4**

Supervised clinical practice in hematology and coagulation. Prerequisites: Senior status in MLS program and clinical placement.

**MLS 483 - Senior Capstone Clinical Practice Credits: 2**

Students will complete a formal analysis of patient data at the clinical affiliate site and submit in a clinical case study format as a comprehensive experience. In addition, students will be required to successfully complete an interdisciplinary comprehensive program exam. Prerequisites: Senior status in MLS program and clinical placement. Notes: Students enrolled in MLS program prior to Fall 2012 will take MLS 483 - Clinical Immunology Clinical Practice.

**MLS 484 - Clinical Immunohematology Clinical Practice Credits: 4**

Supervised clinical practice in the blood bank. Prerequisites: MLS 431, Senior status in MLS program and clinical placement.

**MLS 485 - Diagnostic Microbiology Clinical Practice Credits: 5**

Supervised clinical practice in the clinical microbiology laboratory. Prerequisites: Senior status in MLS program and clinical placement.

**MLS 486 - Coagulation Clinical Practice Credits: 1**

Supervised clinical practice in the coagulation laboratory. Prerequisites: MLS 321, 402L. Acceptance into MLS professional program required.

**MLS 487 - Elective Clinical Practice Credits: 1-4**

Supervised clinical experience in an area outside a large clinical laboratory (rural laboratory, research laboratory, or clinic laboratory). Prerequisites: Senior status in MLS program and clinical placement.

**MLS 488 - Urinalysis and Clinical Microscopy Clinical Practice Credits: 2**

Supervised clinical practice in the analysis of urine and biological fluids. Prerequisites: MLS 411, Acceptance into MLS professional program required.

**MLS 489 - Phlebotomy Clinical Practice Credits: 1**

Supervised clinical practice in phlebotomy. Prerequisites: Senior status in MLS program and clinical placement.

**MLS 490 – Seminar Credits: 1**

**MLS 494 - Internship Credits: (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 Lab Credits: 3**

An introduction to machine tools used in industry and their usage, principles of operations, and production methods. Hands-on laboratory activities provide the students with the opportunity to use various machining equipment, become familiar with various cutting tools, and perform measurement using precision measuring devices. Corequisites: MNET 131L-MNET 131.

**MNET 231-231L - Manufacturing Processes I and Lab Credits: 3**

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 & Lab Credits: 3**

This course is designed to provide students with the opportunity to expand on the topics covered in MNET 231. The course extends the manufacturing processes topics to include effects on work materials properties, tool materials and geometry and analysis of factors effecting the output of various processes. The second course will include numerous local industry tours that include plastics, metal fabrication, electronics, wood, etc. Prerequisites: MNET 231. Corequisites: MNET 232L and Lab.

**MNET 241 - Applied Mechanics Credits: 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; 1 course from subject PHYS Cross-Listed: GE 241

**MNET 243-243L - Intro to Materials Science & Lab Credits: 3**

Basic concepts presented in relation to common engineering materials. Topics include physical and mechanical properties of materials. Laboratories utilize common materials science apparatus and relate to common industrial practices. Prerequisites: CHEM 106. Corequisites: MNET 243L-MNET 243.

**MNET 251-251L - Electricity & Electronics I & Lab Credits: 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, and lab for ET/MNET 251 Prerequisites: 1 course from subject MATH, except courses MATH 021, MATH 101, MATH 100T, or MATH 102 Corequisites: ET/MNET 251L-251 Cross-Listed: ET 251-251L

**MNET 252-252L - Electricity & Electronics II & Lab Credits: 3**

This course is the continuation of 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: ET/MNET 251-251L Corequisites: ET/MNET 252L-252 Cross-Listed: MNET 252-252L



**MNET 260 - Principles of Production and Operations Management Credits: 3**

A broad analytical 'systems' viewpoint is used to develop competency in management decision-making and problem solving in operations setting in various businesses and especially manufacturing. This course involves the study of the production end of business, where resources are transferred into goods and services, and the management of operations through effective planning, implementing, and monitoring for continuous improvement. Prerequisites: One Math course except 021, 095, 101, 100T Cross-Listed: BADM 260

**MNET 291 - Independent Study Credits: 1-3**

**MNET 292-292L – Topics and Lab Credits: 1-3**

**MNET 293 – Workshop Credits: 1-3**

**MNET 296 - Field Experience Credits: 1-3**

**MNET 320-320L - Computer Aided Design/Drawing and Lab Credits: 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 Lab Credits: 3**

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 Credits: 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 Lab Credits: 3**

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 367-367L - Production Strategy and Lab Credits: 3**

Analysis and design of facilities and material handling systems. Lean applications used to reduce waste and increase productivity. Prerequisites: MNET 231 Corequisites: MNET 367L-367

**MNET 436-436L - Production Tooling Methods and Measurement and Lab Credits: 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 453-453L - Manufacturing Automation & Lab Credits: 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: ET 453.

**MNET 460-560 - Manufacturing Cost Analysis Credits: 3**

Cost estimating for processes and products related to various manufacturing operations; engineering economics; analysis; evaluation; and budget justification for capital expenditures. Prerequisites: MNET 231

**MNET 468 - Manufacturing Plant Management Credits: 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 469 - Project Management (AW) Credits: 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. Prerequisites: consent Cross-Listed: GE/ET 469

**MNET 471-471L - Capstone Experience& Lab (AW) Credits: 1**

Technical projects developed in Project Management are completed. Student teams present results in a public venue. Prerequisites: OM 469 or GE 469. Corequisites: OM/MNET/ET 471L-471 Cross-Listed: ET/OM 471-471L

**MNET 491 - Independent Study Credits: 1-3**

**MNET 492-494L – Topics and Lab Credits: 1-3**

**MNET 493 – Workshop Credits: 1-3**

**MNET 496 - Field Experience Credits: 1-3**

**MNET 497 - Cooperative Education Credits: 1-3**

## **MRCH (Merchandising)**

**MRCH 510 - Consumer Behavior in Merchandising Credits: 3**

**MRCH 520 - Professional Advancement in Merchandising Credits: 3**

**MRCH 530 - Product Design, Development, and Evaluation Credits: 3**

**MRCH 540 - Promotional Strategies in Merchandising Credits: 3**

**MRCH 550 - Retail Theory and Current Practice Credits: 3**

**MRCH 580 - Travel Studies Credits: 1-5**

**MRCH 591 - Independent Study Credits: 1-3**

**MRCH 592 – Topics Credits: 1-3**

**MRCH 610 - Historical and Contemporary Issues in Trade Credits: 3**

**MRCH 620 - International Merchandise Management Credits: 3**

**MRCH 630 - Research Methods in Merchandising Credits: 3**

**MRCH 640 - Financial Merchandising Implications Credits: 3**

**MRCH 650 - Strategic Planning in Merchandising Credits: 3**

**MRCH 690 – Seminar Credits: 1-2**

**MRCH 695 – Practicum Credits: 1-3**

**MRCH 788 - Master's Research Problems/Projects Credits: 1-3**

**MRCH 798 – Thesis Credits: 1-3**

## **MSL (Military Science Leadership)**

**MSL 101 - Leadership & Personal Development (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 4**

**MSL 301-301L - Adaptive Team Leadership & Lab(COM) Credits: 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) Credits: 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) Credits: 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. Lab designed to accompany MSL 401. Corequisites: MSL 401L-MSL 401.

**MSL 402-402L - Leadership in a Complex World and Lab(COM) Credits: 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 Credits: 1-3**  
**MSL 494 - Leader Development and Assessment Course (COM) Credits: 4**  
**MSL 495 - ROTC Nurse Summer Training Program Credits: 3**

## **MUAP (Applied Music)**

**MUAP 100-101 - Applied Music - Voice Credits: 1-4**  
One to two hours credit for private lessons is given for half-hour lesson per week. Music majors studying in the major performance area may elect two half-hour lessons per week for two to four hours of credit. Adequate preparation through practice is expected of all students.

**MUAP 102 - Class Instruction- Voice Credits: 1**  
**MUAP 110-111 - Applied Music- Keyboard Credits: 1**  
**MUAP 115-116 - Class Instruction- Keyboard Credits: 1**  
**MUAP 120-121 - Applied Music- Woodwinds Credits: 1**  
**MUAP 130-131 - Applied Music- Brass Credits: 1**  
**MUAP 140-141 - Applied Music- Percussion Credits: 1**  
**MUAP 150-151 - Applied Music- Strings Credits: 1**  
**MUAP 181 - Piano Accompanying (COM) Credits: 1**

**MUAP 200-201 - Applied Music - Voice Credits: 1-4**  
One to two semester hours of credit for private lessons is given for on half-hour lesson per week. Music majors studying in the major performance area may elect two half-hour lessons per week for two to four hours of credit. Adequate preparation through practice is expected of all students.

**MUAP 210-211 - Applied Music- Keyboard Credits: 1**  
**MUAP 220-221 - Applied Music- Woodwinds Credits: 1**  
**MUAP 230-231 - Applied Music- Brass Credits: 1**  
**MUAP 240-241 - Applied Music- Percussion Credits: 1**  
**MUAP 250-251 - Applied Music- Strings Credits: 1**

**MUAP 300-301 - Applied Music - Voice Credits: 1-4**  
One to two hours credit for private lessons is given for half-hour lesson per week. Music majors studying in the major performance area may elect two half-hour lessons per week for two to four hours of credit. Adequate preparation through practice is expected of all students.

**MUAP 310-311 - Applied Music- Keyboard Credits: 2**  
**MUAP 320-321 - Applied Music- Woodwinds Credits: 2**  
**MUAP 330-331 - Applied Music- Brass Credits: 2**  
**MUAP 340-341 - Applied Music- Percussion Credits: 2**  
**MUAP 350-351 - Applied Music- Strings Credits: 2**  
**MUAP 355 - Class Instruction in Strings Credits: 2**

**MUAP 400-401 - Applied Music - Voice Credits: 1-4**  
One to two hours credit for private lessons is given for half-hour lesson per week. Music majors studying in the major performance area may elect two half-hour lessons per week for two to four hours of credit. Adequate preparation through practice is expected of all students.

**MUAP 410-411 - Applied Music- Keyboard Credits: 2**  
**MUAP 420-421 - Applied Music- Woodwinds Credits: 2**  
**MUAP 430-431 - Applied Music- Brass Credits: 2**  
**MUAP 440-441 - Applied Music- Percussion Credits: 2**  
**MUAP 450-451 - Applied Music- Strings Credits: 2**  
**MUAP 483 - Public Recital (COM) Credits: 0**

## MUEN (Music Ensembles)

### **MUEN 100-300 - Concert Choir \*\* (COM) Credits: 0-2**

An ensemble performing accompanied and unaccompanied literature for mixed voices. Membership determined by instructor's permission and audition only. Notes: \*\* meets IGR #2

### **MUEN 102-302 - Men's Choir \*\* (COM) Credits: 1**

An ensemble performing accompanied and unaccompanied literature. Notes: \*\*Course meets IGR #2

### **MUEN 103-303 - Women's Choir \*\* (COM) Credits: 1**

An ensemble performing accompanied and unaccompanied literature. Notes: \*\* Course meets IGR #2

### **MUEN 107-307 - Opera Workshop \*\* (COM) Credits: 1-2**

Notes: \*\*Course meets IGR #2

### **MUEN 110-310 - Orchestra (COM) Credits: 1**

A joint enterprise of the University and interested area musicians. The orchestra studies and performs standard orchestra literature and presents public concerts.

### **MUEN 120-320 - Marching Band \*\* (COM) Credits: 1**

Active during the fall, the marching band performs at all home football games. Notes: \*\*Course meets IGR #2

### **MUEN 121-321 - Symphonic Band \*\* (COM) Credits: 1**

Members are selected by audition to perform the finest in original and transcribed literature in concert performances on and off-campus. Notes: \*\*Course meets IGR #2

### **MUEN 122-322 - Concert Band \*\* (COM) Credits: 0-1**

A joint enterprise open to university students and interested area musicians. Includes rehearsals and performance of band literature culminating in a public performance. Notes: \*\*Course meets IGR #2

MUEN 140-340 - String Ensemble Credits: 1

### **MUEN 150-350 - Woodwind Ensemble Credits: 1**

A select woodwind instrument group which performs music composed or arranged for this medium.

### **MUEN 160-360 - Brass Ensemble Credits: 1**

A select group of brass instrumentalists who perform music composed or arranged for this medium.

### **MUEN 170-370 - Percussion Ensemble \*\* Credits: 1**

A select group of percussionists who perform music composed or arranged for this medium. Notes: \*\* meets IGR #2

### **MUEN 180-380 - Jazz Ensemble\*\* Credits: 1**

Gives students the opportunity to experience and perform music in the popular idiom and to relate it to practical use in secondary school music programs. Notes: \*\*Course meets IGR #2

## MUS (Music)

### **MUS 100 - Music Appreciation \* \*\* (COM) Credits: 3**

A non-technical discussion designed to increase the enjoyment and appreciation of music. Fulfills the music requirement in the general education program \* meets SGR #4 or \*\* IGR #2

### **MUS 109 - First Year Seminar\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic

planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\* Course meets IGR #1

### **MUS 110 - Basic Music Theory I (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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 \* Credits: 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

### **MUS 131 - Music Literature and History II \* Credits: 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. Course meets \* SGR #4

### **MUS 185 - Recital Attendance (COM) Credits: 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 \* Credits: 3**

An in-depth exploration of Country Music, beginning with Scotch-Irish folk music of the late 1600's, through the "New Traditionalists" of the 1990's. Notes: \* Course meets SGR #4

### **MUS 202 - The Music Industry Credits: 3**

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 \* Credits: 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

**MUS 210 - Advanced Music Theory I (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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 Credits: (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 Credits: (1-2)**

Continuation of MUS 270 sections 1-8 as in 270. Voice offered odd years only; Keyboard even years only.

**MUS 280-280L - Explore Music in Western Europe and Ensemble Credits: 3, 0**

An intensive three-week period of rehearsals, performances, lectures, attendance at plays and concerts, educational touring, and travel in a mix of West European countries.

**MUS 292 - Topics (COM) Credits: 1-5****MUS 302 - Introduction to Recording Industry Credits: 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) Credits: 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) Credits: 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) Credits: 2-3**

This course provides methods and materials for guiding elementary students' musical growth.

**MUS 355 - Computer Based Technology and Learning for Music Educators Credits: 2**

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 360-360L - Conducting (COM) Credits: 2, 0**

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. Accompanies 360 Prerequisites: MUS 111. Corequisites: 360L-360

**MUS 361-361L - Music Education II: Conducting and Lab Credits: 2**

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 Materials Credits: 2**

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 Lab Credits: 2**

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 Credits: 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 Credits: 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 Credits: 1-3****MUS 420 - Orchestration and Arranging (COM) Credits: 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 (AW) Credits: 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 Applications Credits: 2**  
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 Credits: 1-3**

**MUS 492-592 - Topics (COM) Credits: 1-5**

**MUS 494 – Internship Credits: 3-12**

Prerequisites: Consent of department program coordinator.

## **NE (Nuclear Engineering)**

**NE 337 - Foundations of Health Physics**

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 121-121L And PHYS 113-113L or 213-213L

**NE 435 - Introduction to Nuclear Engineering Credits: 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.

**NE 494 – Internship Credits: 1-3**

**NE 498 - Undergraduate Research/Scholarship Credits: 1-3**

Independent research problems/projects or scholarship activities. The plan of study is negotiated by the faculty member and student. Contact between the two may be extensive and intensive. Does not include research courses which are theoretical.

## **NFS (Nutrition & Food Science)**

**NFS 111 - Food, People and the Environment\*\* Credits: 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: \*\* Meets IGR #2.

**NFS 141-141L - Foods Principles and Lab Credits: 4**

Scientific investigation of basic foods used to maintain optimum nutrition. Corequisites: NFS 141L-141.

**NFS 151 - Food Safety and Technology Credits: 3**

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 Child Credits: 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.

**NFS 221 - Survey of Nutrition Credits: 3**

Fundamentals of nourishing the body properly and the role that food plays in meeting the nutritional requirements of individuals.

Designed for the student who lacks a science background but wishes to study human nutrition in some detail.

**NFS 291 - Independent Study Credits: 1-3**

**NFS 292 – Topics Credits: 3**

**NFS 295 – Practicum Credits: 1-3**

**NFS 298 - Undergraduate Research/Scholarship Credits: 1-3**

**NFS 315 - Human Nutrition Credits: 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 and Counseling Skills in Nutrition and Lab Credits: 4**

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 315. Corequisites: NFS 322L-322.

**NFS 323 - Nutrition Across the Life Cycle Credits: 3**

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 315

**NFS 341-341L - Food Science and Lab Credits: 4**

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 Lab Credits: 3**

Study of physical/chemical principles and approaches used in heat processing, freezing, dehydration, and fermentation of foods. Current processing methods will be considered in terms of preparation, processing, packaging, and quality control of food products. Prerequisites: NFS 151, CHEM 106 or 114, or consent. Corequisites: NFS 351L-351.

**NFS 360-360L - Food Chemistry and Lab Credits: 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 Management Credits: 3**

A managerial and systems approach to foodservice operations and purchasing. Cross-Listed: HMG 380.

**NFS 381-381L - Quantity Food Production and Service and Lab Credits: 4**

Application of foodservice management principles in quantity food production, purchasing, and service. Lab to accompany NFS/HMG 381. Prerequisites: NFS 141-141L, HMG 251 (or concurrently), HMG 380. Corequisites: NFS/HMG 381L-381 Cross-Listed: HMG 381-381L.

**NFS 422-522 - Advanced Human Nutrition Credits: 4**

Principles of physiological chemistry and physiology applied to nutrition. Undergraduate Prerequisites: NFS 315, BIOL 221 and BIOL 325, CHEM 108 or 112

**NFS 423-423L/523-523L - Medical Nutrition Therapy I and Lab Credits: 3**

This course introduces the role of nutritional intervention in pathological conditions. Students will demonstrate the ability to screen for nutritional risk, collect data for nutritional assessment and calculate and/or define diets for common conditions. Prerequisites: NFS 422. Corequisites: NFS 423L-423/523L-523.

**NFS 424-424L/524-524L - Community Nutrition and Lab Credits: 3**

Application of learning principles, teaching methods and knowledge of nutrition in community nutrition education programs and outpatient nutrition counseling. Prerequisites: NFS 315 and NFS 323. Corequisites: NFS 424L-424/524L-524.

**NFS 425-425L/525-525L Medical Nutrition Therapy II & Lab Credits: 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 Credits: 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 Lab Credits: 4**

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 Credits: 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 Credits: 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 Credits: 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.

**NFS 490/590 - Seminar (AW) Credits: 1-2**

**NFS 491/591 - Independent Study Credits: 1-6**

**NFS 492 – Topics Credits: 1-3**

**NFS 493-593 – Workshop Credits: 1-3**

**NFS 494 – Internship Credits: 1-7**

**NFS 495 – Practicum Credits: 2**

**NFS 498 - Undergraduate Research/Scholarship Credits: 1-3**

**NFS 601 - Orientation in Graduate Study Credits: 1**

**NFS 634-634L - Techniques in Food and Nutrition Research and Lab Credits: 3, 0**

**NFS 660 - Maternal and Child Nutrition Credits: 3**

**NFS 662 - Sociocultural Aspects of Nutrition Credits: 2**

**NFS 702 - Macronutrients in Human Nutrition Credits: 3**

**NFS 704 – Phytochemicals Credits: 3**

**NFS 705 - Functional Foods for Chronic Disease Prevention Credits: 3**

**NFS 706 - Nutrition and Immunology Credits: 3**

**NFS 708 - Evidence Based Analysis Credits: 3**

**NFS 710 - Dietary and Herbal Supplements Credits: 3**

**NFS 723 - Nutrition Focus on Life Stages Credits: 3**

**NFS 724 - Nutrition Education in the Community Credits: 3**

**NFS 725 - Nutrition and Human Performance Credits: 3**

**NFS 726 - Nutrition and Wellness Credits: 3**

**NFS 727 - Obesity Across the Lifespan Credits: 3**

**NFS 728 - Pediatric Clinical Nutrition Credits: 3**

**NFS 729 - International Nutrition/World Hunter Credits: 3**

**NFS 730 - Nutritional Aspects of Oncology Credits: 3**

**NFS 734 - Research Methods in Dietetics Credits: 3**

**NFS 735 - Current Trends in Dietetics Practice Credits: 3**

**NFS 741 - Grant Writing in Dietetics Credits: 3**

**NFS 750 - Transdisciplinary Focus on Childhood Obesity Prevention Credits: 3**

**NFS 751-751L - Research Methods Childhood Obesity and Assessment Skills Lab Credits: (3,1)**

**NFS 760 - Vitamins and Minerals in Human Nutrition Credits: 3**

**NFS 761 - Nutrition of the Aged Credits: 3**

**NFS 765 - Dietetic Accounting Concepts Credits: 3**

**NFS 769 - Healthcare Administration for Dietetics Credits: 3**

**NFS 770 - Food Writing for Professionals Credits: 3**

**NFS 775 - Nutrigenomics and Health Credits: 3**

**NFS 782 – Epidemiology Credits: 3**

**NFS 795 – Practicum Credits: 3**

**NRS 706-706L - Landscape Ecology and Lab Credits: 3**

## **NRM (Natural Resource Management)**

**NRM 109-109L - First Year Seminar and Lab\*\* Credits: 1, 1**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society.

Laboratory course to accompany NRM 109 Corequisites: NRM 109-109 L Notes: \*\*Course meets IGR #1

**NRM 110 - Environmental Conservation \*\*(G) Credits: 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 #2

**NRM 311-311L - Principles of Ecology & Lab(COM) Credits: 3, 1**

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. Laboratory experience that accompanies NRM 311 Corequisites: 311L-311 Cross-Listed: BIOL 311-311L

**NRM 440-440L - Restoration Ecology and Lab Credits: 4**

Scientific principles involved in restoration of natural ecosystems on degraded and disturbed lands. An understanding of ecological principles is recommended prior to enrollment; Laboratory to accompany NRM 440 Corequisites: NRM 440L-440 Cross-Listed: BIOL/LA 440-440L

**NRM 457-557 - Ecological Modeling Credits: 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. Cross-Listed MATH 457-557

**NRM 464-564 - Ecosystem Ecology Credits: 3**

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//NRM 311

**NRM 466-566 - Environmental Toxicology & Contaminants Credits: 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. Cross-Listed: BIOL 466-566

**NRM 706-706L - Landscape Ecology and Lab Credits: 4****NRM 743 - Geospatial Analysis Credits: 3****NRM 767 - Fire and Ecosystems Credits: 3****NRM 790 - Seminar Credits: 1****NURS (Nursing)****NURS 109 - First Year Seminar\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1

**NURS 201 - Medical Terminology Credits: 1**

Study of definition and use of medical terms common to many health-related disciplines. Enrollment limited to freshmen and sophomores, or with permission of the instructor.

**NURS 215 - Professional Nursing Credits: 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: NURS 265-265L, 280-280L, 323.

**NURS 222 - Transition to BS in Nursing Credits: 1**

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 265-265L - Health Assessment & Interventions & Lab Credits: 4**

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 315, 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. Notes: This course has additional charges for student access to electronic health record system used in the program.

**NURS 280-280L - Professional Communication & Lab Credits: 3**

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 293 - Workshop Credits: 1-3****NURS 310-310L - Introduction to Public Health and Population-based Nursing and Lab Credits: 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: NURS 215, 265-265L, 280-280L, 323. Corequisites: NURS 310L- 310, NURS 325-325L, PHA 321.

**NURS 323 - Introduction to Pathophysiology Credits: 3**

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 325-325L - Beginning Nursing Care of the Client with Health Problems and Lab Credits: 6**

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 215, 265-265L, 280-280L, 323. Corequisites: NURS 310-NURS 310L, NURS 325L-NURS 325, PHA 321.

**NURS 355 - Research: Appraisal and Utilization Credits: 2**

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 365-365L - Nursing Care of the Client with Health Problems and Lab Credits: 6**

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-365, NURS 380 380L.

**NURS 380-380L - Nursing Care of the Childbearing Family and Lab Credits: 5**

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 381 - Family and Communication Credits: 3**

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. Corequisites: NURS 222

**NURS 385 - Health Assessment, Clinical Decision-Making and Nursing Interventions Credits: 5**

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 410-410L - Advanced Nursing Care of the Client with Health Problems and Lab Credits: 6**

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 416 - Community Health Nursing (AW) Credits: 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 420-420L - Nursing Care of the Client with Mental Health Problems and Lab Credits: 5**

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 425 - Nursing Leadership Credits: 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 454 - Leadership and Management Credits: 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 460 - Preparation for RN Licensure Credits: 1**

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 465-565 - Introduction to the Clinical Academic Partner Role Credits: 3**

This course will introduce registered nurses to a mentoring model to prepare them for clinical teaching-learning experiences with nursing students and/or new nursing employees.

**NURS 474 - Nursing Research and Nursing Theory Credits: 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 480-480L - Advanced Population based Nursing Practice and Lab (G) Credits: 4**

Apply multi-faceted, evidenced based, interdisciplinary systems thinking to solve public health problems in a variety of arenas. Prerequisites: NURS 410-410L, 420/420L, STAT 281 or HSC 445. Corequisites: NURS 425, NURS 495, NURS 480L-NURS 480.

**NURS 491 - Independent Study Credits: 1-3**

**NURS 492 - Topics Credits: 1-4**

**NURS 495-495L - Practicum and Clinical Lab (AW) Credits: 6**

Prerequisites: NURS 410/410L, 420/420L, HSC 445 or Stat 281  
Corequisites: NURS 425, 480/480L, 495L

**NURS 497 - Cooperative Education Credits: 1-4**

**NURS 615 - Advanced Nursing Practice: Introduction to Roles and Issues Credits: 3**

**NURS 623 - Pathophysiology Applied to Advanced Practice Nursing Credits: 4**

**NURS 626 - Research Methods for Advanced Practice Nursing Credits: 3**

**NURS 631-631L - Advanced Assessment: Lifespan & Lab Credits: 3-4**

**NURS 635 - Dying, Death and Bereavement Credits: 2-3**

**NURS 641 - Application of Leadership Principles in Clinical Settings Credits: 3**

**NURS 642 - Application of Advanced Concepts of Nursing Care Credits: 3**

**NURS 643 - Clinical Nurse Leader I Credits: 3**

**NURS 644 - Clinical Nurse Leader II Credits: 5**

**NURS 670 - Health Policy, Legislation, Economics and Ethics Credits: 3**

**NURS 675 - Cultural Competence in Health Care Credits: 3**

**NURS 690 – Seminar Credits: 1-4**

**NURS 691-691L - Independent Study and Clinical Credits: 1-3**

**NURS 692 – Topics Credits: 1-3**

**NURS 710 - Curriculum Development and Instruction in Nursing Credits: 3**

**NURS 720 - Technology-Based Instruction for Nurse Educators Credits: 3**

**NURS 750 - Transformational Leadership Credits: 3**

**NURS 760-760L - Advanced Concepts in Health Promotion and Disease Prevention and Lab Credits: 3**

**NURS 765 - Family Nursing Practitioner: Practicum I Credits: 6**

**NURS 771 - Family Nursing Practitioner: Practicum II Credits: 7**

**NURS 774-774L - Nurse Administrator: Practicum & Lab Credits: 6**

**NURS 776 - Family Nursing Practitioner III: Small Group Instruction Credits: 3**  
**NURS 777 - Family Nursing Practitioner III: Internship Credits: 3-9**  
**NURS 778-778L - Nursing Education: Practicum and Lab Credits: 6**  
**NURS 788 - Problems in Nursing Research Credits: 1-2**  
**NURS 790 – Seminar Credits: 1-3**  
**NURS 795 - Practicum in Advanced Health Concepts for Nurse Educators Credits: 3**  
**NURS 798 – Thesis Credits: 1-7**  
**NURS 810 - Doctoral Seminar Credits: 1**  
**NURS 815 - Philosophical Basis for Nursing Credits: 3**  
**NURS 820 - Theory Development in Nursing Credits: 3**  
**NURS 825 - Qualitative Research Methods in Nursing Credits: 3**  
**NURS 830 - Quantitative Methods in Nursing Research Credits: 3**  
**NURS 835 - Ethical Issues Influencing Practice and Research in Health Disciplines Credits: 3**  
**NURS 840 - Health Promotion Theory and Research in Underserved Populations Credits: 3**  
**NURS 845 - Instrument Construction and Evaluation with Underserved Populations Credits: 3**  
**NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care Credits: 3**  
**NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3**  
**NURS 865 - DNP Capstone Credits: 6**  
**NURS 870 - DNP Innovation Project Credits: 1-4**  
**NURS 895 – Practicum Credits: 1-3**  
**NURS 898 - Dissertation Research Credits: 1-24**

## OM (Operations Management)

**OM 425 - Production/Operations Management Credits: 3**  
 This course studies the basic tools of operations management with emphasis on decision-making models in production and planning. Such topics as decision theory, production planning and control, inventory control, materials requirement planning, project management, and quality control are covered.

**OM 462-562 - Quality Management Credits: 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: STAT 281.

**OM 463-563 - Supply Chain Management Credits: 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

**OM 465 - Quality Control Applications Credits: 3**  
 Quality control theory applied to problems in production systems, including probability concepts, control chart concepts, sampling inspection plans; mean time between failure; and, application of statistics for quality control in discrete-item manufacturing systems.

**OM 469-569 - Project Management Credits: 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. Prerequisites: Instructor consent

**OM 471-471L - Capstone Experience and Lab (CI) Credits: 1**  
 Technical projects developed in Project Management are completed. Student teams present results in a public venue. Prerequisites: OM-469 or GE-469; Corequisites: OM/MNET/ET 471L-471 Cross-Listed: ET/MNET 471-471L

**OM 494 - Internship (AW) Credits: 1-3**  
**OM 660 - Operations Management Credits: 3**  
**OM 665 - Quality Control Applications Credits: 3**  
**OM 670 - Research Methods in Management Credits: 3**  
**OM 690 – Seminar Credits: 1**

## PE (Physical Education)

**PE 100 - Activity Courses (COM) Credits: 0.5-1**  
 Activities stressing individual physical fitness and lifetime activities according to student needs and interest.

**PE 170 - Fundamental Movement (COM) Credits: 1**  
 Defining, analyzing, and evaluating fundamental locomotor, non-locomotor (axial) and manipulative skills progressions in skill development.

**PE 180 - Foundations of HPER/A (COM) Credits: 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 – Topics Credits: .5-1.5**

**PE 200 - Professional Preparation: Fitness (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 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 300 - Applied Sport and Exercise Science Credits: 3**

This course is an introduction to exercise and sport physiology, designed to allow health professionals to learn and understand the basic scientific foundations of exercise and sport. Special emphasis will be in understanding the basics of exercise physiology consistent with NASPE guidelines.

**PE 320-320L - Lifeguard Training and Lab (COM) Credits: 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 & Lab(COM) Credits: 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) Credits: 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 Credits: 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 & Evaluation (COM) Credits: 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) Credits: 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) Credits: 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) Credits: 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.

**PE 360-360L - K-8 Physical Education Methods and Lab (COM) Credits: 2, 0**

Needs, characteristics, capacities of elementary-aged children (grades K-8); curriculum planning; methods and materials essential to program progression for developmentally appropriate activity in basic skills, games, rhythms, dance, and fitness activities; integrating movement activity on a school-wide basis as part of program efforts to enhance overall student wellness and academic readiness. Accompanies PE 360. Corequisites: PE 360L-360

**PE 367 - Health and Human Performance Credits: 3**

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

**PE 395 - Practicum (COM) Credits: 3****PE 400-400L - Exercise Test and Prescription and Lab (COM) Credits: 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) Credits: 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 Physiology Credits: 3**

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 & Lab (COM) Credits: 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; Lab that 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) Credits: (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) Credits: 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 Testing Credits: 3**

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. Corequisites: PE 400.

**PE 467-467L - Coaching Swimming and Lab(COM)**

**Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 2**

The teaching of fundamental skills and rules in competitive golf; Lab accompanying PE 472. Corequisites: PE 472.

**PE 473-473L - Coaching Track and Field/Cross Country and Officiating Country (COM) Credits: 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) Credits: 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. Lab - 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 & Officiating(COM) Credits: 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)**

**Credits: 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 - 7-12 Methods of Teaching PE Credits: 3, 0**

In this course, students develop an understanding of the tools of inquiry of 7-12 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 7-12 physical education; the ability to assess student learning in 7-12 physical education; and to apply these knowledge, skills, and attitudes to real life situations and experiences. This laboratory experience accompanies PE 480. Prerequisites: Consent. Corequisites: PE 480L-480

**PE 485/585 - Travel Studies Credits: 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) Credits: (1-3) Prerequisites: Consent.****PE 491 - Independent Study (COM) Credits: 1-4****PE 492 - Topics (COM) Credits: 1-3****PE 493-593 - Workshop (COM) Credits: 1-3****PE 496 - Field Experience (COM) Credits: (1-12)****PE 730 - Physical Education Teacher Education Credits: 3****PE 732 - Analysis and Strategies of Teaching and Supervising Physical Education and Sports Credits: 3****PE 745 - Applied Biomechanics Credits: 3****PE 750 - Advanced Exercise Physiology Credits: 3****PE 751-751L - Lab Techniques in Exercise Physiology & Lab Credits: 2****PE 755 - Applied Exercise Physiology Credits: 3****PE 770 - Sport/Recreation Administration & Marketing Credits: 3****PE 771 - Curriculum Trends in HPER and Athletics Credits: 3****PE 772 - Financial Aspects of Sports Management Credits: 3****PHA (Pharmacy)****PHA 109 - First Year Seminar - Pharmacy\*\* Credits: 2**

First-year experience course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to discipline-specific careers and their role in society. Notes: \*\*Meets IGR #1.

**PHA 201 - Medications and Wellness Credits: 2**

Principles of drug action, examination of medical and legal aspects of use and misuse of prescription, non-prescription and illicit drugs.

**PHA 320 - Introduction to Pathophysiology Credits: 3**

Pathophysiology of significant and more common diseases will be discussed at a systems level with limited discussion at the cellular level. Appropriate patient information will also be integrated for each disease. Prerequisites: P1 year Pharmacy standing or Nursing major, and BIOL 325.

**PHA 321 - Pharmacology Credits: 3**

Basics of pharmacology and therapeutics for nurses and others. Prerequisites: CHEM 108 or 114, BIOL 325, NURS 323.

**PHA 323 - Pharmaceutical Biochemistry Credits: 4**

Chemical structure, function, biosynthesis and catabolism of biomolecules in order to understand the biochemical basis of disease and the metabolism and mechanism of action of medicinal agents. Prerequisites: P1 year standing.

**PHA 324 - Biomedical Science I Credits: 4**

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 Credits: 3**

Theory, preparation and application of pharmaceutical dosage forms and drug delivery systems. Prerequisites: P1 year standing.

**PHA 332-332L - Pharmaceutics II and Lab Credits: 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 Credits: 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 Credits: 4**

Principles of medicinal chemistry leading to the clear understanding of pharmacotherapy. Corequisites: PHA 341L-PHA 341.

**PHA 367-367L - Pharmacy Practice I and Lab Credits: 2**

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 Credits: 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 410 - Introductory Practice Experience I Credits: 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 415 - Biopharmaceutics and Pharmacokinetics Credits: 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 Credits: 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 Credits: 3**

State and federal laws and regulations. Prerequisites: P2 year standing.

**PHA 442 - Pharmacology I Credits: 5**

Principles of pharmacology leading to the clear understanding of pharmacotherapy. Prerequisites: P2 year standing.

**PHA 443 - Pharmacology II Credits: 4**

Principles of pharmacology leading to the clear understanding of pharmacotherapy. Prerequisites: PHA 442.

**PHA 444 - Toxicology Credits: 2**

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 Credits: 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 II Credits: 3**

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 467-467L - Pharmacy Practice III and Lab (AW) Credits: 3**

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 468-468L - Pharmacy Practice IV and Lab Credits: 3**

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 487 - Research Problems Credits: 1-3**

Students may elect research problems in one of the pharmaceutical sciences, biopharmaceutics, pharmaceuticals, pharmaceutical chemistry, or pharmacology; or in an appropriate area of pharmacy practice. Prerequisites: Consent.

**PHA 491-Independent Study Credits: 1-3****PHA 492 - Topics Credits: 1-3****PHA 610 - Introductory Practice Experience II Credits: 3****PHA 645 - Pharmacotherapeutics: Application to Advanced Practice Credits: 2-4****PHA 647 - Pharmacological Issues in Mental Health Counseling Credits: 3****PHA 650 - Introduction to Advanced Concepts in Pharmaceutical Sciences Credits: 3**

PHA 700 - Directed Studies Practice Experience Credits: 5  
 PHA 701 - Home Health/Hospice Practice Experience Credits: 5  
 PHA 702 - Indian Health Services Practice Experience Credits: 5  
 PHA 703 - Pharmacy Administration Practice Experience Credits: 5  
 PHA 704 - Nutrition Support Practice Experience Credits: 5  
 PHA 705 - Clinical Research Practice Experience Credits: 5  
 PHA 706 - Critical Care Practice Experience Credits: 5  
 PHA 707 - Infectious Disease Practice Experience Credits: 5  
 PHA 708 - Surgery Practice Experience Credits: 5  
 PHA 709 - Nephrology Practice Experience Credits: 5  
 PHA 710 - Pharmacokinetics Practice Experience Credits: 5  
 PHA 711 - Oncology Practice Experience Credits: 5  
 PHA 712 - Nuclear Pharmacy Practice Experience Credits: 5  
 PHA 713 - Managed Care Practice Experience Credits: 5  
 PHA 714 - Community Pharmacy Practice Experience Credits: 5  
 PHA 715 - First Steps in Pharmacy Care Practice Experience Credits: 4  
 PHA 716 - Hospital/Institutional Pharmacy Practice Experience Credits: 5  
 PHA 717 - Community Health and Patient Monitoring Practice Experience Credits: 5  
 PHA 720 - Advanced Medicinal Chemistry Credits: 3  
 PHA 723 - Ethics in Healthcare Practice Credits: 2  
 PHA 725 - Topics in Medicinal Chemistry Credits: 3  
 PHA 727 - Professional Resource Management Credits: 3  
 PHA 729 - Advanced Pharmacy Marketing and Management Credits: 2  
 PHA 741-741L - Public Health and Wellness and Lab Credits: 2  
 PHA 742-742L - Patient Assessment & Self Care & Lab Credits: 2  
 PHA 744 - End of Life Care Credits: 1  
 PHA 746 - Professional Pharmacy Leadership Skills Credits: 1  
 PHA 747 - Advanced Clinical Nutrition Credits: 1  
 PHA 748 - Topics in Neonatal and Pediatric Pharmacotherapy Credits: 1  
 PHA 749 - Care of the Geriatric Patient Credits: 1  
 PHA 750 - Critical Care Therapeutics Credits: 2  
 PHA 752 - Drugs of Abuse and Addiction Credits: 2  
 PHA 753 - Women and Children's Health Credits: 2  
 PHA 754 - Complementary and Alternative Medicine Credits: 1  
 PHA 755 - Forensic Pharmacology Credits: 2  
 PHA 756 - Pharmacotherapeutics III Credits: 4  
 PHA 757 - Pharmacotherapeutics IV Credits: 4  
 PHA 761 - Pharmacotherapeutics V Credits: 5  
 PHA 762 - Pharmacotherapeutics VI Credits: 5  
 PHA 765 - Topics in Pharmaceutics Credits: 3  
 PHA 767-767L - Pharmacy Practice V and Lab Credits: 3  
 PHA 768-768L - Pharmacy Practice VI and Lab Credits: 3  
 PHA 770 - Pediatrics Practice Experience Credits: 5  
 PHA 771 - Geriatrics Practice Experience Credits: 5  
 PHA 772 - Internal Medicine I Practice Experience Credits: 5  
 PHA 773 - Internal Medicine II Practice Experience Credits: 5  
 PHA 774 - Ambulatory Care Practice Experience Credits: 5  
 PHA 775 - Psychiatry Practice Experience Credits: 5  
 PHA 780 - International Pharmacy Practice Experience Credits: 5  
 PHA 790 - Seminar Credits: 1  
 PHA 791 - Independent Study Credits: 1-3  
 PHA 792 - Topics Credits: 1-3  
 PHA 798 - Thesis Credits: 1-7  
 PHA 820 - Advanced Concepts in Medicinal Chemistry Credits: 3  
 PHA 825 - Topics in Advanced Medicinal Chemistry Credits: 3  
 PHA 840 - Advanced Concepts in Pharmacology Credits: 3  
 PHA 845 - Topics in Advanced Pharmacology Credits: 3  
 PHA 846 - Techniques in Pharmaceutical Research Credits: 3  
 PHA 847 - Grantsmanship and Academic Development Credits: 3  
 PHA 859 - Advanced Concepts in Pharmaceutics Credits: 3  
 PHA 865 - Topics in Advanced Pharmaceutics Credits: 3  
 PHA 890 - Seminar Credits: 1  
 PHA 898 - Dissertation Credits: 1-10

## PHIL (Philosophy)

### PHIL 100 - Introduction to Philosophy \* (COM) Credits: 3

Introduces competing philosophical views of reality, perception, learning, and values, emphasizing their relevance to the contemporary world. Notes: \* Course meets SGR #4.

### PHIL 200 - Introduction to Logic \* (COM) Credits: 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\* Credits: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 #4.

### PHIL 220 - Introduction to Ethics \* (COM) Credits: 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 #4.

### PHIL 313 - Great Philosophers Credits: 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. Notes: May be repeated for a total of 9 hours.

### PHIL 320 - Professional Ethics Credits: 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 Credits: 3

An investigation into the nature of science from the perspectives of the scientific disciplines themselves and from the study of the history of scientific development. Inquiry into the structure of scientific method, the scope and limitations of scientific knowledge, and the implications of competing paradigms of scientific world view.

### PHIL 383 - Bioethics \*\* (G) Credits: 4

Ethical, social and policy dilemmas in medicine and biology. Cross-Listed: BIOL 383 Notes: \*\* Course meets IGR #2.

### PHIL 423 - Political Philosophy Credits: 3

Cross-Listed: POLS 461

### PHIL 424 - Modern Political Philosophy (AW) Credits: 3

Cross-Listed: POLS 462.

### PHIL 454-554 - Environmental Ethics \*\* (COM) Credits: 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 454-554 Notes: \*\* Course meets IGR Goal #2.

### PHIL 470-570 - Philosophy of Religion \*\* (COM) Credits: 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 Goal #2

**PHIL 480 - Ethics of Globalization\*\* Credits: 3**

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. Notes: \*\* Course meets IGR Goal #2

**PHIL 491-591 - Independent Study (COM) Credits: 1-4****PHIL 492-592 - Topics (COM) Credits: 1-5****PHIL 494 – Internship Credits: 1-12****PHTH (Physical Therapy)****PHTH 142 - Introduction to Physical and Occupational Therapy Credits: 1**

Introduces students to the professions of physical and occupational therapy.

**PHTH 491 - Independent Study Credits: 1-3****PHTH 494 – Internship Credits: 1-12****PHTH 496 - Field Experience (COM) Credits: 1-12****PHYS (Physics)****PHYS 101-101L - Survey of Physics \* (COM) and Lab Credits: 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 109 - First Year Seminar\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1.

**PHYS 111-111L - Introduction to Physics I & Lab\* (COM) Credits: 4**

This is the first course in a two semester algebra-level sequence, covering fundamental concepts of physics. The sequence is appropriate for pre-professional 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) Credits: 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) Credits: 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-185. Notes: \*meets SGR #6.

**PHYS 187-187L - Introduction to Astronomy II and Lab\* (COM) Credits: 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. Course meets \*SGR #6.

**PHYS 211-211L - University Physics I & Lab\*(COM) Credits: 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) Credits: 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) Credits: 1-3****PHYS 292 - Topics (COM) Credits: 1-3****PHYS 316-316L - Measurement Theory and Experiment Design and Lab (AW) Credits: 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 Credits: 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) Credits: 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 Credits: 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) Credits: 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) Credits: 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) Credits: 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 Credits: 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) Credits: 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) Credits: 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 439-539 - Solid State Physics (COM) Credits: 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) Credits: 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 Credits: 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 Credits: 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, and 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 Credits: 3**

Photonics refers to the practical application of the electromagnetic spectrum lying in the visible and near visible range, in particular, the devices that inherently utilize that portion of the electromagnetic spectrum. This course will present a fundamental overview of modern photonics. The basic concepts (both mathematical and physical) behind state-of-the-art devices such as solid state lasers, semiconductor lasers, photo-sensors, fiber optics, electro-optic switching, other similar elements will be considered. Background overview of classical optical elements such as lenses, gratings, and polarizers as well as applications and inherent engineering issues are an essential part of the course.

**PHYS 471-571 - Quantum Mechanics (COM) Credits: 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 481-581 - Mathematical Physics (COM) Credits: 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 Credits: 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) Credits: 1-3****PHYS 491-591 - Independent Study (COM) Credits: 1-4****PHYS 492-592 - Topics (COM) Credits: 1-4****PHYS 494 - Internship (COM) Credits: 1-4****PHYS 496 - Field Experience (COM) Credits: 1-4****PHYS 497 - Cooperative Education (COM) Credits: (1-4)****PHYS 498 - Undergraduate Research/Scholarship (COM) Credits 1-12****PHYS 683 - Mathematical Physics II Credits: 3****PHYS 691 - Independent Study Credits: (1-3)****PHYS 692 – Topics Credits: (1-3)****PHYS 721 - Electrodynamics I Credits: 3****PHYS 723 - Electrodynamics II Credits: 3****PHYS 739 - Condensed Matter Physics I Credits: 3****PHYS 743 - Statistical Mechanics Credits: 3****PHYS 749 - Condensed Matter Physics II Credits: 3****PHYS 751 - Theoretical Mechanics Credits: 3****PHYS 771 - Quantum Physics I Credits: 3****PHYS 773 - Quantum Physics II Credits: 3****PHYS 775 - Tensors and General Relativity Credits: 3****PHYS 779 - Group Theory in Quantum Mechanics Credits: 3****PHYS 781 - Nuclear and Particle Physics Credits: 3****PHYS 783 - Quantum Field Theory Credits: 3****PHYS 785 - Astrophysics and Cosmology Credits: 3****PHYS 787 – Research Credits: 1-9****PHYS 788 - Research or Design Paper Credits: 1-2****PHYS 791 - Independent Study Credits: 1-3****PHYS 792 – Topics Credits: 1-3****PHYS 798 – Thesis Credits: 1-7****PLAN (Planning)****PLAN 471-571 - Principles of State, Regional and Community Planning Credits: 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 472-572 - Techniques of State, Regional and Community Planning Credits: 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) Credits: 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.

### **POLS 102 - American Political Issues \* (COM) Credits: 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.

### **POLS 165 - Political Ideologies \* Credits: 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

### **POLS 210 - State and Local Government \* \*\* (COM) Credits: 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 Goal #2.

### **POLS 253 - Current World Problems \* \*\* (G) Credits: 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 Goal #2.

### **POLS 280 - Political Inquiry Credits: 3**

An investigation into the basic concepts, principles, and techniques employed to study politics.

### **POLS 299 - Introduction to Comparative Politics Credits: 3**

Description and analysis of the principal types of modern political systems, including types of democracies and dictatorships found in Western systems, Eastern systems, and the Third World. Deals both with structures and major policy problems confronting these political systems and other topics of relevance.

### **POLS 305 - Women and Politics Credits: 3**

This course explores a variety of perspectives in feminist political thought. Particular emphasis is placed on barriers women face in gaining access to political power in public and private institutions, both in American society and in global contexts. Cross-Listed: WMST 305.

### **POLS 316 - South Dakota Legislative Issues (COM) Credits: 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) Credits: 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 Liberties Credits: 3**

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 330

### **POLS 341 - Europe Democratic Government (COM) Credits: 3**

Comparative study of selected governments of West Europe, especially Britain, France, Germany, and Italy; decision-making institutions; political culture; political parties.

### **POLS 343 - Russian Politics Credits: 3**

Study of government, politics, and some aspects of society in Russia and the region; emphasis on current politics.

### **POLS 347 - Latin American Politics Credits: 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) Credits: 3**

How nations/states behave and why they behave as they do in their relations with each other.

### **POLS 352 - European Union Credits: 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) Credits: 1-3**

### **POLS 400 - The President and The Congress Credits: 3**

In this study of the manner in which the President and the Congress share political power in the formation of public policy, the origins and functions of executive and legislative institutions will be explored, as well as the conflictual state of presidential-congressional relations. Prerequisites: POLS 100 .

### **POLS 417 - American Indian Government and Politics Credits: 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. Cross-Listed: AIS 417

### **POLS 430 - Constitutional Law (COM) Credits: 3**

A study of the interpretation of the federal Constitution through leading decisions of the supreme court.

### **POLS 435 - Political Parties and Campaigns (COM) Credits: 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 Credits: 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 453 - American Foreign Policy (COM) Credits: 3**

An analysis of the formulation and execution of American foreign policy. Emphasis will be placed on national security issues and American policies with regard to particular regions and countries.

### **POLS 454 - International Law & Organization (COM) Credits: 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) Credits: 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) Credits: 3**

Focus on political theory since the Renaissance. Includes Locke, Rousseau, and others. Cross-Listed: PHIL 424.

**POLS 482-582 - Travel Studies Credits: 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) Credits: 1-3****POLS 491-591 - Independent Study (COM) Credits: 1-3****POLS 492-592 - Topics (COM) Credits: 1-5****POLS 494-594 – Internship Credits: 1-12****PR (Park Management)****PR 301 - Park Interpretation Credits: 3**

Principles and methods employed to promote resource awareness and communicate information about natural, cultural, and managerial features of parks and recreation areas to park visitors and resource users. The planning, development and use of interpretive techniques and media such as personal services, public relations, publications, audio-visual programs, exhibits, and environmental education activities. Prerequisites: PRM 101, PRM 202 or by consent.

**PR 303-303L - Forest Ecology & Management & Lab Credits: 3**

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 & Lab Credits: 3**

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 & Recreation Management)****PRM 100 - Introduction to Park and Recreation Credits: 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 Credits: 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 Lab Credits: 3**

Development and management of outdoor recreation areas and resources including planning, administration, and management practices as they relate to parks, forests, land and water resources, wildlands, and private areas. analysis of participation trends, opportunities, and resource supply. Prerequisites: PRM 101 or consent. Corequisites: PRM 202L-PRM 202.

**PRM 300-300L - Park and Recreation Facility Management and Lab Credits: 3**

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 Credits: 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 Programming Credits: 3**

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 Credits: 1-2****PRM 492 – Topics Credits: 1-4****PRM 494 - Internship Credits: 1-12**

Select either (a) or (b): (a) Field Work Experience. Summer work experience with department approved park or recreation system, agency, or institution. One credit per semester or equivalent time unit. (b) Professional Internship. A supervised on-the-job practical experience program. 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 Credits: 1-12****PRM 497 - Cooperative Education Credits: 1-12****PRM 498 - Undergraduate Research/Scholarship Credits: 1-3****PS (Plant Science)****PS 103-103L - Crop Production and Lab Credits: 3**

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 109 - First Year Seminar\*\* Credits: 2**

First-year experience course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1.

**PS 200-200L - Intro to Weed Management and Lab Credits: 2**

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 \* \*\* Credits: 2, 1**

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 #2.

**PS 222-222L - Fundamentals of Turf Management & Lab Credits: 3**

Introduction to basic maintenance and culture of turfgrass for utility turf, home lawns, and commercial grounds. Prerequisites: HO 111-111L or PS 103-103L or consent Corequisites: HO/PS 222L-222 Cross-Listed: HO 222-222L

**PS 223-223L - Principles of Plant Pathology and Lab Credits: 3**

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- 223.

**PS 243 - Principles of Geology\***

Credits: 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.

**PS 244 - Geological Resources of South Dakota Lab Credits: 1**

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 Credits: 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) Credits: 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: ZOOL 305.

**PS 307-307L - Insect Pest Management and Lab Credits: 3**

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 Lab Credits: 2**

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) Credits: 3**

Relationship of soil characteristics and soil classification to land use interpretations. Laboratory exercises involve field and laboratory procedures used in soil survey investigations, and Studio to accompany PS/GEOG 310 Prerequisites: GEOG 132-132L, or PS 213-213L, or consent of instructor. Corequisites: PS 310L-310 Cross-Listed: GEOG 310-310L Notes: \*\* Course meets IGR #2.

**PS 312 - Grain and Seed Production and Processing Credits: 3**

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 Management Credits: 3**

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 Credits: 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 Judging Credits: 1**

Practical experience in evaluating the physical and chemical properties of soils important in soil judging and in making land use decisions. Soil forming factors, soil classification, land use interpretations, and soil morphology. Participation in regional intercollegiate soil judging contests and field trips. May be repeated for a maximum of 3 credits. Prerequisites: PS 213-213L.

**PS 322-322L - Turfgrass Pests and Lab Credits: 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: HO/PS 222-222L & HO/PS 223-223L Corequisites: PS 332-332L

**PS 323 - Soil Fertility and Plant Nutrient Management Credits: 3**

Soil fertility management and its effects on the growth of crops, including evaluation, uptake, and utilization of specific ions by plants, use of fertilizer elements to alter soil fertility, importance of crop residue management to maintain and improve productivity, and chemical composition of fertilizers and their characteristics. Prerequisites: PS 213-213L.

**PS 333-333L - Diseases of Field Crops and Lab Credits: 3**

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 & Lab Credits: 3**

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 Lab Credits: 3**

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 & Lab\*\*Credits:3**

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 #2.

**PS 383-383L - Principles of Crop Improvement and Lab (AW) Credits: 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 383-383L

**PS 390 - Seminar (AW) Credits: 1****PS 412-512 - Environmental Soil Chemistry Credits: 3**

Fundamentals of soil chemical properties and processes important for the sound management of soil resources. Topics include sorption/desorption of inorganic and organic compounds, bioavailability of nutrients and contaminants, oxidation/reduction, phase equilibria, soil organic matter, soil mineralogy, ion exchange, and saline/sodic soils. Prerequisites: PS 213-213L and CHEM 108-108L, or CHEM 120-120L.

**PS 415-415L/515-515L - Mycology and Lab Credits: 3-4**

Comprehensive taxonomic survey of the Kingdom Fungi; reproductive biology, physiology, genetics, and ecology of fungal organisms; relationship of fungi to human affairs. Prerequisites: BIOL 101 or BIOL 151 Corequisites: PS 415L- 415/ 515L- 515 Cross-Listed: BIOL 415-415L-515-515L

**PS 421-421L/521-521L - Soil Microbiology and Lab Credits: 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 153153L, or BOT 201-201L. Corequisites: PS 421L-421/ 521L- 521. Cross-Listed: MICR 421.

**PS 423-523 - Turfgrass Stress Physiology Credits: 3**

The focus of this course is the physiological response to abiotic stress in perennial grass systems, including environmental, cultural, and traffic stress. Prerequisites: Senior or graduate student status or consent Cross-Listed: HO 423-523

**PS 431-531 - Insect Ecology and Biological Control Credits: 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 Credits: 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 307307L; PS 323; PS 343-343L; and STAT 281. Corequisites: PS 440L-PS 440.

**PS 446-546 - Agroecology (G) Credits: 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 Credits: 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 Credits: 3**

Procedures in genetic studies as they relate to molecular and classical genetic applications. Prerequisites: BIOL 202, or BIOL 204, or BIOL 371 Cross-Listed: BIOL 453-553.

**PS 473-473L/573-573L - Rural Real Estate Appraisal and Lab Credits: 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 or AGECE 271-271L Corequisites: PS 473L-473/573L-573 Cross-Listed: AGECE 473-473L

**PS 483 - Irrigation – Crop and Soil Practices Credits: 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 490 - Seminar Credits: .5-1**

Students discuss their internship experience and present materials related to it. They learn techniques for creating, delivering, and evaluating professional presentations. Notes: May be repeated for a total of 1 credit

**PS 491 - Independent Study Credits: 1-5****PS 492-592 – Topics and Lab Credits: 1-3****PS 494 – Internship Credits: 0.5-2****PS 498 - Undergraduate Research/Scholarship Credits: 1-4****PS 543 - Bioenergy Feedstock Production Systems Credits: 3****PS 580 - Environmental Stress Physiology Credits: 3****PS 664 - Molecular Plant Physiology Credits: 6****PS 704-704L - Viral & Bacterial Diseases of Plants & Lab Credits: 4****PS 714-714L - Genetics of Disease Resistance and Host-Plant Pathogen Interaction and Lab Credits: 4****PS 721 - Advanced Integrated Crop Pest Management Credits: 3****PS 723 - Simulation Models in Research Management & Policy Credits 3****PS 732 - Field Studies in Pedology Credits: 2****PS 733 - Advanced Soil Genesis Credits: 3****PS 741 - Crop Breeding Techniques Credits: 1**

**PS 743 - Physical Properties of Soil Credits: 3**  
**PS 744 - Soil N, P, and K Credits: 3**  
**PS 746 - Plant Breeding Credits: 3**  
**PS 753 - Soil Water Quality in Bioenergy Feedstock Production Systems Credits: 3**  
**PS 756 - Quantitative Genetics Credits: 3**  
**PS 761-761L - Taxonomy of Insects and Lab Credits: 4**  
**PS 763 - Crop Physiology Credits: 3**  
**PS 781 - Plant Science Graduate Seminar Credits: 1**  
**PS 785-785L - Soil and Plant Analysis and Lab Credits: 3**  
**PS 787 - Advanced Plant Breeding Credits: 3**  
**PS 788 - Master's Research Problems Credits: 1-3**  
**PS 791 - Independent Study Credits: 1-5**  
**PS 792 - Topics Credits: 1-3**  
**PS 798 - Thesis Credits: 1-7**  
**PS 898D - Dissertation-PhD Credits: 1-7**

## **PSYC (Psychology)**

### **PSYC 101 - General Psychology \* \*\* (COM) Credits: 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 Goal #2.

### **PSYC 202 - The Psychology Major Credits: 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 Credits: 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 \*\* Credits: 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 #2.

### **PSYC 267 - Psychology of Personal Adjustment (COM) Credits: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.

### **PSYC 287 - Controversial Issues in Psychology Credits: 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 Credits: 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) Credits: 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 301L - Sensation and Perception Lab Credits: 1**

This course provides laboratory experience and demonstration in evaluating sensory function and activity as well as perceptual demonstrations. Corequisites: PSYC 301

### **PSYC 305 - Learning and Conditioning (COM) Credits: 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 Lab Credits: 1**

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 Credits: 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.

### **PSYC 327 - Child Psychology \*\* (COM) Credits: 3**

This course covers the physical, social, emotional and intellectual aspect of child development. Prerequisites: PSYC 101 or 102. Notes: \*\* Course meets IGR Goal #2.

### **PSYC 331 - Industrial and Organizational Psychology (COM) Credits: 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 Credits: 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 Modification Credits: 3**

Principles of learning applied to human behavior modification. Prerequisites: PSYC 101 or 102.

### **PSYC 364 - Cross Cultural Psychology\*\* Credits: 3**

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. Notes: \*\*Course meets IGR #2.

**PSYC 367 - Psychological Gender Issues Credits: 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.

**PSYC 367L - Psychological Gender Issues Laboratory Credits: 1**

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) Credits: 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 102; STAT 281.

**PSYC 373L - Research Methods in Experimental Psychology Lab (COM) Credits: 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 Lab Credits: 4**

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 Credits: 3**

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. Prerequisites: MATH 102 (C or better); PSYC 202 (C or better) Corequisites: PSYC 375L.

**PSYC 375L Research Methods in Psychology Lab: Credits: 1**

This course provides laboratory experience in application of methods and principles of psychological research and data analysis. Corequisites: PSYC 375.

**PSYC 376-376L - Research Methods II (AW) Credits: 3**

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; Prerequisites: PSYC 375-375L; Corequisites: PSYC 376L.

**PSYC 376L - Research Methods II Lab Credits: 1**

Laboratory includes performance of experiments, data analysis, and preparation of research reports. Prerequisites: PSYC 375-375L. Corequisites: PSYC 376

**PSYC 390 - Seminar Credits: 1****PSYC 406 - Cognitive Psychology (COM) Credits: 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.

**PSYC 406L - Cognitive Psychology Laboratory Credits: 1**

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) Credits: 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 Psychology Credits: 3**

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) Credits: 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) Credits: 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. Notes: \*\*Course meets IGR #2.

**PSYC 427 - Child Psychopathology Credits: 3**

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 102, and PSYC 327, and PSYC 451.

**PSYC 440-540 - Forensic Psychology Credits: 3**

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) Credits: 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 Goal #2.

**PSYC 441L - Social Psychology Laboratory Credits: 1**

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) Credits: 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 Goal #2.



**PSYC 461 - Theories of Personality \*\* (COM) Credits: 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.

**PSYC 477 - Psychology Testing & Measurement (COM) Credits: 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 Laboratory Credits: 1**

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) Credits: 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) Credits: 1-3****PSYC 492-592 - Topics (COM) Credits: 1-4****PSYC 494 - Internship (COM) Credits: 1-12****PSYC 496 - Field Experience (COM) Credits: 1-12****PSYC 498 - Undergraduate Research/Scholarship (COM) Credits: 1-12****PSYC 591 - Independent Study Credits: 1-4****RANG (Range Science)****RANG 105-105L - Introduction to Range Management and Lab Credits: 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.

**RANG 210-210L - Range Plant Identification and Lab Credits: 2**

Instruction and practice in the recognition of important native and introduced range plants of North America.

**RANG 215 - Introduction to Integrated Ranch Management \*\* Credits: 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. Cross-Listed: AS 215

**RANG 321 - Wildland Ecosystems Credits: 3**

Structure, function and multiple-use management of the major wildland ecosystems of North America. Ecological concepts and renewable resource management strategies will be examined.

**RANG 325-325L - Measurement Topics and Lab Credits: 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. Corequisites: RANG 325L-RANG 325.

**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. Prerequisites: STAT 281 or consent of instructor. Corequisites: RANG 325L-RANG 325.

**RANG 400 - Judging Teams Credits: 1**

**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 Lab Credits: 4**

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 Ecology Credits: 3**

The course is designed to describe the ecological effects of fire on grassland ecosystem components, from soil and vegetation to wildlife and 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 procedures for safely conducting prescribed burns. Cross-Listed: WL 421-521

**RANG 485-485L - Advanced Integrated Ranch Management and Lab Credits: 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 Cross-Listed: AS 485-485L

**RANG 491-591 - Independent Study Credits: 1-3**  
**RANG 492-592 - Topics Credits: 1-3**  
**RANG 494 - Internship Credits: 1-12**  
**RANG 497 - Cooperative Education Credits: 1-12**  
**RANG 510 - Grassland Monitoring and Assessment Credits: 2**  
**RANG 520 - Watershed Management Credits: 3**  
**RANG 530 - Ecology of Invasive Species Credits: 3**  
**RANG 540 - Grassland Plant Identification Credits: 2**  
**RANG 710 - Principles of Forage Quality Credits: 3**

## **READ (Reading)**

### **READ 41 - Reading for College Success Credits: 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 Recreation Credits: 3**

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 Leadership Credits: 3**

Philosophy and interpretations of leadership as it relates to recreational activities.

### **RECR 330 - Therapeutic Recreation (COM) Credits: 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) Credits: 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 & Area Design (COM) Credits:3**

An introduction to the principles and practices of planning, financing, management and maintenance of recreation facilities.

### **RECR 362 - Recreation Across the Lifespan Credits: 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) Credits: 1-3**

### **RECR 410 - Current Issues in Recreation (AW) Credits: 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 & Sport Facility Management Credits: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.

### **RECR 440 - Administration of Leisure Services (COM) Credits:3**

Organization and administration of community recreation, program planning and recreational program areas.

### **RECR 491 - Independent Study (COM) Credits: 1-9**

### **RECR 494 - Internship (COM) Credits: 1-12**

### **RECR 496 - Field Experience (COM) Credits: 1-12**

## **REL (Religion)**

### **REL 213 - Introduction to Religion \* Credits: 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: \* Meets SGR #4

### **REL 224 - Old Testament \* (COM) Credits: 3**

Surveys the sources and development of the peoples and literature of the Old Testament. Notes: \* Course meets SGR #4.

### **REL 225 - New Testament \*(COM) Credits: 3**

Presents the history, writings, and theological themes of the New Testament. Notes: \* Course meets SGR #4.

### **REL 237 - Religion in American Culture \* Credits: 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.

### **REL 238 - Native American Religions \* Credits: 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.

### **REL 250 - World Religions \* (COM) (G) Credits: 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.

### **REL 331 - Women and Religion Credits: 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 353 - Geography of Religion Credits: 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: GEOG 353.

**REL 360 - Moral and Ethical Perspectives on Death and Dying Credits: 3**

Attitudes and issues that focus on death and dying in society, the religious and moral dimensions of these attitudes and issues.

**REL 370 - Philosophy of Religion (COM) Credits: 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. Cross-Listed: PHIL 470

**REL 401-501 - History of Western Religious Thought I Credits: 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.

**REL 402-502 - History of Western Religious Thought IICredits: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.

**REL 454-554 - Environmental Ethics Credits: 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: PHIL 454-545

**REL 491-591 - Independent Study (COM) Credits: 1-3**

**REL 492-592 - Topics Credits: 1-5**

**REL 494 - Internship Credits: 1-12**

## **RUS (Russian)**

**RUSS 101 - Introductory Russian I \* (COM) Credits: 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) Credits: 4**

Fundamentals of language, enabling the student to understand, speak, read and write simple Russian. Emphasis on practical usage. Prerequisites: RUSS 101. Notes: \* Meets SGR #4.

**RUSS 201 - Intermediate Russian I (COM) Credits: 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) Credits: 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) Credits: 1-4**

## **SE (Software Engineering)**

**SE 291 - Independent Study Credits: 1-5**

**SE 292 – Topics Credits: 1-5**

**SE 294 – Internship Credits: 1-8**

**SE 298 - Undergraduate Research/Scholarship Credits: 1-3**

**SE 305 - Foundation of Software Engineering Credits: 3**

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) Credits: 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) Credits: 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 Architecture Credits: 3**

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 Credits: 1-5**

**SE 392 – Topics Credits: 1-5**

**SE 398 - Undergraduate Research/Scholarship Credits: 1-3**

**SE 410 - Software Test and Quality Assurance Credits: 3**

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 Management Credits: 3**

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 Systems Credits: 3**

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 Credits: 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 II Credits: 2**

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 Credits: 1-3****SE 491 - Independent Study Credits: 1-5****SE 492-592 - Topics Credits: 1-5****SE 494 - Internship Credits: 1-3****SE 496 - Field Experience Credits: 1-3****SE 497 - Cooperative Education Credits: 1-5****SE 498 - Undergraduate Research/Scholarship Credits: 1-3****SE 591 - Independent Study Credits: 1-3****SE 791 - Independent Study Credits: 1-3****SE 792 - Topics Credits: 1-3****SE 794 - Internship Credits: 1-3****SEED (Secondary Education)****SEED 314 - Supervised Clinical/Field Experience Credits: 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 Schools Credits: 4**

Planning units and semester plans for use in student teaching. Includes goal-setting and evaluation/measurement methods. Admission to Professional Semester III. Required for Certification. 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 Law Credits: 2**

Focus on management strategies and models as vehicles for maintaining an effective learning environment. Law and foundations relevant to the classroom teacher. Admission to Professional Semester III. Required for Certification. 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) Credits: 2-3**

Students develop an 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 these knowledge, skills, and attitudes to real life situations and experiences.

**SEED 413 - 7-12 Science Methods (COM) Credits: 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 these knowledge, skills, and attitudes to real life situations and experiences.

**SEED 415 - 7-12 Social Science Methods (COM) Credits: 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) Credits: 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 Credits: 0**

**Corequisites: SEED 418.**

**SEED 420-420L - 5-12 Teaching Methods and Lab Credits: 2, 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 420L-420

**SEED 424 - 7-12 Language Arts Methods (COM) Credits: 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 these knowledge, skills, and attitudes to real life situations and experiences.

**SEED 450 - 7-12 Reading & Content Literacy (COM) Credits: 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) Credits: 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 Credits: 1-9****SEED 492/592 - Topics (COM) Credits: 1-5****SEED 493-593 - Workshop****SEED 494 - Internship Credits: 3-12****SEED 496 - Field Experience Credits: 3-12****SEED 497 - Cooperative Education Credits: 3-12**

**SEED 690 – Seminar Credits: 1-3**

**SEED 748 - Secondary Curriculum Practicum Credits: 1**

## **SOC (Sociology)**

**SOC 100 - Introduction to Sociology \* (COM) (G) Credits: 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) Credits: 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.

**SOC 240 - The Sociology of Rural America\* (COM) (G) Credits: 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.

**SOC 250 - Courtship and Marriage \* (COM) Credits: 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.

**SOC 270 - Introduction to Social Work (COM) Credits: 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.

**SOC 271 - Social Work Skills and Methods I Credits: 3**

Basic concepts and methods common to all social service practice; focus on developing interactional skills. Prerequisites: SOC 270.

**SOC 286 - Service Learning Credits: 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.

**SOC 307 - Research Methods I Credits: 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.

**SOC 308 - Research Methods II Credits: 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.

**SOC 325 - Domestic and Intimate Violence Credits: 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.

**SOC 330 - Self and Society (COM) Credits: 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.

**SOC 350 - Race and Ethnic Relations (COM) (G) Credits: 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.

**SOC 351 - Criminology (COM) Credits: 3**

Focuses on theories of crime, juvenile delinquency and justice, laws, systems of criminal behavior, victimization, and corrections. Prerequisites: SOC 100 or 150

**SOC 353 - Sociology of Work (COM) Credits: 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.

**SOC 354 - Victimology Credits: 3**

An up-to-date examination of the victim-offender relationship, including: characteristics of those victimized; forms of victimization; the role of the victim in contributing to their own injuries and losses; and, state and federal programs designed to ameliorate physical, emotional and economic suffering.

**SOC 382 - The Family (COM) Credits: 3**

Focus is on the development and maintenance of the family as a social institution with emphasis on comparative family systems and the contemporary American family from the standpoint of social class, ethnic background and family crises. Prerequisites: SOC 100 or 150.

**SOC 400 - Social Policy (COM) Credits: 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.

**SOC 402-502 - Social Deviance (COM) Credits: 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.

**SOC 403 - Sociological Theory (COM) Credits: 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.

**SOC 433-533 - Leadership and Organizations (COM) Credits: 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.

**SOC 440 - Urban Sociology (COM) (G) Credits: 3**

A study of the urban community, focusing on its development, social structures and institutional patterns. Prerequisites: SOC 100 or 150.

**SOC 453 - Industrial Sociology Credits: 3**

An investigation of industrial societies with attention given to social trends creating industrialization, the development of organizations, the evolution of work-roles, international relations between industrial and non-industrial nations, and the future of industrial societies.

**SOC 455-555 - Juvenile Delinquency (COM) Credits: 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.

**SOC 456-556 - Community Corrections (COM) Credits: 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.

**SOC 460-560 - Advanced Criminology (COM) Credits: 3**

An extensive examination of major criminological issues and theories including sociological definitions of crime. Prerequisites: SOC 351.

**SOC 462-562 - Population Studies \*\* (COM) Credits: 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. Notes: \*\* Meets IGR #2

**SOC 483 - Sociology of Gender Roles (COM) (G) Credits: 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.

**SOC 490 - Seminar (COM) Credits: 1-3**

**SOC 491 - Independent Study (COM) Credits: 1-3** Prerequisites: Consent

**SOC 492 - Topics (COM) Credits: (1-3)**

**SOC 494 - Internship Credits: 1-12** Prerequisites: Written permission

**SOC 496 - Field Experience Credits: 1-12** Prerequisites: Consent

**SOC 497 - Cooperative Education Credits: 1-12** Prerequisites: Consent

**SOC 709 - Evaluation Research Credits: 3**

**SOC 710 - Research Methods Credits: 3**

**SOC 711 - Qualitative Research Methods Credits: 3**

**SOC 712 - Sociological Theory I Credits: 3**

**SOC 713 - Sociological Theory II Credits: 3**

**SOC 714 - Race, Class, Gender Intersections Credits: 3**

**SOC 716 - Symbolic Interaction Credits: 3**

**SOC 720 - Scholarship of Teaching and Learning for Sociologists Credits: 3**

**SOC 721 - Social Stratification Credits: 3**

**SOC 725 - Social Organization Credits: 3**

**SOC 730 - Social Change Credits: 3**

**SOC 740 - Rural Community Development Credits: 3**

**SOC 762 - Applied Demography Credits: 3**

**SOC 764 - Modern Demographic Theory Credits: 3**

**SOC 766 - World Population Issues Credits: 3**

**SOC 790 - Seminar Credits: 1-4**

**SOC 791 - Independent Study Credits: 1-3**

**SOC 792 - Topics Credits: 1-6**

**SOC 794 - Internship Credits: 1-3**

**SOC 798 - Thesis Credits: 1-7**

**SOC 898D - Dissertation-PhD Credits: 1-12**

**SPAN (Spanish)****SPAN 101 - Introductory Spanish I \* (COM) (G) Credits: 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: \* meets SGR #4

**SPAN 102 - Introductory Spanish II \* (COM) (G) Credits: 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

**SPAN 201 - Intermediate Spanish I \* \*\* (COM) Credits: 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. Notes: \*meets SGR #4 and \*\* IGR #2

**SPAN 202 - Intermediate Spanish II \* \*\* (COM) Credits: 3**

Continuation of 201 with more emphasis on using grammar structures in an interactive way. Further study of the Hispanic world. Students planning to major or minor in Spanish are encouraged to take 212 concurrently. Prerequisites: SPAN 201 Notes: \* Course meets SGR #4 and \*\* IGR #2

**SPAN 211 - Intermediate Oral Practice I (COM) Credits: 2**

Conversational work, oral reports. May be taken concurrently with SPAN 201 or 202. Prerequisites: SPAN 102.

**SPAN 212 - Intermediate Oral Practice II (COM) Credits: 2**

Conversational work, oral reports. May be taken concurrently with SPAN 202 Prerequisites: SPAN 102.

**SPAN 296 - Field Experience Credits: 1-6****SPAN 308 - Spanish for the Health Professions Credits: 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 Credits: 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 Credits: 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 Credits: 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

**SPAN 350 - Spanish for Business Communication (COM) Credits: 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) Credits:3**

Introduction to Spanish literature through reading and discussion. Prerequisites: SPAN 202.

**SPAN 355 - Introduction to Latin-American Literature I (COM) Credits: 3**

Introduction to Spanish American literature through readings with discussion in Spanish. Prerequisites: SPAN 202.

**SPAN 386 - Service Learning Credits: 1-4**

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. Notes: Credit will count toward elective credits for major or minor.

**SPAN 396 - Field Experience Credits: 1-6****SPAN 415 - Extensive Reading in Spanish Credits: 1**

This course will allow students to do extensive reading at their own level and according to individual interests. The course will include writing, conversation and grammar review.

**SPAN 433 - Spanish Civilization & Culture (COM) (AW) Credits:3**

Geography, history, politics, and arts of Spain.

**SPAN 435 - Latin American Civilization & Culture (AW) Credits: 3**

Geography, history, politics, and arts of Latin America. Prerequisites: SPAN 310.

**SPAN 437 - Topics in Film Studies Credits: 3**

Selected film studies topics in Spanish and/or Latin American Cinemas. The course is taught in Spanish and the films are generally viewed in Spanish with English subtitles. May be repeated as topics change.

**SPAN 443 - Linguistics Credits: 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 444 - Introduction to Translation Credits: 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 Spain Credits: 3**

Selected literary and cultural studies topics from 19th and 20th Century Spain. Topics may include themes, such as the Spanish Civil War; movements, such as Modernismo or the Movida; genres, authors, or artists. Prerequisites: SPAN 310, or consent. Notes: May be repeated as topics change.

**SPAN 484 - 19th and 20th Century Latin America Credits: 3**

Selected literary and cultural studies topics from 19th and 20th Century Latin America. Topics may include themes, such as the wars of independence; movements, such as the Boom; genres, authors, or artists. Prerequisites: SPAN 310, or consent. Notes: May be repeated as topics change.

**SPAN 486 - Early Modern Spain Credits: 3**

Selected literary and cultural studies topics from 16th and 17th century Spain. Topics may include themes, such as Muslims in Spain; movements, such as the Baroque; genres, authors, or artists. May be repeated as topics change.

**SPAN 491 - Independent Study (COM) Credits: 1-3****SPAN 492 - Topics (COM) Credits: 1-3****SPAN 496 - Field Experience Credits: 1-6****SPAN 591 - Independent Study (COM) Credits: 1-3****SPAN 592 - Topics Credits: 1-4****SPCM (Speech Communication)****SPCM 101\* - Fundamentals of Speech (COM) Credits: 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 109 - First Year Seminar - Communication Studies and Theatre\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\*Course meets IGR #1

**SPCM 201 - Interpersonal Communication (COM) Credits: 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 Studies Credits: 3**

An overview of the communication discipline, theory, and practice. Prerequisites: Advanced Placement in Speech or consent.

**SPCM 215 - Public Speaking (COM) \* Credits: 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. Course meets \*SGR #2

**SPCM 222 - Argumentation and Debate (COM) \* Credits: 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) Credits: 1-4**

Initiates active participation in competitive public speaking, including debate, oral interpretation, and non-competitive public performances.

**SPCM 305 - Communication Research (COM) (AW) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 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) Credits: 3**

Evaluates American speakers from colonial to contemporary times.

**SPCM 417 - Political Communication (COM) Credits: 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) Credits: 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) Credits: 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 Credits: 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) Credits: 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 Credits: 3**

Problems of the speech teacher. Curriculum, instructional materials, and methods.

**SPCM 482-582 - Travel Studies Credits: 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 491-591 - Independent Study (COM) Credits: 1-3**

**SPCM 492-592 - T-opics (COM) Credits: 1-5**

**SPCM 494 - Internship (COM) Credits: 1-12**

**SPCM 605 - Current Approaches to Communication Credits: 3**

**SPCM 700 - Instructional Methods in Communications (COM) Credits: 3**

**SPCM 787 - Research Methods in Speech Communication Credits: 3**

**SPCM 791 - Independent Study (COM) Credits: 1-2**

**SPCM 792 - Topics (COM) Credits: 1-3**

**SPCM 798 - Thesis (COM) Credits: 1-7**

## **SPED (Special Education)**

**SPED 300 - Students With Exceptionalities (COM) Credits: 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) Credits: 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 Disabilities Credits: 2**

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) Credits: 3**

Focuses on the nature and needs of the gifted child.

**SPED 451 - Curriculum & Instruction in Gifted (COM) Credits: 3**

This course focuses on curriculum, development and teaching strategies for the gifted.

**SPED 452 - Nature of Creativity & Assessment (COM) Credits: 2-3**

This course focuses on the nature of creativity and assessment of creativity.

## **STAT (Statistics)**

**STAT 281 - Introduction to Statistics (COM) Credits: 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 Credits: 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) Credits: 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 I Credits: 3**

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 Credits: 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 414-514 - R Programming Credits: 1**

An introduction to the R programming language. Topics will include the R programming language and environment, preparation and summarization of data, presentation of data, programming basics, and additional selected advanced topics. Prerequisites: CSC 150 (required for undergraduates only)

**STAT 435-535 - Applied Bioinformatics Credits: 2**

This practical course is designed for students with biological background to learn how to analyze and interpret genomics data. Topics include finding online genomics resources, BLAST searches, manipulating/editing and aligning DNA sequences, analyzing and interpreting DNA microarray data, and other current techniques of bioinformatics analysis. Prerequisites: STAT 281 or STAT 381.

**STAT 441-541 - Statistical Methods II Credits: 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 Credits: 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 451-551 - Predictive Analytics I Credits: 3**

Introduction to Predictive Analytics. This course will examine the fundamental methodologies of predictive modeling used in financial and predictive modeling such as credit scoring. Topics covered will include logistic regression, tree algorithms, customer segmentation, cluster analysis, model evaluation, and credit scoring. Prerequisites: STAT 482-582 or STAT 786.

**STAT 460-560 - Time Series Analysis Credits: 3**

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 Credits: 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 490-590 - Seminar Credits: 1-2****STAT 491-591 - Independent Study Credits: 1-3****STAT 492-592 - Topics (COM) Credits: 1-3****STAT 498 - Undergraduate Research/Scholarship Credits: 1-3****STAT 662 - Quality Control Credits: 3****STAT 715 - Multivariate Analysis I Credits: 3****SAT 721 - Statistical Computing and Stimulation Credits: 3****STAT 731 – Biostatistics Credits: 3****STAT 736 – Bioinformatics Credits: 3****STAT 742 - Spatial Statistics Credits: 3****STAT 751 - Predictive Analytics II Credits: 3****STAT 756 - Quantitative Genetics Credits: 3****STAT 761 - Design of Experiments I Credits: 3****STAT 762 - Design of Surveys Credits: 3****STAT 784 - Statistical Inference I Credits: 3****STAT 785 - Statistical Inference II Credits: 3****STAT 786 - Regression Analysis I Credits: 3****STAT 787 - Regression Analysis II Credits: 3****STAT 788 - Research Paper Credits: 1-2****STAT 790 - Seminar Credits: 1****STAT 791 - Independent Study Credits: 1-3****STAT 792 – Topics Credits: 1-3****STAT 798 – Thesis Credits: 1-7****THEA (Theatre)****THEA 100 - Introduction to Theatre \* (COM) Credits: 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: \* meets SGR #4

**THEA 131 - Introduction to Acting \* (COM) Credits: 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 Credits: 1**

Credit earned by active participation in acting roles. May be repeated for a total of 8 credits. Prerequisite: Consent.

**THEA 145 - Theatre Activities-Technical Credits: 1**

Credit earned by backstage and crew work. May be repeated for a total of 8 credits. Prerequisite: Consent

**THEA 191 - Independent Study Credits: 1** Prerequisite: Consent**THEA 240 - Stage Costuming (COM) Credits: 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) Credits: 3**

Theory and practical experience in theatre production. Lab work on two major theatre productions.

**THEA 243 - Make-Up (COM) Credits: 3**

Principles of theatrical makeup techniques, including character analysis and practical application.

**THEA 250 - Play Analysis Credits: 3**

Study and application of principles of playscript analysis and production conceptualization.

**THEA 351 - Directing (COM) Credits: 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) Credits: 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 Credits: 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) Credits: 3**

Analysis of important drama through present day.

**THEA 435 - History of American Musical Theater (COM) Credits 3**

History and development of American musical theatre from 1866 to the present.

**THEA 441 - Scene Design (COM) Credits: 3**

Principles and practices of scenic design, including the scenic image, movement patterns, color, form, and rendering techniques.

**THEA 443 - Costume Design Credits: 3**

Principles and practices of costume design, including the fundamentals of play analysis as applied to character statement, historical research, and rendering technique.

**THEA 445-445L - Lighting and Lab (COM) Credits: 3**

Basic principles and practices of lighting design, including basic electricity, script analysis, color, and directionality.

**THEA 455 - Advanced Acting (COM) Credits: 3**

Textual analysis, movement and acting styles for the theatre.

**THEA 460-560 - History of Theatre Credits: 3**

Periods, theatres, and representative dramatic literature from the classical to the present day.

**THEA 470 - Portfolio and Resume Building Credits: 3**

Principles and practices of portfolio and resume building for acting and technical theatre.

**THEA 480 - Summer Theatre Credits: 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) Credits: 1-3**

Prerequisite consent

**THEA 492-592 - Topics (COM) Credits: 1-5**

**THEA 494-594 - Internship (COM) Credits: 0-12 P, consent.**

**THEA 592 – Topics Credits: 1-3**

**THEA 791 - Independent Study Credits: 1-2**

**UC (University College)****UC 011 - Strategies for Academic Success Credits: 1**

UC 011 is an early intervention course designed to assist students who have been readmitted following suspension to achieve greater success. Through utilization of strategies which strengthen skills required for academic, professional, and personal accomplishments, the course will empower students to become proactive, responsible self-advocates for their academic careers and personal goals.

**UC 101 - Academic and Career Exploration Credits: 1**

The course applies developmental theory to assist students in exploring career and major options and help them prepare for academic, career and employment transitions. Includes 15 lecture hours and up to 8 out of class advising sessions.

**UC 109 - First Year Seminar\*\* Credits: 2**

First-year seminar course designed to introduce students to academic success strategies including the development of critical thinking and study skills, identification of campus resources, guidance in academic planning and engagement, time management and goal setting. Students will also investigate wellness topics, contemporary issues, diversity, and the land-grant mission of SDSU. In addition, this course is designed to expose students to the discipline-specific careers and their role in society. Notes: \*\* Course meets IGR #1

**UC 143 - Mastering Lifetime Learning Skills Credits: 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.

**UC 199 - Exploratory Studies Credits: 2**

The Exploratory Studies course will aid students in decision-making, self-assessment, academic exploration and career planning. The two credit-hour course will provide students with a clear understanding of what it means to major in a specific area of study.

**UC 199 - Peer Mentoring the College Student Credits: 1**

Provide instruction to train peer mentors on mentoring techniques, roles in the peer mentoring relationship, and peer leadership. Areas of emphasis include mentor and mentee responsibilities, confidentiality, leading mentoring meetings, communication skills, learning styles, mentoring diverse populations, study skills and mentoring skills.

**UC 282 - Tutoring the College Student Credits: 1-3**

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. Prerequisites: Written consent (must be employed as a tutor at SDSU)

**UC 286 - Service Learning (COM) Credits: 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.

**UC 382 - Theory & Practice of College Peer Tutoring Credits 1-3**

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. Prerequisites: UC 282 AND Written consent (must be employed as a tutor at SDSU)

**UC 482 - Applied Leadership Training for Tutors Credits: 1-3**

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: UC 382 and Written consent (*must be employed as a tutor at SDSU*)

**UC 489 - Transition to Careers Credits: 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.

**VET (Veterinary Science)****VET 103 - Introduction to Veterinary Medicine Credits: 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 Terminology Credits: 1**

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 223-223L - Anatomy and Physiology of Domestic Animals and Lab Credits: 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-223.

**VET 403-503 - Animal Diseases and Their Control Credits: 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 424-524 - Medical and Veterinary Virology Credits: 3**

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 476-576 - Advanced Mammalian Physiology Credits: 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. Prerequisites: BIOL 221 or VET 223 or Instructor written consent Cross-Listed: BIOL 476/576

**VET 491-591 - Independent Study Credits: 1-3****VET 492-592 – Topics Credits: 1-3****VET 493 - Workshop****VET 494 - Internship (COM) Credits: 1-12****VET 496 - Field Experience (COM) Credits: 1-12****VET 497 - Cooperative Education (COM) Credits: 1-12****VET 498 - Undergraduate Research/Scholarship Credits: 1-4****VET 788 - Master's Research Problems Credits: 1-3****VET 791 - Independent Study Credits: 1-4****VET 792 – Topics Credits: 1-3****VET 793 – Workshop Credits: 1-4****WEL (Wellness)****WEL 100-100L - Wellness for Life and Lab (COM) Credits: 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

**WEL 192 – Topics Credits: 1****WL (Wildlife & Fisheries Sciences)****WL 220 - Introduction to Wildlife and Fisheries Management Credits: 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 Techniques Credits: 3**

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 Credits: 1-3****WL 302 - Animal Behavior Credits: 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 151 Cross-Listed: ZOOL 302

**WL 355-355L - Mammalogy and Lab Credits: 3, 0**

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. Prerequisites: BIOL-101 or BIOL-151 Corequisites: WL 355L-355 Cross-Listed: ZOOL 355-355L

**WL 361 - Survey of Amphibians and Reptiles Credits: 2**

This course provides an overview of amphibians and reptiles; lecture topics will primarily focus on life history with some information provided on identification. Prerequisites: BIOL 101-101L\* or BIOL 151-151L\*

**WL 363-363L - Ornithology and Lab(COM) Credits: 4**

Identification of bird species; life histories, ecology, habits, and special structural and physiological adaptations of various groups. Laboratory experience that accompanies WL 363. Prerequisites: BIOL/NRM 311 Corequisites: WL 363L-363.

**WL 367-367L - Ichthyology and Lab Credits: 3**

Characteristics and relationships of fishes; adaptations, behavior, ecology, evolution, systematics, and zoogeography of fishes; and, identification and life histories of fishes. Corequisites: WL 367L-367.

**WL 400-400L - Habitat Conservation and Restoration and Lab Credits: 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 Mngmnt & Lab Credits: 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 & Lab Credits: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 415-415L/515-515L - Upland Game Ecology & Management and Lab Credits: 3**  
Upland game birds and mammals as components of ecosystems. Effects of farming; industry; social change; technology; and federal, state, and private programs on game and non-game species. Techniques for individual species management. ( 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 & Management & Lab Credits: 3**  
Large mammal life histories and distributions. Relationships of nutrition, reproduction, interspecific competition, and predation to management of large mammal habitat and harvest. Techniques for research and management of large mammals. ( Prerequisites: Department written consent for WL 417 only). Corequisites: WL 417L-417L/517L-517.

**WL 419-419L/519-519L - Waterfowl Ecology and Management and Lab Credits: 3**  
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 419L/WL 519L-WL 519.

**WL 420-420L - Wildlife Law and Enforcement and Laboratory Credits: 3**  
Evolution of laws relating to fish and wildlife, enforcement of wildlife law, federal versus state jurisdiction, types of violations, tribal fishing and hunting rights, and other topics. Guest speakers from state, federal, and local law enforcement agencies. Prerequisites: WL 220 and WL 230 . Corequisites: WL 420-WL 420L. Notes: Offered Fall semester on even numbered years.

**WL 421/521 - Grassland Fire Ecology Credits: 3**  
The course is designed to describe the ecological effects of fire on grassland ecosystem components, from soil and vegetation to wildlife and 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 procedures for safely conducting prescribed burns. Cross-Listed: RANG 421-521.

**WL 425-425L/525-525L - Wildlife Nutrition and Disease and Lab Credits: 3**  
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 425L/WL 525L-WL 525.

**WL 427-427L/527-527L - Limnology of Lakes & Streams and Lab Credits: 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 427L/WL 527L-527.

**WL 429-429L/529-529L - Fish Ecology and Lab Credits: 2**  
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-WL429L/WL 529L-WL 529.

**WL 430-430L - Human Dimensions in Wildlife and Fisheries and Lab (G) Credits: 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.

**WL 431-431L - Fisheries Management in Small Waters and Lab Credits: 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: WL 412 Corequisites: WL 431L-WL

**WL 440-440L - Fisheries and Wildlife Biometrics and Lab Credits: 2**  
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 – Seminar Credits: 1**  
**WL 491 - Independent Study Credits: 1-3**  
**WL 492-492L/592-592L - Topics and Lab Credits: 1-3**  
**WL 494 – Internship Credits: 1-12**  
**WL 496 - Field Experience (COM) Credits: 1-12**  
**WL 497 - Cooperative Education (COM) Credits: 1-12**  
**WL 712-712L - Wetland Ecology and Management & Lab Credits: 3**  
**WL 713-713L - Animal Population Dynamics and Lab Credits: 3**  
**WL 714-714L - Fish Structure and Function and Lab Credits: 3**  
**WL 715-715L - Wildlife Research Design and Lab Credits: 3**  
**WL 717-717L - Aquatic Trophic Ecology and Lab Credits: 3**  
**WL 718-718L - Ecology of Aquatic Invertebrates & Lab Credits: 3**  
**WL 719-719L - Stream Ecology & Management & Lab Credits: 3**  
**WL 720-720L - Quantitative Fisheries Science and Lab Credits: 3**  
**WL 721-721L - Natural Resource Modeling and Lab Credits: 3**  
**WL 722-722L - Natural Resource Policy and Administration and Lab Credits: 3**  
**WL 723-723L - Fisheries Ecology & Management & Lab Credits: 3**  
**WL 790 – Seminar Credits: 1**  
**WL 791 - Independent Study Credits: 1-3**  
**WL 792 – Topics Credits: 1-3**  
**WL 798 – Thesis Credits: 1-7**  
**WL 898D – Dissertation Credits: 1-12**

## **WMST (Women's Studies)**

**WMST 101 - Introduction to Women's Studies \* \*\* Credits: 3**  
Exploration of women's issues in both historical and contemporary contexts, including introduction to feminist theory. Notes: \* Course meets SGR #3 or \*\* IGR Goal #2.

**WMST 248 - Women in Literature Credits: 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 Sexuality Credits: 3**

A basic course which explores the biological, behavioral, and cultural aspects of human sexuality. The course focuses on individual sexual development, interpersonal aspects of sexual behavior and social/cultural values and beliefs about sexuality and sex roles throughout the lifespan. Cross-Listed: HDFS 250.

**WMST 253 - Socio-Psychological Aspects of Dress Credits: 3**

Examination of clothing behavior from sociological, psychological and cultural perspectives. Cross-Listed: AM 253

**WMST 260 - Women's Health Issues Credits: 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 issues are explored.

**WMST 305 - Women and Politics Credits: 3**

This course explores a variety of perspectives in feminist political thought. Particular emphasis is placed on barriers women face in gaining access to political power in public and private institutions, both in American society and in global contexts.

Cross-Listed: POLS 305.

**WMST 325 - Domestic and Intimate Violence Credits: 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: SOC 325.

**WMST 331 - Women and Religion Credits: 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 Credits: 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 History Credits: 3**

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 Credits: 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.

**WMST 383 - Sociology of Gender Roles Credits: 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 Credits: 3****WMST 415 - Communication and Gender Credits: 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 Media Credits: 3**

This course examines contributions of women to the mass media from colonial era to present. It also studies the portrayal of women by the news media and by advertising, and it studies the roles currently played by women in the media and in supporting areas of advertising and public relations. Cross-Listed: MCOM 419.

**WMST 420 - International Women's Issues Credits: 3**

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 491 - Independent Study Credits: 1-4**

Prerequisites: WMST 101.

**WMST 492-592 – Topics Credits: 3****ZOOL (Zoology)****ZOOL 302 - Animal Behavior (COM) Credits: 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. Cross-Listed: WL 302 - Animal Behavior

**ZOOL 305-305L - Insect Biology and Lab(COM) Credits: 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

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) Credits: 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. Cross-Listed: WL 355 - 355L - Mammalogy and Lab

**ZOOL 467-467L/567-567L - Parasitology & Lab (COM) Credits: 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 & Lab (COM) Credits: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.





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# Agricultural Experiment Station

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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 the 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, and 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 Education and Human Sciences are especially strengthened by this new knowledge.

Much of the SDAES research is done at Brookings; however, a considerable amount is conducted at several field stations and at the West River Agricultural Research and Extension Center at Rapid City. The 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 Extension Offices or the Experiment Station Bulletin Room on campus.

For information contact the call 605-688-4149 or e-mail: [sdsu.agexperimentstation@sdstate.edu](mailto:sdsu.agexperimentstation@sdstate.edu).

## Alumni Association

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The SDSU Alumni Association is an independent, not-for-profit corporation. This non dues association welcomes all graduates, former students, faculty, staff, friends of South Dakota State, as well as students, as members. The Alumni Association strives 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 more than 75,000 alumni. Each year the Alumni Association directs and/or participates in more than 125 events both on and off campus and publishes *STATE Magazine* which is distributed to their members at no cost. The Alumni Association can be reached at 605-697-5198, [alumni@statealum.com](mailto:alumni@statealum.com) or Box 515, Brookings, SD 57007. Or visit the web site at [www.statealum.com](http://www.statealum.com)

## Animal Disease Research and Diagnostic Laboratory

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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](mailto:david.zeman@sdstate.edu)



# Cooperative Extension Service

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The SD Cooperative Extension Service (CES) provides an off campus informal educational function of SDSU and encompasses the following broad areas of programming: Agriculture, Family, Youth, and Communities. 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 non-formal, out-of-classroom learning opportunity provided to them for more than 90 years by SDSU in cooperation with the U.S. Department of Agriculture and county governments.

Approximately 50% of the funds supporting Cooperative Extension educational programs is appropriated to SDSU by the SD Legislature with 41% from Federal appropriations. Additionally, approximately \$3 million is provided by SD counties in the form of in-kind support. Extension program emphasis is constantly changing to meet the needs and opportunities (circumstances) of people who help determine instructional needs.

Cooperative Extension Service staff and South Dakota stakeholders 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 the Director of SD Cooperative Extension Service, SDSU, Box 2207D, Brookings, SD 57007, or visit the web site at <http://www.sdstate.edu/sdces/index.cfm>.

## Crime Reports

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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](http://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

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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. For more information contact the Office of Diversity Enhancement at 605-688-6361 or go online to <http://www.sdstate.edu/ode/>.

### 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. Additionally, the center includes a student lounge, computer laboratory and meeting/conference room.

## Endowed Chairs

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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 on July 1, 1991, and is funded by the SA Education Foundation in Watertown.

The Alfred Chair will be a continuing campus position with faculty rank filled by a dairy/food scientist with experience in cheese chemistry and technology. The addition of the Alfred Chair, a prestigious faculty appointment, is expected to maintain national

prominence of the SDSU Dairy Science Department in the dairy processing profession.

### **Electrical Engineering**

The Hohbach Endowed Chair in Electrical Engineering was established through funds provided by Harold C. Hohbach, a Plankinton, SD, native and 1943 graduate of Electrical Engineering from SDSU. Mr. Hohbach is currently a patent attorney with offices in San Francisco and Palo Alto, California.

The purpose of the Hohbach Endowed Chair is to improve quality of education, research, and entrepreneurship. The primary focus is to develop applied research that will spur economic growth in the region, while supporting undergraduate and graduate teaching and promoting entrepreneurship among students.

The Hohbach Chair is a faculty rank position on campus within the Department of Electrical Engineering and is occupied by an individual with an established reputation in electrical engineering or a closely related field.

### **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 and Safety Office

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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. For staff and students with questions concerning any of these functions contact EHS at: Environmental Health & Safety Avera Science Center 143; Box 2202, Brookings, SD 57007 Phone: 605-688-4264 E-mail: EHS@sdstate.edu

## Facilities and Services

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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. The Customer Service Center processes all incoming and outgoing mail for SDSU departments.

Faculty and Staff are encouraged to note problems or deficiencies of areas of campus they use at 605-688-4136, SDSU.FacilitiesAndServices@sdstate.edu. To find on-line service guides, customer forms, facilities information, maps, contact information for Facilities and Services personnel, please contact Facilities and Services at: <http://www.sdstate.edu/facserv/>. For additional questions, comments or concerns please contact the office at 605-688-4136.

Tuition and Fees listed below are approved for the 2012-2013 academic year – 2012 Summer, 2012 Fall and 2013 Spring terms. Minnesota Reciprocity tuition rates are effective for 2012 Fall, 2013 Spring & 2013 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](http://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 \$26.60 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.

## **University Support Fee day after Payment Due Date**

A fee of \$90.30 per credit is charged 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.

## **Animal Science Fees**

A fee of \$42.95 per credit is charged for courses in animal, range and veterinary sciences.

## **Architecture Fees**

A fee of \$283.65 per credit is charged for architecture courses. A fee of \$2,060.00 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.

## **Chemistry Fees**

A fee of \$21.20 per credit is charged for courses in chemistry.

## **Dairy Science Fees**

A fee of \$77.45 per credit is charged for courses in dairy science.

## **Economics Fees**

A fee of \$27.65 per credit is charged for undergraduate courses and a \$49.65 per credit is charged for graduate courses related to Economics, Business and Entrepreneurship.

## **Education Fees**

Education students enrolled in selected Education courses are assessed a fee of \$159.65 per semester for Sophomore/Junior Field Experience, \$319.50 per semester for Senior Student Teaching, and \$159.65 for Master's Level Internships.

## **Engineering Fees**

A fee of \$64.50 per credit hour is charged for courses in the College of Engineering and designated courses in mathematics, statistics, computer science, and physics. A fee of \$21.20 per credit hour is charged for remaining courses in mathematics, statistics, physics, and computer science.

## **Equine Fees**

A fee of \$177.50 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 Fees**

A fee of \$17.85 per credit hour is charged for courses in Athletic Training; Dietetics; Health Education; Hospitality Management; Nutrition and Food Science; Physical Education Teacher Education, and Sport, Recreation and Park Management.

## **Engineering, Natural Sciences and Laboratory Fees**

A fee of \$54.80 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.

## **Medical Laboratory Science Fees**

A fee of \$1,469.65 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 \$882.30 per semester.

## **Nursing Fees**

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 and HSC courses are assessed a fee of \$92.20 per credit and graduate NURS and HSC courses are assessed a fee of \$202.95 per credit.

## **Pharmacy Fees**

A fee of \$183.50 per credit is charged for courses in Pharmacy. Students in the PharmD program are assessed a \$55.00 annual charge for an electronic reference and a \$16.00 annual charge for malpractice insurance.

## **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. All accounts that the University is unable to collect will be submitted for collection and forwarded to a credit reporting bureau. The University will recover from the debtor all collection fees and attorney's fees that result from collection of an account.

# Tuition, Living, and Other Expenses

For further information about the fees listed below for the Academic Year September 2012 --- May 2013, visit <http://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	Non-Resident
<i>Tuition</i>		
Undergraduate on-campus per semester credit	\$129.90	\$194.75
Graduate on-campus per semester credit	\$196.80	\$416.55
University Support Fee - per credit	\$90.30	\$90.30
Activity Fee - per credit	\$26.60	\$26.60

### Fees

See accompanying text for the descriptions of fees for Architecture, Business/Economics, Chemistry, Animal & Dairy Sciences, Engineering, Health & Nutrition, Nursing, Pharmacy, Medical Laboratory Science, Veterinary Science and other courses; Education students; and lab and equine experience courses.

### Campus Room and Board Costs Meal Plan

Students have a choice of 6 Meal Plans ranging from \$1,204.20 to \$1,713.30 per semester. For more detailed information, contact the Food Service Office or Card Services Office.

Residence Halls - per semester	Double	Single
Wecota Annex	---	\$1,837.50
Brown, Hansen, Waneta	\$1,419.60	\$2,042.10
Binnewies, Pierson, Young	\$1,563.45	\$2,086.10
Matthews	\$1,671.60	\$2,230.50
Jackrabbit Village (Designed Single)	---	\$2,373.70
Caldwell/Jackrabbit Village	\$2,205.00	\$2,756.15
Meadows North/South		\$2,205.00

### Typical Educational Expenses for Full Time Undergraduate for one Semester

	Resident	Nonresident
Tuition - 16 credits	\$2,078.40	\$3,116.00
University Support & Activity Fees	\$1,870.40	\$1,870.40
Books and supplies (estimate)	\$650.00	\$650.00
Meal Plan (midpoint of range)	1,373.35	\$1,373.35
Residence hall cost	<u>1,563.45</u>	<u>1,563.45</u>
	\$7,535.60**	\$8,573.20**

\*\* Expenses will be higher if a student takes coursework requiring course, program or lab fees. See accompanying text on FEES.

### Payment Process

By the day after census date, each student makes a full payment of charges based on the number of registered credits, residency status, and campus housing. Late fees will be assessed starting on the day after the established payment due date. SDSU encourages students to mail payments before the registration day. Payment of tuition and fees can be made by cash, check or electronic bank transfer directly to the University Cashier's Office SAD 136 PO Box 2201, Brookings, SD 57007-2098.

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. Authorized payers may view and pay the students' account by going to the South Dakota Public Universities Authorized Payer login at SDePay. Students may link to SDePay through their secure account on WebAdvisor.

### Online Billing and Payment of Tuition and 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.

### Email 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 email 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.

### 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 Hobo 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.



SDSU processes student withdrawals in compliance with federal and Board of Regents policies. 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 Direct Loan, Unsubsidized Stafford Direct Loans, Parent Loans for Undergraduate Students (PLUS), Federal Perkins Loans, Federal Pell Grants, and Federal Supplemental Grants. Also, the Federal Nursing Loans and Federal Health Professions Loans use the Return to Title IV Funds calculation.

**A student's withdrawal date** is 1) When the student began the withdrawal process or officially notified SDSU of intent to withdraw by contacting the SDSU Registrar's Office; or 2) The midpoint of the period for a student who leaves without notifying SDSU; or at SDSU's option, the student's last documented date of academically-related activity.

**Return of Title IV Funds** When a student receiving federal financial Title IV financial aid withdraws from SDSU during the enrollment period, the amount of the Title IV funds (not including Federal Work Study) that the student earned during the enrollment

period is calculated as of the student's withdrawal date. Title IV funds are earned at a fixed rate on a per day basis up to the 60 percent point in the enrollment period. Title IV funds are 100 percent earned if the withdrawal date is after the 60 percent point in that period.

If the date a student withdraws from SDSU is prior to or on the 60% point of the semester, SDSU is required to determine the portion of the aid disbursed that was "earned" by the student before the withdrawal date. The "unearned" Title IV funds must be returned to the respective federal 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.

For students who fail to officially withdraw when they stop attending classes and are assigned an "F" grade for all courses for the semester, the Return to Title IV Funds policy requires SDSU to calculate the "earned" amount based on the 50 percent point of the semester. Unearned federal aid must be returned as described above. If a student was disbursed aid after the 50 percent point of the semester, the student is assumed ineligible for those funds and will be required to return those funds.

**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](http://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.

## 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 assets valued at more than \$144 million, including an endowment of more than \$70 million. The work of the SDSU Foundation provides support that translates to nearly \$500,000 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 1-888-747-SDSU (7378), [steve.erpenbach@sdsufoundation.org](mailto:steve.erpenbach@sdsufoundation.org), or [www.sdsufoundation.org](http://www.sdsufoundation.org)

## Geographic Information Sciences Center of Excellence

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 unique collaboration between SDSU and the US Geological Survey Center for Earth Resources Observation and Science (EROS) with a focus on the science of earth observation and monitoring. EROS 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 EROS scientists that 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 goal, 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 that focus on the resultant effects 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. Undergraduates can earn 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. 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. The Center also coordinates the Ph.D. program in Geospatial Science and Engineering. For more information call 605-688-6591 or e-mail [geoffrey.henebry@sdstate.edu](mailto:geoffrey.henebry@sdstate.edu).



# Information Technology

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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.

**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 605-688-6312.

**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 605-688-4988.

**IT Support Desk** - 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 605-688-6776.

**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 605-688-6312.

**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 and Research (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 605-688-4988.

# Intercollegiate Athletics

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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, 1-866-GoJacks (465-2257), or e-mail [sdsu.tickets@sdstate.edu](mailto:sdsu.tickets@sdstate.edu)

# International Affairs

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The Office of International Affairs (OIA) is the comprehensive home for international student and scholar services, international undergraduate admission, study abroad planning, and community connections programs. All services and activities are intended to help enrich the experience of international students here at SDSU and to help expand global engagement for all students, faculty and staff

The office was first established in 1988 and was focused on creating a number of international education and research exchange partnerships. Today, OIA has educational partners on six continents and has expanded its focus to include international student services.

Study abroad staff advise faculty in planning SDSU-based global educational options and advise students of their study abroad options.

International student and scholars staff provide guidance and administrative support to hundreds of international students from over 60 countries. Staff members also support the International Relations Council and its events and outreach, as well as help connect the campus community with International students and global issues through its Connections programs. OIA has a variety of partners and affiliates. For more information visit <http://www.sdstate.edu/international-affairs>.



# Financial Assistance

## General Information

Approximately 89% 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.

## 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.

II. 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](http://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.
  - A. Federal Pell Grant awards are determined by a federal formula for the student's first bachelor degree.
  - B. Federal Supplemental Educational Opportunity Grant awards are based on Pell Grant eligibility and available funds.
  - C. 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.
  - D. 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](http://www.studentloans.gov).
2. 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.
  - A. 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

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](http://www.sdstate.edu) (Keyword: financial aid).

is disbursed. Interest rate is 7.9% and has loan fees (see MPN).

- B. 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.
  - C. 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.
  - D. 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.
    - A. 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.
    - B. 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](http://www.sdstate.edu) (Keyword: Scholarships).
    - A. 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.
    - B. 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.
1. Selected new freshman scholarships.
    - A. Renewable scholarships, upon meeting academic standards, include: Briggs; Lohr; May; Nichols; and many named Foundation scholarships.
    - B. 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.

- C. Many general, departmental, and talent awards are also available.
2. Upper class student scholarships are awarded by the college/ department based on a student's academic record through an annual competitive scholarship application process.
3. 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

4. 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](mailto:sdsu.finaid@sdstate.edu) for specific applications, forms, and information. Additional information can be accessed on the SDSU Home Page: [www.sdstate.edu](http://www.sdstate.edu)

## Library, H. M. Briggs

Library services and collections are housed in the Briggs Library, which is named for President Hilton M. Briggs, who served the University from 1958 to 1975. Library collections consist of more than 668,000 bound volumes, 573,000 government documents, 18,000 e-Books, 31,000 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 more than ten thousand information requests annually through personal contacts and via telephone, e-mail, and instant messaging. Each year they teach approximately 250 classes on information literacy and use of library resources.

In addition, the interlibrary loan staff annually acquires over 4,000 copies (mostly electronic) of journal articles and approximately 1,000 books from other libraries worldwide to supplement the resources held locally for SDSU students and faculty.

## Logos, Seals, Caricatures, Wordmarks (Official 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. 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 ®	Weary Willie TM	Beef Bowl®
SDSU®	Jackrabbits ®	You can go anywhere from here!®
SDSU Jackrabbits®	Jacks ®	Jackrabbit Guarantee®
South Dakota State TM	Cereal Bowl ®	Pride of the Dakotas®
Hobo Day ®	Oak Lake Field Station TM	Be Great. Start Here. TM
HoboTech ®	Midwest Market	The Campanile Line ®
SDSU Jacks®	Analysis TM	Campanile Records ®
Go Big. Go Blue. Go Jacks®	Garden Line TM	McCrorry Gardens ®
SD State®	Go Jacks®	iGrow TM
Dirty Lil TM	On Call®	Passionate. Relentless. Champions. ®
	Today's Ag®	

For information on usage, please contact the Office of University Relations at [sdsu.ur@sdstate.edu](mailto:sdsu.ur@sdstate.edu) or 605-688-6161.



Hobotech wordmark

Garden Line



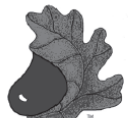
SDSU Cereal Bowl



Beef Bowl



McCrorry Gardens



Oak Lake Field Station

# 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 Plant Science, 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 is a 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 605-688-6253 or e-mail: david.graper@sdsu.edu

## Museum/Collections

**The South Dakota Art Museum's** collection of over 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 the Medary Avenue at Harvey Dunn Street. The museum is open Free to the public Monday through Friday from 10:00am to 5:00pm, Saturdays from 10:00 to 4:00 and Sunday's from noon to 4 pm. The museum is closed on Sunday's January – March and on all 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 email sdsu.sdsm@sd

state.edu or go online to <http://www.southdakotaartmuseum.com>.

**The Agricultural Heritage Museum's** collection of 100,000 objects interprets South Dakota agricultural history and rural heritage. The museum is concerned with human experiences that were shaped by the state's diverse environment. The museum is located on the northwest corner of Medary Avenue and 11th Street in the old Stock Judging Pavilion. The museum is open free to the public Monday through Saturday from 10:00 AM to 5:00 PM and Sundays from 1:00 to 5:00 PM. The museum is closed on Sundays January - March and on all 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@sdsu.edu or visit <http://www.agmuseum.com>.

## 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, fliers, 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; Biostess 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@sdsu.edu](mailto:brenda.quam@sdsu.edu)

## Student Affairs

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 (Financial Aid, Records and Registration, and Scholarships) Office of Student Conflict Prevention, Management, and Conduct Services, Residential Life, The Union, Office of Student Engagement (Student Organizations, Greek Life, Program Bound, Career Center), Multicultural Center/Student Support Services (Disability Services, Upward Bound, TRiO Student Support Services, Veterans Resource Center, African American, Latino, and GLBT student support), University Dining Services, and Wellness (Intramurals and Club Sports, Recreation, and Student Health & Counseling). 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 in this section 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

## Dean of Students

The Dean of Students serves as the student Ombudsperson for the university, supervises the Student Conduct System, chairs the Clery Report Review Committee, and represents the division of Student Affairs on other university committees and special projects. In the role of the "Ombuds," the Dean of Students acts as a mentor or arbitrator rather than a conduct hearing officer. The goal is to help a student resolve an issue before it becomes a problem. For students in need of assistance or guidance, the Dean of Students office is an important resource. The office is located in AD 312, phone 605-688-4493.

**Office of Student Conflict Prevention, Management, and Conduct Service**, formerly Judicial Affairs, has developed into a point of contact for both faculty and staff on a variety of Student Affairs matters. The functions of this office are of service to all students. Serving as ombuds, mediators, and hearing officers, this office helps students in all stages of adjustment and adaptation. Upon request, the office assists faculty and staff to more comfortably and effectively address minor student concerns. The office also provides "train the trainer" information for individuals and organizations on matters of conflict prevention and mediation to more broadly serve students.

## Dining Services

Campus Dining is committed to providing a dining service program at SDSU that is of the highest quality at a reasonable cost. Students can choose from a variety of offerings including "all-you-care-to-eat" buffet meals, food courts, convenience stores, ice cream shops, delis, specialty coffee, salad and soup bars, grab and go areas, and much more. All SDSU students living on campus are required to purchase a meal plan. Weary Wil's and Einstein Bros. Bagels offer students special late night dining options.

## Enrollment Services

The Office of Enrollment Services is comprised of the Scholarship Office, Registrar's Office, and Financial Aid. The mission of the Office of Enrollment Services is grounded in excellent customer service. These units provide the resources to assist students in achieving a successful college experience and also provide high quality services to current students, alumni, staff, faculty, and the general public. The Enrollment Services office strives to make all services available to students where, when and how they need them. These offices work closely with other university offices to ensure that current information is provided to students. Staff members are committed to providing exceptional service while exhibiting accuracy and efficiency in our work, and maintaining integrity, professionalism and respect. For further information contact the Registrar's Office at 605-688-6195.

**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.

**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.

## Multicultural Center and Student Support Services

**Multicultural Center** - The Multicultural Center develops campus initiatives that demonstrate the valued practice and philosophy of multiculturalism within the University community. The office provides support to students of color by providing tutorial services, multicultural and diversity programming, advising cultural organizations, and coordinating the Minority Peer Mentor Program. The Multicultural Center compliments the Division of Student Affairs' mission by broadening the social, cultural, educational, and recreational experience of students. Phone: 605-688-5585.

**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. Direct Line: 605-688-4504 or Main Office: 605-688-5585.

**Veterans Resource Center** - The office is responsible for providing services and coordinating programs for veterans which includes coordinating orientation program for veterans, house the Federal Certifying Official to assist students with their financial aid, assisting veterans who are deployed while still enrolled at SDSU, provide additional support to the SDSU Veterans Club, collaborating with the city and county agencies that assist veterans, working with returning National Guard units and other active duty personnel to assist with their admission/ re-admission to SDSU. The office also works collaboratively with Financial Aid, Counseling Center, and Disability Services to provide services and support to SDSU Veterans. Phone: 605-688-5585.

**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) individualized support in managing academic pursuits; 3) personalized financial, career, and social support services to ease transitions through college; 2) tutorial services in a variety of course areas (including math, English, and basic sciences); 3) referral assistance to other campus support services; and 4) 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 program designed to support high school students in their preparation for successful college graduation. Upward Bound provides support in areas of tutoring, mentoring, cultural enrichment, college tours, personal development, and academic preparation. To participate, students must be either first-generation college-bound or parents meet the federal income guidelines; and be enrolled in one of the five participating high schools located in Sioux Falls and Flandreau, SD. Phone: 605-688-6653.

## Residential Life

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. Currently, residence hall double rooms rent is from \$1,352 to \$2,100 depending on the assigned hall per semester. 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 605-688-5148.

**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 [www.sdstate.edu/reslife](http://www.sdstate.edu/reslife) and click on the housing application link. If individuals do not have access to a computer they may contact the housing office to have hard copy materials sent to them. A \$75 confirmation fee must accompany all applications for residence hall space. The seventy-five 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 November 30 for new spring semester will have the \$75 dollars refunded. Any person who is canceled at their request after these dates will forfeit the Confirmation Fee.

**Family Student Housing** - 78 unfurnished one-bedroom apartments and 6 unfurnished two-bedroom apartments are available for rent on campus. Currently, rent for the one-bedroom apartments ranges from \$282.65-\$374.45 per month. Rent for the two bedroom apartments is \$446.10 per month. Each apartment includes a refrigerator, stove, and all utilities. To be eligible to apply for Family 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 Meadows North apartment complex. Monthly rent, including utilities, Internet, dishwasher, stove, refrigerator, and air conditioning. Nine-month contracts are available and a \$75 confirmation fee is required with all applications for an apartment space. Contact Residential Life Office personnel for more information.

## 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 University Student Union, which includes services such as the Information Exchange, Outback Jacks, Blue Print Design Center, Central Reservations and State Technical Services. Students can cash checks, send faxes, play billiards, rent outdoor recreational equipment, reserve sound and lighting services for programs, and dine at the Market, Jacks' Place, Einstein Bros. Bagels and Weary Wil's Sports Grill. 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 Office of Student Engagement works closely with the University Program Council (UPC), Greek Life, the recognition

of student organizations, and career development/internships. The department also coordinates the New Student Orientation program for the summer, fall, and spring and is engaged in the Lead State and Meet State programs.

This Union is home to *The Collegian* student newspaper, Students' Association, Student Legal Services, KSDJ 90.7 campus radio station, Greek Life, Multicultural Student Organizations, University Program Council, Dining Services: the Market and Jacks', the Bookstore, Card Services/Hobo Dough, and fifteen meeting rooms including the Volstorff Ballroom which add to the already extensive list of student programs and services that work to build a great student experience at State. For more information regarding the Union call 605-688-4960.

## Center for Student Engagement

The Center for Student Engagement is located in the Union and links students to a variety of programs and initiatives designed to promote their success at South Dakota State University. The center is home to career development and internship staff, as well as staff focused on serving student organizations, leadership development programs and campus wide engagement initiatives. The University Program Council, Greek Life, the Students' Association and the New Student Orientation program also call the center home.

**Career Development and Internship Services** - Career Development staff promote student growth and development through variety of programming and services that facilitate the transition from student to professional and help students and employers connect. Students from all colleges and majors are welcome to take advantage of the support offered by the Career Center. Uncovering the best career opportunities takes time and the effort begins with the foundation of experience developed as early as the freshman year. Career inventories are available to help students assess their interests and abilities and connect them to careers. Whether searching for part-time or summer jobs, internships, or full-time employment, the Career Development staff offer 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 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 Campanile Connections, [www.myinterfase.com/capcenter/student/](http://www.myinterfase.com/capcenter/student/) 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 and Regulations for the convenience of students searching for part-time and summer jobs in Brookings and the around the state. The Career Center can be contacted at 605-688-4425, [sdsu.careercenter@sdbor.edu](mailto:sdsu.careercenter@sdbor.edu), or for more information visit <http://www.sdstate.edu/careercenter/>.

**New Student Orientation** - NSO assists the transition process for students new to SDSU. NSO implements Orientation sessions for new, transfer, and readmit students throughout the year. At Orientation, students register for classes, attend informational sessions, and receive other important information about being a student at SDSU. After attending Orientation, students often feel much better prepared for life at SDSU.

## Wellness Center

The Wellness Center is dedicated to supporting academic success and personal development by promoting and encouraging healthy lifestyle for the members of the SDSU community. The Wellness Center houses state of the art fitness equipment, a variety of recreational and intramural programs, effective wellness education, and a student health clinic and counseling center. Services and programs provided are detailed below. For further information about

the Wellness Center is available at 605-688-6415, [sdsu.wellnesscenter@sdsu.edu](mailto:sdsu.wellnesscenter@sdsu.edu), or go online to <http://www.sdsu.edu/wellness-center/>.

### **Community Fitness and Recreation**

Community Fitness strives to provide current and diverse programming to enhance life-long health and well-being. Knowledgeable professionals serve the students, faculty and community to make appropriate decision about their fitness and nutritional desires. 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 fitness goals.

Fitness and Recreation facilities are open Monday through Thursday 5:00 a.m.-11 p.m.; Friday 5:00 a.m.-10:00 p.m.; Saturday 8:00 a.m. - 8:00 p.m.; and Sunday 12:00 - 5:00 p.m. Summer hours begin May 5 and end August 24 - Monday through Thursday 5:30 a.m. - 11:00 p.m.; Friday 5:30 a.m.-8:00 p.m.; Saturday 8:00 a.m. - 4:00 p.m.; and Sunday 12:00 p.m. - 8:00 p.m. For further information regarding the Wellness Center and its services, call 605-688-6415.

### **Intramural & Recreational Sports & Sport Clubs**

**Intramural Sports** - The Intramural Program provides 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. Over 3,100 individual students participate each year with many in more than one intramural sport, with total participation numbers over 6,500 students annually. The program seeks to foster a life-long positive attitude toward physical activity in informal settings such as open swim and gyms and through league play. Activities are organized on an individual, team, and club basis. Leagues are established for women, men, and mixed (co-rec) competition activities. Students may manage, participate, and/or seek employment opportunities supervising and officiating. Residence hall, independent, and organizational groups may form teams. There are 30 recreational sports including flag football, 3-on-3 basketball, volleyball, basketball, softball and many more. Intramural registration is online at [www.imleagues.com](http://www.imleagues.com).

**Sport Clubs** - 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. Eight club sports such as hockey, rugby, men's soccer, and ultimate Frisbee compete regionally giving SDSU students additional recreation opportunities.

All program offerings are governed by an elected intramural and sport club councils, 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 online at <http://www.sdsu.edu/wellness-center>.

## **Teaching and Learning Center**

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.

### **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.) Call 605-688-6146 or visit <http://www.sdsu.edu/wellness-center/counseling/index.cfm> for more 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. For further information, a medical appointment, or medical record assistance, call 605-688-4157.

**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. For further information, call 605-688-6146.

**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. For further information, call 605-688-6146 or 605-688-4157.

**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.

Additional services include nutrition education and health promotion with a student-run organization advocating for healthy lifestyles – Helping Everyone Reach Optimal Health (HEROH).

**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. A variety of SDSU departments have established service-learning courses and students are encouraged to contact specific departments for information. Assistance with service learning can be obtained from the Teaching Learning Center by calling 605-688-6413.

# University Relations Office

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The role of the Office of University Relations is to serve as a reliable communications and marketing link between the general public and the state's largest higher education institution: South Dakota State University. The numerous services and activities performed by UR are designed to inform key stakeholders and promote the areas of excellence at SDSU, ranging from faculty and student achievements, research-based initiatives, and alumni accomplishments. UR assists and works with the University's administration, colleges and departments and numerous student organizations in providing strategic marketing and communications functions to showcase the University's commitment as a land-grant institution to teaching, research, and outreach. University Relations maintains five primary areas of operations: news service, creative services, marketing & brand management, photography and licensing & merchandise.

## News Service

The News Service division is the official source for South Dakota State University news, information and expert sources and university-wide events. The division is committed to providing information to the public and university community about the quality and diversity of the learning environment at SDSU, the level of scholarship and research and the university's dedication to finding solutions to the challenges of today. University Relations responds to all media requests concerning issues, events and research happening at SDSU. Incoming reporter queries help determine experts who can most appropriately respond. The office works closely with all branches of the news media to provide interview and information requests, University event publicity, news tips and advisories, distribution of University research information, and a wide variety of student-related announcements. South Dakota State University welcomes the media to campus and request they contact University Relations to schedule interviews and visits to campus. News Service representatives can be reached at 605-688-6161.

## Creative Services

The creative services division of University Relations serves a vital communications role at SDSU. Creative services manages eight magazines and newsletters, which showcase students, faculty, and alumni as they carry State's message of opportunity to various audiences, both on and off campus.

UR produces the following magazines for the following colleges and organizations on campus:

- State Magazine (SDSU Alumni Association)
- Calling Home (magazine for parents)
- Impulse Magazine (College of Engineering)
- College of Nursing
- College of Pharmacy
- Rabbit Tracks (SDSU Athletics)
- College of Arts and Sciences
- College of Education and Human Sciences

UR staffers regularly collaborate and consult with various campus departments and colleges about their communication needs. Professional and experienced staff make the various publications shine through the creative work of several graphic designers and writers. In addition to magazines and newsletters, the creative services unit designs brochures, display banners, posters, programs, invitations and just about anything else that clients request. A key goal is to ensure that SDSU's name and logo is properly used in printing projects. UR maintains the University's Graphic Identity Manual and monitor University logo usage.

## Marketing & Brand Management

The South Dakota State University marketing division provides strategic and tactical marketing services, including brand

management, positioning and messaging and advertising. The division is also responsible for the development and implementation of the University's strategic marketing plan. The department aids the University in reaching its strategic and operational goals by building awareness, preference and loyalty among its current and prospective stakeholders.

## Brand Management

University Relations also carries the responsibility of ensuring that SDSU's name and logos are properly used in printing projects. The University currently has three main marks: The Campanile with SDSU underneath serves as the institutional logo and is to be used for most publications; the Jackrabbit is the mascot of the University and is used by Athletics, the SDSU Alumni Association and student organizations; and the stretch SD is used by Athletics and for external marketing purposes.

There are a few basic rules that apply to each mark:

- All marks must be used in its entirety. Using only a portion of the mark is not allowed.
- All marks must be used in the proper colors, with no color substitutions or embellishments.
- Marks cannot be altered in any way, for example, the jackrabbit cannot wear a cowboy hat or be dressed in scrubs.
- Marks cannot be overprinted, and a ring of 3/16 inch clear space must surround them at all times.

In order to use any of the marks on printed publications, prior approval must be obtained from University Relations. Call 605-688-4537 for logo usage approval.

## Licensing

The purpose of the South Dakota State University Trademark Licensing Program is to protect and promote the name, symbols, and other trademarks that are associated with the University on apparel and other merchandise for internal and external consumption.

The SDSU Trademark Licensing Program is charged with:

- Protecting and controlling use of the University name and marks;
- Developing cooperative relationships with licensees;
- Distribution and approval of artwork;
- Promotion of products and designs that are consistent with the University's image, reputation, and goals;
- Supporting the University's strategic brand development

Any product bearing the logos, trademarks, word marks, or having an implied association with South Dakota State University must be licensed with the South Dakota State University Trademark Licensing Program, which approves all products and designs and ensures proper labeling as appropriate. In addition, the South Dakota State University Trademark and Licensing Program seeks to insure that all products and designs submitted for licensing are safe for consumers and project the proper image of the University. Contact the South Dakota State Trademark Licensing Office at 605-688-6161 with questions at [sdsu.ur@sdstate.edu](mailto:sdsu.ur@sdstate.edu) or 605-688-6161.

## Photographic Services

University Relations is home to SDSU's photography services and is responsible for meeting photo requests across campus. Requests are varied ranging from the presidents office, campus events, conferences, SDSU's web pages, college publications, promotional and marketing items to intercollegiate athletic competition. SDSU photography services provides the university with high-quality images at reasonable rate. To schedule photography services please call 605-688-5913.



# Water and Environmental Engineering Research Center

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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 (NGPWRRRC), 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 Director Christopher Schmit, Christopher.Schmit@sdstate.edu, 605-688- 6252, or WEERC, SDSU, Box 2219, Brookings, SD 57007-0096.

## Water Resources Institute

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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 of activities include agricultural water management such as irrigation and drainage, the role of agricultural nutrient management on water quality, phosphorous loss from agricultural fields 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 a range of 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 decision-makers 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. The funds are targeted for research, including research by students, directed toward solving state, regional, and national water problems.

The Water Resources Institute co-sponsors the annual Eastern South Dakota Water Conference held in Brookings. Water is an important part of the economic future of South Dakota, and this conference serves as an important avenue to exchange experiences and ideas, explore the latest research and share knowledge with other participants on this Resource. The WRI also co-sponsors the Big Sioux Water Festival in Brookings, SD, which has hosted more than 20,000 4th grade students since its beginning in 1993.

WRI provides a unique service to the public by identifying and provide 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: [sdsu.wri@sdstate.edu](mailto:sdsu.wri@sdstate.edu) or on the Internet at <http://www.sdstate.edu/abe/wri>





# University Organization, Administration & Staff

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# Organizations & Administration

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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 Faculty 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 Kathryn Johnson*

President  
(Term expires March 31, 2017)  
Rapid City

*Honorable Dean Krogman*

Vice President  
(Term expires March 31, 2015)  
Brookings

*Honorable Randy Schaefer*

Secretary  
(Term expires March 31, 2015)  
Madison

*Honorable Terry Baloun*

(Term expires March 31, 2016)  
Highmore

*Honorable James O. Hansen*

(Term expires March 31, 2013)  
Pierre

*Honorable Harvey C. Jewett*

(Term expires March 31, 2017)

*Honorable Randall K. Morris*

(Term expires March 31, 2016)  
Spearfish

*Honorable Carole Pagonos*

(Term expires March 31, 2015)  
Sioux Falls

*Honorable Patrick Weber*

Student Regent  
(Term Expires July 1, 2012)  
Montrose

*Honorable Jack R. Warner*

Executive Director  
Pierre

## ***General Administration***

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David L. Chicoine, Ph.D.

Provost and Vice President for Academic Affairs

Laurie Stenberg Nichols, Ph.D.

Vice President for Information Technology

Michael F. Adelaine, Ph.D.

Vice President for Finance and Business/CFO

Wesley G. Tschetter, M.B.A.

Vice President for Research and

Kevin D. Kephart, Ph.D.

Vice President for Student Affairs

Marysz Palczewski-Rames, Ed.D.

Associate Vice President for Academic Affairs

Mary Kay Helling, 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 Finance and Business/Controller

Jeff A. Siekmann, M.B.A.

Assistant Vice President for International Affairs and Outreach

Kathleen Fairfax, M.A.

Interim Associate Vice President for Research

James Doolittle, Ph.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

Daniel Scholl, Ph.D., Associate Dean and Director of

Agricultural Experiment Station

*College of Arts and Sciences*

Dennis Papini, Ph.D., Dean

Kathleen Donovan, Ph.D., 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

Richard A. Reid, Ph.D., Associate Dean

Dennis Helder, Ph.D., Associate Dean

*College of Nursing*

Roberta K. Olson, Ph.D., Dean

Nancy Fahrenwald, Associate Dean

Linda Herrick, Ph.D., Associate Dean

Lynnette Stamler, Ph.D., Associate Dean

*College of Pharmacy*

Dennis Hedge, Pharm.D., Dean

Jane Mort, Pharm.D., Associate Dean

Daniel Hansen, Pharm.D., Assistant Dean

*Honors College*

Timothy J. Nichols, Ph.D., Dean

*University College*

Keith Corbett, Ed.D., Dean

*Graduate School*

Kinchel Doerner, Ph.D., Dean

*Library*

Kristi Tornquist, Ph.D., Chief University Librarian

*Office of Student Affairs*

Samuel A. Jennings II, Ph.D., Dean of Students

# Organizations & Administration

## **Directors**

Academic Evaluation & Assessment  
Jo Ann Sckerl, Ed.D.

Academic Programs (College of AgBio)  
Donald M. Marshall, Ph.D.

Admissions  
Tracy Welsh, B.A.

Agricultural Experiment Station  
Daniel Scholl, Ph.D.

Agricultural Heritage Museum  
Barry Dunn, Ph.D., interim

Alumni Association  
Matt Fuks, B.S., President

Animal Disease Research and Diagnostic  
Laboratory (ADRDL)  
David H. Zeman, D.V.M., Ph.D.

Athletics  
Justin Sell, M.S.

Bookstore, University  
Derek Peterson, B.S.

Capitol University Center-Pierre  
Ron Woodburn, M.S.

Center for Infectious Disease Research and  
Vaccinology  
David H. Francis, Ph.D.

Cooperative Extension Service  
Barry Dunn, Ph.D.

Dining Services  
Jill Ackland, B.S.

Disability Services  
Nancy Crooks, M.S.

Diversity Enhancement  
Jaime Nolan-Andrino, M.A.

Enrollment Services and Registrar  
Aaron Aure, Ph.D.

Environmental Health & Safety  
Gary Yarrow, Ph.D.

Ethel Austin Martin Program in Human  
Nutrition  
Bonny Specker, Ph.D.

Financial Aid  
Jay A. Larsen, M.Ed.

Geographic Information Sciences Center  
of Excellence  
Geogrey Henbry, Ph.D.

Grants and Contracts Administration  
Jacqueline Nelson, M.Ed., CRA

4-H Foundation  
Nancy Swanson, M.A.

Human Resources  
Louise Loban, Acting Director

Institutional Research and Budget  
Jeri Kurtz, Ed.D.

Marketing and Communications  
Mike Lockrem, M.Ed.

McCrorry Gardens,  
David Graper, Ph.D.

North Central Sun Grant  
James Doolittle, Ph.D.

Oak Lake Field Station  
Nels Troelstrup, Ph.D.

Orientation  
Adam Karnopp, M.S.

Residential Life  
Jeffrey Hale, Ed.D.

South Dakota Art Museum  
Lynn Verschoor, M.S.

SDSU Foundation/Development  
Steve Erpenbach, B.S., President

SD EPSCoR  
James Rice, Ph.D.

Student Activities  
Jennifer Novotny, M.S.

Student Engagement  
Nick Wendell, M.S.

Technology Transfer Service  
William Aylor, J.D.

Water and Environmental Engineering  
Research Center  
Christopher Schmit, Ph.D.

Water Resources Institute  
Van C. Kelley, Ph.D.

Web Development and Management  
Patricia Edler, B.A.

West River Ag Center  
Dan Oedekoven, M.Ed.

## **Department Heads**

**Agriculture and Biological Sciences**

Agricultural and Biosystems Engineering  
Van C. Kelley, Ph.D.

Animal Sciences  
Clinton Rusk, Ph.D.

Biology and Microbiology  
Volker Brozel, Ph.D.,

Dairy Science  
Vikram V. Mistry, Ph.D.

Economics  
Eluned Jones, Ph.D.

Natural Resource Management  
David W. Willis, Ph.D.

Plant Science  
Thomas Cheesbrough, Ph.D.

Veterinary and Biomedical Science  
David H. Zeman, D.V.M., Ph.D.

Water Resources  
Van C. Kelley, Ph.D.

**Arts and Sciences**

Aerospace Studies  
Lt Col Carleton H. Hirschel, M.P.A.

Architecture  
Brian T. Rex, M.S.

Chemistry and Biochemistry  
James A. Rice, Ph.D.

Communication Studies and Theatre  
Laurie Haleta, Ph.D.

English  
Jason McEntee, Ph.D.

Geography  
George White, Ph.D.

History and Political Science  
April Brooks, Ph.D.

Journalism and Mass Communication  
Mary Peterson Arnold, Ph.D.

Military Science  
Aaron C. Schultz, M.B.A..

Modern Languages and Global Studies  
Maria Ramos, Ph.D.

Music  
David Reynolds, D.M.A.

Physics  
Joel Rauber, Ph.D.

Psychology  
Bradley Woldt, Ph.D.

Sociology and Rural Studies  
Mary Emery, Ph.D.

Visual Arts  
Tim Steele, Ph.D.

## **Education and Human Sciences**

Consumer Sciences  
Jane E. Hegland, Ph.D.

Counseling and Human Development  
Jay Trenhaile, Ed.D.

Health and Nutritional Sciences  
Matthew Vukovich, Ph.D.

Teaching, Learning and Leadership  
Andrew Stremmel, Ph.D.

## **Engineering**

Civil and Environmental Engineering  
Bruce Berdanier, Ph.D.

Electrical Engineering and Computer  
Science  
Steven Hietpas, Ph.D.

Engineering Technology and Management  
Teresa Hall, Ph.D.

Mathematics and Statistics  
Kurt Cogswell, Ph.D.

Mechanical Engineering  
Kurt Bassett, Ph.D.

## **Nursing**

Graduate Nursing  
Lynnette Stamler, Ph.D.

Nursing Research,  
Nancy Fahrenwald, Ph.D.

Nursing Student Services  
Rebecca Randall, Ed.D.

Undergraduate Nursing  
Linda Herrick, Ph.D.

West River Nursing  
Barbara Hobbs, Ph.D.

## **Pharmacy**

Pharmacy Practice  
James Clem, Pharm.D.

Pharmaceutical Sciences  
Chandradhar Dwivedi, Ph.D.



# Accreditations and Affiliations

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 (HLC) of the North Central Association of Colleges and Schools (230 North LaSalle Street, Suite 7-500, Chicago, IL, 60604; Phone 800-621-7440). Its purpose is to maintain high standards of instructional work and educational programs.

**Agricultural Systems Technology:** The Agricultural Systems Technology Program is accredited by the American Society of Agricultural And Biological Engineering (2950 Niles Road, St. Joseph, MI 49085-9659; Phone: 269-429-0300).

**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).

**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 Counseling and Human Resource Development program is accredited by the Council for Accreditation of Counseling and Related Educational Programs (1001 North Fairfax Street, Suite 510 Alexandria, Virginia 22314; Phone 703-535-5990). The specialization in Rehabilitation and Mental Health Counseling has been provisionally accredited by the Council on Rehabilitation Education (CORE), with the full accreditation review during 2012. (1699 E. Woodfield Road, Suite 300 Schaumburg, IL 60173; 847-944-1345).

**Dietetics:** The Dietetics program is accredited by the Council for Education of Nutrition and Dietetics, the accrediting agency for Academy of Nutrition and Dietetics (120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040 ext 5400).

**Early Childhood Education:** The Early Childhood Education program 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).

**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).

**Extension:** The extension programs of Agricultural and Biosystems Engineering; Animal Science; Biology/Microbiology; Chemistry & Biochemistry; Dairy Science; Economics; Education and Human Sciences; Experiment Station; Natural Resource Management; Plant Science; Sociology and Rural Studies; and Veterinary Medicine are reviewed by the United States Department of Agriculture, National

Institute of Food and Agriculture (NIFA); 1400 Independence Avenue SW., Stop 2201, Washington, DC 20250-2201

**Exercise Science:** The Exercise Science Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) (1361 Park Street, Clearwater, FL 33756; Phone 727-210-2350). The program was recommended for CAAHEP accreditation after review by the Committee on Accreditation for the Exercise Sciences (COAES) (401 W. Michigan Street, Indianapolis, IN 46202; Phone 317-637-9200 ext. 147).

**Fishback Center for Early Childhood Education:** The Fishback Center for Early Childhood Education is accredited by the National Association for the Education of Young Children (1506 16th St., NW, Washington, D.C. 20036-1426; Phone 800-424-2460).

**Interior Design:** The Interior Design program is accredited by the Council for Interior Design Accreditation (206 Grandville Avenue, Suite 350 Grand Rapids, MI 49503-4014; 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).

**Leadership & Management Non-Profit Organizations (LMNO):** The program is accredited by the Nonprofit Leadership Alliance (1100 Walnut Suite 1900 Kansas City, MO 64106; 816-561-6415).

**Medical Laboratory Science:** The curriculum in Medical Laboratory Science is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (5600 N. River Rd., Suite 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 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 x252 Fax: (202) 887-8476).

**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:** The 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 American Society for Information Science & Technology, 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, Association for Supervision & Curriculum Development, Council of Graduate Schools in the United States, National Association for Foreign Student Affairs, National Collegiate Honors Council. Through the Board of Regents, the University also participates in the Western Interstate Commission for Higher Education.

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 and Professor of Human Development, Graduate Faculty, 1978,

2003; B.S., SDSU, 1977; M.S., 1982; Ph.D., Purdue University, 1992.

**Doolittle, James J.**, Associate Vice President of Research & Sponsored Programs, Director of North Central Sun Grant Center, Professor of Plant Science, Graduate Faculty, 1991, 2012; 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.

**Fairfax, Kathleen**, Assistant Vice President for International Affairs and Outreach, 2011; B.S., DePauw University, 1984; M.A., Indiana University Bloomington, 1986.

**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**, Associate Vice President of Student Affairs, 1998, 2007; B.S., SDSU, 1985; M.S.Ed., Eastern Illinois University, 1987; Ph.D., SDSU, 2008.

## 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 University College, Professor of Educational Leadership, Graduate Faculty, 1981, 2004; B.S., SDSU, 1976; M.Ed., 1987; Ed.D., University of South Dakota, 2001.

**Donovan, Kathleen**, 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.

**Doerner, Kinchel**, Dean of the Graduate School, Professor of Biology and Microbiology, Graduate Faculty, 2012, B.S., Southern Illinois University, 1986; M.S., University of Illinois, 1989; University of Illinois at Urbana-Champaign, 1992.

**Dunn, Barry**, Dean of the College of Agriculture and Biological Sciences, Professor of Animal Science, 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.

**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.**, Associate 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.

**Herrick, Linda M.**, Associate Dean of undergraduate Nursing, 2012; B.S., Winona State University, 1979; M.S., University of Minnesota, 1991; Ph.D., University of Minnesota, 1998.

**Jennings II, Samuel A.**, Dean of Students, 2012; B.S., Lewis-Clark State College, 1996; M.S. Portland State University, 1999; Ph.D., Capella University, 2005.

**Marshall, Donald M.**, Associate Dean and Director of Academic Programs, College of Agriculture and Biological Sciences, Professor of Animal Science, 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, 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.

**Papini, Dennis**, Dean of the College of Arts and Sciences, Professor of Psychology, Graduate Faculty, 2012; B.S., Western Illinois University, 1979; M.S., West Virginia University, 1982; Ph.D., West Virginia 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.

**Scholl, Daniel**, Associate Dean of the College of Agriculture and Biological Sciences, Ag Experiment Station Director, Professor, Graduate Faculty, 2000, 2010; B.S., University of California, 1985; D.V.M., University of California, 1987; M.P.V.M., University of California, 1988; Ph.D., State University of Utrecht (the Netherlands) 1992.

**Stamler, Lynnette**, Associate Dean of Graduate Nursing, Graduate Faculty, 2012; BSN, St. Olaf College; MEd, University of Manitoba; PhD, University of Cincinnati.

**Thorngren, Jill**, Dean of the College of Education and Human Sciences, 2011; B.A., Idaho State University, 1994; M.S., 1996; Ph.D., 1999.

**Tornquist, Kristi M.**, Chief University Librarian, Professor, Graduate Faculty, 1994, 2011; B.A. University of Minnesota - Morris, 1980; M.L.S., University of Wisconsin, 1982; Ph.D., University of Minnesota, 1992.

## 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.

## 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.

**Granholm, Nels H.**, Distinguished Professor Emeritus of Biology and Microbiology, Graduate Faculty, 1968, 2011; 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.

**Helder, Dennis L.**, Associate Dean of Research and Distinguished Professor of Electrical Engineering, Graduate Faculty, 1983, 2011; B.S., SDSU, 1979; B.S., 1980; M.S., 1985; Ph.D., North Dakota State University, 1991.

**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

## 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;

**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.

**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.

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 Plant Science, 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 Science, Graduate Faculty, 1986, 2007; B.A., Southern Connecticut State College, 1971; M.S., Washington State University, 1975; Ph.D., 1984.

**Pritchard, Robbi H.**, Distinguished Professor of Animal Science, 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.

**Ryder, Mary R.**, Distinguished Professor of English, Graduate Faculty, 1989, 2002; B.A., Monmouth College, 1972; M.A., Illinois State University, 1981; Ph.D., University of Illinois, 1987.

**Schingoethe, David J.**, Distinguished Professor Emeritus of Dairy Science, Graduate Faculty, 1969, 2003; 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.

**Willis, David W.**, Distinguished Professor and Head of Wildlife and Fisheries Sciences, Graduate Faculty, 1987, 2002; 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, 2002; 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.

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.

**Adams, Wells E., Jr.**, Adjunct Assistant Professor of Wildlife and Fisheries Sciences, 2011; B.S., Iowa State University, 2002; M.S., SDSU, 2004.



- Adamson, Dwight W.**, Associate Professor of Economics, Graduate Faculty, 1989, 1995; B.A., Washington State University, 1976; M.A., 1983; Ph.D., 1988.
- Adamyian, Luiza**, Instructor of Modern Language and Global Studies, 2012; B.A., University of Nebraska-Lincoln, 2009; M.A., 2012.
- 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.
- Aguiar, Gary G.**, Associate Professor of Political Science, Graduate Faculty, 1999, 2003; B.A., Coe College, 1983; B.A., University of Hawaii, 1990; M.A., Indiana University, 1993; Ph.D., 1996.
- Ahrendsen, Wendy**, Instructor of Mathematics and Statistics, 1995; B.A., Wartburg College, 1995; M.S., SDSU, 1999.
- Ali, Shaukat**, Associate Professor of Plant Science, Graduate Faculty, 2012; M.Sc., University of Agriculture, Faisalabad (Pakistan), 1978; M.S., SDSU, 1993; Ph.D., North Dakota State University, 2001.
- Alsaker, William**, Instructor of Mathematics and Statistics, 2010; B.S., SDSU, 2008; M.S., SDSU, 2010.
- Alfson, Troy M.**, Assistant Director of Conference and Special Services, 2003, 2005; B.S., Bemidji State University, 1994; M.S., University of Wisconsin, 1996.
- Anand, Sanjeev**, Associate Professor of Dairy Science, Graduate Faculty, 2006; B.S., D.S. College (India), 1978; M.S., National Dairy Research Institute (India), 1981; Ph.D., 1986.
- Andersen, Brenda F.**, Associate Director of Student Health Services, 1982, 1984; B.S., SDSU, 1979; M.S., 1986.
- Anderson, Barbara**, Clinic Recruitment and Outreach Coordinator, 2010; EA Martin Program in Human Nutrition; B.A., SDSU, 1981
- Anderson, Carla L.**, Student Services Ctr. Coordinator/Advisor EHS Student Services Coordinator & Academic Advisor, 2004, 2005; B.S., SDSU, 2002; M.S., 2007.
- Anderson, Carter D.**, Adjunct Assistant Professor of Economics, 2006; B.S., North Dakota State University, 1981; M.S., 1983.
- Anderson, Cody**, Imaging Engineering 2008; B.S., SDSU, 2007.
- Anderson, Gary A.**, Professor of Agricultural and Biosystems Engineering, Graduate Faculty, 1987, 1999; B.S., SDSU, 1975; M.S., Iowa State University, 1985; Ph.D., 1987.
- Anderson, Jacob**, Manager, Dairy Plant, 2011; B.S., SDSU, 2004.
- Anderson, Jenn**, Assistant Professor of Communication Studies and Theatre, 2012; B.A., Truman State University, 2004; M.A., Miami University, 2008; Ph.D. Michigan State University, 2012.
- Anderson, Jill L.**, Assistant Professor of Dairy Science, 2012; B.S., University of Delaware, 2003; M.S., SDSU, 2005; Ph.D., 2012.
- Anderson, Randi**, Instructor of English, 2011; B.A., Black Hills State University, 2007; M.A., SDSU, 2011.
- Anderson, Randy**, Adjunct Professor, Plant Science, Graduate Faculty, 2004; B.S., SDSU, 1974; M.S., 1976; Ph.D., University of Wyoming, 1980.
- Anderson, Zach**, Student Affairs Fiscal and Facility Officer, 2012; B.S., SDSU, 2004; M.S., University of South Dakota, 2006.
- Andrawis, Alfred S.**, Professor of Electrical Engineering, Graduate Faculty, 1981, 2001; B.S., Alexandria University (Egypt), 1974; M.S., SDSU, 1982; Ph.D., Virginia Polytechnic Institute and State University, 1991.
- Andrawis, Madeleine Y.**, Professor of Electrical Engineering, Graduate Faculty, 1980, 2001; B.S., Cairo University (Egypt), 1977; M.S., SDSU, 1983; Ph.D., Virginia Polytechnic Institute and State University, 1991.
- Arends, Robin**, Instructor of Nursing/Nurse Practitioner, 2011; B.S. Briar Cliff, 2001; M.S. SDSU, 2008.
- Arneson, Angela**, Instructor of Modern Languages and Global Studies, 2012; B.A., SDSU, 2001; M.A., Bowling Green State University, 2006; Ph.D., Texas Tech University, 2012.
- Arnold, Mary P.**, Professor and Head of Journalism and Mass Communication, Graduate Faculty, 2002, 2005; B.A., Dakota Wesleyan University, 1969; M.A., University of South Dakota, 1973; Ph.D. University of Iowa, 1994.
- Aro, Carlene D.**, Professor/Serials Librarian, 1989, 1998; B.A., Oregon State University, 1981; M.L.S., University of Michigan, 1982; M.Ed., SDSU, 1993.
- Arwood, Donald**, Professor of Rural Sociology, Graduate Faculty, 1986, 1999; B.S., SDSU, 1980, M.S., 1982; Ph.D., 1989.
- Atteberry, Anna**, Instructor/Advisor of Nursing, 2008, A.S., USD, 1994; B.S., SDSU, 1998, 1999; M.S., 2002.
- Auger, Donald L.**, Associate Professor of Biology and Microbiology, Graduate Faculty, 2003, 2008; B.A., Saint John's University, 1975; Ph.D., University of North Dakota, 1995.
- Austin, Jane E.**, Adjunct Assistant Professor of Wildlife and Fisheries, 2003; B.S., University of Maine, 1980; M.S., University of Missouri, 1983; Ph.D., 1988.
- Aure, Aaron**, Director of Enrollment Services and Registrar, Student Affairs, 2010; B.S., University of Iowa, 1995; M.S., University of Northern Colorado, 1999; Ph.D., Colorado State University, 2003.
- Aylor, William W.**, Director of Technology Transfer, 2012; B.S., Frostburg State University, 2000; M.S., North Carolina State University, 2002; J.D., West Virginia University, 2005.
- Baggett, Marie-Pierre E.**, Professor of Modern Languages, Graduate Faculty, 1998, 2002; B.A., Université de Clermont (France), 1986; M.A., University of California, 1989; Ph.D., 1996.
- Baggett, Paul B.**, Assistant Professor of English, Graduate Faculty, 2002, 2008; B.A., University of California-Irvine, 1987; M.A., California State University- Long Beach, 1993; Ph.D., University of Miami, 1998.
- Bahr, Jr., Alvin M.**, Instructor of Mathematics and Statistics, 1998; B.A., SDSU, 1996; M.S., 2000.
- Bakker, Kristel K.**, Adjunct Assistant Professor of Wildlife and Fisheries Sciences, 2003; B.S., SDSU, 1990; M.S., 1996; Ph.D., 2000.
- Ball, John J.**, Professor of Plant Science, 1991, 2001; B.S., Michigan Technological University, 1976; M.S., Michigan State University, 1979; Ph.D., 1982.
- Ballou, Amybeth**, Instructor of Teaching, Learning and Leadership, 2011; B.S., SDSU, 2008; M.S. 2011.
- Banik, Deborah K.**, Assistant Professor of Nursing, 1998, 2012; Diploma in Nursing, Trinity School of Nursing, 1973; B.S., SDSU, 1985; MPH, University of Minnesota, 1988, Ph.D., University of Nebraska-Omaha, 2002.
- Barnes, Thomas G.**, Adjunct Professor of Natural Resource Management, 2003; B.A., Huron College, 1979; M.S., SDSU, 1982; Ph.D., Texas A&M University, 1988.
- Bartel, Billie**, Assistant Professor of Pharmacy Practice, 2011; B.S., South Dakota State University, 2007; Pharm.D., 2009.
- Bassett, Janine D.**, Instructor of Nursing/Nurse Practitioner, 2000; B.S., SDSU, 1992; M.S., 2004.
- Bassett, Kurt D.**, Professor and Head of Mechanical Engineering, Graduate Faculty, 2005, 2007; B.S., SDSU, 1981; M.S., 1983; Ph.D., North Dakota State University, 1996.
- Bassett, Susan D.**, Instructor of Nursing, 1992; B.S., SDSU, 1982; M.S., 1998.
- Baszler, Jared C.**, Head Coach, Women's and Men's Golf, 2003; B.A., Grinnel College, 2002.
- Bates, James**, Assistant Professor of Counseling and Human Development, 2008; B.S., Brigham Young University, 2002; M.S., Purdue University, 2005; Ph.D., Syracuse University, 2009.
- Bayer, Michelle A.**, Instructor, University College, 2007; B.A., SDSU, 1995; M.ED., University of Nevada, 2005.
- Beare, Tianna M.**, Program Manager, 2002, 2006; EA Martin Program in Human Nutrition, B.S. SDSU, 2002.

- Beaudoin, Daniel**, Adjunct Assistant Professor of Aerospace Studies, 2012; B.S., United States Air Force Academy, 2007.
- Bebensee, Stephanie M.**, First Year Professional Advisor, 2001, 2012; B.S., SDSU, 2000; M.S., SDSU, 2008.
- Beck, Dwayne L.**, Research Manager of Dakota Lakes Field Station, Professor, Graduate Faculty, 1979, 1995; B.S., Northern State University, 1975; Ph.D., SDSU, 1983.
- Beck, Ruth**, Agronomy Crops Specialist, Plant Science, 2012; B.S., University of Manitoba, 1980; M.S., SDSU, 1990.
- Beeny, Martyn**, Instructor of History, 2012; B.A., University of Kent (England), 2000; Ph.D., 2011.
- Begley, Rick L.**, Assistant Professor of Military Science, 2008; B.S. California Polytechnic State University, 1977.
- Behl, Diana M.**, Assistant Professor of Visual Arts, 2005; B.F.A., Bowling Green State University, 2001; M.A., University of Iowa, 2004; M.F.A., 2005.
- Bell, Julie A.**, Assistant Professor and Academic Advisor, College of Education and Human Sciences, 1975, 1980; B.S., SDSU, 1970; M.S., 1976.
- Belzung, Kristin**, Assistant Volleyball Coach, Intercollegiate Athletics, 2010; B.A., University of Northern Iowa, 2008; M.S., University of South Carolina, 2010.
- Benzer, Fatih**, Associate Professor of Visual Arts, 2003; B.F.A., Dokuz Eylul University (Turkey), 1992; M.A., California State University, 1996; Ed.D., Arizona State University, 2000.
- Berdanier, Bruce W.**, Professor and Head of Civil and Environmental Engineering, Graduate Faculty, 2008; B.S., Ohio State University, 1980; M.S., Purdue University, 1983; PhD, Ohio State University, 1995.
- Berg, Jr., Robert K.**, Manager, SESD Experiment Station Farm, Professor, Graduate Faculty, 1993, 1998; B.S., Oklahoma State University, 1981; M.S., 1982; Ph.D., Iowa State University, 1987.
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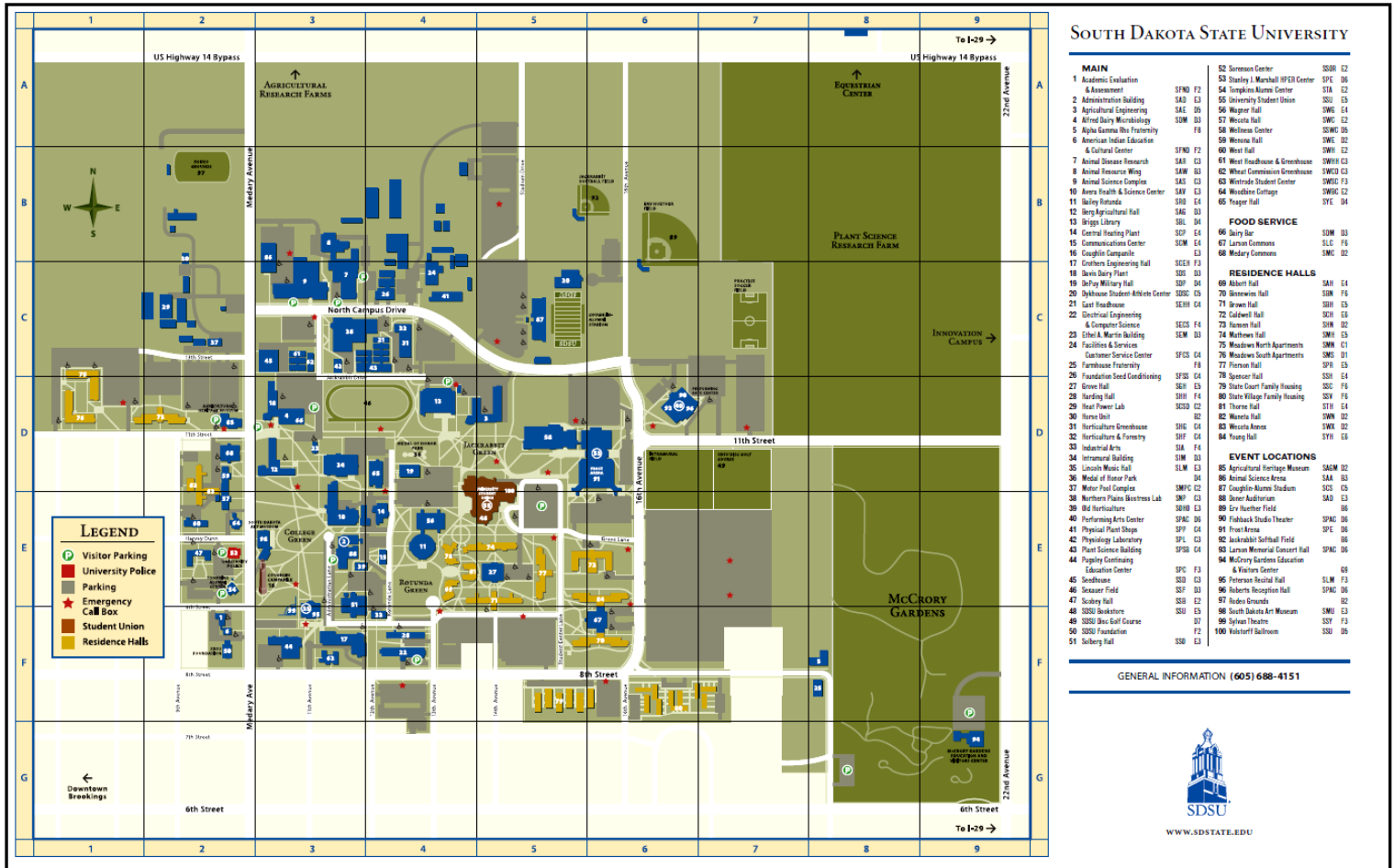
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# Campus Map



# Academic Calendar

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## 2012 Fall Term

August 27, Monday	Orientation/Start Date
August 27, Monday, 4:00 pm	Instruction begins
August 27-August 29, Monday-Wednesday	Tuition and Fee Payment Days
September 3, Monday	Labor Day Holiday
September 5, Wednesday	Last day to drop or add and adjust final fees
September 6, Thursday	“W” grade begins
September 14, Friday	Last day to submit graduation applications for Fall 2012
October 8, Monday	Native American Day Holiday
October 18, Thursday	First half Fall Term ends
October 23, Tuesday	Deficiency reports due on WebAdvisor by midnight
October 27, Saturday	Hobo Day
November 8, Thursday	Last day to drop a course
November 12, Monday	Veterans’ Day Holiday (observed)
November 21-23, Wednesday-Friday	Thanksgiving Recess
December 10-14,* Monday-Friday	Final exams
December 19, Wednesday	Grades due on WebAdvisor by midnight

\* December 14-official graduation date noted on transcript  
Note: There will be no Fall 2012 Commencement Ceremony

## 2013 Spring Term

January 9, Wednesday	Orientation/Start Date
January 9, Wednesday, 4:00 pm	Instruction begins
January 9-11, Wednesday-Friday	Tuition and Fee Payment Days
January 18, Friday	Last day to drop or add and adjust final fees
January 19, Saturday	“W” grade begins
January 21, Monday	Martin Luther King Day Holiday
February 1, Friday	Last day to submit graduation application for Spring 2012
February 18, Monday	Presidents’ Day Holiday
March 4-8, Monday-Friday	Spring Break
March 11, Monday	First half Spring Term ends
March 14, Thursday	Deficiency reports due on WebAdvisor by midnight
March 29-April 1, Friday-Monday	Easter Recess
April 3, Wednesday	Last day to drop a course
April 29-May 3,* Monday-Friday	Final exams
May 4, Saturday	127th Annual Commencement
May 8, Wednesday	Grades due on WebAdvisor by midnight

\* May 3-official graduation date noted on transcript

## 2013 Summer Term

May 6, Monday - May 24, Friday	May Interim
May 27, Monday	Memorial Day Holiday
May 28, Tuesday - August 2, Friday	10-week Academic Summer Session
July 4, Thursday	Independence Day Holiday
August 5, Monday - August 23, Friday	August Interim
May 6, Monday - August 23, Friday	Summer Administrative Term