The information contained in this catalog is the most accurate available at the time of publication, but changes may become effective before the next catalog is published. It is ultimately the student's responsibility to stay abreast of current regulations, curricula, and the status of specific programs being offered. Further, the university reserves the right, as approved by the Board of Regents, to modify requirements, curricula offerings, and charges, and to add, alter, or delete courses and programs through appropriate procedures. While reasonable efforts will be made to publicize such changes, a student is encouraged to seek current information from appropriate offices.
Discrimination complaints including complaints of harassment or sexual discrimination in educational programs should be directed to:

Programs or activities. This includes discrimination on the basis of sex in admission to or employment in SDSU’s education programs or activities.

It is the policy of South Dakota State University (SDSU) not to discriminate on the basis of race, color, creed, religion, national origin, ancestry, citizenship, age, gender, sexual orientation, disability, marital status, pregnancy, veteran 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 sex in admission to or employment in SDSU’s education programs or activities. The grievance process to address these complaints as well as 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

South Dakota State University Non-Discrimination Policy

Frequently Called Numbers

<table>
<thead>
<tr>
<th>General Numbers</th>
<th>Administrative Information Services</th>
<th>605-688-6134</th>
<th>SDSU Foundation</th>
<th>605-697-7475</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Experiment Station</td>
<td>605-688-4149</td>
<td>South Dakota Art Museum</td>
<td>605-688-5423</td>
<td></td>
</tr>
<tr>
<td>Agricultural Heritage Museum</td>
<td>605-688-6226</td>
<td>Student Activities</td>
<td>605-688-6129</td>
<td></td>
</tr>
<tr>
<td>Alumni Association Office</td>
<td>605-697-5198</td>
<td>Tickets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian Education and Cultural Center</td>
<td>605-688-6416</td>
<td>Jackrabbit Athletics</td>
<td>605-688-5422</td>
<td></td>
</tr>
<tr>
<td>Art Museum</td>
<td>605-688-5423</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board of Regents</td>
<td>605-773-3455</td>
<td>Theatre Box Office</td>
<td>605-688-6045</td>
<td></td>
</tr>
<tr>
<td>Bookstore</td>
<td>605-688-4163</td>
<td>University Police Department</td>
<td>605-688-5117</td>
<td></td>
</tr>
<tr>
<td>Capital University Center-Pierre</td>
<td>605-773-2160</td>
<td>University Marketing and Communications</td>
<td>605-688-6161</td>
<td></td>
</tr>
<tr>
<td>Career Center Office</td>
<td>605-688-4425</td>
<td>University Center-Sioux Falls</td>
<td>605-367-5640</td>
<td></td>
</tr>
<tr>
<td>Counseling Services</td>
<td>605-688-6146</td>
<td>University Center-Rapid City</td>
<td>605-394-6823</td>
<td></td>
</tr>
<tr>
<td>Dining Services</td>
<td>605-697-2550</td>
<td>Veterans Advising</td>
<td>605-688-4700</td>
<td></td>
</tr>
<tr>
<td>Disability Services Office</td>
<td>605-688-4504</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity, Equity, &amp; Community Office</td>
<td>605-688-6556</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Health &amp; Safety</td>
<td>605-688-4264</td>
<td>President's Office</td>
<td>605-688-4111</td>
<td></td>
</tr>
<tr>
<td>Extension Service</td>
<td>605-688-4792</td>
<td>Provost and Vice President for Academic Affairs</td>
<td>605-688-4173</td>
<td></td>
</tr>
<tr>
<td>Facilities &amp; Services</td>
<td>605-688-4136</td>
<td>Vice President for Finance and Business/CFO</td>
<td>605-688-4492</td>
<td></td>
</tr>
<tr>
<td>Financial Aid Office</td>
<td>605-688-4695</td>
<td>Vice President for Research</td>
<td>605-688-5642</td>
<td></td>
</tr>
<tr>
<td>Graduate School</td>
<td>605-688-4181</td>
<td>Vice President for Student Affairs</td>
<td>605-688-4493</td>
<td></td>
</tr>
<tr>
<td>Health Services</td>
<td>605-688-4157</td>
<td>Vice President for Technology and Security</td>
<td>605-688-4988</td>
<td></td>
</tr>
<tr>
<td>Human Resources</td>
<td>605-688-4128</td>
<td>College of Agriculture and Biological Sciences</td>
<td>605-688-4148</td>
<td></td>
</tr>
<tr>
<td>Information Exchange</td>
<td>605-688-6127</td>
<td>College of Arts and Sciences</td>
<td>605-688-4723</td>
<td></td>
</tr>
<tr>
<td>International Affairs</td>
<td>605-688-4913</td>
<td>College of Education and Human Sciences</td>
<td>605-688-6181</td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>605-688-5107</td>
<td>Jerome J. Lohr College of Engineering</td>
<td>605-688-4161</td>
<td></td>
</tr>
<tr>
<td>Multicultural Affairs Office</td>
<td>605-688-6129</td>
<td>College of Nursing</td>
<td>605-688-5178</td>
<td></td>
</tr>
<tr>
<td>Registrar</td>
<td>605-688-6195</td>
<td>College of Pharmacy</td>
<td>605-688-6197</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Continuing and Distance Education</td>
<td>605-688-4154</td>
<td></td>
</tr>
<tr>
<td>Research Office</td>
<td>605-688-6696</td>
<td>Graduate School</td>
<td>605-688-4181</td>
<td></td>
</tr>
<tr>
<td>Residential Life</td>
<td>605-688-5148</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Table of Contents

<table>
<thead>
<tr>
<th>FREQUENTLY CALLED NUMBERS</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDSU NON-DISCRIMINATION POLICY</td>
<td>2</td>
</tr>
<tr>
<td>SDSU IN REVIEW</td>
<td>5</td>
</tr>
<tr>
<td>SDSU in Review</td>
<td>6</td>
</tr>
<tr>
<td>Accreditation</td>
<td>6</td>
</tr>
<tr>
<td>Board of Regents, Graduate Council and SDSU Administration</td>
<td>7</td>
</tr>
<tr>
<td>ADMISSION INFORMATION</td>
<td>9</td>
</tr>
<tr>
<td>Admission to Graduate School</td>
<td>10</td>
</tr>
<tr>
<td>Application for Admission</td>
<td>10</td>
</tr>
<tr>
<td>Application Processing</td>
<td>11</td>
</tr>
<tr>
<td>Admission Status</td>
<td>11</td>
</tr>
<tr>
<td>Special Student (non-degree)</td>
<td>11</td>
</tr>
<tr>
<td>Readmission</td>
<td>11</td>
</tr>
<tr>
<td>Residency Requirements</td>
<td>11</td>
</tr>
<tr>
<td>ACADEMIC POLICIES</td>
<td>13</td>
</tr>
<tr>
<td>Student Responsibility</td>
<td>14</td>
</tr>
<tr>
<td>Graduate Academic Standards</td>
<td>14</td>
</tr>
<tr>
<td>Course Restrictions for Master’s Degree and Doctoral</td>
<td>14</td>
</tr>
<tr>
<td>Degree Plans of Study</td>
<td>14</td>
</tr>
<tr>
<td>Registration and Status</td>
<td>15</td>
</tr>
<tr>
<td>Credit Load</td>
<td>15</td>
</tr>
<tr>
<td>Cancellation of Courses</td>
<td>15</td>
</tr>
<tr>
<td>Final Examinations</td>
<td>15</td>
</tr>
<tr>
<td>Grades</td>
<td>16</td>
</tr>
<tr>
<td>Grading</td>
<td>17</td>
</tr>
<tr>
<td>Graduate Credit for Seniors</td>
<td>18</td>
</tr>
<tr>
<td>Graduate Study by University Staff</td>
<td>18</td>
</tr>
<tr>
<td>Post-Doctoral Study</td>
<td>18</td>
</tr>
<tr>
<td>Graduation</td>
<td>18</td>
</tr>
<tr>
<td>Continual Registration for Dissertation, Thesis/Research-Design Paper</td>
<td>18</td>
</tr>
<tr>
<td>Professional Conduct</td>
<td>19</td>
</tr>
<tr>
<td>Academic Performance Not Directly Related to Coursework</td>
<td>19</td>
</tr>
<tr>
<td>Appeals</td>
<td>19</td>
</tr>
<tr>
<td>FINANCIAL INFORMATION AND SERVICES</td>
<td>21</td>
</tr>
<tr>
<td>Tuition and Fees</td>
<td>22</td>
</tr>
<tr>
<td>Payment Process</td>
<td>22</td>
</tr>
<tr>
<td>Electronic Billing and Electronic Payment of Tuition and Fees</td>
<td>23</td>
</tr>
<tr>
<td>E-mail Policy</td>
<td>23</td>
</tr>
<tr>
<td>Campus Debit Card System – Hobo Dough</td>
<td>23</td>
</tr>
<tr>
<td>Fees for Auditing Courses</td>
<td>23</td>
</tr>
<tr>
<td>Thesis and Dissertation Fees</td>
<td>23</td>
</tr>
<tr>
<td>Fellowships and Assistantships</td>
<td>23</td>
</tr>
<tr>
<td>International Graduate Student Summer Credit Requirements</td>
<td>23</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>24</td>
</tr>
<tr>
<td>Student Services</td>
<td>24</td>
</tr>
<tr>
<td>MASTER’S DEGREE REQUIREMENTS</td>
<td>27</td>
</tr>
<tr>
<td>Admission Requirements</td>
<td>28</td>
</tr>
<tr>
<td>Advisory Committee</td>
<td>28</td>
</tr>
<tr>
<td>Plan of Study Information</td>
<td>28</td>
</tr>
<tr>
<td>Registration and Status</td>
<td>29</td>
</tr>
<tr>
<td>Thesis, Research Paper, or Design Paper</td>
<td>29</td>
</tr>
<tr>
<td>Multiple Master’s Degrees or Majors</td>
<td>29</td>
</tr>
<tr>
<td>Time Limitations</td>
<td>29</td>
</tr>
<tr>
<td>Master’s Degrees and Options</td>
<td>30</td>
</tr>
<tr>
<td>Master’s Degree Checklist</td>
<td>31</td>
</tr>
<tr>
<td>DOCTOR OF PHILOSOPHY DEGREE REQUIREMENTS</td>
<td>33</td>
</tr>
<tr>
<td>Admission Requirements</td>
<td>34</td>
</tr>
<tr>
<td>Advisory Committee</td>
<td>34</td>
</tr>
<tr>
<td>Plan of Study Information</td>
<td>34</td>
</tr>
<tr>
<td>Plan of Study Credit Requirements</td>
<td>35</td>
</tr>
<tr>
<td>Registration and Status</td>
<td>35</td>
</tr>
<tr>
<td>Examinations</td>
<td>35</td>
</tr>
<tr>
<td>Dissertation</td>
<td>35</td>
</tr>
<tr>
<td>Time Limitations</td>
<td>36</td>
</tr>
<tr>
<td>Doctor of Philosophy Checklist</td>
<td>36</td>
</tr>
<tr>
<td>DOCTOR OF PHARMACY DEGREE REQUIREMENTS</td>
<td>37</td>
</tr>
<tr>
<td>Program Application Requirements</td>
<td>38</td>
</tr>
<tr>
<td>Curriculum/Plan of Study</td>
<td>38</td>
</tr>
<tr>
<td>College of Pharmacy Regulations</td>
<td>38</td>
</tr>
<tr>
<td>OFF-CAMPUS AND DISTANCE PROGRAMS</td>
<td>41</td>
</tr>
<tr>
<td>Summer Term</td>
<td>42</td>
</tr>
<tr>
<td>University Center – Sioux Falls</td>
<td>42</td>
</tr>
<tr>
<td>Capital University Center</td>
<td>42</td>
</tr>
<tr>
<td>University Center – Rapid City</td>
<td>42</td>
</tr>
<tr>
<td>Distance Education</td>
<td>42</td>
</tr>
<tr>
<td>Outreach Programs</td>
<td>43</td>
</tr>
<tr>
<td>State Authorization</td>
<td>43</td>
</tr>
<tr>
<td>Notification of Complaint Process for Program Integrity</td>
<td>43</td>
</tr>
<tr>
<td>COLLEGES</td>
<td>45</td>
</tr>
<tr>
<td>College of Agriculture and Biological Sciences</td>
<td>46</td>
</tr>
<tr>
<td>College of Arts and Sciences</td>
<td>51</td>
</tr>
<tr>
<td>College of Education and Human Sciences</td>
<td>55</td>
</tr>
<tr>
<td>College of Nursing</td>
<td>58</td>
</tr>
<tr>
<td>College of Pharmacy</td>
<td>59</td>
</tr>
<tr>
<td>Graduate School</td>
<td>60</td>
</tr>
<tr>
<td>Jerome J. Lohr College of Engineering</td>
<td>61</td>
</tr>
<tr>
<td>DEGREES</td>
<td>65</td>
</tr>
<tr>
<td>Graduate Programs at SDSU</td>
<td>66</td>
</tr>
<tr>
<td>Master’s Degree Programs</td>
<td>66</td>
</tr>
<tr>
<td>Doctoral Degree Programs</td>
<td>67</td>
</tr>
<tr>
<td>Professional Doctoral Programs</td>
<td>67</td>
</tr>
<tr>
<td>Graduate Certificates</td>
<td>68</td>
</tr>
<tr>
<td>Graduate Minors</td>
<td>68</td>
</tr>
<tr>
<td>Additional Academic Programs and Units</td>
<td>68</td>
</tr>
<tr>
<td>ACADEMIC PROGRAMS</td>
<td>69</td>
</tr>
<tr>
<td>Master’s Degrees</td>
<td>70</td>
</tr>
<tr>
<td>Doctoral Degrees</td>
<td>125</td>
</tr>
<tr>
<td>Professional Doctoral Degrees</td>
<td>145</td>
</tr>
<tr>
<td>Graduate Minors</td>
<td>162</td>
</tr>
<tr>
<td>Graduate Certificates</td>
<td>163</td>
</tr>
<tr>
<td>Coursework Only</td>
<td>171</td>
</tr>
<tr>
<td>COURSE INFORMATION</td>
<td>173</td>
</tr>
<tr>
<td>Curriculum Entries</td>
<td>174</td>
</tr>
<tr>
<td>Colleges, Departments and Program Abbreviations</td>
<td>174</td>
</tr>
<tr>
<td>Miscellaneous Abbreviations</td>
<td>175</td>
</tr>
<tr>
<td>Course Types and Instructional Methods</td>
<td>175</td>
</tr>
<tr>
<td>Other Important Definitions</td>
<td>176</td>
</tr>
<tr>
<td>x9x Common Course Descriptions</td>
<td>176</td>
</tr>
<tr>
<td>Course Schedules</td>
<td>177</td>
</tr>
<tr>
<td>Course Descriptions (Alpha-Numeric by Prefix)</td>
<td>177</td>
</tr>
<tr>
<td>UNIVERSITY STAFF</td>
<td>219</td>
</tr>
<tr>
<td>General Administration</td>
<td>220</td>
</tr>
<tr>
<td>Academic Deans</td>
<td>220</td>
</tr>
<tr>
<td>Regental Distinguished Professors</td>
<td>221</td>
</tr>
<tr>
<td>Distinguished Professors</td>
<td>221</td>
</tr>
<tr>
<td>Faculty, Staff</td>
<td>221</td>
</tr>
<tr>
<td>Emeriti Faculty, Staff</td>
<td>244</td>
</tr>
<tr>
<td>ACADEMIC CALENDAR</td>
<td>250</td>
</tr>
<tr>
<td>CAMPUS MAP</td>
<td>251</td>
</tr>
<tr>
<td>INDEX</td>
<td>252</td>
</tr>
</tbody>
</table>
SDSU in Review

Accreditation

Board of Regents, Graduate Council and SDSU Administration
**General Information**

An act of the Territorial Legislature approved in 1881 provided for the establishment of what is now South Dakota State University. As a Land-Grant institution, the University subscribes to the philosophy of education, research, and extension as its three-fold mission. The Graduate School is a separate administrative unit composed of selected scholars within the University engaged in work to further the land-grant mission. The institution granted its first Master of Science degree in 1891, its first Master of Education degree and Doctor of Philosophy degree in 1958. All graduate work was supervised by a committee until 1957, when the Graduate School was established.

A Graduate Council of twelve (12) elected members from the Graduate Faculty assists the Graduate Dean. The council includes the Graduate Dean (chair); and two (2) members, and alternates from each of the six (6) colleges: Agriculture and Biological Sciences, Arts and Sciences, Education and Human Sciences, Engineering, Nursing, and Pharmacy. The Dean of the Library serves as an ex-officio voting member.

The Graduate Faculty is composed of the University President, Provost and Vice President for Academic Affairs, college deans, and heads of departments in which graduate courses are offered. Tenure-track faculty with a terminal degree are eligible for graduate faculty status and will be admitted to the Graduate Faculty at the request of the appropriate Department Head and Dean (using the appropriate request form), in accordance with the policies of the Graduate School. Faculty who are not tenure-track and/or do not have a terminal degree will follow the nomination process for associate graduate faculty status and must be approved by the Graduate Council. All matters of policy and standards are acted on by the Graduate Faculty. In addition, Graduate Faculty are authorized to serve on graduate student committees, advise graduate students, and teach graduate-level courses.

The Graduate School provides 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. The Graduate School promotes scholarly pursuits and scientific research for the advancement of knowledge within a climate of freedom of inquiry. For material on undergraduate programs and for general information concerning South Dakota State University, refer to the General Catalog (Undergraduate Catalog) or at www.sdstate.edu.

This Catalog is printed to provide information about the graduate programs of South Dakota State University. Every effort has been made to provide as complete and accurate information as possible; however, it should be noted that changes may occur at any time and that the catalog does not represent a contractual agreement. The university reserves the right, as approved by the Board of Regents, to modify requirements, curricula offerings, and charges, and to add, alter, or delete courses and programs through appropriate procedures. While reasonable efforts will be made to publicize such changes, a student is encouraged to seek current information from appropriate offices.

Students are allowed to fulfill the degree requirements in effect at the time of initial enrollment as a degree-seeking student, provided the student completes the degree requirements within the stated time frame through continuous enrollment. If a student needs to re-apply into the degree program, the guidelines in effect at the time of re-application must then be followed. It is the student's responsibility to become familiar with and complete the requirements for the degree being sought.

**Accreditation**

Listed below are the specific accreditation boards involving SDSU Graduate Programs:

The University holds institutional membership in a number of educational associations: the Association of Public and Land-grant Universities (APLU) (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.

**Mass Communication:** The curriculum in 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).

**Athletic Training:** The Athletic Training Program 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).

**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 accredited by the Council on Rehabilitation Education (CORE) (1699 E. Woodfield Road, Suite 300 Schaumburg, IL 60173; 847-944-1345).

**Teacher Education:** The preparation of teachers and other professional school personnel at both the undergraduate and graduate levels is accredited by the Council for Accreditation of Educator Preparation (CAEP) (2010 Massachusetts Ave., NW, Suite 500, Washington, D.C. 20036-1023; Phone 202-466-7496) and the South Dakota Department of Education (800 Governors Drive, Pierre, SD 57501, Phone 605-773-3134).

**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).
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).

Board of Regents, Graduate Council and SDSU Administration

**Board of Regents**
Honorable Dean Krogman
President
Brookings, Term expires March 31, 2015

Honorable Randy Schaefer
Vice President
Madison, Term expires March 31, 2015

Honorable Bob Sutton
Secretary
Pierre, Term Expires April 1, 2019

Honorable Terry Baloun
Sioux Falls, Term expires March 31, 2016

Honorable Harvey C. Jewett
Aberdeen, Term expires March 31, 2017

Honorable Kathryn Johnson
Hill City, Term expires March 31, 2017

Honorable Randall K. Morris
Spearfish, Term expires March 31, 2016

Honorable Joseph Schartz
Student Regent
Humboldt, Term expires July 1, 2016

Honorable Kevin Schieffer
Sioux Falls, Term expires March 31, 2015

Honorable Jack R. Warner
Pierre, Executive Director

**Graduate Council**
Kinchele C. Doerner
Dean of Graduate School, permanent position

Kristi Tornquist
Chief University Librarian, ex-officio voting member

Chris Briddick
Associate Professor of Counseling & Human Development, Term expires 2017

Brad Bowser
Assistant Professor of Health & Nutritional Sciences, Term expires 2016

Linda Burdette
Assistant Professor of Graduate Nursing, Term expires 2015

Jihong Cole-Dai
Professor of Chemistry & Biochemistry, Term expires 2017

Trisha Jackson
Assistant Professor of Geography, Term expires 2016

Radhey Kaushik
Associate Professor of Biology & Microbiology, Term expires 2016

Brad Laible
Associate Professor of Pharmacy Practice, Term expires 2015

Christine Larson
Professor of Mathematics & Statistics, Term expires 2015

Mary Minton
Associate Professor of West River Nursing, Term expires 2015

Xiao Qin
Assistant Professor of Civil & Environmental Engineering, Term expires 2015

Hemachand Tummala
Associate Professor of Pharmaceutical Sciences, Term expires 2017

Michael Wimberly
Professor of Natural Resource Management, Term expires 2017
SDSU Administration

President
David L. Chicoine, Ph.D.

Provost and Vice President for Academic Affairs
Laurie Stenberg Nichols, Ph.D.

Vice President for Finance and Business/CFO
Wesley G. Tschetter, M.B.A.

Vice President for Research
Kevin D. Kephart, Ph.D.

Vice President for Student Affairs
Marysz Palczewski-Rames, Ed.D.

Vice President for Technology and Security
Michael F. Adelaide, Ph.D.

Associate Vice President for Academic Affairs
Mary Kay Helling, Ph.D.

Associate Vice President for Research
James Doolittle, Ph.D.

College Deans, Associate and Assistant Deans

College of Agriculture and Biological Sciences
Barry Dunn, Ph.D., Dean
Donald M. Marshall, Ph.D., Associate Dean
Daniel Scholl, Ph.D., Associate Dean

College of Arts and Sciences
Dennis Papini, Ph.D., Dean
Kathleen Donovan, Ph.D., Associate Dean

College of Education and Human Sciences
Jill Thorngren, Ph.D., Dean
Jane Hegland, Ph.D., Associate Dean
CY Wang, Ph.D., Associate Dean

Jerome J. Lohr 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
Nancy Fahrenwald, Ph.D., Dean
Linda Herrick, Ph.D., Associate Dean
Mary Minton, Ph.D., Associate Dean
Barbara Hobbs, Ph.D., Assistant Dean

Associate Vice President for Student Affairs
Douglas Wermedal, Ph.D.

Assistant Vice President for Academic Affairs – International Affairs and Outreach
Kathleen Fairfax, M.A.

Assistant Vice President for Facilities and Services
Dean Kattelmann, M.S.

Assistant Vice President for Finance and Business/Controller
Jeff A. Siekmann, M.B.A.

Assistant Vice President for Human Resources
Marc Serrett, M.S.

Assistant Vice President for Safety and Security
Don Challis, M.A.

Assistant Vice President for Technology
Ryan Knutson, M.S.

College of Pharmacy
Dennis Hedge, Pharm.D., Dean
Jane Mort, Pharm.D., Associate Dean
Xiangming Guan, Ph.D., Assistant Dean
Daniel Hansen, Pharm.D, Assistant Dean

Van D. and Barbara B. Fishback Honors College
Timothy J. Nichols, Ph.D., Dean

University College
Keith Corbett, Ed.D., Dean

Graduate School
Kinchel C. 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
Admission Information

- Admission to Graduate School
- Application for Admission
- Application Processing
- Admission Status
- Special Student (non-degree)
- Readmission
- Residency Requirements
Admission to Graduate School

For pursuit of an advanced degree, students must be admitted to the Graduate School before enrolling in graduate courses. A completed application must be filed with the Graduate School by April 15 for consideration for fall admission and by August 15 (international) or October 1 (domestic) for consideration for spring admission. **Students should check with their specific program of interest as some programs have earlier deadlines.** Students not pursuing an advanced degree but wishing to enroll in graduate coursework should apply as a Special Student (non-degree) by completing an application prior to the start of the semester.

Applicants who meet the Graduate School requirements are not necessarily admitted to the degree program. All qualified applications are reviewed by university and program personnel to determine if admission will be granted. Students who are denied admission may not reapply to the same program within one year of notification, unless specifically requested by the program.

Application for Admission

**Application Form**
A completed on-line application must be submitted and accompanied by a non-refundable application fee of $35.00.

**Official Transcripts**
Domestic degree-seeking students must provide official academic transcripts from all post-secondary institutions where a degree was earned, or will be earned, and where graduate level coursework was completed. As a courtesy to the applicant, the Graduate School will retrieve all required South Dakota regental transcripts. International degree-seeking students must provide a professional transcript evaluation, performed by a National Association of Credential Evaluation Services-accredited evaluation service member (e.g. Educational Perspectives, WES, or ECE) for all international university academic transcripts. Evaluations must include transcript authenticity, Grade Point Average (GPA) calculation, and U.S. degree equivalency and be sent directly from the evaluation service. Applications will not be processed until the evaluation is received from the service. Submitted transcripts become the property of South Dakota State University and will not be returned. The Graduate School mailing address is as follows:

Graduate School
South Dakota State University
130 Administration Building/Box 2201
Administration Lane
Brookings, SD USA 57007

**Baccalaureate Degree**
Admission to the Graduate School requires that the applicant have a baccalaureate degree, or equivalent, from an institution of higher learning. The baccalaureate-granting institution must be one of recognized standing (including U.S. institutions accredited by agencies recognized by the U.S. Department of Education) whose requirements are substantially the same as those of South Dakota State University program(s) in which the advanced degree will be taken.

If applicants are enrolled in U.S. institutions, and if the application is submitted before the Bachelor's degree is complete, an incomplete transcript must be filed. However, a transcript indicating the Bachelor's degree has been awarded must be received no later than the end of the first semester of graduate work.

**Program Requirements**
Individual programs may have additional admission requirements. Applicants should inquire about such requirements from the program of interest.

**Graduate Record Examination (GRE)**
Submission of the results of a Graduate Record Examination is not a Graduate School requirement; however some programs may require test scores to be submitted. Please review the admission requirements for the program of interest. For the location of testing centers and more information regarding the GRE, please contact the Educational Testing Service.

**Immunization Requirements**
All university students (domestic and international) must provide documentation proving two (2) properly administered measles (rubeola), mumps, rubella (MMR) immunizations OR immune titers for measles, mumps and rubella. Exemptions to this requirement are considered. Furthermore, all international students are required to submit to a tuberculosis skin test upon arrival. For more information contact: Student Health Clinic and Counseling Services, Box 2818, Wellness Center, South Dakota State University, Brookings, SD USA 57007, Telephone: 605.688.4157, Fax: 605.688.6450 or the Office of International Affairs & Outreach, Briggs Library (SBL) Suite 119, Box: 2115, Brookings, SD USA 57007, Telephone: 605.688.4122.

International Students must also submit the following:

**TOEFL Score**
A score of 525 paper-based, 197 computer-based, or 71 Internet-based or higher is required by the Graduate School for the Test of English as a Foreign Language (TOEFL). Equivalent International English Language Testing System (IELTS) scores are also accepted. Some programs may require higher test scores for admission and are listed within each program section in this Catalog. Also, programs may require additional testing upon arrival.
Financial Support
Evidence of available financial support for at least one year must be submitted to the Office of International Affairs & Outreach, Briggs Library (SBL) Suite 119, Box: 2115, Brookings, SD USA 57007, Telephone 605.688.4122. Applicant must also show evidence that the financial support will be continued throughout their program, at least two years for master’s degrees or four years for doctoral degrees. For any financial assistance from this institution, the applicant must contact the program.

Documentation
Documents for entry into the U.S. will be issued by the Office of International Affairs and Outreach after academic admission and financial certification are complete. Students applying for a visa cannot be admitted conditionally into any graduate program. For inquiries please contact: Office of International Affairs & Outreach, Briggs Library (SBL) Suite 119, Box: 2115, Brookings, SD USA 57007, Telephone: 605-688-4122.

Application Processing
When all required admissions documents are received, the Graduate School reviews the documents to insure the minimum requirements are met. If minimum requirements are not met, the application is denied and the applicant so informed. If the minimum requirements are met, the application and supporting documentation forwarded to the program for review. The program makes a recommendation of acceptance or rejection to the Dean of the Graduate School who, in turn, acts on the recommendation and notifies all concerned parties of the decision in the form of a letter of acceptance or a letter of denial.

Admission Status

Admission
An applicant may be admitted without condition if a Bachelor's degree, or equivalent, has been earned, all undergraduate prerequisites for major and minor (if required) fields of study have been satisfactorily completed, and the applicant has an average of 3.0 or higher on a 4-point grading system (A = 4, B = 3, C = 2, D = 1) or maintained a 3.0 during the last two academic years of undergraduate work. Admission to all degree programs is competitive and limited by the availability of personnel, facilities, and funding.

Conditional Admission
Conditional admission may be granted for students enrolled in an accredited U.S. college or university, if the applicant:
1. meets the requirements for admission for the last three semesters but has not completed the last semester of undergraduate study. Admission is conditional until the Bachelor's degree is granted, OR
2. lacks prerequisite undergraduate courses specified by the major program. Admission is conditional until these courses have been completed to the satisfaction of the program, OR
3. has a grade point average between 2.75 and 3.0 cumulative for the junior and senior years.

A student admitted conditionally must satisfy any conditions before receiving unconditional status. Performance required to receive unconditional status will be provided to the student in the letter of acceptance. Failure of a student to fulfill the stated conditions may result in dismissal from the program.

Special Student (non-degree)

Students who are not pursuing a degree may register as a Special Student. There is not any cost to register with the Graduate School as a Special Student, though the student is responsible for tuition and fees. Special Students may not receive graduate assistantships, financial aid, or enroll for thesis/dissertation credits. The Dean of the Graduate School will act as an advisor for these students unless otherwise noted. A Special Student may apply for admission into a graduate program using the normal procedures outlined in this document. No more than ten credits acquired under Special Student status may be applied toward a degree.

Readmission

Students formerly enrolled as graduate students at South Dakota State University and who have not enrolled in three (3) continuous semesters (including summer semester) must apply for readmission for their program. Graduate School policies in effect for the term of readmission will apply. Official transcripts must be furnished for graduate work taken at other institutions since last enrolled at South Dakota State University. Programs may require the student to update supporting documents for the application. Readmitted students are encouraged to contact their graduate advisor prior to registration. Students who are readmitted may be required to change their Advisory Committee, file a new plan of study or resubmit other matriculation documents.

Residency Requirements

South Dakota State University is required to establish residency status of all applicants. Please review the residency requirements prior to completing an application. A full description of qualifications is available in the Residency Application.
Academic Policies

Student Responsibility

Graduate Academic Standards

Course Restrictions for Master’s and Doctoral Plans of Study

Registration and Status

Credit Load

Cancellation of Courses

Final Examinations

Grades

Grading

Graduate Credit for Seniors

Graduate Study by University Staff

Post-Doctoral Study

Graduation

Continual Registration for Dissertation, Thesis/Research-Design Paper

Professional Conduct

Academic Performance Not Directly Related to Course Work

Appeals
Student Responsibility

Before a degree is granted, the student must meet all the requirements of the Advisory Committee, the Graduate Program and the Graduate School. Students should note that graduate studies represent advanced work and research in a discipline or interdisciplinary area and should be more than a compilation of course work. Students are responsible for conforming to all published academic policies and degree requirements. They are likewise responsible for the regulations concerning the degree they plan to obtain and any special requirements within the program or academic unit. In addition, it is the student's responsibility to conform to the University's policies regarding the standard of work necessary to maintain enrollment in the Graduate School.

The University makes every effort to provide accurate advising information. However, it is the student's responsibility to make certain that he/she has fulfilled all graduation requirements.

Graduate Academic Standards

Graduate students are expected to maintain at least a 3.0 ("B") cumulative grade point average for all courses in the graduate plan of study. If the graduate plan of study has not been approved, the cumulative GPA is used. Students who encounter academic difficulty will be warned by the Graduate School and may be discontinued from their degree program or from the University when academic standards are not maintained. Students must also maintain academic standards as determined by their program.

Course Restrictions for Master's and Doctoral Plans of Study

Converted Credits - Courses numbered 300-499 are considered to be advanced undergraduate credits. These credits may be used in graduate programs with the following provisions:

- When applied to a graduate program, total credit for these courses will be valued at 80 percent, discarding all fractions.
- After such conversion, these credits are defined as "converted credits," which may be used as graduate credit in meeting the requirements for the various degrees, provided a grade of at least "B" is obtained in each course in this series. For example, if eight credits are earned in this series, they would be equivalent to six graduate credits.
- Courses used for converted credit must be SDSU credits taken during the period the student is enrolled as a graduate (not undergraduate) student at this institution. These must be entered on the graduate transcript to be eligible for converted credit.
- For the Master of Arts, Master of Science or Master of Education degrees, a maximum of seven converted credits may be applied to the graduate program.
- For the Doctor of Philosophy degree, a maximum of ten converted credits may be applied to the graduate program.
- Converted credits may be applied to a graduate program only with the approval of the major advisor or Advisory Committee and Dean of the Graduate School.

Problems Courses - A maximum of four (4) credits in problems courses (special problems, independent study, etc.) may be counted toward the Master of Arts, Master of Science, or Master of Education degree. Only six credits of problems courses may be counted toward the Doctor of Philosophy degree without approval of the Graduate Dean.

Transfer of Credits - Graduate credits earned at other institutions may be applied toward an advanced degree if they were awarded a grade of at least "B" (3.0), and if they are approved by the advisor or Advisory Committee and the Dean of the Graduate School. Transfer credit is limited to Graduate credit as defined by the institution issuing the transcript. In order to be accepted by the Graduate School the offering institution must accept the credits toward their Graduate Program without restriction. Dual-numbered courses offered primarily for upper-level undergraduate credit are (generally) not transferable as graduate credit. Requests for transfer of credits are usually made at the time a plan of study is approved and must be supported by an official transcript filed with the Graduate School. Forty (40) percent of the coursework may be from graduate credits earned at other institutions. Credits from a first degree to a second degree are considered to be transfer credits; they should be limited to ten credits. A minimum of sixty (60) percent of all credits in the program must be earned at SDSU unless the program is part of an approved joint or cooperative degree. Credits earned at another institution as a part of an approved joint or cooperative degree program will not count as transfer credits for the purposes of this policy.

Transfer credit is not permitted for courses taken by correspondence. Independent Study, Readings, or Problems courses, Continuing Education, Outreach Programs, or Extension courses may be approved for transfer if they are regularly listed in the graduate catalog of an accredited institution and were taught by members of the Graduate Faculty of such institution, and if they carry a grade of "B" or higher. Subtitles or explanatory information will be required for approval of Independent Study and Readings courses.

Workshops - While any number of credits may be earned in workshops, a maximum of two such credits may be applied toward an advanced degree. Workshop notation on transcripts will be used for application of this limitation.
Internet Courses - SDSU will evaluate the transfer of graduate credit for graduate courses delivered and taken over the Internet on the same basis as other transfer courses. The course must be from an accredited institution as recognized by the Board of Regents policy. If credits are to be applied to an accredited SDSU program, the program in which the course was taken at another institution must also be accredited.

Registration and Status

To maintain active status, students must be registered each semester of the academic year (excluding summer). Students who are not registered will be moved to inactive status and may be required to reapply before continuing their graduate studies. All graduate assistants must register for a minimum of one (1) credit (including summer) in order to receive an assistantship.

Credit Load

Nine credits per semester is considered a full-time graduate load. Domestic students must be enrolled at least half-time (5 credits) to receive Federal Aid. Loan deferment may also require full or part-time status. Eligibility varies with financial aid programs and students should contact their lender for requirements.

International graduate students are required to pursue a full time course of study to maintain non-immigrant status in accordance with the U.S. Code of Federal Regulations. International students must register for nine (9) credit hours per semester to pursue a full course of study. Students who fail to maintain a full course of study will be considered out of status and may be terminated. The exceptions to a full course of study are limited but very important. Students must seek the approval of the International Student Affairs office for authorization to drop below nine (9) credits per semester.

Credits needed for full-time/part-time student status (does not apply to Graduate Assistants):

<table>
<thead>
<tr>
<th>Graduate Assistants</th>
<th>Minimum Credits</th>
<th>Maximum credits without overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time status</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Three-fourths (3/4) time status</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>One-half (1/2) time status</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Full-time status, Summer Term</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Half-time status, Summer Term</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

Credits needed for full-time/part-time students status for graduate assistants:

<table>
<thead>
<tr>
<th>Credits to be considered full time</th>
<th>Summer Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-fourth (1/4) time assistant, fall or spring term</td>
<td>7</td>
</tr>
<tr>
<td>One-half (1/2) time assistant, fall or spring term</td>
<td>5</td>
</tr>
<tr>
<td>Three-fourths (3/4) time assistant, fall or spring term</td>
<td>3</td>
</tr>
</tbody>
</table>

Graduate Assistant Responsibilities will be based on an average number of hours of work per week using a 40 hour week as a base. However, this may vary slightly depending on assignment.

One-quarter time GA = minimum of 10-11 hours/week
One-half time GA (.49) = minimum of 20-22 hours/week
Three-quarter time GA (.75) = minimum of 30 hours/week

During the academic year F-1 international students are ineligible to hold more than half-time (.49) GA positions as they are limited to a maximum 20 hours/week.

In calculating credit loads, audit courses and undergraduate courses are included at full value for student status but are not allowable for loan deferral, full- and part-time certification, or financial aid disbursement. Graduate assistants must be registered for at least one credit each semester during the academic year to hold a graduate assistantship. For financial aid requirements of a full load, contact the Financial Aid Office.

Cancellation of Courses

In general, entry level graduate courses (500 or 600 level courses) will not be offered to fewer than seven (7) students and graduate only (700 or 800 level courses) will not be offered to fewer than four (4) students unless there is some special reason for doing so. Instructors will cancel courses with low enrollment or for other reasons only with the approval of the dean of the academic college concerned.

Final Examinations

Among the tasks of instruction is that of evaluation of a student’s performance. Each course has its own particular parameters, and the evaluation procedure in any one course is not necessarily the same as that in another course. However, the most commonly used evaluation technique is that of written examinations or papers periodically due during the course, and a final examination at the end of the course. The final examination procedure has become so universal and accepted that a final examination period is set aside at the end of the semester in most colleges and universities. The Carnegie credit hour is calculated by contact hours with 15 contacts hours equating to 1 credit hour. Finals week is considered an integral part of the 17-week academic semester and critical to the credit hour calculation.
It is the policy of South Dakota State University to adhere to the following (www.sdstate.edu/policies/section-2.cfm):

1. The final examination schedule will be published in the fall or spring course schedules. Courses offered for 2 or more credits will have an examination time determined by the final examination schedule published in the schedule book.
2. Multiple section final examinations will be scheduled at 7:00 a.m. as published in the schedule book through a request process from the instructor to the Registrar’s office.
3. Final exams for evening courses (any course that begins at 5:00 p.m. or later) must be scheduled at the regularly scheduled time (of the course) during finals week.
4. Courses of 1 credit or laboratory only will have the final examination or alternative learning experience during the last week of regular classes before final examination week.
5. Every course except as noted in #2, #3, and #4 above is required to follow the final examination schedule.
6. Five days are to be scheduled for final examinations at the end of each semester, fall and spring. Due to the variety of summer sessions and other accelerated course formats, the final day of the term will be reserved for the final examination.
7. A block of 2 hours will be available for administering individual final examinations. Within the final examination time period, instructors may reduce the time limit of an examination by prior announcement.
8. Final examinations are an integral part of the instructional program and should be given in all courses except in some cases such as laboratory, studio, capstone courses, seminars, colloquia and other independent learning credits, where a final examination may not be appropriate. Any instructor wishing to waive the right to a final examination must do so by submitting a request as outlined under Procedures. The right to waive the final examination does not, however, preclude the requirement to hold class during final examination week for an alternative learning experience. The discipline is responsible for defining appropriate alternative learning experiences.
9. Take home final examinations are permissible but the course must still meet during final examination week for alternative learning experience.
10. Online and hybrid courses must be held to the same standard for final examinations and can only be administered during final examination week.
11. If a final examination is used, it should not be given early. The published final examination schedule must be followed and the final examination in a course should be given as scheduled and not at other times, even if the faculty member and all students in a course agree to such a change. This is true even if the final examination is an alternative learning experience. It is understood that some culminating learning assessment may be administered during the last week of classes. This does not preclude the requirement however, for these classes to meet during finals week.
12. The week of classes preceding the scheduled final examination period should be used primarily for continued instruction and may include the introduction of new material. No final examinations are to be given during the seven days preceding the start of the examination period (excluding 1 credit courses). However, laboratory practicums, seminar presentations, etc. may be scheduled in that week.
13. Individual students may petition in writing for a variance from these policies, provided the instructor is satisfied that the exception is based on good and sufficient reasons, and that such an exception for an early or late examination will not prejudice the interests of other students in the course. Reasons for individual students missing a scheduled examination will be handled by the department. Each department will decide what will, or will not, be an acceptable excuse and deal with individual hardship cases. Note that the SDSU Attendance Policy should be consulted for excused absences. In the event of a department approved excuse, the instructor will decide the procedure necessary to complete the course requirement. Instructors must have the consent of the department head in excusing the student.
14. When students have more than three final examinations on the same day, they are entitled to arrange an alternative examination time for an examination or examinations scheduled on that day. Such arrangements must be made no later than the end of the 12th week of the semester. Students are expected to provide evidence to the Registrar’s Office that they have more than three examinations to qualify for exceptions.
15. This policy applies to all undergraduate and graduate students, including seniors. Graduating seniors are not exempted from final examinations.

Each instructor, department head and dean is responsible for enforcing the above policies. The SDSU Attendance Policy will be used to establish acceptable excuses for missing and re-taking a final examination.

Any instructor wishing to request a waiver from administering a final examination must do so by submitting a request to the department head for approval. The department head will then forward such requests to the college dean. A course need only be approved once; however, if substantive modifications are made to a course, it should be resubmitted for approval.

Grades

Cumulative 3.0 (B) average - The student must maintain a 3.0 (B) cumulative grade point average for courses in the graduate plan of study. No credit is given toward a graduate degree for any grade below "C" in 500, 600, 700 or 800 level courses, or below 3.0 (B) in 300 or 400 level courses. Grades for transfer courses are not used in calculating these grade point averages. The grade earned the last time the course was taken will be used to determine the grade point average for the Plan of Study.

Dissertation/Thesis/Research or Design Paper Credits - Graduate students usually register for dissertation/thesis/research or design paper credit during several semesters. A grade of satisfactory (S) or unsatisfactory (U) should be assigned during the semester of registration, based on progress made. Credits receiving "U" will not be credited toward the plan of study.

Seminars - A letter grade or a grade of Satisfactory (S) or Unsatisfactory (U) may be assigned at the discretion of the instructor.

Incomplete Grades - When a graduate student is given an Incomplete grade (I) for any course in the student's plan of study, the instructor may indicate in writing to the student what additional work must be completed and may establish a date at which such work must be completed. A copy of
An Incomplete (I) grade may be granted at the graduate level only when all of the following conditions apply:

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

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

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

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

With the exception of an "I" that has not been completed within the 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 in 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.

Grades of **I** (Incomplete), **NP** (Normal Progress), **IP** (In Progress) and **NR** (Not Reported) awarded to thesis/dissertation coursework will be changed to 'S' (Satisfactory) upon completion of all other degree requirements. The change of grade will be conducted without specific consent of the instructor. Completion of course work with the 798 or 898 suffix awarded a "U" (Unsatisfactory) must be changed by standard processes.

Once a student has graduated and the degree has been recorded, the record is considered officially closed and grades can no longer be changed.

BOR Policy 2.10

**Graduate Credit for Seniors**

Seniors within fifteen (15) credits of completing a Bachelor's degree at South Dakota State University may request permission from the Dean of the Graduate School to take up to six (6) credits of 500 or 600 level courses for graduate credit. Permission requires the student to have a grade point average of at least 2.5, or a junior-senior grade point average of 3.0 or higher, and to enroll for not more than eighteen (18) credits, undergraduate and graduate credits combined (9 credits during Summer Term). Seniors must have completed 105 credits. Senior Permit forms may be obtained from the Graduate School website.

**Graduate Study by University Staff**

Faculty who already hold a terminal degree required for promotion and tenure may work on an additional degree at South Dakota State University, by special approval of the Vice President for Academic Affairs. All faculty may take graduate courses for credit with the required approvals and authorization. The online graduate school application must be completed. An "Authorization For Educational Benefits" form, obtained from the Human Resources Department, should be completed and returned to Human Resources before registration. Staff members below the rank of Assistant Professor who intend to work toward a degree at this institution must follow the regular process for admission to the Graduate School.

Full-time members of the research, instructional, or extension staffs may enroll for a maximum of twelve (12) credits during the calendar year, with a maximum of seven (7) in any one (1) semester and two (2) during the Summer Session. Staff must pay the application fee.

**Post-Doctoral Study**

Postdoctoral students or eminent scholars who desire temporary privileges of the research facilities, staff counsel, library or seminars at the institution and who are not candidates for a degree, must obtain approval of the Department Head, Dean and/or Director concerned.

**Graduation**

*Graduation Application* - The student must file a graduation application by the date specified in the University calendar for the term in which completion of the advanced degree is expected. Failure to file this application will result in a delay in graduation.

*Commencement Attendance* - All students are urged to participate in the Commencement exercises at which their degrees are to be granted. However, attendance is optional. In order to participate, all course work and exams must have been satisfactorily completed. Students who wish to participate in the commencement ceremony to be held during the semester their degree is awarded need not inform the Graduate School. The names of such students will be added to the commencement roster by default. Students who wish to participate in a commencement ceremony during a semester subsequent to receiving their degree, must complete a Request to Participate in Graduate Ceremony form. Attendance at Commencement or inclusion in the Commencement Program does not, in itself, constitute completing or receiving a graduate degree.

Diplomas are mailed approximately three months after the degree is awarded.

*Cap, Gown and Hood* - Caps, gowns and hoods for Commencement may be rented or purchased from the University Bookstore.

**Continual Registration for Dissertation, Thesis/Research-Design Paper**

All graduate students who have completed the dissertation/thesis/research-design paper credits specified on their Plan of Study are required to follow one of the following each semester during the academic year and Summer term until the degree is awarded:
a. Students who have completed the required number of dissertation/thesis/research-design paper credits on the Plan of Study, but are still involved in research work as part of the degree requirement, must continue to register for one credit for each succeeding semester including summer.

b. Students who miss the deadline for graduation in a given semester, but successfully complete their final orals and all other requirements except minor edits of their thesis or dissertation prior to the start of the next semester do not have to enroll for the semester they graduate.

Registration is the student's responsibility and must be completed and payment made by the appropriate deadline each semester. Failure to register may delay award of the degree and thereby require additional registrations.

**Professional Conduct**

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. Reference the South Dakota State University Policies and Procedures Manual Section 2:4 Student Academic Integrity (www.sdstate.edu/policies/section-2).

**Academic Performance Not Directly Related to Course Work**

Pending review of the Graduate Council, the Graduate Dean may dismiss students for violations of professional integrity, upon recommendation by the department/program. Departments may have policies accepted in their disciplines that determine continuation in programs on factors other than grades. These include any violation of ethical standards such as plagiarism or professional standards as determined by the department. The department or graduate program may request the Graduate School to remove the student.

**Appeals**

Student appeal policies are outlined in the South Dakota State University's Policies and Procedures Section 2:4 Student Academic Integrity and Academic Appeals and BOR Policy 2:9.
Financial Information and Services

Tuition and Fees
Payment Process
Electronic Billing and Electronic Payment of Tuition and Fees
E-mail Policy
Campus Debit Card System – Hobo Dough
Fees for Auditing Courses
Thesis and Dissertation Fees
Fellowships and Assistantships
International Graduate Student Summer Credit Requirements
Financial Aid
Student Services
## Tuition and Fees

### 2014-2015 Tuition Table for Graduate Students (per credit)

Amounts shown here are subject to change by the Board of Regents

<table>
<thead>
<tr>
<th>Tuition Costs: Fall 2014- Spring 2015</th>
<th>Tuition Per Credit Hour</th>
<th>Tuition + Mandatory Fees Per Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>$210.40</td>
<td>$328.70*</td>
</tr>
<tr>
<td>Non-Resident</td>
<td>$445.30</td>
<td>$586.60*</td>
</tr>
<tr>
<td>State Employee, Teacher Certification</td>
<td>$105.20</td>
<td>$223.50*</td>
</tr>
<tr>
<td>Graduate Assistant - Resident</td>
<td>$70.15</td>
<td>$188.45*</td>
</tr>
<tr>
<td>Graduate Assistant - Non-resident</td>
<td>$70.15</td>
<td>$211.45*</td>
</tr>
<tr>
<td>Over Sixty-Five</td>
<td>$52.60</td>
<td>$170.90*</td>
</tr>
<tr>
<td>Minnesota Reciprocity</td>
<td>$327.10 (estimated)</td>
<td>$445.40* (estimated)</td>
</tr>
<tr>
<td>Graduate Self-Support (Internet Courses and Centers in Sioux Falls, Pierre, and Rapid City) University Fees Included</td>
<td>$414.85</td>
<td>N/A</td>
</tr>
<tr>
<td>State Employee - Graduate at Centers</td>
<td>$310.20</td>
<td>N/A</td>
</tr>
<tr>
<td>Graduate Assistant at Centers and Internet</td>
<td>$286.10</td>
<td>N/A</td>
</tr>
<tr>
<td>Great Plains IDEA</td>
<td>$515.00</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Many programs including Engineering, Nursing, and Pharmacy have additional fees. Internship fees, laboratory fees, international student fees and textbook/material fees are not included in this estimate. For a complete listing of department fees, contact the Cashier's Office at 605-688-6116 or visit http://www.sdstate.edu/cashiers/undergrad/fees.cfm.

**Activity Fee** - A fee charged per semester to cover health, Student Union and other University services, such as: admission to plays, athletic events, athletic facilities, and partially funded judging, music and forensic programs.

**University Support Fee** - Funds administrative and service areas of SDSU. This includes construction and maintenance of buildings, as well as the areas listed below.

- Instructional and Administrative Service Areas; direct instruction, libraries, computer centers, museums, admissions, financial aid, and administrative offices.
- Salary Competitiveness Component
- Maintenance and Repair Fee – Facilities Management
- Technology Fee Component

**Late Charge** - A fee charged if tuition and fees are not paid during the regular established payment periods. Failure to satisfy financial obligations when due may result in a student's administrative withdrawal from the University.

**Residency Requirements** - In order to establish residency for tuition purposes you must live in South Dakota for twelve (12) consecutive months immediately preceding the first scheduled day of classes of the semester. Attendance at the college or university controlled by the Board of Regents does not count in determining the twelve (12) month period of residence. Residency qualifications for tuition purposes may be obtained by contacting the Admissions Office at 605-688-4121.

**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.

### 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 and fees can be made directly to the University by cash, check or electronic bank transfer. Payment of tuition and fees using a debit or credit card can only be made through SDePay, the electronic billing and payment system. Discover, Visa, American Express or MasterCard credit/debit cards are accepted by SDePay. A 2.75% service fee will be charged by Nelnet Business Solutions, host provider of SDePay. For more information or to make a payment, please contact the Cashiers Office at 605-688-6116 or visit http://www.sdstate.edu/cashiers/billing/index.cfm.

All student accounts which the University is unable to collect will be submitted to a collection agency for collection and referred to a credit reporting bureau. The debtor will be responsible for all collection fees and attorney fees resulting from collection of an account.
Electronic Billing and Electronic 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 a secured Web site via the Internet through a student's WebAdvisor account. Payment of the student account can also be made electronically (ePayment) through the secure website. Students can authorize parents, spouse and other individuals to view the eBill and make ePayment on their student account. For additional information on eBilling and ePayment, please contact 605-688-6116.

E-Mail Policy

E-mail messages sent by SDSU to students through university-assigned, jacks e-mail addresses will constitute an official means of communication. It is the student's responsibility and obligation to access official university e-mail messages in a timely manner. As other email 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 Debit Card System - Hobo Dough

The student identification card can be 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, photocopying and printing, and selected off-campus businesses. Students may load funds at the Card Services office in the Student Union, the Briggs Library, or Online. Upon graduation or leaving the University, these funds ($5.00 or more) will be returned in full upon request. No service charges are assessed for active accounts. However, accounts inactive for six (6) months or more are assessed a monthly service charge. If the service charge exceeds the account balance, the account is automatically closed.

Fees for Auditing Courses

Regular tuition and fees, per credit, will be charged for auditing a course. Registration as an auditor is by petition. Auditing courses will be a matter of record (recorded on the academic transcript). Grades will be designated by the instructor as Audit Pass (AUP) or Audit Fail (AUF). Audit courses are not counted in calculating undergraduate or graduate full-time student status.

Thesis and Dissertation Fees

Students are responsible for following all deposition protocols and paying all archiving fees associated with a thesis or dissertation.

Fellowships and Assistantships

Application - Students receiving assistantship appointments must meet the academic requirements established by the Graduate School for admission (minimum 2.75 GPA, either cumulative or Junior/Senior, or complete a minimum of nine (9) graduate credits with grades of B or above and must maintain a 3.0 Plan of Study GPA). Graduate assistants must be enrolled in at least one credit of graduate work each semester, including summer. Graduate assistants who graduate in May are not eligible for assistantships the following summer unless they remain enrolled as a graduate student in good standing. International graduate students receiving graduate assistantships must have sufficient English proficiency to perform the duties assigned. Ordinarily, this will be interpreted to mean successful scores on the TOEFL examination or completion of remediation for any deficiencies; however, it may also involve further assessment and observation by a department head relative to a classroom teaching role.

International Graduate Student Summer Credit Requirements

Full time enrollment required when the summer session is an international student's first semester.

According to the United States Citizenship and Immigration Services (USCIS), international students who begin their studies during a summer session must be enrolled full time in order to maintain their F1/J1 status. It is a violation of USCIS regulations to permit an international student to begin a program and only register for 1 credit the first semester they are here. Graduate Programs (that intend to admit international students for the summer session/term) must ensure that students will be able to enroll in enough credits to maintain their full time status. Students without an assistantship would need to register for 9 credits. Students with an assistantship would need to enroll in the appropriate number of credits corresponding with the percentage of their assistantship. International students are allowed to register for less than a full time course load during all subsequent Summer Terms. This policy only pertains to international students who are beginning their programs during a summer term.
Financial Aid

Student financial assistance programs are administered through the student Financial Aid Office in the Enrollment Services Center. They may be contacted at 605-688-4695 or via e-mail at finaid@sdsstate.edu for more information. Graduate assistantships, fellowships, and traineeships are administered by the department or program involved. Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdsstate.edu (alternative loans). Please contact the SDSU Financial Aid Office if you have any questions.

Student Services

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 Board, 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. Detailed information on Student Life and Services is found in the General Catalog (Undergraduate Catalog).

Academic Evaluation and Assessment Office - Students needing testing information (GRE, TOEFL, etc.) may contact the Office of Evaluation and Assessment located in the American Indian Education and Cultural Center, (920 9th Street, northwest entrance), telephone 605-688-4217 or by email.

Bookstore - Located in the University Student Union SSU 146, the University Bookstore sells textbooks, merchandise and other supplies. Telephone: 605-688-6392.

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.

Health and Counseling Services - Student Health and Counseling Services provides outpatient services and is located in the Wellness Center. To schedule an appointment call 605-688-4157 or e-mail.

Housing and Food Service - Prospective graduate students should inquire about rooms or apartments on-campus from the Department of Residential Life well in advance of registration. Information regarding off-campus housing is also available from the Department of Residential Life. Caldwell Hall 167, telephone: 605-688-5148 and e-mail, Students may select a dining services plan by visiting Campus Card Services in the University Student Union Room 144 or purchase Resident Meal Plans.

International Student Affairs - International students should consult with the International Student Affairs Office concerning special requirements and additional expenses. 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.

Formerly the Office of International Programs, the department was initially 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, refer to www.sdsstate.edu/international-affairs. The office is located in the Briggs Library Suite 119, telephone 605-688-4122 and e-mail.

Library, Hilton 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 667,000 bound volumes, 573,000 government documents, 18,000 e-books, 34,000 online journals and other electronic resources.

Briggs Library users have access to book, periodical, archives, map and government documents collections as well as wireless networking, laptop loans and more than 70 public computer workstations providing access to the Internet, to library databases, and to software such as MS Word, Excel, PowerPoint and statistical packages. Briggs Library contains group study/conference rooms for student use, informal lounge areas, and photocopiers and scanners. Special collections of congressional papers, archival, state and local history, and curriculum materials are available for students, faculty, and researchers. In addition, materials from thousands of other libraries worldwide are available through interlibrary loan. The Briggs Library building is also the home of International Affairs and Outreach, the Teaching Learning Center and the Writing 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, Pierre and other locations throughout South Dakota and the U.S. Each year they teach hundreds of classes on information literacy and the use of library resources. They respond to thousands of information requests annually through personal contacts, via telephone at 605-688-5107, and by means of e-mail, online chat and texting. Look for the "Ask Us" link on the library homepage: www.sdstate.edu/library.
Master’s Degree Requirements

Admission Requirements
Advisory Committee
Plan of Study Information
Registration and Status
Examinations
Thesis, Research Paper, or Design Paper
Multiple Master’s Degrees or Majors
Time Limitations
Master’s Degrees and Options
Master’s Degree Checklist
Admission Requirements

The application file must be complete with the application form, application fee, all post-secondary transcripts, degree certificate, letters of recommendation, and other materials as required by Graduate School before processing of the application will begin. Application materials are due to the Graduate School by April 15 to be considered for fall enrollment and by August 15 (for international applicants) or October 15 (for domestic applicants) to be considered for spring enrollment. **Students should check with their specific program of interest, as some programs have earlier deadlines.** Master's degree applicants must have an approved Bachelor's degree from an accredited institution (except in approved/accelerated programs). Applications can be submitted on-line at https://app.applyyourself.com/?id=sdstate-g.

Advisory Committee

After consultation with the student, the head of the major department will designate a major advisor. The major advisor will recommend to the Dean of the Graduate School (by submission of the Committee Approval Request Form) members of an Advisory Committee. All graduate students in master's (option A, B and C) degrees must form a committee. The Advisory Committee must be composed of three (3) to five (5) members. The committee must include:

- **Committee Chair** – must hold either Full Graduate Faculty or Associate Graduate Faculty Status to chair master's (option B and C) committees. Committee Chair must hold Full Graduate Faculty Status to chair master's (option A) committees. Lecturer or Senior Lecturer-rank faculty who hold Associate Graduate Faculty status may chair master's (option A) committees with Department Head approval. This member assists the student in developing a suitable graduate program, provides continuing guidance and counsel, evaluates student progress, informs the student as to who will provide primary research supervision, serves as a contact for the committee and ensures the completion of the degree requirements to the Dean of the Graduate School.

- **Additional member(s) with expertise in the discipline** - must hold either Full Graduate Faculty or Associate Graduate Faculty Status at SDSU. Additional members assist the student in developing a suitable graduate program, provide continuing guidance and counsel, evaluate student progress, and assist with the completion of the degree requirements. Additional members may serve as co-chairs.

- **Graduate Faculty Representative** - selected by the Dean of the Graduate School from within a distant, broadly-defined discipline. This member represents the Graduate Council to ensure the supervision of the student is carried out with sufficient integrity. This member ensures that minimal academic standards are maintained and acts as an advocate and counselor for the student. For votes regarding the final oral defense, the Graduate Faculty Representative must vote in the affirmative for the vote to carry.

Committee chairs, with department head approval, may request up to two (2) additional committee members. The Dean of the Graduate School approves requests for additional committee members.

Professional doctorate degree holders with Full Graduate Faculty Status may only serve as chair for a committee for the degree which they hold.

Adjunct faculty members or University employees holding a master's degree who fail to qualify as Associate Graduate Faculty member may serve on graduate student committees. Such committees must contain the minimum number of Full/Associate Graduate Faculty in addition to the master's degree holder. A committee may only include one master's degree holder. Addition of the master's degree holder does not alter the maximum number of committee members allowed. The master's degree holder is not considered as having Associate Graduate Faculty status and cannot serve as co-chair.

The Advisory Committee is responsible for approving the content and scope of comprehensive and final examinations, both written and oral. The committee must evaluate the student's performance for the final oral exam and all other degree requirements taken under the auspices of -798 coursework (including those internal to the program).

All committee members must avail themselves to regular meetings with the student and/or committee. Each committee member has voting privileges. Only committee members may vote on business before the committee. For activities requiring committee votes, the chair must ensure due diligence for accommodating all members of the committee. The Graduate Faculty Representative and all but one (1) of the graduate committee must vote in the affirmative to pass the student.

The committee and the student must approve the Plan of Study, and must forward the request to the Dean of the Graduate School for approval. The Department Head is responsible for informing the Graduate School if and when a committee member can no longer discharge her/his duties consistent with the policies of the University.

Plan of Study Information

Guidelines - During the first semester of graduate work and no later than the end of the first year or completion of fifty (50) percent of the credits needed for graduation, the plan of study must be prepared on the appropriate form and approved by the major advisor. The plan of study will then be submitted to the Dean of the Graduate School for approval. At least fifty (50) percent of the credits on a plan of study must be in courses open only to graduate students (600-series or above). Failure to submit a plan of study may result in disapproval of courses taken prior to approval and/or registration restrictions. After approval, changes in the plan of study must be requested on the appropriate form. While devising a plan of study, refer to the "Academic Information" section in this catalog in addition to the following information.
Options:  

<table>
<thead>
<tr>
<th>Option</th>
<th>Minimum Credit Hours*</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Thesis</td>
<td>30</td>
</tr>
<tr>
<td>B Research Paper/Design Paper</td>
<td>32</td>
</tr>
<tr>
<td>C Coursework only</td>
<td>35</td>
</tr>
</tbody>
</table>

*Requirements may vary by Graduate Program

Minor/Supporting Area Requirement - Most Master's programs do not require a minor or supporting area of coursework. If required, it is indicated in the listing of degrees and in the department/program section of this catalog. Whether required or not, consideration should be given to both depth and breadth of courses on the plan of study.

Language Requirement - There is no general language requirement for the Master's degree. However, individual departments may require a speaking or reading knowledge of a modern language other than English.

Registration and Status

To maintain active status, students must be registered for each semester of the academic year (excluding summer). All graduate assistants must register for a minimum of one (1) credit (including summer) in order to receive an assistantship. Students who are not registered will be moved to inactive status. Inactive students must apply and be accepted for readmission before continuing graduate study.

Examinations

Final - An oral examination will be administered by the Advisory Committee covering the student's plan of study and research if appropriate. This examination must be comprehensive, testing the student's ability to analyze, integrate, and apply knowledge from the discipline. The "Final Oral Exam" form must be submitted to the Graduate School two (2) weeks before the exam. The Graduate Faculty Representative and all but one (1) of the graduate committee must pass the student.

Thesis, Research Paper, or Design Paper

Students following Option B must complete at least two (2) credits for a Research Problem (or Design Paper in Engineering) in the major field and present a written report. The content, style, and format of the report must meet the requirements of the program. The Research Report or Design Paper must be approved by the Advisory Committee and filed in the major department. A copy of the written report should be provided to each committee member, including the Graduate Faculty Representative ten (10) working days before the oral exam, and be available at the final oral examination. A thesis must meet the requirements of the program and the Graduate School and must be submitted by each student completing a Master's degree in Option A. The thesis must represent a scholarly contribution to research knowledge in the major field.

Credits - A research area for the thesis topic should be chosen after consultation with the major advisor as early in the student's program as possible. The thesis accounts for five (5) to ten (10) semester hours in the major.

Thesis Formatting and Deposition - The thesis must be prepared in the format required by the Graduate School. All theses must be submitted to the Graduate School for appropriate format checking and deposition with the library. Instructions are found on the Graduate School website. http://www.sdstate.edu/graduate/current/guidelines.cfm

Use of Human Subjects or Vertebrate Animals in Research, if applicable - Students must also seek approval for the use of human subjects or vertebrate animals in research (from the appropriate committee, if applicable). These approvals must be secured before beginning the study. For more information, visit the Research Compliance website or contact the SDSU Research Compliance Coordinator in the Office of Research & Sponsored Programs, SAD 124, 605-688-6696.

Multiple Master's Degrees or Majors

Graduate students may pursue a second or additional Master's degree in areas other than their first Master's degree, providing the degree designation is different. Up to ten (10) credits may be transferred to a second degree program.

Time Limitation

Obsolete Program - If the requirements for the Master's degree are not completed within six (6) years from the time of admission, a reconsideration of the student's program will be required.

Obsolete Coursework - Courses completed more than six (6) years prior to completion of the requirements of the Master's degree are regarded as obsolete coursework. Such courses may be used in the Master's degree program if validated. Validation is allowed at the discretion of the major advisor with approval of the Graduate School. Validation of obsolete coursework cannot exceed fifty (50) percent of the total coursework listed on the plan of study and must be certified by the major advisor on the appropriate form. Course validation may be subject to a processing fee.
### Master's Degrees and Options

<table>
<thead>
<tr>
<th>Program</th>
<th>Degree</th>
<th>Thesis</th>
<th>Research/Design Paper</th>
<th>Courses only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and Biosystems Engineering</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Animal Science</td>
<td>MS</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td>MArch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Athletic Training</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Communication Studies and Journalism - Communication</td>
<td>MS A</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication Studies and Journalism - Journalism</td>
<td>MS A</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Science</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Counseling and Human Resource Development</td>
<td>MEd</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Counseling and Human Resource Development</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Curriculum and Instruction</td>
<td>MEd</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Science</td>
<td>MS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dietetics</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Educational Administration</td>
<td>MEd</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>MS</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>MA</td>
<td>A</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Geography</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Human Sciences</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Mass Communication</td>
<td>MMC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master of Public Health</td>
<td>MPH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Nursing</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Nutritional, Exercise, and Food Sciences</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Operations Management</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Plant Science</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Sociology and Rural Studies</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Sport and Recreation Studies</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>Statistics</td>
<td>MS</td>
<td>A</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Wildlife and Fisheries Sciences</td>
<td>MS</td>
<td>A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Minimum Credit Hour Requirement**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30</td>
<td>32</td>
<td>35</td>
</tr>
</tbody>
</table>

1. Options: A. Thesis  
   B. Research Paper/Design Paper  
   C. Coursework only

2. Department requires a minor/supporting area

3. Biology Specialization only
### Master's Degree Checklist

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation of Major Advisor</td>
<td>Upon acceptance into Graduate School</td>
</tr>
<tr>
<td>Designation of Advisory Committee</td>
<td>During first semester of graduate work</td>
</tr>
<tr>
<td>Plan of Study</td>
<td>During the first semester of graduate work or before 50% of coursework is complete.</td>
</tr>
<tr>
<td></td>
<td>Must be approved by Major Advisor and submitted to Graduate School</td>
</tr>
<tr>
<td>Graduation Application</td>
<td>During final semester, by deadline*</td>
</tr>
<tr>
<td>Final Oral Exam</td>
<td>During final semester, by deadline*</td>
</tr>
<tr>
<td></td>
<td>Final Oral Exam Form must be submitted <strong>two (2) weeks</strong> prior to exam date</td>
</tr>
<tr>
<td>Thesis Format Check (Option A Only)</td>
<td>After successful completion of Final Oral Exam, by deadline*</td>
</tr>
<tr>
<td>Final Submission of Thesis (Option A Only)</td>
<td>Must complete format check first. Final submission due by deadline*</td>
</tr>
<tr>
<td></td>
<td>Signed acceptance page and library fee must also be submitted</td>
</tr>
<tr>
<td>Final Submission of Research/Design Paper (Option B Only)</td>
<td>Submitted directly to the Department by specified deadline</td>
</tr>
</tbody>
</table>

* The Graduate School sets deadlines for graduation (http://www.sdstate.edu/graduate/current/important-dates.cfm) each semester. Please also consult with your Department for other program specific requirements and deadlines. All forms are available on the Graduate School Forms (http://www.sdstate.edu/graduate/forms/index.cfm) page.
Doctor of Philosophy Degree Requirements

Admission Requirements

Advisory Committee

Plan of Study Information

Plan of Study Credit Requirements

Registration and Status

Examinations

Dissertation

Time Limitations

Doctor of Philosophy Checklist
**Admission Requirements**

The application file must be complete with the application form, application fee, all post-secondary transcripts, degree certificates, letters of reference, and other materials as required by specific programs before processing of the application will begin. A completed application must be filed with the Graduate School by April 15 for consideration for fall admission and by August 15 (international) or October 15 (domestic) for consideration for spring admission. **Students should check with their specific program of interest as some programs have earlier deadlines.** Applicants for the Doctor of Philosophy degree, 60-credit plan, will usually have a Master's degree. This degree must be awarded from an approved, accredited institution. In those cases where applicants do not have a Master's degree, departmental requirements will apply, either requiring completion of a Master's degree or permitting an individual to move directly into a doctoral program, 90-credit plan. Applications for domestic, international or non-degree seeking students are found at http://app.applyyourself.com/?id=sdstate-g.

**Advisory Committee**

After consultation with the student, the head of the major department will designate a major advisor. As soon as possible, but no later than the completion of fifty (50) percent of the credits toward graduation, the major advisor will recommend to the Dean of the Graduate School (by submission of the Committee Approval Request Form) members of an Advisory Committee. The Advisory Committee must be composed of four (4) to six (6) members. The committee must include:

- **Committee Chair** – must hold Full Graduate Faculty Status at SDSU. This member assists the student in developing a suitable graduate program, provides continuing guidance and counsel, evaluates student progress, informs the student as to who will provide primary research supervision, serves as a contact for the committee and ensures the completion of the degree requirements to the Dean of the Graduate School.

- **Two (2) additional members with expertise within the discipline** – must hold either Full Graduate Faculty or Associate Graduate Faculty Status at SDSU. Additional members assist the student in developing a suitable graduate program, provide continuing guidance and counsel, evaluate student progress, and assist with the completion of the degree requirements. Additional members may serve as co-chairs.

- **Graduate Faculty Representative** – selected by the Dean of the Graduate School from within a distant, broadly-defined discipline. This member represents the Graduate Council to ensure the supervision of the student is carried out with sufficient integrity. This member ensures that minimal academic standards are maintained and acts as an advocate and counselor for the student. For votes regarding the final oral defense, the Graduate Faculty Representative must vote in the affirmative for the vote to carry.

Committee chairs, with department head approval, may request up to two (2) additional committee members. The Dean of the Graduate School approves requests for additional committee members.

Professional doctorate degree holders with Full Graduate Faculty Status may only serve as chair for a committee for the degree which they hold.

Adjunct faculty members or University employees holding a master's degree who fail to qualify as Associate Graduate Faculty member may serve on graduate student committees. Such committees must contain the minimum number of Full/Associate Graduate Faculty in addition to the master's degree holder. A committee may only include one master's degree holder. Addition of the master's degree holder does not alter the maximum number of committee members allowed. The master's degree holder is not considered as having Associate Graduate Faculty status and cannot serve as co-chair.

The Advisory Committee is responsible for approving the content and scope of comprehensive and final examinations, both written and oral. The committee must evaluate the student's performance for the comprehensive exams and final defense and all other degree requirements taken under the auspices of 898 coursework (including those internal to the program).

All committee members must avail themselves to regular meetings with the student and/or committee. Each committee member has voting privileges. Only committee members may vote on business before the committee. For activities requiring committee votes, the chair must ensure due diligence for accommodating all members of the committee. The Graduate Faculty Representative and all but one (1) of the graduate committee must vote in the affirmative to pass the student.

The committee and the student must approve the Plan of Study, and must forward the request to the Dean of the Graduate School for approval. The Department Head is responsible for informing the Graduate School if and when a committee member can no longer discharge her/his duties consistent with the policies of the University.

**Plan of Study Information**

After the Advisory Committee is formed, the major advisor will schedule a meeting with the student to develop a plan of study and to consider a research area for the dissertation. The plan of study must be prepared using the form provided by the Graduate School and approved by the Advisory Committee and the Dean of the Graduate School prior to completion of 50 percent of the credits toward graduation. Delay in submitting a plan of study may result in disapproval of courses taken prior to approval. The student cannot take the comprehensive written examination prior to approval of the plan of study. Changes in the approved plan of study must be requested using the appropriate form and must be approved by the Advisory Committee and the Dean of the Graduate School. While devising the plan of study, refer to the "Academic Policies" section in this catalog in addition to the following information.
Plan of Study Credit Requirements

Total Credits Required - A minimum of three academic years of full-time work beyond the Bachelor's degree (minimum of 90 semester credits, 90-Credit Plan) or a minimum of two (2) academic years of full-time work beyond the Master's degree (minimum of 60 semester credits, 60-Credit Plan) are generally required for the Doctor of Philosophy degree. Where consideration is given to a Master's degree it must be in the area of the program or a related area, be an academic program from an accredited institution, and be declared at the time the Plan of Study is submitted. The Advisory Committee may require more credits than the minimum listed previously if it believes the extra requirements are in the best interest of the student.

Program Courses - At least sixty (60) credits of the 90-Credit Plan or forty (40) credits of the 60-Credit Plan required for the degree must be earned in the program. Dissertation and transfer credits may apply. Not all courses need to be in a single department or area, but all courses should be closely related to the program area.

Minor or Supporting Courses, if required - Few programs require a minor. Please see departmental requirements for specific minors.

Graduate Credit Requirement - At least fifty (50) percent of the credits on a Plan of Study must be in courses open only to graduate students (600-series or above).

Additional Requirements - The Advisory Committee may require more credits than the minimum indicated if it feels it is in the best interest of the student.

Registration and Status

To maintain active status, students must be registered each semester of the academic year (excluding summer). All graduate assistants must register for a minimum of one (1) credit (including summer) in order to receive an assistantship. Students who are not registered will be moved to inactive status. Inactive students must apply for readmission and be accepted before continuing their graduate studies.

Examinations

Interim Evaluation - Upon completion of approximately fifty (50) percent of the coursework on the plan of study, the Advisory Committee will meet to evaluate the progress of the student, provide advice and counsel, and recommend continuance or termination of the program. Because the Doctor of Philosophy is a terminal academic degree, student performance includes an evaluation of progress in the program and academic performance. The Advisory Committee may recommend, in writing to the student and Dean of the Graduate School, termination of the student in the program.

Comprehensive Written and Oral Examinations - Comprehensive examinations are generally administered after coursework on the plan of study has been substantially completed. The comprehensive written examination is followed, on satisfactory completion, by an oral examination. These examinations are to test the student's breadth of knowledge and his/her ability to integrate this knowledge.

The student arranges with his/her committee the time and location for the comprehensive written and oral examinations. The student will submit the "Comprehensive Written Exam" form to the Graduate School at least two (2) weeks prior to the examination date. The submission of this form initiates the necessary paperwork to be provided by the Graduate School to the student and committee members. Copies of the written examinations must be kept on file in the major department. Upon successful completion of the comprehensive written examination, the student will arrange with his/her advisor and committee members to take the comprehensive oral examination and will submit the "Comprehensive Oral Exam" form to the Graduate School at least two (2) weeks prior to the exam. The submission of this form initiates the necessary paperwork to be provided by the Graduate School to the student and committee members. The comprehensive examinations must be completed at least two (2) months before the final oral examination. Upon satisfactory completion of the comprehensive examinations, the student is formally admitted to candidacy for the PhD degree. If the student does not receive the PhD degree within three (3) years after becoming a candidate, comprehensive examinations must be repeated.

Final Examination - This final examination is conducted by the Advisory Committee after notifying the Graduate School using the "Doctor of Philosophy - Final Oral Exam" form two (2) weeks prior to the examination. While the Advisory Committee determines the character and length of the examination, sufficient time should be devoted to the dissertation, including literature review, to evaluate the ability of the student to defend the research. In addition, questions to test the student's general knowledge, judgment and critical thinking powers are usually asked. The final oral examination cannot be taken earlier than two (2) months following successful completion of the comprehensive examinations and must be completed by the date set by the Graduate School in order to graduate in that semester.

Dissertation

Proposal - The student in consultation with the major advisor or dissertation advisor shall prepare a written dissertation proposal for approval by the Advisory Committee.

Requirements - The dissertation should represent at least one (1) academic year of full-time research (18-30 credits). Of no specific length, the dissertation should advance or modify knowledge in the discipline and demonstrate the candidate's mastery of the subject. The dissertation should meet discipline standards as required by the program. All dissertations must be submitted to the Graduate School for appropriate format checking and deposition with the library. Instructions are found on the Graduate School website http://www.sdstate.edu/graduate/current/guidelines.cfm.
Use of Human Subjects or Vertebrate Animals in Research - After receiving approval of the research proposal students must also seek approval for the use of human subjects or vertebrate animals in research, when applicable, from the appropriate committee. These approvals must be secured before beginning the study. For more information, visit the Research Compliance website or contact the SDSU Research Compliance Coordinator in the Office of Research & Sponsored Programs, SAD 124, telephone: 605-688-6975.

Time Limitation

Obsolete Program - If the Doctor of Philosophy degree is not completed within eight (8) years from the time of admission, a reconsideration of the student's program is required.

Obsolete Coursework - Courses completed more than eight (8) years before completion of the doctorate are regarded as obsolete coursework. Such courses may be used in the doctoral degree program if validated. Validation is allowed at the discretion of the Advisory Committee and department involved and can be accomplished by passing validation requirements in the subject matter area. Validated obsolete coursework cannot exceed fifty (50) percent of the coursework (excluding dissertation credits) listed on the plan of study and must be certified by the Advisory Committee on a form provided by the Graduate School.

Doctor of Philosophy Checklist*

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation of Major Advisor</td>
<td>Upon acceptance into Graduate School</td>
</tr>
<tr>
<td>Designation of Advisory Committee</td>
<td>During first semester of graduate work Graduate Faculty Representative will be assigned by the Graduate School</td>
</tr>
<tr>
<td>Plan of Study</td>
<td>During the first semester of graduate work or before 50% of coursework is complete. Must be approved by all Advisory Committee members and submitted to Graduate School</td>
</tr>
<tr>
<td>Comprehensive Written Exam</td>
<td>Per Dept procedures, near the completion of coursework. Comprehensive Written Exam Form due to Graduate School two (2) weeks prior to exam date.</td>
</tr>
<tr>
<td>Comprehensive Oral Exam</td>
<td>Scheduled upon successful completion of Comprehensive Written Exam. Comprehensive Oral Exam Form due to Graduate School two (2) weeks prior to exam date. Must be two (2) months prior to Final Oral Exam.</td>
</tr>
<tr>
<td>Graduation Application</td>
<td>During final semester, by deadline*</td>
</tr>
<tr>
<td>Final Oral Exam (Dissertation Defense)</td>
<td>During final semester, by deadline* Final Oral Exam Form must be submitted two (2) weeks prior to exam date</td>
</tr>
<tr>
<td>Dissertation Format Check</td>
<td>After successful completion of Final Oral Exam, by deadline*</td>
</tr>
<tr>
<td>Final Submission of Dissertation</td>
<td>Must complete format check first. Final submission due by deadline* Signed acceptance page and library fee must also be submitted.</td>
</tr>
</tbody>
</table>

* The Graduate School sets deadlines for graduation (http://www.sdstate.edu/graduate/current/important-dates.cfm) each semester. Please also consult with your Department for other program specific requirements and deadlines. All forms are available on the Graduate School Forms (http://www.sdstate.edu/graduate/forms/index.cfm) page.
Doctor of Pharmacy Degree Requirements

Program Application Requirements
Curriculum/Plan of Study
College of Pharmacy Regulations
Program Application Requirements

Preparation for the Major
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. For more information, visit http://www.sdstate.edu/pha/apply/pre-pharmacy-curriculum.cfm

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 requirements prior to fall semester is eligible to apply.

Notification of acceptance into the professional program will be made by March 15. Students admitted to the professional program must submit a non-refundable deposit to secure their position for the fall semester. That deposit will be applied to student's account in the fall semester.

Curriculum/Plan of Study

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 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.

College of Pharmacy Regulations

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

1. Pharmacy GPA Calculation – Pharmacy GPA is calculated using all pharmacy PHA prefix courses, excluding 201 & 321.

   A. For pharmacy courses repeated at SDSU, only the repeated grade will be used to calculate the pharmacy GPA.

   B. For pharmacy courses repeated at another college of pharmacy, a grade of "C" will be used to calculate the pharmacy GPA in place of the grade received for the corresponding course at SDSU (grades of "D" or "F" for pharmacy courses from other pharmacy programs do not satisfy the course requirement).

2. Probation - A student will be placed on "pharmacy probation" when the student's pharmacy GPA for a semester falls below 2.0. Each subsequent semester while on "pharmacy probation" the student must earn a pharmacy GPA of 2.0 or better or the student will be placed on "refused status". The student will be on probation for a minimum of one semester while taking pharmacy courses (PHA prefix, excluding 201 & 321) and will remain on "pharmacy probation" until the student's cumulative Pharmacy GPA is 2.0 or greater.

3. Graduation - A student must earn a minimum 2.0 grade point average for all pharmacy courses (excluding 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 the 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 the 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):

- **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 109.
- **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.
- **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.

F. The student must successfully complete P4 capstone requirements including P4 seminar, the P4 knowledge exam, all items on the Student Activities Checklist, and all components of the P4 Assessment Activities. In addition, the student must maintain a portfolio of activities according to distributed portfolio guidelines.
Off-Campus and Distance Programs

Summer Term

University Center – Sioux Falls

Capital University Center

University Center – Rapid City

Distance Education

Outreach Programs

State Authorization

Notification of Complaint Process for Program Integrity
The Office of Continuing and Distance 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 Distance 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.

**Summer Term**

SDSU offers a wide range of courses on and off-campus to continue your studies 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.

**University Center - Sioux Falls**

(South Dakota Public Universities and Research Center)

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. The course content, number and contact hours are the same as the identical course taught on campus. However, a typical three-credit course will meet for three hours one day or night per week rather than one hour three days per week. Coursework is offered during the fall, spring, and summer terms. The start and end of term for summer at University Center is different from the dates of summer term on campus.

The majors offered in Sioux Falls include General Studies (A.A), Consumer Affairs, General Studies (B.G.S.), Human Development and Family Studies, Graphic Design, Interdisciplinary Studies, Journalism, Nursing, Psychology, and Sociology at the undergraduate level. Pre-engineering courses are also available in Sioux Falls. Master's degrees are offered in Counseling and Nursing. Students in all majors may complete their general education core in Sioux Falls at University Center.

**Capital University Center**

The Capital University Center in Pierre was established by the people of Central South Dakota in 1982 to provide opportunities in higher education for the people of the region. In 1983, CUC and South Dakota State University entered into an agreement to enhance educational opportunities for residents of Central South Dakota through the offering of courses designed to transfer to degree-granting institutions of higher education. In 2003, CUC was fully merged into the SD Board of Regents System. SDSU offers at CUC the Associate of Arts degree in General Studies, the Bachelor of General Studies, and the Bachelor of Science degree with a major in Interdisciplinary Studies, as well as a variety of general education courses and non-credit programs.

**University Center - Rapid City**

The University Center in Rapid City provides both undergraduate and graduate offerings. Undergraduate programs include the Bachelor's of Interdisciplinary Studies (IDS), which allows students whose academic and career goals encompass more than one traditional academic area to put together their own degree unique to their needs. Special opportunities exist in Agriculture, for example, where students may combine an interest in Range Science with Animal Science to form a degree which crosses these two academic areas. In addition to undergraduate offerings, the College of Education and Human Sciences offers Master of Education and Master of Science programs in Educational Administration and Counseling in Rapid City. These programs serve the military personnel, teachers, administrators, and counselors in Western South Dakota. SDSU coordinates its West River activities with other Regental universities serving the area.

**Distance Education**

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

Every year, several thousand students enroll in the 18 degree-programs, 8 certificate 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.

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

**Outreach Programs**

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 University 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 Distance 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 Office of Continuing and Distance Education provides opportunities for individuals to participate in professional development and personal enrichment activities throughout the year. Continuing and Distance Education offers a number of Continuing Education Units (CEUs), tax update workshops, and partners with Osher Lifelong Learning Institute (OLLI) to offer short-term, non-credit classes.

**State Authorization**

Colleges and Universities who offer certain services to out-of-state students may be required to request authorization in the states whose students they serve. SDSU is intent on complying with all state regulations and will apply for authorization, when necessary, from those states where it conducts activities such as delivery of online courses, placement for field experiences (internships, clinicals, practicums, etc.) academic and athletic recruiting, marketing, etc.

South Dakota State University is registered as a private institution with the Minnesota Office of Higher Education pursuant to sections 136A.61 to 136A.71. Registration is not an endorsement of the institution. Credits earned at the institution may not transfer to all other institutions.

**Notification of Complaint Process for Program Integrity**

Any person may file the complaint with the Executive Director of the South Dakota Board of Regents to obtain a review and appropriate action on allegations that an institution governed by the Board:

• Violated South Dakota consumer protection laws;
• Engaged in fraud or false advertising;
• Violated South Dakota laws relating to the licensure of postsecondary institutions or programs;
• Failed to provide an educational program meeting contemporary standards for content and rigor;
• Failed to assign qualified instructors; or
• Violated one or more accreditation requirements.

Where the institution has not already considered and acted upon the complaint, the Executive Director will refer the matter to the institutional president for review and action. If the complainant challenges an institutional disposition of the complaint, the Executive Director will provide for an independent review and disposition of the allegations. The Executive Director may be contacted at: The Office of the Executive Director of the South Dakota Board of Regents, 306 East Capitol Avenue, Suite 200; Pierre, South Dakota 57501-2545; Phone 605-773-3455; info@sdbor.edu.

Allegations involving violation of consumer protection laws may also be filed with Office of Attorney General, Division of Consumer Protection; 1302 E Hwy 14 Ste 3; Pierre SD 57501; Phone 605-773-4400, 1-800-300-1986 (in-state only); Fax 605-773-7163; consumerhelp@state.sd.us; online complaint form, http://atg.sd.gov/Consumers/HandlingComplaints/ConsumerComplaintForm.aspx.
Contact Information For Students Residing In States Other Than South Dakota Who Have Complaints Relating Specifically To Distance Learning Or Correspondence Education

Pursuant to the United States Department of Education's Program Integrity Rule, South Dakota State University is required to provide all prospective and current students with the contact information of the state agency or agencies that handle complaints against postsecondary education institutions offering distance learning or correspondence education within that state. Students residing in other states while enrolled in a course offered by South Dakota State University are encouraged to utilize the institution's internal complaint or review policies and procedures prior to filing a complaint with the state agency or agencies. However, if the complaint is not resolved through these processes, a student may use the following list to identify the office(s) in the state in which the student resides to which the complaint against any public institution in South Dakota may be filed.

Agencies by State (http://www.sdstate.edu/cee/upload/Ensuring-Program-Integrity.pdf) where these complaints may be Filed: (NOTE: This list is subject to change. If a student is not able to contact the appropriate agency in a given state, please contact the Offices of the South Dakota Board of Regents and assistance will be provided. (306 East Capitol Ave, Suite 200, Pierre, SD 57501; phone: 605-773-3455; e-mail: info@sdbor.edu).
Colleges

College of Agriculture and Biological Sciences 46
College of Arts and Sciences 51
College of Education and Human Sciences 55
College of Nursing 58
College of Pharmacy 59
Graduate School 60
Jerome J. Lohr College of Engineering 61
College of Agriculture and Biological Sciences

Animal Science
Department Head: Professor Joseph Cassady
Graduate Coordinator: Professor Joseph Cassady
For additional information contact:
Mailing address: SDSU Box 2170
Animal Science Complex – SAS 101
Website: http://www.sdstate.edu/ars/
E-mail: Cheryl.Beste@sdstate.edu

Degrees Offered:
• Ph.D. Animal and Range Sciences
• M.S. Animal and Range Sciences
Students may select an emphasis in Nutrition, Meat Science and Muscle Biology, Reproduction, or Genetics.

Certificates Offered:
• Animal Science

Graduate Faculty
Amanda Blair, Associate Professor
Rebecca C. Bott, Assistant Professor
Derek Brake, Assistant Professor
Joseph Cassady, Department Head and Professor
Jeffrey A. Clapper, Professor
Michael Gonda, Associate Professor
Elaine Grings, Assistant Professor
Donald M. Marshall, Associate Dean and Professor
Kenneth C. Olson, Professor
George A. Perry, Professor
Robbi H. Pritchard, Distinguished Professor
Stacy Scramlin, Assistant Professor
Robert C. Thaler, Professor
Keith R. Underwood, Assistant Professor
Julie A. Walker, Associate Professor
Cody L. Wright, Professor

Biological Sciences
Ph.D. Coordinator: Professor Donald M. Marshall
M.S. Coordinator: Professor Donald M. Marshall
For additional information contact:
Mailing address: SDSU Box 2207
Academic Programs Office, SAG 156
Website: www.sdstate.edu/abs
E-mail: donald.marshall@sdstate.edu

Degrees Offered:
• Ph.D. Biological Sciences
  • Agricultural and Biosystems Engineering Specialization
  • Biology Specialization
  • Dairy Science Specialization
  • Microbiology Specialization
  • Molecular Biology Specialization
  • Plant Molecular Biology Specialization
  • Plant Science Specialization
  • Veterinary Microbiology Specialization
  • Veterinary Pathobiology Specialization
• M.S. Biological Sciences
  * Horticultural Science Emphases
  * Veterinary Microbiology Emphases
  * Veterinary Pathology Emphases
  • Biology Specialization
  • Dairy Science Specialization
  • Microbiology Specialization

Graduate Faculty
Agricultural and Biosystems Engineering
Animal Science
Biology and Microbiology
Dairy Science
Natural Resource Management
Veterinary & Biomedical Sciences
**Biology and Microbiology**

**Department Head:** Professor Volker Brozel  
**Graduate Coordinator:** Professor Radhey Kaushik

**For additional information contact:**

| Mailing address: | SDSU Box 2207B  
West Hall 115 | Phone: 605-688-6141  
Fax: 605-688-6677 |
| Website: | www.sdstate.edu/biomicro |
| E-mail: | biomicro@abs.sdstate.edu |

**Degrees Offered:**

- Ph.D. Biological Sciences  
  - Biology  
  - Microbiology  
  - Molecular Biology  
- M.S. Biological Sciences  
  - Biology  
  - Biology Education  
  - Microbiology

**Graduate Faculty**

Donald Auger, Associate Professor  
Bruce Bleakley, Professor  
Volker Brozel, Department Head and Professor  
Heike Bucking, Associate Professor  
Charles D. Dieter, Professor  
William Ray Gibbons, Professor  
Susan A. Gibson, Professor  
Michael Hildreth, Professor  
Carol A. Johnston, Professor  
Radhey Kaushik, Professor  
Gary E. Larson, Professor  
Feng Li, Professor  
Wanlong Li, Associate Professor  
Madhav Nepal, Assistant Professor  
Scott Pedersen, Professor  
R. Neil Reese, Professor  
Jai Rohila, Assistant Professor  
John J. Ruffolo, Professor Emeriti  
Nels Troeltstrup, Professor  
Carol Wake, Professor  
Xuqing Wang, Professor  
Thomas P. West, Professor  
Yajun Wu, Associate Professor  
Lan Xu, Associate Professor  
Yang Yen, Professor

**Dairy Science**

**Department Head:** Professor Vikram Mistry  
**Graduate Coordinator:** Professor Vikram Mistry

**For additional information contact:**

| Mailing address: | SDSU Box 2104  
Alfred Dairy Science Hall — SDS 136 | Phone: 605-688-4116  
Fax: 605-688-6276 |
| Website: | www.sdstate.edu/ds |
| E-mail: | vikram.mistry@sdstate.edu |

**Degrees Offered:**

- Ph.D. Biological Sciences  
  - Dairy Science  
- M.S. Biological Sciences  
  - Dairy Science

**Graduate Faculty**

Sanjeev K. Anand, Professor  
Jill L. Anderson, Assistant Professor  
David P. Casper, Assistant Professor  
Ashraf N. Hassan, Associate Professor  
Lloyd E. Metzger, Professor, and Alfred Chair in Dairy Education  
Vikram V. Mistry, Department Head and Professor  
Hasan A. Patel, Assistant Professor

**Economics**

**Department Head:** Professor Eluned Jones  
**Graduate Coordinator:** Professor Joseph M. Santos

**For additional information contact:**

| Mailing address: | SDSU Box 504  
Scobey Hall — SSB 138 | Phone: 605-688-4141  
Fax: 605-688-6386 |
| Website: | www.sdstate.edu/econ/grad |
| E-mail: | joseph.santos@sdstate.edu |

**Faculty**

Donald Auger, Associate Professor  
Bruce Bleakley, Professor  
Volker Brozel, Department Head and Professor  
Heike Bucking, Associate Professor  
Charles D. Dieter, Professor  
William Ray Gibbons, Professor  
Susan A. Gibson, Professor  
Michael Hildreth, Professor  
Carol A. Johnston, Professor  
Radhey Kaushik, Professor  
Gary E. Larson, Professor  
Feng Li, Professor  
Wanlong Li, Associate Professor  
Madhav Nepal, Assistant Professor  
Scott Pedersen, Professor  
R. Neil Reese, Professor  
Jai Rohila, Assistant Professor  
John J. Ruffolo, Professor Emeriti  
Nels Troeltstrup, Professor  
Carol Wake, Professor  
Xuqing Wang, Professor  
Thomas P. West, Professor  
Yajun Wu, Associate Professor  
Lan Xu, Associate Professor  
Yang Yen, Professor  
Sanjeev K. Anand, Professor  
Jill L. Anderson, Assistant Professor  
David P. Casper, Assistant Professor  
Ashraf N. Hassan, Associate Professor  
Lloyd E. Metzger, Professor, and Alfred Chair in Dairy Education  
Vikram V. Mistry, Department Head and Professor  
Hasan A. Patel, Assistant Professor  
Sanjeev K. Anand, Professor  
Jill L. Anderson, Assistant Professor  
David P. Casper, Assistant Professor  
Ashraf N. Hassan, Associate Professor  
Lloyd E. Metzger, Professor, and Alfred Chair in Dairy Education  
Vikram V. Mistry, Department Head and Professor  
Hasan A. Patel, Assistant Professor
Degrees Offered:
- M.S. Economics
  - Agricultural Business Emphasis
  - Agricultural and Resource Economics Emphasis
  - Business Economics Emphasis
  - General Economics Emphasis

Graduate Faculty
Dwight Adamson, Associate Professor
Kuo-Liang Chang, Assistant Professor
Carol Cumber, Professor
David E. Davis, Associate Professor
Matthew A. Diersen, Professor
Scott Fausti, Professor
Curtis Gustafson, Associate Professor
Larry Janssen, Professor
Eluned Jones, Department Head and Professor
Nicole Klein, Professor
George Langelett, Professor
Michael D Miller, Assistant Professor
Jamie O’Brien, Professor
Bashir Qasmi, Associate Professor
Joseph M. Santos, Professor
Gary Taylor, Associate Professor
Evert Van der Sluis, Professor
Zhiguang Wang, Assistant Professor
Jason Zimmerman, Professor

Natural Resource Management
Interim Department Head: Professor Nels H. Troelstrup
Graduate Coordinator: Distinguished Professor Jonathan Jenks
Grassland Management Certificate Coordinator: Professor Alexander (Sandy) Smart

For additional information contact:
Mailing address: SDSU Box 2140B
   Northern Plains Biostress Laboratory — SNP 138
   Website: www.sdstate.edu/nrm
   E-mail: jonathan.jenks@sdstate.edu
   alexander.smart@sdstate.edu
Phone: 605-688-6121
Fax: 605-688-4515
605-688-4783
605-688-4017

Degrees Offered:
- Ph.D. Biological Sciences
- Ph.D. Wildlife and Fisheries Sciences
- M.S. Biological Sciences
- M.S. Wildlife and Fisheries Sciences

Certificates Offered:
- Grassland Management

Graduate Faculty
Katie N. Bertrand, Associate Professor
Michael L. Brown, Distinguished Professor
Steven Chipps, Adjunct Professor
Charles D. Dieter, Professor
Roger N. Gates, Professor
Larry Gigliotti, Adjunct Assistant Professor
Brian Graeb, Associate Professor
Troy Grovenburg, Assistant Professor
Jonathan Jenks, Distinguished Professor
Kent C. Jensen, Associate Professor
Patricia S. Johnson, Professor
W. Carter Johnson, Distinguished Professor
Carol A. Johnston, Professor
Gary E. Larson, Professor
Lora Perkins, Assistant Professor
Alexander (Sandy) Smart, Professor
Joshua D. Stafford, Adjunct Associate Professor
Nels H. Troelstrup, Interim Department Head and Professor
Melissa R. Wuebner, Assistant Professor
Lan Xu, Associate Professor
**Plant Science**
**Department Head:** Professor David Wright  
**Graduate Coordinator:** Professor Howard J. Woodard

*For additional information contact:*

**Mailing address:** SDSU, Box 2207A  
Agricultural Hall — SAG 004  
**Website:** www.sdstate.edu/ps/grad  
**E-mail:** howard.woodard@sdstate.edu

**Degrees Offered:**
- Ph.D. Plant Science
- Ph.D. Biological Sciences
  - Plant Molecular Biology Specialization
  - Plant Science Specialization
- M.S. Plant Science

**Graduate Faculty**

- Arvid Boe, Professor  
- Rhoda L. Burrows, Professor  
- C. Gregg Carlson, Professor  
- David Clay, Professor  
- Sharon Clay, Professor  
- James Doolittle, Associate Vice President for Research and Professor  
- Anne Fennell, Professor  
- Billy Fuller, Professor  
- Karl D. Glover, Professor  
- Jose Luis Gonzalez, Associate Professor  
- Xingyou Gu, Professor  
- Guo-Liang Jiang, Assistant Professor  
- Paul Johnson, Professor  
- Kevin D. Kephart, Vice President for Research and Professor  
- Marie Langham, Professor  
- Jonathan Lundgren, Adjunct Assistant Professor  
- Douglas Malo, Distinguished Professor  
- Thandiwe Neya, Associate Professor  
- Shannon Osborne, Adjunct Assistant Professor  
- Vance Owens, Professor  
- Peter R. Schafer, Professor  
- Thomas Schumacher, Professor Emeritus  
- Peter Sexton, Associate Professor  
- Senthil Subramanian, Assistant Professor  
- Kelley J. Tilmon, Associate Professor  
- E. Brent Turnipseed, Professor  
- Howard J. Woodard, Professor  
- David Wright, Department Head and Professor  
- Jixiang Wu, Assistant Professor

**Veterinary & Biomedical Sciences**
**Department Head:** Professor Jane Christopher-Hennings  
**Graduate Coordinator:** Professor Christopher Chase

*For additional information contact:*

**Mailing address:** SDSU Box 2175  
Veterinary Science — SAR 105  
**Website:** www.sdstate.edu/vs  
**E-mail:** christopher.chase@sdstate.edu

**Degrees Offered:**
- Ph.D. Biological Sciences
  - Veterinary Microbiology Specialization
  - Veterinary Pathobiology Specialization
- M.S. Biological Sciences
- M.S. Animal and Range Sciences

**Graduate Faculty**

- Christopher Chase, Professor  
- Jane Christopher-Hennings, Department Head and Professor  
- Alan Erickson, Professor  
- Michael Hildreth, Professor  
- Radhey Kaushik, Professor  
- Feng Li, Professor  
- Regg Neiger, Professor  
- Eric Nelson, Professor  
- Alan Young, Professor
Wildlife & Fisheries Sciences
Interim Department Head: Professor Nels H. Troelstrup
Graduate Coordinator: Distinguished Professor Jonathan A. Jenks
For additional information contact:
Mailing address: SDSU Box 2140B Phone: 605-688-6121
Northern Plains Biostress Laboratory — SNP 138 Fax: 605-688-4515
Website: www.sdstate.edu/nrm
E-mail: jonathan.jenks@sdstate.edu 605-688-4783
nels.troelstrup@sdstate.edu 605-688-6121

Degrees Offered:
- Ph.D. Biological Sciences
- Ph.D. Wildlife and Fisheries Sciences
- M.S. Biological Sciences
- M.S. Wildlife and Fisheries Sciences
  - Wildlife Specialization
  - Fisheries Specialization

Graduate Faculty
Katie N. Bertrand, Assistant Professor
Michael L. Brown, Distinguished Professor
Steven R. Chipps, Adjunct Professor
Charles D. Dieter, Professor
Roger N. Gates, Professor
Larry M. Gigliotti, Adjunct Assistant Professor
Brian D. S. Graeb, Associate Professor
Kenneth F. Higgins, Professor Emeritus
Jonathan A. Jenks, Distinguished Professor
Kent C. Jensen, Associate Professor

Patricia S. Johnson, Professor
W. Carter Johnson, Distinguished Professor
Carol A. Johnston, Professor
Gary E. Larson, Professor
Lora Perkins, Assistant Professor
Alexander J. Smart, Professor
Joshua D. Stafford, Adjunct Associate Professor
Nels H. Troelstrup, Jr., Interim Department Head and Professor
Melissa R. Wuellner, Assistant Professor
Lan Xu, Associate Professor
College of Arts and Sciences

Architecture
Department Head: Associate Professor Brian Rex
For additional information contact:
Mailing address: SDSU Box 2203
Intramural Building 108
Website: www.sdstate.edu/arch
E-mail: brian.rex@sdstate.edu

Degrees Offered:
- M.Arch. - Master of Architecture

Graduate Faculty
Brian Rex, Department Head and Associate Professor
Charles MacBride, Assistant Professor

Chemistry and Biochemistry
Department Head: Professor James A. Rice
Graduate Coordinator: Professor James A. Rice
For additional information contact:
Mailing address: SDSU Box 2202
Avera Health Science Center — SAV 131
Website: www.sdstate.edu/chem
E-mail: gradchem@sdstate.edu

Degrees Offered:
- Ph.D. Chemistry
- Ph.D. Biochemistry
- M.S. Chemistry
- Chemical Education Specialization

Graduate Faculty
David Cartrette, Associate Professor
Suvobrata Chakravarty, Assistant Professor
Jihong Cole-Dai, Professor
Fathi Halaweish, Professor
Adam Hoppe, Associate Professor
Linhong Jing, Assistant Professor

Communication Studies and Theatre
Department Head: Professor Laurie L. Haleta
Graduate Coordinator: Associate Professor Elizabeth Tolman
For additional information contact:
Mailing address: SDSU Box 2218
Pugsley Center — SPC 115
Website: www.sdstate.edu/cst/programs/mscom-studies
E-mail: elizabeth.tolman@sdstate.edu

Degree Offered:
- M.S. Communication Studies and Journalism
- Communication Studies Specialization

Graduate Faculty
J.D. Ackman, Professor
Jenn Anderson, Assistant Professor
Laurie L. Haleta, Department Head and Professor
Melissa Hauschild-Mork, Assistant Professor
Karla Hunter, Assistant Professor
Susan Kiemp, Assistant Professor

Rebecca Kuehl, Assistant Professor
Corey Shelsta, Professor
Elizabeth Tolman, Professor
Joshua Westwick, Assistant Professor
Lonnie Wilburn, Associate Professor
William J. Wood, Assistant Professor
English
Department Head: Professor Jason McEntee
Graduate Coordinator: Assistant Professor Sharon Smith
For additional information contact:
Mailing address: SDSU Box 2218
Pugsley - 301
Website: www.sdstate.edu/engl
E-mail: jason.mcentee@sdstate.edu

Degrees Offered:
• M.A. English
  • Literature Emphasis
  • Language and Rhetoric Emphasis

Graduate Faculty
Paul Baggett, Associate Professor
Bruce Brandt, Professor
Kathleen Danker, Professor
Kathleen Donovan, Associate Dean and Professor
Nicole Flynn, Assistant Professor
Michael Keller, Professor
Jason McEntee, Department Head and Professor
Kathy Malone, Assistant Professor
Michael Nagy, Associate Professor
Sharon Smith, Assistant Professor
Christine Stewart, Associate Professor
John Taylor, Professor
Steven Wingate, Assistant Professor
Charles Woodard, Distinguished Professor

Geography
Department Head: Professor George W. White
Graduate Coordinator: Professor Darrell E. Napton
For additional information contact:
Mailing address: SDSU Box 504
109 Wecota Hall
Website: www.sdstate.edu/geo
E-mail: George.White@sdstate.edu or Darrell.Napton@sdstate.edu

Degrees Offered:
• Ph.D. Geospatial Science & Engineering
  • Remote Sensing Geography specialization
• M.S. Geography
• Graduate Minor in Geographic Information Sciences

Graduate Faculty
Hilary Hungerford, Assistant Professor
Trisha Jackson, Assistant Professor
Thomas Loveland, Adjunct Professor
Darrell E. Napton, Professor
Robert Watrel, Associate Professor
George W. White, Department Head and Professor

History, Political Science, Philosophy and Religion
Department Head: Associate Professor William Prigge
For additional information contact:
Mailing address: SDSU Box 504
West Hall — SWH 109
Website: www.sdstate.edu/hist
E-mail: will.prigge@sdstate.edu

Coursework Only

Graduate Faculty
Thomas Agostini, Assistant Professor
Gary Aguilar, Professor
April Brooks, Professor
Julie Lane, Assistant Professor
Arthur James Murphy, Assistant Professor
Gregory R. Peterson, Professor
Dale Potts, Assistant Professor
Charles Vollan, Associate Professor
Jonathan York, Assistant Professor
**Journalism and Mass Communication**

**Department Head:** Professor Mary Arnold  
**Graduate Coordinator:** Professor Lyle D. Olson (On-Campus Master Program)  
**Online Graduate Program Advisor:** Assistant Professor Rocky Dailey (Online Masters in Mass Communication)

**For additional information contact:**

<table>
<thead>
<tr>
<th>Mailing address:</th>
<th>SDSU Box 2235</th>
<th>Phone: 605-688-4171</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yeager Hall — SYE 211</td>
<td></td>
<td>Fax: 605-688-5034</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Website:</th>
<th><a href="http://www.sdstate.edu/mcom">www.sdstate.edu/mcom</a></th>
</tr>
</thead>
</table>

| E-mail: | mary.arnold@sdstate.edu or lyleolson@sdstate.edu |

**Degrees Offered:**
- M.M.C. Mass Communication  
- M.S. Communication Studies and Journalism  
  - Journalism Specialization (see also Communication Studies and Theatre)

**Graduate Faculty**
- Mary Arnold, Department Head and Professor  
- Rocky Dailey, Assistant Professor  
- Lyle D. Olson, Professor

---

**Modern Languages and Global Studies**

**Interim Department Head:** Professor Laurie L. Haleta  

**For additional information contact:**

<table>
<thead>
<tr>
<th>Mailing address:</th>
<th>SDSU Box 2275</th>
<th>Phone: 605-688-5101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wagner Hall — SWG 121</td>
<td></td>
<td>Fax: 605-688-6699</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Website:</th>
<th><a href="http://www.sdstate.edu/mfl">www.sdstate.edu/mfl</a></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>E-mail:</th>
<th><a href="mailto:laurie.haleta@sdstate.edu">laurie.haleta@sdstate.edu</a></th>
</tr>
</thead>
</table>

**Coursework Only**

**Graduate Faculty**
- Marie-Pierre Baggett, Professor  
- Eckhard Rolz, Professor

---

**Music**

**Department Head:** Professor David Reynolds  

**For additional information contact:**

<table>
<thead>
<tr>
<th>Mailing address:</th>
<th>SDSU Box 2212</th>
<th>Phone: 605-688-5188</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln Music Hall — SLM 205</td>
<td></td>
<td>Fax: 605-688-4307</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Website:</th>
<th><a href="http://www.sdstate.edu/mus">www.sdstate.edu/mus</a></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>E-mail:</th>
<th><a href="mailto:paul.reynolds@sdstate.edu">paul.reynolds@sdstate.edu</a></th>
</tr>
</thead>
</table>

**Coursework Only**

**Graduate Faculty**
- David Reynolds, Department Head and Professor

---

**Physics**

**Department Head:** Professor Joel Rauber  

**For additional information contact:**

<table>
<thead>
<tr>
<th>Mailing address:</th>
<th>SDSU Box 2222</th>
<th>Phone: 605-688-5428</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daktronics Engineering Hall 255</td>
<td></td>
<td>Fax: 605-688-3878</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Website:</th>
<th><a href="http://www.sdstate.edu/phys/">www.sdstate.edu/phys/</a></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>E-mail:</th>
<th><a href="mailto:joel.rauber@sdstate.edu">joel.rauber@sdstate.edu</a></th>
</tr>
</thead>
</table>

**Coursework Only**

**Graduate Faculty**
- Larry Browning, Professor  
- Yung Moo Huh, Associate Professor  
- Parashu Kharel, Assistant Professor  
  - Robert McTaggart, Associate Professor  
  - Joel Rauber, Department Head and Professor
Psychology
Department Head: Professor Brad Woldt
For additional information contact:
Mailing address: SDSU Box 504
                Scobey Hall — SSB 336
Website: www.sdstate.edu/psych
E-mail: bradley.woldt@sdstate.edu

Coursework Only
Graduate Faculty
Brady Phelps, Professor
Debra Spear, Professor
Bradley Woldt, Department Head and Professor

Sociology and Rural Studies
Department Head: Professor Mary Emery
Graduate Coordinator: Professor Mary Emery
For additional information contact:
Mailing address: SDSU Box 504
                Scobey Hall — SSB 226
Website: sociology.sdstate.edu
E-mail: jamie.jacobsen@sdstate.edu

Degrees Offered:
• Ph.D. Sociology
• M.S. Sociology
  o Sociology On-site
  o Community Development Specialization (On-line through Great Plains IDEA)

Graduate Faculty
Donald Arwood, Professor
Mary Emery, Department Head and Professor
Peter Froelich, Assistant Professor
Jacob Jantzer, Assistant Professor
Jeffrey Jacquet, Assistant Professor
Diane Kayongo-Male, Professor
Timothy Nichols, Dean of Honors College and Professor
Meredith Redlin, Professor
Douglas Wermedal, Associate Vice President for Student Affairs and
  Assistant Professor
Julie Yingling, Assistant Professor

Visual Arts
Department Head: Professor Michael (Tim) Steele
For additional information contact:
Mailing address: SDSU Box 2802
                Grove Hall — SGH 101
Website: www.sdstate.edu/art
E-mail: sdsu.artdept@sdstate.edu

Coursework Only
Graduate Faculty
Leda Cempellin, Associate Professor
Randy Clark, Associate Professor
Richard (Cable) Hardin, Associate Professor
Scott Wallace, Professor
College of Education and Human Sciences

Athletic Training
Department Head: Professor Matthew Vukovich
Graduate Coordinator: Assistant Professor Trevor Roiger
For additional information contact:
Mailing address: SDSU Box 2203
Intramural Building 116
Website: www.sdsstate.edu/hns/graduate-programs
E-mail: trevor.roiger@sdsstate.edu

Degrees Offered:
- M.S. Athletic Training

Graduate Faculty
Bernadette Olson, Associate Professor
Trevor Roiger, Assistant Professor

Counseling and Human Development
Department Head: Professor Jay Trenhaile
Graduate Coordinator: Professor Jay Trenhaile
University Center - Rapid City: Stephen Saiz
For additional information contact:
Mailing address: SDSU Box 307
Wenona Hall — SWE 312
Website: www.sdsstate.edu/chd
E-mail: sdsu.chd@sdsstate.edu

Degrees Offered:
- M.Ed. Counseling and Human Resource Development
  - Administration of Students Affairs Specialization
- M.S. Counseling and Human Resource Development
  - Clinical Mental Health Counseling Specialization
  - College Counseling Specialization
  - Rehabilitation and Mental Health Counseling Specialization
  - School Counseling Specialization

Graduate Faculty
Hande Briddick, Associate Professor
William Briddick, Associate Professor
Mark Britzman, Professor
Alan Davis, Professor
Ruth Harper, Professor
Sun Woo Kang, Assistant Professor
Renee Oscarson, Associate Professor
Howard Smith, Associate Dean and Professor Emeritus
Jay Trenhaile, Department Head and Professor

Dietetics
Department Head: Professor Matthew Vukovich
Graduate Coordinator: Professor Kendra Kattelmann
For additional information contact:
Mailing address: SDSU
SIM 116, Box 2203
Website: www.sdsstate.edu/hns/graduate-programs/ms-dietetics
Email: kendra.kattelmann@sdsstate.edu

Degrees Offered:
- M.S. Dietetics

Graduate Faculty
Elizabeth Droke, Associate Professor
Kendra Kattelmann, Professor
Matthew Vukovich, Department Head and Professor
Human Sciences

Dean: Professor Jill Thorngren

Program Head and Graduate Coordinator (Human Sciences): Professor Jane Hegland

For additional information contact:

Mailing address: SDSU Box 2275A Phone: 605-688-6181
SWG Wagner Hall 369 Fax: 605-688-4439
Website: www.sdstate.edu/ehs/programs
E-mail: jane.hegland@sdstate.edu

debra.debates@sdstate.edu Graduate Coordinator for Human Sciences
katie.grayson@sdstate.edu Human Sciences (M.S.) - Family and Consumer Sciences Education Specialization
kathryn.morrison@sdstate.edu GPIDEA Coordinator
susan.strickler@sdstate.edu Human Sciences (M.S.) - Family Financial Planning Specialization; Financial and Housing Counseling Certificate
jay.trenhaile@sdstate.edu Human Sciences (M.S.) - Adult Development in the Workplace; Human Sciences (M.S.) - Family and Community Services Specialization

Degrees Offered:

- M.S. Human Sciences
  - M.S. Human Sciences - Adult Development in the Workplace
  - M.S. Human Sciences - Family and Community Services Specialization (GPIDEA)
  - M.S. Human Sciences - Family and Consumer Sciences Education Specialization (GPIDEA)
  - M.S. Human Sciences - Family Financial Planning Specialization (GPIDEA)
  - M.S. Human Sciences - Merchandising Specialization (GPIDEA)

Certificates Offered:

- Merchandising (GPIDEA)
- Family Financial Planning (GPIDEA)
- Financial and Housing Counseling (GPIDEA)

Graduate Faculty

Mary Bowne, Associate Professor
Soo Hyun Cho, Assistant Professor
Kay Cutler, Associate Professor
Ann Michelle Daniels, Associate Professor
Debra DeBates, Professor
DeAnna Gilkerson, Professor
Jane Hegland, Associate Dean, Department Head and Professor
Mary Kay Helling, Associate Vice President for Academic Affairs and Professor

Nutrition, Exercise, and Food Sciences

Department Head: Professor Matthew Vukovich
Graduate Coordinator: Professor Matthew Vukovich

For additional information contact:

Mailing address: SDSU Box 2203 Intramural Building 116 Phone: 605-688-4668
Website: www.sdstate.edu/hns/graduate-programs/ms-nutritional-sciences Fax: 605-688-6110
E-mail: matt.vukovich@sdstate.edu

Degrees Offered:

- Ph.D. Nutrition, Exercise, and Food Science
- M.S. Nutrition, Exercise, and Food Science
  - Exercise Science
  - Food Science
  - Nutritional Sciences

Certificate Offered:

- Transdisciplinary Childhood Obesity Prevention Certificate

Graduate Faculty

Moul Dey, Associate Professor
Elizabeth Droke, Associate Professor
Kendra K. Kettlmann, Professor
Padmanaban G. Krishnan, Professor
Jessica Meendering, Associate Professor
Bernadette Olson, Associate Professor
Trevor Roiger, Assistant Professor

Igor Sergeev, Professor
Bonny L. Specker, Professor
Matthew Vukovich, Department Head and Professor
C.Y. Wang, Associate Dean and Professor
Gary Van Guilder, Assistant Professor
Mary Beth Zwart, Assistant Professor
Sport and Recreation Studies

Department Head: Professor Matthew Vukovich
Graduate Coordinator: Professor Matthew Vukovich

For additional information contact:
Mailing address: SDSU Box 2203 Intramural Building
Website: www.sdstate.edu/hns/graduate-programs/ms-sport
E-mail: matt.vukovich@sdstate.edu

Degree Offered:
- M.S. Sport and Recreation Studies

Graduate Faculty
Paul Fokken, Associate Professor
Patty Hacker, Professor
Bernadette Olson, Associate Professor
Trevor Roiger, Assistant Professor
Matthew Vukovich, Department Head/Professor
Mary Beth Zwart, Assistant Professor

Teaching, Learning, and Leadership

Department Head: Professor Andrew Stremmel
Graduate Coordinator: Associate Professor Kenneth S. Rasmussen

For additional information contact
Mailing address: SDSU Box 507
Wenona Hall — SWE 108
Website: www.sdstate.edu/tll
E-mail: andrew.stremmel@sdstate.edu

Degrees Offered:
- M.Ed. Curriculum and Instruction
  - Adult and Higher Education
  - Early Childhood Education
  - Elementary Education
  - Secondary Education
- M.Ed. Educational Administration
  - Elementary Education
  - Secondary Education

Graduate Faculty
Katherine Bertolini, Assistant Professor
Mary Bowne, Associate Professor
Kay Cutler, Professor
Debra DeBates, Professor
Ralph Erion, Professor
Deanna Gilkerson, Professor
Patty Hacker, Professor
Jeongmi Kim, Assistant Professor
Mary Moeller, Associate Professor
Christine Nganga, Assistant Professor
Kathryn Penrod, Professor
Kenneth Rasmussen, Associate Professor
Andrew Stremmel, Department Head and Professor
College of Nursing

Nursing

Associate Dean of Graduate Nursing: Associate Professor Mary Minton

For additional information contact:

Mailing address: SDSU Box 2275 Phone: 605-688-4114
SWG Wagner Hall 255 Fax: 605-688-5827
Website: www.sdstate.edu/nurs/programs/graduate
E-mail: SDSU.gradnursing@sdstate.edu

Degrees Offered:
- M.S. Nursing
  - Clinical Nursing Leadership Specialization
  - Nurse Administrator Emphasis
  - Clinical Nurse Leader Emphasis
- Family Nurse Practitioner Specialization
- Nurse Educator Specialization
- Doctor of Nursing Practice
  - Bachelor's to D.N.P.
  - Family Nurse Practitioner Specialization
  - Family Mental Health Nurse Practitioner Specialization (in collaboration with University of Missouri - Columbia)
  - Neonatal Nurse Practitioner Specialization (in collaboration with University of Missouri - Kansas City)
  - Pediatric Clinical Nurse Specialist Specialization (in collaboration with University of Missouri - Columbia)
  - Pediatric Nurse Practitioner Specialization (in collaboration with University of Missouri - Columbia)
  - Post Master to D.N.P. for Master's Prepared NPs, CRNAs, CNSs, CNMs
  - Family Nurse Practitioner Specialization for Master's Prepared Professionals in a non-clinical Nursing specialization
- Ph.D. Nursing

Certificates Offered:
- Post Master Certificates
  - Clinical Nurse Leadership
  - Family Nurse Practitioner
  - Nursing Education

Graduate Faculty

Deborah K. Banik, Assistant Professor
Linda Burdette, Assistant Professor
Paula Carson, Associate Professor
Gloria Craig, Professor
Cynthia Elverson, Associate Professor
Nancy Fahrenwald, Dean of College of Nursing and Professor
Kay Foland, Professor
S. Jo Gibson, Clinical Assistant Professor
Margaret Hegge, Distinguished Professor Emerita
Lori Hendrickx, Professor
Linda Herrick, Associate Dean Undergraduate Nursing and Professor
Barbara Hobbs, Assistant Dean West River Nursing and Associate Professor
Polly Hulme, Professor
Mary Isaacson, Assistant Professor
Cristina Lammers, Associate Professor
Heidi Mennenga, Assistant Professor
Mary Minton, Associate Dean of Graduate Nursing and Associate Professor
Marylou Mylant, Professor
Roberta Olson, Dean and Professor Emerita
Robin Peterson-Lund, Assistant Professor
Rebecca Randall, Assistant Professor
Thomas Stenvig, Associate Professor
Lois Tschetter, Associate Professor
Jo Voss, Associate Professor
Howard Wey, Associate Professor
College of Pharmacy

Pharmacy

Dean: Professor Dennis D. Hedge
Pharmaceutical Sciences Department Head: Professor Omathunu Perumal
Pharmacy Practice Department Head: Professor James Clem
Associate Dean for Academic Programs: Professor Jane Mort
Assistant Dean of Research: Professor Xiangming Guan
Assistant Dean for Student Services: Associate Professor Daniel Hansen

For additional information regarding the Doctor of Pharmacy program contact:
Mailing address: SDSU Box 2202C Pharmacy — SAV 133
Website: www.sdstate.edu/pha
E-mail: dan.hansen@sdstate.edu
Phone: 605-688-6197 or 605-688-5598
Fax: 605-688-6232 or 605-688-5993

For additional information regarding the PhD Pharmaceutical Sciences program contact:
Mailing address: SDSU Box 2202C Pharmacy — SAV 275
Website: www.sdstate.edu/pha
E-mail: xiangming.guan@sdstate.edu
Phone: 605-688-6197 or 605-688-5598
Fax: 605-688-6232 or 605-688-5993

Degrees Offered
- Doctor of Pharmacy (Pharm.D.)
- Pharmaceutical Sciences (Ph.D.)
- Public Health (M.P.H.)

Graduate Faculty
Gudiseva Chandrasekher, Associate Professor
James Clem, Department Head and Professor
Hesham Fahmy, Associate Professor
Debra K. Farver, Professor
Xiangming Guan, Assistant Dean of Research and Professor
Jayarama Gunaje, Associate Professor
Dennis Hedge, Dean of College of Pharmacy and Professor
Jodi Heins, Professor
David L. Helgeland, Professor
Zhu-Qiu Jin, Assistant Professor
Brad Laible, Professor
Kimberly Messerschmidt, Professor
Jane Mort, Associate Dean for Academic Programs and Professor
Omathunu Perumal, Department Head and Professor
Shafiqur Rahman, Professor
Teresa Seefeldt, Associate Professor
Hemachand Tummala, Associate Professor
Hongwei Zhang, Assistant Professor
Graduate School

Graduate School
Dean: Kinchel C. Doerner
For additional information contact:
Mailing address: SDSU Box 2201
Administration Building — SAD 130
Website: www.sdstate.edu/graduate
E-mail: gradschool@sdstate.edu
Phone: 605-688-4181
Fax: 605-688-6167

Coursework Only

Graduate Faculty
Kinchel C. Doerner, Dean of the Graduate School and Professor
Agricultural and Biosystems Engineering

Department Head: Associate Professor Van C. Kelley
Graduate Coordinator: Distinguished Professor Kasiviswanathan Muthukumarappan

For additional information contact:
Mailing address: SDSU Box 2120
Agricultural Engineering - SAE 107
Website: www.sdstate.edu/abe
E-mail: Kas.Muthukum@sdstate.edu

Degrees Offered:
- Ph.D. Biological Sciences
  - Agricultural and Biosystems Engineering Specialization
- Ph.D. Agricultural, Biosystems and Mechanical Engineering
- M.S. Agricultural and Biosystems Engineering

Certificates Offered:
- Bioenergy and Sustainable Technology Certificate

Graduate Faculty
Michael F. Adelaine, Vice President for Technology & Safety and Professor
Gary A. Anderson, Professor
Erin L. Cortus, Assistant Professor
Zhengrong Gu, Assistant Professor
Christopher H. Hay, Assistant Professor
Daniel S. Humburg, Professor

Civil Engineering

Department Head: Professor Nadim Wehbe
Graduate Coordinator: Professor Suzette Burckhard

For additional information contact:
Mailing address: SDSU Box 2219
Crothers Engineering Hall
Website: www.sdstate.edu/cvlee
E-mail: suzette.burckhard@sdstate.edu

Degree Offered:
- Ph.D. Civil Engineering
- M.S. Civil Engineering

Graduate Faculty
Suzette Burckhard, Professor
Guanghui Hua, Assistant Professor
Allen Jones, Professor
Hesham Mahgoub, Associate Professor
Xiao Qin, Associate Professor

Computer Science

Department Head: Professor Steven Hietpas
Graduate Coordinator: Professor Sung Shin

For additional information contact:
Mailing address: SDSU Box 2222
Administration — EECS 214
Website: www.sdstate.edu/eecs/cs
E-mail: sdsu.eecs@sdstate.edu

Degree Offered:
- M.S. Computer Science

Graduate Faculty
Robert Fourney, Associate Professor
George Hamer, Associate Professor

Yi Liu, Associate Professor
Manki Min, Associate Professor
Construction and Operations Management

Department Head: Professor Teresa Hall
Graduate Coordinator: Professor Huitian Lu
For additional information contact:
Mailing address: SDSU Box 2223
Solberg Hall SSO 116
Website: www.sdstate.edu/com/graduate-programs
E-mail: huitian.lu@sdstate.edu

Degrees Offered:
- M.S. Operations Management

Certificates Offered:
- Management Foundations Certificate
- Systems Management Certificate

Graduate Faculty
Teresa Hall, Department Head and Professor
Ross Kindermann, Professor
Huitian Lu, Professor
Carrie Steinlicht, Senior Lecturer

Electrical Engineering

Department Head: Professor Steven Hietpas
Graduate Coordinator: Harold Hobbach Endowed Professor David Galipeau
For additional information contact:
Mailing address: SDSU Box 2222
SDEH 214
Website: www.sdstate.edu/eecs/ee/graduate
E-mail: sdsu.eecs@sdstate.edu

Degrees Offered:
- PhD Electrical Engineering
- MS Electrical Engineering

Graduate Faculty
Lewis F. Brown, Dean of Jerome J. Lohr College of Engineering and Professor
Qi Hua Fan, Associate Professor
Mahdi Farrokh Baroughi, Assistant Professor
Robert Fourney, Associate Professor
David W. Galipeau, Harold Hohbach Endowed Professor
Dennis L. Helder, Associate Dean of Research and Distinguished Professor
Steven M. Hietpas, Department Head and Professor
Qiquan Qiao, Assistant Professor
Songxin Tan, Associate Professor
Reinaldo Tonkoski, Assistant Professor
Wei Sun, Assistant Professor

Geospatial Science and Engineering

Graduate Coordinator: Professor Michael Wimberly
For additional information contact:
Mailing address: SDSU Box 506B
Wecota Hall – SWC 115
E-mail: Michael.Wimberly@sdstate.edu

Degrees Offered:
- PhD Geospatial Science and Engineering*
  - Remote Sensing Engineering Specialization
  - Remote Sensing Geography Specialization
- *Students may declare one of the two specializations or elect to pursue a degree in interdisciplinary geospatial science.

Graduate Faculty
Suzette R. Burckhard, Professor
Mark A. Cochrane, Professor
Kevin Gallo, Adjunct Professor
Alisa L. Gallant, Adjunct Professor
Janet Gritzner, Professor Emerita
Niall P. Hanan, Professor
Dennis Helder, Associate Dean of Research and Professor
Geoffrey M. Henebry, Professor
Shuguang (Leo) Liu, Adjunct Professor
Thomas R. Loveland, Adjunct Professor
Darrell Napon, Professor
Xiao Qin, Associate Professor
David P. Roy, Professor
Gabriel Senay, Adjunct Professor
Mathematics and Statistics

Department Head: Professor Kurt D. Cogswell
Graduate Coordinator: Associate Professor Donald Vestal

For additional information contact:
Mailing address: SDSU Box 2220C
Harding Hall — SHH 121
Phone: 605-688-6196
Website: www.sdstate.edu/mathstat
Fax: 605-688-6814
E-mail: donald.vestal@sdstate.edu

Degrees Offered:
- Ph.D. Computational Science and Statistics
- M.S. Data Science
- M.S. Statistics
- M.S. Mathematics
- Statistics specialization

Graduate Faculty
Ross P. Abraham, Professor
Matthew Biesecker, Associate Professor
Thomas Brandenburger, Assistant Professor
Kurt D. Cogswell, Department Head and Professor
Gemechis Djira, Associate Professor
Donna Flint, Professor
Xijin Ge, Associate Professor
Gary Hatfield, Assistant Professor
Daniel Kemp, Professor
Jung-Han Kimm, Associate Professor
Ross Kindermann, Professor
Christine Larson, Professor
Cedric Neumann, Assistant Professor
Yunpeng Pan, Assistant Professor
Chris Saunders, Assistant Professor
Daniel J. Schaal, Professor
Robert C. Schmidt, Professor
Donald Vestal, Associate Professor
Sharon Vestal, Associate Professor

Mechanical Engineering

Department Head: Professor Kurt Bassett
Graduate Coordinator: Associate Professor Zhong Hu

For additional information contact:
Mailing address: SDSU Box 2219
SCEH 216
Phone: 605-688-5426
Website: www.sdstate.edu/me/graduate-program
Fax: 605-688-5878
E-mail: zhong.hu@sdstate.edu

Degree Offered:
- Ph.D. Agricultural, Biosystems and Mechanical Engineering
- M.S. Mechanical Engineering

Graduate Faculty
Kurt Bassett, Department Head and Professor
Fereidoon Delfanian, Professor
Jikai Du, Assistant Professor
Shawn Duan, Professor
Stephen Gent, Assistant Professor
Zhong Hu, Professor
Todd Letcher, Assistant Professor
Gregory Michna, Assistant Professor
Degrees

Graduate Programs at SDSU 66
Master’s Degree Programs 66
Doctoral Degree Programs 67
Professional Doctoral Programs 67
Graduate Certificates 68
Graduate Minors 68
Additional Academic Programs and Units 68
Graduate Programs at SDSU

The Graduate School supports post-baccalaureate education at SDSU by promoting programs for student recruitment, setting and adhering to admission standards, and defining and maintaining rigorous academic standards for graduate programs.

Administrative support is provided to departments and colleges delivering master's, doctoral, and professional programs, as well as graduate certificates.

Master's Degrees
- Master of Art (M.A.)
- Master of Architecture (M.Arch.)
- Master of Education (M.Ed.)
- Masters of Mass Communication (M.M.C.)
- Masters of Public Health (M.P.H.)
- Master of Science (M.S.)

Master's Degree Programs (by College)

College of Agriculture & Biological Sciences
- Animal and Range Sciences (M.S.)
- Biological Sciences (M.S.)
  - Biological Sciences (M.S.) - Biology Specialization
  - Biological Sciences (M.S.) - Dairy Science Specialization
  - Biological Sciences (M.S.) - Microbiology Specialization
- Economics (M.S.)
- Plant Science (Ph.D.)
- Wildlife and Fisheries Sciences (M.S.)
  - Wildlife Specialization
  - Fisheries Specialization

College of Arts & Sciences
- Architecture (M.Arch.)
- Chemistry (M.S.)
  - Chemistry (M.S.) - Chemical Education Specialization
- Communication Studies and Journalism (M.S.)
  - Communication Studies and Journalism (M.S.) - Communication Studies Specialization
  - Communication Studies and Journalism (M.S.) - Journalism Specialization
- English (M.A.)
- Geography (M.S.)
- Mass Communication (M.M.C.)
- Sociology (M.S.)
  - Sociology (M.S.) - Community Development Specialization

College of Education and Human Sciences
- Athletic Training (M.S.)
- Counseling and Human Resource Development (M.S./M.Ed.)
  - Counseling & Human Resource Development (M.Ed.) - Administration of Student Affairs Specialization
  - Counseling and Human Resource Development (M.S.) - Clinical Mental Health Counseling Specialization
  - Counseling and Human Resource Development (M.S.) - College Counseling Specialization

Doctoral Ph.D. & Professional Programs
- Doctor of Nursing Practice (D.N.P.)
- Doctor of Pharmacy (Pharm.D.)
- Doctor of Philosophy (Ph.D.)

- Counseling and Human Resource Development (M.S.) - Rehabilitation and Mental Health Counseling Specialization
- Counseling and Human Resource Development (M.S.) - School Counseling Specialization
- Curriculum and Instruction (M.Ed.)
  - Curriculum and Instruction (M.Ed.) - Adult and Higher Education Specialization
  - Curriculum and Instruction (M.Ed.) - Early Childhood Education Specialization
  - Curriculum and Instruction (M.Ed.) - Elementary Education Specialization
  - Curriculum and Instruction (M.Ed.) - Secondary Education Specialization
- Dietetics (M.S.)
- Educational Administration (M.Ed.)
  - Educational Administration (M.Ed.) - Elementary Education Specialization
  - Educational Administration (M.Ed.) - Secondary Education Specialization
- Human Sciences (M.S.)
  - Human Sciences (M.S.) - Adult Development in the Workplace
  - Human Sciences (M.S.) - Family and Community Services Specialization
  - Human Sciences (M.S.) - Family and Consumer Sciences Education Specialization
  - Human Sciences (M.S.) - Family Financial Planning Specialization
  - Human Sciences (M.S.) - Merchandising Specialization
- Nutrition, Exercise, and Food Sciences (M.S.)
  - Nutrition, Exercise, and Food Sciences (M.S.) - Exercise Science Specialization
  - Nutrition, Exercise, and Food Sciences (M.S.) - Food Science Specialization
  - Nutrition, Exercise, and Food Sciences (M.S.) - Nutritional Science Specialization
- Sport and Recreation Studies (M.S.)
Degrees

College of Engineering
- Agricultural and Biosystems Engineering (M.S.)
- Civil Engineering (M.S.)
- Computer Science (M.S.)
- Data Science (M.S.)
- Electrical Engineering (M.S.)
- Operations Management (M.S.)
- Mathematics (M.S.)
  - Mathematics (M.S.) - Statistics Specialization
  - Mechanical Engineering (M.S.)
- Statistics (M.S.)

College of Nursing
- Nursing (M.S.) - Clinical Nursing Leadership Specialization
- Nursing (M.S.) - Family Nurse Practitioner Specialization
- Nursing (M.S.) - Nurse Educator Specialization

College of Pharmacy
- Public Health (M.P.H.)

Professional Doctoral Programs (by College)

College of Nursing
- Doctor of Nursing Practice (D.N.P.)
  - Bachelor's to D.N.P.
    - Family Nurse Practitioner Specialization
    - Family Mental Health Nurse Practitioner Specialization
    - Neonatal Nurse Practitioner Specialization
    - Pediatric Clinical Nurse Specialist Specialization
    - Pediatric Nurse Practitioner Specialization
  - Post Master to D.N.P. (NPs, CRNAs, CNSs, and CNMs)
    - Family Nurse Practitioner Specialization for Master prepared professionals in a non-clinical nursing specializations

College of Engineering
- Agricultural, Biosystems and Mechanical Engineering (Ph.D.)
- Civil Engineering (Ph.D.)
- Computational Science and Statistics (Ph.D.)
- Electrical Engineering (Ph.D.)
- Geospatial Science & Engineering (Ph.D.)
  - Geospatial Science & Engineering (Ph.D.) - Remote Sensing Engineering Specialization
  - Geospatial Science & Engineering (Ph.D.) - Remote Sensing Geography Specialization

College of Nursing
- Nursing (Ph.D.)

College of Pharmacy
- Pharmaceutical Sciences (Ph.D.)

College of Arts & Sciences
- Biochemistry (Ph.D.)
- Chemistry (Ph.D.)
- Sociology (Ph.D.)

College of Education and Human Sciences
- Nutrition, Exercise, and Food Sciences (Ph.D.)

Degrees 67
Graduate Minors (by College)

College of Arts & Sciences
- Geographic Information Sciences Minor

Graduate Certificates (by College)

College of Agriculture and Biological Sciences
- Animal Science Certificate
- Bioenergy and Sustainable Technology Certificate
- Grassland Management Certificate

College of Arts and Sciences
- Health Journalism Certificate

College of Education and Human Sciences
- Family Financial Planning Certificate
- Financial and Housing Counseling Certificate
- Merchandising Certificate
- Transdisciplinary Childhood Obesity Prevention Certificate

College of Engineering
- Management Foundations Certificate
- Systems Management Certificate

College of Nursing
- Post Master Clinical Nurse Leadership Certificate
- Post Master Family Nurse Practitioner Certificate
- Post Master Nursing Educator Certificate

Additional Academic Programs and Units
- History, Political Science, Philosophy, and Religion
- Modern Languages and Global Studies
- Music
- Physics
- Psychology
- Visual Arts
Academic Programs

- Master's Degrees: 70
- Doctoral Degrees: 125
- Professional Doctoral Degrees: 145
- Graduate Minors: 162
- Graduate Certificates: 163
- Coursework Only: 171
Academic Programs - Master's Degrees

Agricultural and Biosystems Engineering (M.S.)

Program Information
Graduate work in the Department of Agricultural and Biosystems Engineering leads to Master of Science in Agricultural and Biosystems Engineering and Doctor of Philosophy in Biological Sciences degrees.

Students who undertake graduate studies in Agricultural and Biosystems Engineering normally have as their goal a better understanding of the current theories, principles, issues, and problems in agricultural and biological systems. Graduate studies improve the student's ability to think critically and creatively, and to synthesize, analyze, and integrate ideas for decision-making and problem solving.

The department offers students an opportunity to undertake research and advanced study in specialization areas such as machine vision, food and biomaterial processing, physical properties of biological materials, natural resource engineering, structures, indoor environment, waste management and machine design.

Course Delivery Format
The program engages students in lecture, laboratory, and in hands-on, field-based learning experiences.

Facilities and Services
The Agricultural and Biosystems Engineering Department is housed in the Agricultural Engineering Building. The entire building is dedicated to undergraduate instruction and research and outreach projects that support the engineering needs of production agriculture, natural resource conservation, and value added processing of the food and fiber produced in the region. Additional research and outreach projects take place at multiple field locations in the region. There are almost 17000 square feet of space dedicated to industry-sponsored student design projects and cutting edge research, including a full fabrication shop and two computer labs to support these efforts. The department is also home to the Water Resources Institute, dedicated to the proper stewardship of the state's water resources.

Student Engagement and Support Opportunities
Many students participate in activities such as designing and building the Quarter-scale tractor, internships, and research projects. Other ABE opportunities are available via our student branch of the American Society of Agricultural and Biological Engineers (ASABE). In addition, engineering opportunities are available via organizations such as Society of Women Engineers, Engineers Without Borders, and others. The most outstanding students are honored by induction into the ABE honorary society of Alpha Epsilon and engineering honor societies such as Tau Beta Pi.

Available Options for Graduate Degrees
Master of Science

Option A

Option B

Core Requirements
- ABE 771 - Graduate Seminar Credits: 1
- STAT 541 - Statistical Methods II Credits: 3
- ABE 798 - Thesis (Option A) Credits: 5-8
  or ABE 788 - Master's Research Problems/Projects (Option B) Credits: 2-3
- ABE Electives: 9
  - ABE 544 - Unit Operations of Biological Materials Processing and Lab Credits: 4
  - ABE 555 - Principles Biological Separation Processing and Lab Credits: 3
  - ABE 732 - Advanced Hydrology in Agriculture
  - ABE 732 - Advanced Hydrology in Agriculture Credits: 2
  - ABE 733 - Ground Water Engineering in Agriculture Credits: 3
  - ABE 734 - Advanced Irrigation Engineering Credits: 3
  - ABE 748 - Bioseparations Credits: 3
  - ABE 752 - Theoretical Micro-Climatology Credits: 2
  - ABE 754 - Advanced Unit Operations of Food/Biomaterials Processing and Lab Credits: 3
  - ABE 763 - Instrumentation and Lab Credits: 3
  - ABE 771 - Graduate Seminar Credits: 1
  - ABE 773 - Programming Agricultural Systems and Lab Credits: 3

*Other elective courses from outside the department (such as in Computer Science, Math, Physics or another engineering department or another supporting department) may be used only if: (1) 500-level or higher, (2) they support a coherent plan of study, and (3) they are approved by the Major Advisor and Graduate School.

Additional Approved Electives: 9-17
- Plan A: 9-12
- Plan B: 16-17

*Other courses from outside the ABE department (such as in Computer Science, Math, Physics or another engineering department or another supporting department) may be used only if: (1) 500-level or higher, (2) they support a coherent plan of study, and (3) they are approved by the Major Advisor and Graduate School.

Total Credits: 30 (Option A), 32 (Option B)
Additional Admission Requirements
GRE: Not required
TOEFL: Score of 550 paper-based, 213 computer-based, 79 Internet-based
IELTS: 5.5

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Animal and Range Sciences (M.S.)

Program Information
The Department of Animal Science offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees in Animal Science, or the Doctor of Philosophy degree in Biological Sciences. Faculty and graduate students are actively involved in basic and/or applied research in the fields of nutrition, reproductive physiology, muscle biology, animal breeding, meat science, and animal production.

With the multi-disciplinary approaches towards production efficiency, product enhancement, and natural resources management, graduate students gain strong skill sets. The graduate programs are administered in collaboration with the Departments of Animal Science, Dairy Science, Veterinary and Biomedical Sciences, and Agricultural and Biosystems Engineering. The Department is committed to providing graduate students with quality educational and research experiences and preparing them to meet the challenges of a competitive job market upon graduation.

This program allows for considerable latitude in the education and training of students. Identification of a major professor with resources to support the student's thesis project is required for unconditional acceptance into the program. An advisory committee will be formed for each student. The advisory committee will work with the student to design a unique and individualized plan of study to meet the interests and needs of the student. While the training of most students is largely directed to a single discipline represented within one of the participating departments, cross-discipline training is available and encouraged.

Facilities
Training and experience in research methods are among the most important facets of a well-rounded graduate student education. Excellent facilities and large herds and flocks of livestock are available for Animal Science research at South Dakota State University. To ensure continued access to modern research facilities in the future, a major effort is underway to renovate or replace livestock production research facilities. A facility for ruminant nutrition is presently under construction, and funding has recently been approved for a new swine research facility. A new facility for sheep physiology and management research is in the planning stages. Renovation of off-campus research facilities is also a priority. Plans are also being implemented for on-campus construction of multi-departmental facilities to house research related to environmental stress of plants and animals.

Student Engagement and Support Opportunities
The department conducts cutting edge research that creates opportunities for graduate students. Qualified students may apply for a Graduate Research Assistant position and the Darwin Britzman Graduate Assistant Scholarship.

Available Options for Graduate Degrees
Master of Science Option A

Core Requirements
- Present a seminar on the student's thesis/dissertation work (non-credit)
- AS 790 - Seminar Credits: 1
- Minor or supporting courses required:
  - 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 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
  - DS 731 - Laboratory Techniques in Dairy Science Credits: 3
  - STAT 541 - Statistical Methods II Credits: 3
  - STAT 761 - Design of Experiments II Credits: 3
  - PS 756 - Quantitative Genetics Credits: 3
  - VET 523 - Advanced Mammalian Physiology Credits: 4
- 12-14 credits of discipline specific courses are required for a total requirement of 30 credits.
  - The Advisory Committee will work with the student to select the discipline specific courses intended to prepare the student in their emphasis area.
- Develop a Plan of Study no later than the end of the first semester of study.
- Develop a research proposal no later than the end of the first semester.
Total Credits: 30 (Option A)

Additional Admission Requirements
GRE: Not required
TOEFL: required score of 550 paper-based, 213 computer-based, 79-80 Internet-based
Two letters of reference, a letter of interest and intent, and a resume.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.

Architecture (M.Arch.)
Program Information
The Master's of Science, Architecture major program prepares professional leaders with specialized knowledge and skills to meet the nation's needs in design, build, and education. The aim of the program is to prepare architecture majors to practices at an advanced level.

The core academic experience offered in the Department of Architecture is the 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.

Available Options for Graduate Degrees
Master of Architecture          Option A

Core Requirements
- ARCH 521 - Building Specification Credits: 2
- ARCH 522 - Drawing in Detail Credits: 2
- ARCH 551 - Whole Building Studio I Credits: 6
- ARCH 552 - Whole Building Studio II Credits: 6
- ARCH 571 - Architectural Practice I: Regulation Credits: 2
- ARCH 572 - Architectural Practice II: Economics Credits: 2
- ARCH 592 - Topics Credits: 3
- ARCH 631 - Building Technology I Credits: 2
- ARCH 632 - Building Technology II Credits: 2
- ARCH 651 - Professional Design Practice I Credits: 6
- ARCH 652 - Professional Design Practice II Credits: 6
- ARCH 671 - Architectural Practice III: Stewardship Credits: 2
- ARCH 672 - Architectural Practice IV: Management Credits: 2
- ARCH 692 - Topics Credits: 3

Total Credits: 46

Additional Admission Requirements
Students may be admitted fully or provisionally. Path B students will be admitted on a case by case basis beginning in Spring 2013. Path A students can apply for admission into the graduate degree beginning in February 2014. 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.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.
**Athletic Training (M.S.)**

**Program Information**
The South Dakota State University Master of Science in Athletic Training (AT) Program aspires to prepare engaged practitioners and contemporary leaders of athletic training. The program exists to cultivate a learning environment implementing innovative and best practice pedagogies which challenge students to become reflective, professional, and ethical practitioners dedicated to improving patients’ quality of life. The overall goals of the program are to provide students with knowledge and experiences which improve the depth and breadth of professional competency in athletic training, enhance written and oral communication abilities, promote an appreciation for the ways research can inform practice, and/or prepare students for advanced study in the field.

The Master of Science in Athletic Training prepares students for entry into clinical practice as licensed athletic trainers. The program is two years in length and includes coursework in the summer between first and second professional years. In addition to completing the courses required for the curriculum, students must successfully complete proficiencies associated with clinical education and clinical experiences under the supervision of preceptors who are appropriately credentialed health care professionals. Clinical experiences will include working with a variety of patients in high schools, colleges/universities, sports medicine clinics, and medical and rehabilitation clinics. Upon successful completion of the curriculum, students will be eligible to challenge the national certifying examination for athletic trainers through the Board of Certification (BOC).

Each year the Master of Science in AT program admits (1) new cohort of students who begin their plan of study during the Fall semester. Admission to the program is on a competitive basis. For initial consideration, students must be admitted into Graduate School at SDSU. To complete their eligibility for admission, candidates must also complete a secondary selective admissions application specifically for the AT program.

**Course Delivery Format**
The program consists of lecture, laboratory, and experiential learning opportunities.

**Additional Academic Requirements**
Students enrolled in the Athletic Training program must pay for a background check before they can be placed at any of the clinical sites. Approximate cost of the background check is $75.00.

**Accreditation, Certification, and Licensure**
Upon completion of the program, students are eligible to challenge the national certifying examination for athletic trainers through the Board of Certification. The Entry Level Graduate Program in Athletic Training at South Dakota State University was awarded initial accreditation by the Commission on Accreditation of Athletic Training Education (CAATE) in August, 2008. As a professional degree program, it is not designed for individuals who already have a degree in Athletic Training and/or are eligible for certification in Athletic Training.

**Student Support and Engagement Opportunities**
The Department of Health and Nutritional Sciences aims to provide premier academic programs and high-quality services to students. A limited number of research and teaching assistantships and scholarships may be available to qualified graduate students.

**Available Options for Graduate Degrees**
- **Master of Science**
  - Option A
  - Option B
  - Option C

**Core Requirements**
- AT 541-541L - Athletic Training Techniques I and Lab Credits: 3
- AT 542 - Athletic Training Techniques II Credits: 3
- AT 543-543L - Athletic Training Techniques III and Lab Credits: 3
- AT 544 - Athletic Training Techniques IV Credits: 2
- AT 554 - Athletic Injuries Assessment – Lower Extremity Credits: 2
- AT 556 - Athletic Injuries Assessment – Upper Extremity Credits: 2
- AT 562 - Interventions I Credits: 3
- AT 564 - Interventions II Credits: 2
- AT 574 - Interventions III Credits: 2
- AT 790 - Seminar Credits 2
- PE 745 - Applied Biomechanics Credits 3
- PE 750 - Advanced Exercise Physiology Credits 3
- HNS 783 - Research Methods in Health and Nutritional Sciences Credits: 3
- AT 795 - Practicum Credits: 9

**Option A**
- HNS 798 - Thesis Credits: 5

**Option B**
- HNS 788 - Individual Research and Study Credits: 3
- HNS 796 - Field Experience Credits: 2

**Option C**
- HNS 796 - Field Experience Credits: 2

Total Credits: 47
Additional Admission Requirements
GRE: Not required
TOEFL: Score of 525 paper-based, 197 computer-based, 71 Internet-based.

Program Application
Admission into the MSAT program is on a competitive basis. Each year the AT program uses a Primary (Graduate School Application) and Secondary (Program Application) Selective Admission Process to admit (1) new cohort of students who will begin their program of study during the Fall semester. In order to establish this cohort, the AT program reviews applications during (2) time periods during the application year:

- Fall Application Review (for next Fall admittance): Candidates who wish to get an early start on the application process in order to receive early notification of acceptance/denial into the Master of Science in AT program can complete their full application during the Fall semester. Graduate School applications are due by November 1st and secondary Program Application materials are due by December 1st.
- Spring Application Review (for next Fall admittance): Candidates who wish to have more time to complete the requirements for admittance into the Master of Science in AT program have until the Spring semester to complete the application process. Graduate School applications are due by February 1st and secondary Program Application materials are due by March 1st.

In order to complete all application requirements, students must:
1. Complete the Graduate School Application and submit this to the South Dakota State University Graduate School
2. Complete the Secondary Selective Admission Process/Program Application and submit application materials directly to the MS in Athletic Training Program

Students should begin the application process by submitting their Graduate School Application to the SDSU Graduate School and downloading Program Application materials for the MS in Athletic Training Program from the program website.

- GRADUATE SCHOOL APPLICATIONS MUST BE SUBMITTED TO THE GRADUATE SCHOOL BY EITHER NOVEMBER 1 or FEBRUARY 1 (See Fall Application Review.) This allows time for graduate school personnel to review applications and forward them to the program. An applicant must be accepted by the Graduate School before a final decision on the secondary selective admission process will be made.
- SECONDARY SELECTIVE ADMISSION/PROGRAM APPLICATION MATERIALS MUST BE SUBMITTED BY DECEMBER 1 or MARCH 1 (See Spring Application Review.) These materials can be submitted directly to:
  Trevor Roiger, EdD, ATC
  Box 2203, Intramural Building 116
  Department of Health and Nutrition Sciences
  Brookings, SD 57007

Verification and Demonstration of Technical Standards
Students will receive a copy of the program's technical standards as part of the application process. They will be asked to verify that they have received a copy, understand the concepts and work with the program if accommodations are necessary. 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 athletic trainer. Technical Standards are requirements of the Commission on Accreditation of Athletic Training Education (CAATE). Technical standards are assessed at the time of application, during progress and for completion of the program. Skills are described in five areas: cognitive ability/skills, psychomotor skill, affective behaviors, interpersonal skills, and knowledge or/interest in the profession of athletic training. The technical standards also describe policy statements regarding accommodations, standards of English as a second language, and eligibility requirements for the BOC national certifying examination and state licensing examinations.

Secondary Selective Admissions Minimum Selection Criteria
The criteria listed below represents additional pre-requisite requirements.
- Completed Health Assessment
- Verification of Technical Standards
- Cumulative (or Junior-Senior) GPA of 3.0 or better
- Completion of the Athletic Training Observation Record
- Completed Program application, letter of interest, three letters of reference and a personal interview
- Successful completion (C or better) of the following courses or their equivalents.*

Basic and Applied Sciences
- Eight (8) credits Chemistry
- BIOL 221 - Human Anatomy
- BIOL 325 - Mammalian Physiology
- PE 350 - Exercise Physiology
- PE 454 - Biomechanics
- NURS 323 - Introduction of Pathophysiology**

Social Sciences
- PSYC 417 - Health Psychology - OR - PSYC 451 - Abnormal Psychology
- HDFS 210 - Lifespan Development

General Health Science Courses
- HLTH 120 - Community Health - OR - HLTH 212 - Contemporary Health - OR - HSC 443 - Public Health Science
• PE 354 - Prevention and Care of Athletic Injuries
• NURS 201 - Medical Terminology

Nutrition
• NFS 315 - Human Nutrition

Statistics
• STAT 281 - Statistics

Optional
• AT 164 - Introduction to Athletic Training

* Students may be asked to submit syllabi from courses or demonstrate competence in specific discipline areas if they completed courses to an institution other than SDSU.

**If a student is unable to complete an undergraduate course in Pathophysiology, they will have the option of completing NURS 323: Pathophysiology or PE 550: Clinical Exercise Physiology.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

**Biological Sciences (M.S.)**

Program Information
The masters and doctoral programs in Biological Sciences allow for considerable latitude in the education and training of students. The plan of study can be designed to meet the interests and individual needs of the student. While the training of most students is largely directed to a single discipline represented within one of the participating departments, cross-discipline training is available. Generally, identification of a major professor with resources to support the student's dissertation project is required for unconditional acceptance into the program. Therefore, interested persons should make application for program admission well in advance of the anticipated date of enrollment. Please refer to each departmental section for a listing of the graduate faculty and details regarding the areas of study offered in this program. Inquiries should be made directly to the department representing the discipline of interest.

Biological Sciences Program Objectives
Graduates of the Master's of Science in Biological Sciences will:
• Have a deep understanding and knowledge of biological principles related to the chosen discipline
• Apply principles into practice in the field or industry setting
• An appreciation and working knowledge of scientific research methods in the discipline
• Ability to interpret research findings and understand the implications
• Write a coherent thesis or research paper and demonstrate the ability to write a scientific journal paper
• Demonstrate competence in the major course topics covered by the student's graduate plan of study
• Demonstrate the ability to use ethics in decision making and planning
• Demonstrate information literacy for science-based decision making and lifetime learning

Master of Science
This is a collaborative graduate program leading to the Master of Science degree in Biological Sciences. Departments that cooperate in the program are the Departments of Agricultural and Biosystems Engineering; Biology and Microbiology; Dairy Science; Natural Resource Management; Plant Science; and Veterinary & Biomedical Sciences. Students interested in advanced studies in the biological sciences will have the opportunity to tailor a program that meets their interest by selecting courses offered by faculty from the participating departments. Specializations are available in Biology, Microbiology and Dairy Science, while Emphases are available in Veterinary Microbiology and Veterinary Pathobiology.

Course Delivery
Biological Sciences courses are delivered face-to-face and enhanced with web-based instruction. Online delivery may be offered for specific courses.

Facilities and Services
A variety of outstanding laboratories, green houses, McCrory Gardens and Arboretum, livestock units, and field stations are available for education and research. Many Biological Sciences faculty hold appointments in the South Dakota Agricultural Experiment Station.

Available Options for Graduate Degrees
Master of Science  Option A
Option B

Core Requirements
The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

Option A
• XXX 790 - Seminar Credits: 2
• XXX 798 - Thesis Credits: 5-10
• 3 or more credits of STAT courses numbered 500-level or higher
• 6 additional course credits, designed to meet the interests and individual needs of the student
Option B

- XXX 790 - Seminar Credits: 2
- XXX 798 - Master's Research Problems/Project minimum Credits: 2-3
- 3 or more credits of STAT courses numbered 500-level or higher

Additional Admission Requirements

GRE: Not a general requirement, but individual departments may require GRE
TOEFL: required score of 525 paper-based, 197 computer-based, 71 Internet-based
(Individual departments may have different requirements for GRE and TOEFL.)

General Requirements (Master's Degree)

Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.

Biological Sciences (M.S.) - Biology Specialization

Program Information

The Department of Biology and Microbiology provides students with a wide range of opportunities for advanced study. The graduate faculty offer expertise and graduate student advisement in subdisciplines from molecular biology through ecology. Faculty members are very successful in obtaining extramural funds to support graduate student projects. Graduate students have modern research laboratories, equipment and field research sites available to carry out their research projects. The learning environment, scholarly excellence and quality of teaching are areas of strength in the department's Graduate Program.

Available Options for Graduate Degrees

Master of Science
- Option A
- Option B

Core Requirements

For details see specific program: Biological Sciences (M.S.)
The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

Option A

- XXX 790 - Seminar Credits: 2
- XXX 798 - Thesis Credits: 5-10
- 3 or more credits of STAT courses numbered 500-level or higher
- 6 additional course credits, designed to meet the interests and individual needs of the student

Option B

- XXX 790 - Seminar Credits: 2
- XXX 798 - Master's Research Problems/Project minimum Credits: 2-3
- 3 or more credits of STAT courses numbered 500-level or higher

Masters Graduation Requirements

- Yearly evaluation (research progress + coursework)
- Presentation of Thesis/Paper (public) during last semester of program
- Oral defense of Thesis (committee) during last semester of program
- Thesis (Plan A) - OR - Research Paper (Plan B) completion

Additional Admission Requirements

GRE: Scores ranking above the 50th percentile will strengthen the case for admission
TOEFL: Score of 575 paper-based, 233 computer-based, 90 Internet based, or 6.5 for IELTS.

At least two letters of reference or Personal References must be sent to the Department. A personal statement that includes a description of the applicants involvement in research, the applicants research interest, and career goals is also required.
Retention in the program is dependent on formation of a committee and completion of review matrix by the end of the first year. In ensuing years, students must have a committee meeting and complete review annually.

General Requirements (Master's Degree)

Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
**Biological Sciences (M.S.) - Dairy Science Specialization**

**Program Information**
The Dairy Science Department provides research opportunities leading to Masters and Ph.D. degrees. SDSU is one of two universities in the US with a Dairy Science Program that offers Dairy Production and Manufacturing majors. It is equipped with excellent laboratories, and a state of the art dairy processing plant which has the capability of processing fluid milk, cheese, butter, ice cream, concentrated and dried products, and other products. It also has a dairy research and training facility where a herd of 300 Holstein and Brown Swiss cattle for teaching and research is maintained. Metabolism and surgical facilities in the Animal Science Complex, and specialized laboratory equipment the Genomics Lab and other departments on campus, including, Veterinary and Biomedical Sciences, and Health and Nutritional Sciences programs are also available. Graduate students accepted in the program will have opportunities to utilize these facilities to develop basic and/or applied research programs in dairy product processing, microbiology, chemistry, food safety, dairy cattle nutrition, metabolism, breeding, microbiology of the rumen, immunology, and management, while interacting with well qualified faculty. The SDSU Dairy Science Program, in collaboration with the Food Science and Nutrition Program at the University of Minnesota and the Food Science and Human Nutrition Program at Iowa State University, is the Midwest Dairy Foods Research Center. This provides graduate students in the manufacturing area a unique opportunity to be involved with current issues and research needs.

**Student Engagement and Support Opportunities**
An application to the graduate program serves as an application for a graduate assistantship. Qualified applicants may be eligible for financial aid in the form of departmental research assistantships for masters and doctoral students. Graduate assistants pay one-third the resident tuition per credit, per semester for tuition and fees. The department also offers some limited scholarships for qualified students.

**Available Options for Graduate Degrees**
Master of Science  
Option A  

**Core Requirements**
For details see specific program: M.S. in Biological Sciences.
The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

Option A  
- XXX 790 - Seminar Credits: 2  
- XXX 798 - Thesis Credits: 5-10  
- 3 or more credits of STAT courses numbered 500-level or higher  
- 6 additional course credits, designed to meet the interests and individual needs of the student

Option B  
- XXX 790 - Seminar Credits: 2  
- XXX 798 - Master's Research Problems/Project minimum Credits: 2-3  
- 3 or more credits of STAT courses numbered 500-level or higher

**Additional Academic Requirements**
GRE: Not required  
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based  

At least two letters of reference and a personal statement that includes a description of the applicants' involvement in research, the applicants research interest, and career goals.

**General Requirements (Master's Degree)**
Graduate students should consult with their advisor before registering for graduate work.  
See Master’s Degree Requirements.

**Biological Sciences (M.S.) - Microbiology Specialization**

**Program Information**
The Department of Biology and Microbiology provides students with a wide range of opportunities for advanced study. The graduate faculty offer expertise and graduate student advisement in subdisciplines from molecular biology through ecology. Faculty members are very successful in obtaining extramural funds to support graduate student projects. Graduate students have modern research laboratories, equipment and field research sites available to carry out their research projects. The learning environment, scholarly excellence and quality of teaching are areas of strength in the department's Graduate Program.

**Available Options for Graduate Degrees**
Master of Science  
Option A  
Option B

**Core Requirements**
For details see specific program: Biological Sciences (M.S.).
The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

Option A
- XXX 790 - Seminar Credits: 2
- XXX 798 - Thesis Credits: 5-10
- 3 or more credits of STAT courses numbered 500-level or higher
- 6 additional course credits, designed to meet the interests and individual needs of the student

Option B
- XXX 790 - Seminar Credits: 2
- XXX 798 - Master's Research Problems/Project minimum Credits: 2-3
- 3 or more credits of STAT courses numbered 500-level or higher

Masters Graduation Requirements
- Yearly evaluation (research progress + coursework)
- Presentation of Thesis/Paper (public) during last semester of program
- Oral defense of Thesis (committee) during last semester of program
- Thesis (Plan A) - OR - Research Paper (Plan B) completion

Additional Admission Requirements
GRE: Scores ranking above the 50th percentile will strengthen the case for admission
TOEFL: Score of 575 paper-based, 233 computer-based, 90 Internet based, or 6.5 for IELTS.

At least two letters of reference or Personal References must be sent to the Department. A personal statement that includes a description of the applicants involvement in research, the applicants research interest, and career goals is also required. Retention in the program is dependent on formation of a committee and completion of review matrix by the end of the first year. In ensuing years, students must have a committee meeting and complete review annually.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Chemistry (M.S.)
Program Information
The Department's chemistry faculty research programs fall into the thematic focus areas of environmental chemistry and green chemistry, chemical sensor development, organic synthesis, materials chemistry, natural products chemistry, and chemical education. Within these multidisciplinary and interdisciplinary focus areas, students can select research projects that involve the traditional subdisciplines of chemistry; analytical, biochemistry, inorganic, organic and physical. Currently active research projects in the Department focus on various aspects of analytical chemistry, drug discovery and delivery, synthesis or photoactive materials including polymers, materials chemistry and self assembly, chromatography, the chemistry of cell membranes, environmental and green chemistry, chemistry of climate change, photo-physical chemistry, natural products synthesis, biophysical chemistry, computational chemistry, and solid-state NMR. For additional information student should review the descriptions of current faculty research interests at chembiochem.sdstate.edu.

In addition to a traditional thesis-based (Option A) M.S. degree, the Department also offers a predominantly on-line M.S. in chemistry in chemical education. This is a non-thesis (Option B) degree that focuses on the content necessary for practicing high school teachers to achieve highly qualified status. Admission in this program is limited to practicing high school science teachers, students interested in the thesis-based M.S. degree in chemical education should specify this on the application for admission.

Research Instrumentation
The Department is equipped with modern instrumentation core facilities to support its research program. These facilities are readily available to graduate students for "hands-on" experience after successfully completing a short training course.

- **NMR core facility** includes 600, 400, and 200 MHz solution FT-NMR spectrometers and 400, 300, 100 MHz wide-bore solid-state NMR spectrometers.

- **Core campus mass spectrometry facility** consists of a 7T ESI FTMS; a high-resolution magnetic sector mass spectrometer with EI and CI sources and GC, HPLC, pyrolysis and fast-atom bombardment capabilities, a MALDI-TOF mass spectrometer; a Eksigent/Thermo LTQ ESI LC-MS/SM dedicated to "bottom-up" proteomics studies and an Applied Biosystems SCIEX QTRAP ESI LC-MS/MS dedicated to small molecule and metabolomics characterizations; and a Varian GCMS.

- **Core campus proteomics facility** has all the necessary equipment to prepare samples for mass-spectrometry-based proteomics characterizations.

- **Optical Spectroscopy lab** containing 2 FT-IR spectrometer with far-IR capabilities; time-resolved spectrofluorometer; atomic absorption and diode-array UV-Vis spectrophotometers.

- **Powder x-ray diffractometer**
In addition to these departmental resources, individual research groups also maintained instrumentation including supercritical fluid chromatography and extraction, for FRET microscopy, laser light scattering, and computational chemistry. Campus super-computer facilities and on-line computer access to Web of Science, Chemical Abstracts Services and other on-line information sources are readily available.

Facilities
The Department is housed in the newly constructed Avera Health Science Center South and newly renovated Avera Health and Science Center North. Combined, these connected facilities provide 100,000 sq. ft. of research and instructional space.

Available Options for Graduate Degrees
Master of Science
- Option A
- Option B

Core Requirements
Thesis-Based (Option A)
Students are required to complete a minimum of 30 credits which includes 21 credits of course work (12 credits of core coursework and 9 credits specific to the research project); 2 credits of seminar; and 7 credits of research.

Non-Thesis-Based (Option B) – Specialization in Chemical Education
Students are required to complete 32 credits, 26 credits are offered on-line. Six (6) credits of 2 separate laboratory development courses are delivered on-site at South Dakota State University during the two consecutive summers that students are enrolled in the program. The student completes 3 credits for the development, implementation, and reporting of a problem-based project completed in the participant's classroom. The written report of this project is defended orally as the capstone activity of the program.

Additional Admission Requirements
International students wishing to be considered for an assistantship should submit a complete application no later than March 15 for Fall admission and October 1 for Spring admission.
GRE: General and subject score are recommended but not required
TOEFL: Score of 580 paper-based, 237 computer-based, 92-93 Internet-based

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.

Civil Engineering (M.S.)
Program Information
The MSCE program offers courses, design, and research activities within Civil and Environmental Engineering that are related to structural, transportation, geotechnical, water resources, hydrology, hydraulics and environmental engineering, as well as engineering mechanics. Students can pursue an MS degree under a thesis, design paper, or coursework only option.

Educational Objectives
The Civil Engineering Program at SDSU prepares students to achieve the following educational objectives within the first five years of their career:
1. Completion of professional licensure or specialized certification,
2. Completion of advanced academic degrees and/or active participation in professional societies, and
3. Assume leadership positions within organizations in their profession, in their communities and in the global society.

Accreditation
The department has been accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Course Delivery Format
The program offers course, design, and research activities within Civil and Environmental Engineering that are related to structural, transportation, geotechnical, water resources, hydrology, hydraulics, and environmental engineer, was well as areas of engineering mechanics in classroom, laboratory, and field-based setting.

Facilities and Services
The Civil and Environmental Engineering department is housed in Crothers Engineering Hal and maintains over 18,000 square feet of classroom and laboratory space dedicated to undergraduate instruction and research experience, as well as testing laboratories for research and sponsored projects. This includes the Lohr Structures Lab, Fluid Mechanics Lab, HDR Environmental Lab, Geotechnical Lab, Concrete Lab, Structural Materials Lab, Bituminous Lab, Design Studio Laboratories and Student Computer Lab

Student Engagement
The department provides outreach and services through the American Society of Civil Engineers Student Chapter Program.

Available Options for Graduate Degrees
Master of Science
- Option A
- Option B
- Option C
Core Requirements
- CEE 702 - Advanced Civil and Environmental Engineering Minimum Credits: 2
- CEE 798 - Thesis Credits: 5-10 (Option A)
  or CEE 788 - Engineering Research or Design Paper Credits: 2-3 (Option B)
- Civil and Environmental Engineering Elective Credits: 18-33 (Depending on Option)
- Supporting Elective Credits: 0-9 (Depending on Option)

Total Credits: 30 (Option A), 32 (Option B), 35 (Option C)

Additional Admission Requirements
GRE: Not required
TOEFL: Score of 525 paper-based, 197 computer-based, 71 Internet-based

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Communication Studies and Journalism (M.S.) - Communication Studies Specialization

Program Information
The Master of Science specialization in Communication Studies is designed to provide advanced studies in the area of communication theory, research methodology, instructional methodology, and public address. It provides further professional preparation and competencies in the area of communication. The program provides broad-based, graduate degree for students with an undergraduate degrees in communication studies and related areas. Students will be exposed to areas of concentration including organizational, interpersonal, and instructional communication as well as rhetorical and communication theory, drama, and competencies in the area of communication.

Student Learning Outcomes
A graduate with a Master of Science specialization in Communication Studies will be able to:
- Recognize and apply communication theory in a variety of contexts,
- Understand multiple methodologies for conducting communication research,
- Conduct independent and original research,
- Demonstrate advanced competencies in the area of communication.

Course Delivery Format
The on campus program provides a wide range of course formats including seminar, small group, interactive and collaborative partnerships; limited courses are offered online.

Available Options for Graduate Degrees
Master of Science Option A

Core Requirements
- SPCM 501 - Advanced Interpersonal Communications Credits: 3
- SPCM 701 - Introduction: Graduate Studies Credits: 3 - First semester
- SPCM 787 - Research Methods in Speech Communications Credits: 3 - Second semester
- SPCM 605 - Current Approaches to Communication Credits: 3
- SPCM 700 - Instructional Methods in Communication Credits: 3 - Required only for Graduate Assistants
- SPCM 798 - Thesis Credits: 5-7
- Electives approved by advisor

Total Credits: 30

Additional Admission Requirements
GRE: Not required
TOEFL: Department requirement of 600 paper-based, 250 computer-based, 100 Internet-based

Prerequisite of a minimum of 20 semester hours of undergraduate credit in Speech, Theatre, Journalism, or Communication. Other undergraduate programs may qualify.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
Communication Studies and Journalism (M.S.) - Journalism Specialization

Program Information
The Master of Science in Communication Studies and Journalism – Journalism Specialization consists of advanced studies in journalism, advertising and public relations. The goal of the program is to expand and contribute to the knowledge of these academic fields rather than the knowledge of professional practice. This degree provides an introduction to research and advanced study in preparation for students seeking to move on to the doctoral level.

Student Learning Outcomes
Graduates of the Journalism program
• advance mass communication's body of knowledge through research, analysis and application.
• demonstrate leadership and mass communication skills for expanding their influence within their chosen professions.
• adapt fundamental critical thinking and storytelling skills to the interconnected world with its digital, networked media environment.
• utilize technology and have the vision to expand their knowledge base and skill set.

Accreditation
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).

Course Delivery Method
This program is offered at SDSU's Brookings campus and includes both face-to-face and online instruction options.

Facilities and Services
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 three computer laboratories with equipment and software for newswriting; for news editing and digital media; for broadcasting and advertising; and for photojournalism. 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.

Available Options for Graduate Degrees
Master of Science
Option A
Option B

Core Requirements
• MCOM 704 - Introduction to Graduate Studies Credits: 3
  or MCOM 705 - Introduction to Master of Mass Communication Credits: 3
• MCOM 710 - Cross-Platform Storytelling Credits: 3
  or MCOM 785 - Health Journalism Credits: 3
  or MCOM 615 - Opinion Writing Credits: 3
• MCOM 730 - Media Law Case Studies Credits: 3
  or MCOM 530 - Media Law Credits: 3
• MCOM 786 - Conducting Professional Research Credits: 3
  or MCOM 787 - Research Methods in Communication Credits: 3
• MCOM 798 - Thesis (Option A) Credits: 6
  or MCOM 788 - Master's Research Problems/Projects (Option B) Credits: 2
• Elective Credits: 18-24

Total Required Credits: 30 (Option A), 32 (Option B)

Additional Admission Requirements
GRE: Not required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

General Requirements (Master’s Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements for more detail.
Computer Science (M.S.)

Program Information
The Department of Electrical Engineering and Computer Science offers the Master of Science in Computer Science. The program prepares graduate students for positions in the design and development of computer systems and applications in business and industry and for scientific positions in industrial or academic computing research. Areas of research interest within the department currently include Software Engineering, Medical Image Processing, Parallel Processing, Applied Computing, GIS, Computer Security, Cluster Computing, and Computer Networks.

Program Objectives
The CS graduate program objectives are to equip individuals to:

- Discover and disseminate knowledge relevant to the discipline of computer science.
- Provide leadership for increasingly complex roles in computer science and industry.
- Contribute to the advancement of the science of computer science serving regional and national needs.

Course Delivery Format
A majority of the courses are taught on campus in smart classrooms. The smart classrooms allow for a variety of methods for student engagement and faculty are able to record and post their lectures on-line.

Facilities and Services
With more than $12 million invested in classrooms and laboratories, graduate students benefit from modern lecture rooms and gain valuable experience using state-of-the-art equipment. The recently dedicated modern Daktronics Engineering Hall is home to the Computer Science program with over 15,000 square feet of dedicated research space.

Available Options for Graduate Degrees
Master of Science
Option A
Option B

Core Requirements
- CSC 705 - Design and Analysis of Computer Algorithms Credits: 3
- CSC 710 - Structure and Design of Programming Languages Credits: 3
- CSC 720 - Theory of Computation Credits: 3
- CSC 770 - Software Engineering Management Credits: 3
- CSC 798 - Thesis (Option A)
  or CSC 788 - Research Report/Design Paper (Option B) Credits 2-5
- Approved electives 13-18

Total Credits: 30 (Option A), 32 (Option B)

Additional Admission Requirements
GRE: Not required
TOEFL: Department requirement of 525 paper-based, 197 computer-based, 71 Internet-based

Additional Graduation Requirements
All CS graduate candidates must pass a comprehensive written examination. The comprehensive written examination is offered twice during each academic year. The four graduate core courses are the subjects of the comprehensive written examination.

Comprehensive Written Exam Requirements
All CS graduate candidates must pass a comprehensive written examination. The comprehensive written examination is offered twice during each academic year. It is usually during the third week of both the fall and spring semester. The four graduate core courses (listed below) are the subjects of the comprehensive written examination.

CS graduate students can take the comprehensive exam up to three times as long as they have an average score of 50 or higher in the comprehensive exam and a minimum score of 40 or higher in each of the core course exams. If at any time in the students' scores fall below the criteria, the student loses the option of retaking the exam.

If a student submits an application to take the comprehensive exam, that application will be counted as one of their three opportunities.

Final Oral Exam Requirements
The final oral exam is required for both option A and option B students. It is scheduled for approximately two hours. The first part of the exam includes the candidate's thesis or design paper defense, and the second part of the exam comprises the candidate's course work.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
Counseling and Human Resource Development (M.Ed.) - Administration of Student Affairs Specialization

Program Information
This Administration of Student Affairs Specialization is designed for those who seek professional roles in student affairs or related areas of higher education in any postsecondary setting. The administrative emphasis will build skills based on both theory and experience. Students that complete this 36-credit program will earn a Master of Education in Counseling & Human Resource Development (CHRD) specializing in Administration of Student Affairs.

Accreditation, Certification, and Licensure

Standards and Accreditations
The Master of Education specialization in Administration of Student Affairs meets the guidelines of the Council for the Advancement of Standards in Higher Education (CAS).

The Master of Science in CHRD specializing in Clinical Mental Health Counseling, School Counseling, and College Counseling is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

The Master of Science in CHRD specializing in Rehabilitation and Mental Health Counseling is accredited by the Council on Rehabilitation Education (CORE).

Certification
All Master of Science students are eligible to begin the process for the National Certified Counselor certification by taking the NCE six months before or after they graduate.

Students specializing in Rehabilitation and Mental Health Counseling are eligible to begin the process for the Certified Rehabilitation Counselor certification by taking the CRC exam after a student has completed 75% of coursework or after graduation.

The School Counseling specialization prepares students for endorsement/certification in the state of South Dakota. Students are responsible for researching school counseling certification requirements for any state in which they wish to practice.

The Clinical Mental Health Counseling specialization is designed to meet the requirements of the South Dakota Board of Counselor Examiners. Graduates of this specialization are eligible for certification as a Counselor Associate under South Dakota Codified Law, 36-32-14. Once graduates complete an approved plan for the remainder of the supervised clinical experience, they are eligible for licensure as a Licensed Professional Counselor – Mental Health (LPC-MH).

Licensure
Graduation from this program does not grant immediate licensure as a counselor. Licensure differs by state and is obtainable by completing additional client contact hours after graduation. Students are responsible for researching licensure requirements for the state in which they plan to practice.

Course Delivery Format
Instruction occurs through didactic (classroom) and clinical experience. Most classes are enhanced with internet supplement.

Available Options for Graduate Degrees

Master of Education
Option A
Option B
Option C

Core Requirements
- CHRD 601 - Introduction to Professional Issues and Ethics Credits: 1
- CHRD 602 - Research and Evaluation in Counseling and Human Development Credits: 3
- EDFN 727 - Group Processes Credits: 3
- CHRD 742 - Career Counseling and Planning Credits: 3
- CHRD 770 - Student Development: Theory and Practice Credits: 3
- CHRD 771 - Student Personnel Services Credits: 3
- CHRD 772 - Administration and Leadership in Student Affairs Credits: 3
- CHRD 794 - Internship Credits: 2-6
- Elective Credits: 11
  - CHRD 798 - Thesis (Option A)
  - CHRD 788 - Research Problems in Counseling and Guidance (Option B)
  - Additional Coursework (Option C)

Total Credits: 36

Additional Program Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
- All Master of Science students are required to purchase and carry professional liability insurance throughout the duration of the program.
- M.Ed. students will be required to purchase and carry professional liability insurance if enrolled in clinical courses.
- Clinical course registration is completed by the department.
- Students enrolled in the M.S. CHRD program need to complete a practicum and an approved internship. These experiences allow students to learn by doing, with active, sound supervision. The practicum and internship experiences carry clock and credit hour completion...
expectations. For example, for every 3 credits of internship, students are required to complete 20 hours per week of on-site experience. In addition, regular work expectations outside the classroom exist for every credit hour enrolled. Thus, students enrolled in 3 credits of internship or practicum experience will be considered part-time. Students enrolled in 4 credits of internship or 3 credits of practicum plus other courses to total 4 semester credits will be considered full-time.

**Additional Admission Requirements for Counseling and Human Resource Development (M.S./M.Ed.)**

GRE: Not required  
TOEFL: Department requirement of 525 paper-based, 197 computer-based, 71 Internet-based

**Formal Application Process**

In addition to applying for Graduate School, applicants must also apply to the CHRD program by April 1 for fall admission or by October 1 for spring admission. Admission is competitive; late applications will not be considered. Students have one calendar year from the time of acceptance to begin taking courses otherwise formal re-application to the CHRD program is required.

The CHRD department requires all applicants to submit the documents below by the appropriate admission deadline:

1. CHRD Disclosure Statement  
2. Resume  
3. A typed, one-page goal statement discussing your aspirations to the counseling field  
4. Two completed CHRD Recommendation Forms (do not use the Graduate School reference forms).

Based on the rating score of the applicant's file, the applicant will either be invited to the group screening interview to continue the admissions process or denied admission.

**Criminal Background Check Requirement**

Applicants who successfully complete the interview will be required to successfully complete and pay for a criminal background check before an official offer of admission is secured.

**General Requirements (Master’s Degree)**

Graduate students should consult with their advisor before registering for graduate work.  
See Master’s Degree Requirements.

**Counseling and Human Resource Development (M.S.) - Clinical Mental Health Counseling Specialization**

**Program Information**

Students who successfully complete this 60-credit hour specialization will earn a Master of Science in Counseling and Human Resource Development specializing in Clinical Mental Health Counseling. Upon successful completion of the core requirements, and those of the Clinical Mental Health Counseling specialization and with the successful completion of the comprehensive written and oral examinations, graduates are endorsed as having constructed appropriate entry level knowledge and as having met appropriate skill acquisition to be recognized as professional clinical mental health counselors. Students in the Clinical Mental Health Counseling specialization are also responsible for having taken supporting area courses which supplement or enhance their chosen specialty.

**Accreditation, Certification, and Licensure**

**Standards and Accreditations**

The Master of Education specialization in Administration of Student Affairs meets the guidelines of the Council for the Advancement of Standards in Higher Education (CAS).

The Master of Science in CHRD specializing in Clinical Mental Health Counseling, School Counseling, and College Counseling is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

The Master of Science in CHRD specializing in Rehabilitation and Mental Health Counseling is accredited by the Council on Rehabilitation Education (CORE).

**Certification**

All Master of Science students are eligible to begin the process for the National Certified Counselor certification by taking the NCE six months before or after they graduate.

Students specializing in Rehabilitation and Mental Health Counseling are eligible to begin the process for the Certified Rehabilitation Counselor certification by taking the CRC exam after a student has completed 75% of coursework or after graduation.

The School Counseling specialization prepares students for endorsement/certification in the state of South Dakota. Students are responsible for researching school counseling certification requirements for any state in which they wish to practice.

The Clinical Mental Health Counseling specialization is designed to meet the requirements of the South Dakota Board of Counselor Examiners. Graduates of this specialization are eligible for certification as a Counselor Associate under South Dakota Codified Law, 36-32-14. Once graduates complete an approved plan for the remainder of the supervised clinical experience, they are eligible for licensure as a Licensed Professional Counselor – Mental Health (LPC-MH).
Licensure
Graduation from this program does not grant immediate licensure as a counselor. Licensure differs by state and is obtainable by completing additional client contact hours after graduation. Students are responsible for researching licensure requirements for the state in which they plan to practice.

Student Learning Outcomes
Upon successful completion of the course requirements for a MS in CHRD specializing in Clinical Mental Health Counseling, students will:

• understand and advocate for positive attention to developmental needs of individuals, families, schools, and communities;
• promote mental health through well-developed and consistent theoretical study and application;
• appreciate cultural, ethnic, and gender differences as they relate to perceptions and expectations of counseling;
• apply ethical, legal, moral, and professional standards to all aspects of professional counseling services;
• respond to the mental health needs of a variety of individuals and families, through a wide spectrum of services including support, education, assessment, and treatment;
• understand and be able to appropriately select and apply a variety of service or treatment modalities;
• understand assessment strategies and the criteria for mental illnesses as well as effective treatments;
• understand and model healthy community and work relationships; and
• be prepared to pursue licensure as a professional counselor.

Course Delivery Format
Instruction occurs through didactic (classroom) and clinical experience. Most classes are enhanced with internet supplement.

Available Options for Graduate Degrees
Master of Science
  Option A
  Option B
  Option C

Core Requirements
• CHRD 601 - Introduction to Professional Issues and 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 701 - Professional Issues and Ethics II Credits: 1
• 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 766 - Group Counseling Credits: 3
• CHRD 785 - Pre-Practicum Credits: 3
• CHRD 786 - Counseling Practicum Credits: 3-5
• CHRD 713 - Administration and Management of Mental Health Organizations Credits: 3
• CHRD 723 - Counseling the Family Credits: 3
• CHRD 755 - Clinical Diagnosis and Treatment Planning Credits: 3
• PHA 647 - Pharmacological Issues in Mental Health Counseling Credits: 3
• CHRD 794 - Internship Credits: 9
• Elective Credits: 9
  • CHRD 798 - Thesis (Option A)
  • CHRD 788 - Research Problems in Counseling and Guidance (Option B)
  • Additional Coursework (Option C)

Total Credits: 60

Additional Program Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
• All Master of Science students are required to purchase and carry professional liability insurance throughout the duration of the program.
  M.Ed. students will be required to purchase and carry professional liability insurance if enrolled in clinical courses.
• Clinical course registration is completed by the department.
• Students enrolled in the M.S. CHRD program need to complete a practicum and an approved internship. These experiences allow students to learn by doing, with active, sound supervision. The practicum and internship experiences carry clock and credit hour completion expectations. For example, for every 3 credits of internship, students are required to complete 20 hours per week of on-site experience. In addition, regular work expectations outside the classroom exist for every credit hour enrolled. Thus, students enrolled in 3 credits of internship or practicum experience will be considered part-time. Students enrolled in 4 credits of internship or 3 credits of practicum plus other courses to total 4 semester credits will be considered full-time.

Additional Admission Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
GRE: Not required
TOEFL: Department requirement of 525 paper-based, 197 computer-based, 71 Internet-based

Academic Programs  85
Formal Application Process
In addition to applying for Graduate School, applicants must also apply to the CHRD program by April 1 for fall admission or by October 1 for spring admission. Admission is competitive; late applications will not be considered. Students have one calendar year from the time of acceptance to begin taking courses otherwise formal re-application to the CHRD program is required.
The CHRD department requires all applicants to submit the documents below by the appropriate admission deadline:
1. CHRD Disclosure Statement
2. Resume
3. A typed, one-page goal statement discussing your aspirations to the counseling field
4. Two completed CHRD Recommendation Forms (do not use the Graduate School reference forms).

Based on the rating score of the applicant's file, the applicant will either be invited to the group screening interview to continue the admissions process or denied admission.

Criminal Background Check Requirement
Applicants who successfully complete the interview will be required to successfully complete and pay for a criminal background check before an official offer of admission is secured.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Counseling and Human Resource Development (M.S.) - College Counseling Specialization

Program Information
This program prepares students to work in higher education settings in the various aspects of student life that take place largely outside of the classroom. These include, but are not limited to, student affairs administration, general college student counseling, career counseling, academic advising, institutional admissions, student activities, multicultural affairs, and residence hall settings. Currently, there are no certification or licensure requirements for student personnel professionals. Students who successfully complete this 48-credit hour specialization will earn a Master of Science in Counseling and Human Resource Development specializing in College Counseling. Upon successful completion of the core requirements, and those of the College Counseling specialization, and, with the successful completion of the comprehensive written and oral examinations, graduates are endorsed as student affairs professionals.

Accreditation, Certification, and Licensure

Standards and Accreditations
The Master of Education specialization in Administration of Student Affairs meets the guidelines of the Council for the Advancement of Standards in Higher Education (CAS).

The Master of Science in CHRD specializing in Clinical Mental Health Counseling, School Counseling, and College Counseling is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

The Master of Science in CHRD specializing in Rehabilitation and Mental Health Counseling is accredited by the Council on Rehabilitation Education (CORE).

Certification
All Master of Science students are eligible to begin the process for the National Certified Counselor certification by taking the NCE six months before or after they graduate.

Students specializing in Rehabilitation and Mental Health Counseling are eligible to begin the process for the Certified Rehabilitation Counselor certification by taking the CRC exam after a student has completed 75% of coursework or after graduation.

The School Counseling specialization prepares students for endorsement/certification in the state of South Dakota. Students are responsible for researching school counseling certification requirements for any state in which they wish to practice.

The Clinical Mental Health Counseling specialization is designed to meet the requirements of the South Dakota Board of Counselor Examiners. Graduates of this specialization are eligible for certification as a Counselor Associate under South Dakota Codified Law, 36-32-14. Once graduates complete an approved plan for the remainder of the supervised clinical experience, they are eligible for licensure as a Licensed Professional Counselor – Mental Health (LPC-MH).

Licensure
Graduation from this program does not grant immediate licensure as a counselor. Licensure differs by state and is obtainable by completing additional client contact hours after graduation. Students are responsible for researching licensure requirements for the state in which they plan to practice.

Student Learning Outcomes
Upon successful completion of the requirements for a M.S. in CHRD with an emphasis in College Counseling, students will:
- Understand and apply various student development theories;
- Understand and incorporate multicultural and diverse perspectives;
- Comprehend the effects of student characteristics and the effects of college on students;
• Be proficient at individual and group counseling techniques;
• Understand the historical, philosophical, psychological, cultural, and sociological foundations of higher education and student affairs;
• Have skills and knowledge of assessment, evaluation, and research in higher education and student affairs;
• Be familiar with the organization and administration of student affairs programs and services;
• Demonstrate program planning and evaluation skills;
• Practice in accordance with the legal and ethical standards of counseling and college student personnel;
• Be able to develop and maintain human relations and enhance student development within the professional setting;
• Be prepared to pursue licensure as a professional counselor.

Course Delivery Format
Instruction occurs through didactic (classroom) and clinical experience. Most classes are enhanced with internet supplement.

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
• CHRD 601 - Introduction to Professional Issues and 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 701 - Professional Issues and Ethics II Credits: 1
• 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 766 - Group Counseling Credits: 3
• CHRD 785 - Pre-Practicum Credits: 3
• CHRD 786 - Counseling Practicum Credits: 3
• CHRD 770 - Student Development: Theory and Practice Credits: 3
• CHRD 771 - Student Personnel Services Credits: 3
• CHRD 772 - Administration and Leadership in Student Affairs Credits: 3
• CHRD 794 - Internship Credits: 6
• Elective Credits: 4
  • CHRD 798 - Thesis (Option A)
  • CHRD 788 - Research Problems in Counseling and Guidance (Option B)
  • Additional Coursework (Option C)

Total Credits: 48

Additional Program Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
• All Master of Science students are required to purchase and carry professional liability insurance throughout the duration of the program.
  M.Ed. students will be required to purchase and carry professional liability insurance if enrolled in clinical courses.
• Clinical course registration is completed by the department.
• Students enrolled in the M.S. CHRD program need to complete a practicum and an approved internship. These experiences allow students to learn by doing, with active, sound supervision. The practicum and internship experiences carry clock and credit hour completion expectations. For example, for every 3 credits of internship, students are required to complete 20 hours per week of on-site experience. In addition, regular work expectations outside the classroom exist for every credit hour enrolled. Thus, students enrolled in 3 credits of internship or practicum experience will be considered part-time. Students enrolled in 4 credits of internship or 3 credits of practicum plus other courses to total 4 semester credits will be considered full-time.

Additional Admission Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
GRE: Not required
TOEFL: Department requirement of 525 paper-based, 197 computer-based, 71 Internet-based

Formal Application Process
In addition to applying for Graduate School, applicants must also apply to the CHRD program by April 1 for fall admission or by October 1 for spring admission. Admission is competitive; late applications will not be considered. Students have one calendar year from the time of acceptance to begin taking courses otherwise formal re-application to the CHRD program is required.

The CHRD department requires all applicants to submit the documents below by the appropriate admission deadline:
1. CHRD Disclosure Statement
2. Resume
3. A typed, one-page goal statement discussing your aspirations to the counseling field
4. Two completed CHRD Recommendation Forms (do not use the Graduate School reference forms)
Based on the rating score of the applicant's file, the applicant will either be invited to the group screening interview to continue the admissions process or denied admission.

**Criminal Background Check Requirement**
Applicants who successfully complete the interview will be required to successfully complete and pay for a criminal background check before an official offer of admission is secured.

**General Requirements (Master's Degree)**
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

**Counseling and Human Resource Development (M.S.) - Rehabilitation and Mental Health Counseling Specialization**

**Program Information**
The Rehabilitation and Mental Health Counseling Specialization is dedicated to enhancing the effectiveness of counselors and programs of service to people with disabilities. Educational experiences will aim to prepare qualified rehabilitation counselors, increase knowledge in the field of rehabilitation, and to apply knowledge to the growing effectiveness of rehabilitation professionals and service delivery systems. In alliance with students, agencies, consumers, and professional organizations, the specialty area will promote the independence, acceptance, and dignity of all people with significant disabilities.

Students who successfully complete this 48-credit hour specialization will earn a Master of Science in Counseling and Human Resource Development specializing in Rehabilitation and Mental Health Counseling. Upon successful completion of the core requirements, and those of the Rehabilitation and Mental Health Counseling emphasis, and with successful completion of the comprehensive written and oral examinations, graduates are endorsed as having constructed appropriate entry level knowledge and as having met appropriate skill acquisition to be recognized as professional rehabilitation and mental health counselors. Students in this emphasis are also responsible for having taken supporting area courses which supplement or enhance their chosen specialty.

**Accreditation, Certification, and Licensure**

**Standards and Accreditations**
The Master of Education specialization in Administration of Student Affairs meets the guidelines of the Council for the Advancement of Standards in Higher Education (CAS).

The Master of Science in CHRD specializing in Clinical Mental Health Counseling, School Counseling, and College Counseling is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

The Master of Science in CHRD specializing in Rehabilitation and Mental Health Counseling is accredited by the Council on Rehabilitation Education (CORE).

**Certification**
All Master of Science students are eligible to begin the process for the National Certified Counselor certification by taking the NCE six months before or after they graduate. Students specializing in Rehabilitation and Mental Health Counseling are eligible to begin the process for the Certified Rehabilitation Counselor certification by taking the CRC exam after a student has completed 75% of coursework or after graduation.

The School Counseling specialization prepares students for endorsement/certification in the state of South Dakota. Students are responsible for researching school counseling certification requirements for any state in which they wish to practice.

The Clinical Mental Health Counseling specialization is designed to meet the requirements of the South Dakota Board of Counselor Examiners. Graduates of this specialization are eligible for certification as a Counselor Associate under South Dakota Codified Law, 36-32-14. Once graduates complete an approved plan for the remainder of the supervised clinical experience, they are eligible for licensure as a Licensed Professional Counselor – Mental Health (LPC-MH).

**Licensure**
Graduation from this program does not grant immediate licensure as a counselor. Licensure differs by state and is obtainable by completing additional client contact hours after graduation. Students are responsible for researching licensure requirements for the state in which they plan to practice.

**Program Objectives**
- meet the growing needs and diverse challenges of consumers with physical and psychiatric disabilities; prepare qualified counselors for careers with federal, state, and private agencies;
- meet anticipated work force needs in the growing rehabilitation and mental health counseling field; and
- provide field experience and internships to develop professional counseling skills.
Student Learning Outcomes
Upon successful completion of the course requirements for a MS in CHRD specializing in Rehabilitation and Mental Health Counseling, students will:

- acquire a sound, basic education in rehabilitation;
- develop the lifelong habit of updating skills and professionalism;
- develop a commitment to assist individuals with disabilities in using their own resources and opportunities to meet their developmental, vocational, and educational needs;
- nourish a commitment to individual human values;
- exercise skills and competencies on a high ethical level and with personal integrity;
- maintain a critical, questioning, and exploratory attitude; and
- contribute to the profession by offering suggestions to educators and researchers with the overall goal of improving practice in the rehabilitation profession in general and in the specific area of professional application. Students should also be personally committed to the field of rehabilitation who can provide effective services to individuals with disabilities, including individuals with severe disabilities.

Students are encouraged to contribute to the advancement of knowledge in the field of rehabilitation through research and the demonstrated application of significant findings.

Course Delivery Format
Instruction occurs through didactic (classroom) and clinical experience. Most classes are enhanced with internet supplement. Rehabilitation counseling specific courses are on a semester rotation for online delivery. Classes are scheduled for one day per week for three hours. All courses are available at the University Center-Rapid City except for rehabilitation-specific courses. The Rehabilitation Counseling specialization is not available at the University Center-Rapid City. A few courses are available at the University Center-Sioux Falls; CHRD does not offer a degree program at the University Center in Sioux Falls.

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
- CHRD 601 - Introduction to Professional Issues and 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 701 - Professional Issues and Ethics II Credits: 1
- 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 766 - Group Counseling Credits: 3
- CHRD 785 - Pre-Practicum Credits: 3
- CHRD 786 - Counseling Practicum Credits: 3
- CHRD 751 - Overview of Rehabilitation and 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 794 - Internship Credits: 6
- Elective Credits: 4
  - CHRD 798 - Thesis (Option A)
  - CHRD 788 - Research Problems in Counseling and Guidance Option B)
  - Additional Coursework (Option C)

Total Credits: 48

Additional Program Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
- All Master of Science students are required to purchase and carry professional liability insurance throughout the duration of the program. M.Ed. students will be required to purchase and carry professional liability insurance if enrolled in clinical courses.
- Clinical course registration is completed by the department.
- Students enrolled in the M.S. CHRD program need to complete a practicum and an approved internship. These experiences allow students to learn by doing, with active, sound supervision. The practicum and internship experiences carry clock and credit hour completion expectations. For example, for every 3 credits of internship, students are required to complete 20 hours per week of on-site experience. In addition, regular work expectations outside the classroom exist for every credit hour enrolled. Thus, students enrolled in 3 credits of internship or practicum experience will be considered part-time. Students enrolled in 4 credits of internship or 3 credits of practicum plus other courses to total 4 semester credits will be considered full-time.

Additional Admission Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
GRE: Not required
TOEFL: Department requirement of 525 paper-based, 197 computer-based, 71 Internet-based
Formal Application Process
In addition to applying for Graduate School, applicants must also apply to the CHRD program by April 1 for fall admission or by October 1 for spring admission. Admission is competitive; late applications will not be considered. Students have one calendar year from the time of acceptance to begin taking courses otherwise formal re-application to the CHRD program is required.

The CHRD department requires all applicants to submit the documents below by the appropriate admission deadline:

1. CHRD Disclosure Statement
2. Resume
3. A typed, one-page goal statement discussing your aspirations to the counseling field
4. Two completed CHRD Recommendation Forms (do not use the Graduate School reference forms).

Based on the rating score of the applicant's file, the applicant will either be invited to the group screening interview to continue the admissions process or denied admission.

Criminal Background Check Requirement
Applicants who successfully complete the interview will be required to successfully complete and pay for a criminal background check before an official offer of admission is secured.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Counseling and Human Resource Development (M.S.) - School Counseling Specialization

Program Information
The School Counseling specialization is designed to prepare students for endorsement/certification as a school counselor in the state of South Dakota. Should the student seek endorsement in another state, it is that student's responsibility to meet any additional requirements by that particular state.

Students who successfully complete this 48-credit hour specialization will earn a Master of Science in Counseling and Human Resource Development specializing in School Counseling.

Upon successful completion of the core requirements, and those of the School Counseling specialization, and with the successful completion of the comprehensive written and oral examinations, graduates are endorsed as having constructed entry level knowledge and as having met appropriate skill acquisition to be recognized as professional school counselors. Students in the School Counseling specialization are also responsible for having taken supporting area courses which supplement or enhance their chosen specialty.

Accreditation, Certification, and Licensure

Standards and Accreditations
The Master of Education specialization in Administration of Student Affairs meets the guidelines of the Council for the Advancement of Standards in Higher Education (CAS).

The Master of Science in CHRD specializing in Clinical Mental Health Counseling, School Counseling, and College Counseling is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

The Master of Science in CHRD specializing in Rehabilitation and Mental Health Counseling is accredited by the Council on Rehabilitation Education (CORE).

Certification
All Master of Science students are eligible to begin the process for the National Certified Counselor certification by taking the NCE six months before or after they graduate.

Students specializing in Rehabilitation and Mental Health Counseling are eligible to begin the process for the Certified Rehabilitation Counselor certification by taking the CRC exam after a student has completed 75% of coursework or after graduation.

The School Counseling specialization prepares students for endorsement/certification in the state of South Dakota. Students are responsible for researching school counseling certification requirements for any state in which they wish to practice.

The Clinical Mental Health Counseling specialization is designed to meet the requirements of the South Dakota Board of Counselor Examiners. Graduates of this specialization are eligible for certification as a Counselor Associate under South Dakota Codified Law, 36-32-14. Once graduates complete an approved plan for the remainder of the supervised clinical experience, they are eligible for licensure as a Licensed Professional Counselor – Mental Health (LPC-MH).

Licensure
Graduation from this program does not grant immediate licensure as a counselor. Licensure differs by state and is obtainable by completing additional client contact hours after graduation. Students are responsible for researching licensure requirements for the state in which they plan to practice.
Student Learning Outcomes
Upon successful completion of the requirements for the School Counseling specialization, students will:

- understand developmental theory as it relates to the difference(s) between "normal" developmental behavior and "abnormal" developmental behavior in youth;
- utilize knowledge and skills to address the counseling needs of a dynamic and diverse population of students and their families;
- be prepared to create and deliver a comprehensive, K-12 developmental school guidance program;
- be able to consult with school personnel and serve as a liaison to community programs to assist in coordinating services for students, parents, and teachers;
- understand and provide effective individual, group, and classroom guidance services;
- know the ethical, legal, and professional standards in a K-12 educational institution;
- develop a commitment to continued personal and professional development;
- be certified by the State of South Dakota as a K-12 School Counselor; and
- be prepared to pursue licensure as a professional counselor.

Course Delivery Format
Instruction occurs through didactic (classroom) and clinical experience. Most classes are enhanced with internet supplement.

Available Options for Graduate Degrees
Master of Science
- Option A
- Option B
- Option C

Core Requirements
- CHRD 601 - Introduction to Professional Issues and 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 701 - Professional Issues and Ethics II Credits: 1
- 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 766 - Group Counseling Credits: 3
- CHRD 785 - Pre-Practicum Credits: 3
- CHRD 786 - Counseling Practicum 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 755 - Clinical Diagnosis and Treatment Planning Credits: 3
- CHRD 794 - Internship Credits: 6
- Elective Credits: 1
  - CHRD 798 - Thesis (Option A)
  - CHRD 788 - Research Problems in Counseling and Guidance (Option B)
  - Additional Coursework (Option C)

Total Credits: 48

Additional Program Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
- All Master of Science students are required to purchase and carry professional liability insurance throughout the duration of the program. M.Ed. students will be required to purchase and carry professional liability insurance if enrolled in clinical courses.
- Clinical course registration is completed by the department.
- Students enrolled in the M.S. CHRD program need to complete a practicum and an approved internship. These experiences allow students to learn by doing, with active, sound supervision. The practicum and internship experiences carry clock and credit hour completion expectations. For example, for every 3 credits of internship, students are required to complete 20 hours per week of on-site experience. In addition, regular work expectations outside the classroom exist for every credit hour enrolled. Thus, students enrolled in 3 credits of internship or practicum experience will be considered part-time. Students enrolled in 4 credits of internship or 3 credits of practicum plus other courses to total 4 semester credits will be considered full-time.

Additional Admission Requirements for Counseling and Human Resource Development (M.S./M.Ed.)
- GRE: Not required
- TOEFL: Department requirement of 525 paper-based, 197 computer-based, 71 Internet-based

Formal Application Process
In addition to applying for Graduate School, applicants must also apply to the CHRD program by April 1 for fall admission or by October 1 for spring admission. Admission is competitive; late applications will not be considered. Students have one calendar year from the time of acceptance to begin taking courses otherwise formal re-application to the CHRD program is required.
The CHRD department requires all applicants to submit the documents below by the appropriate admission deadline:
1. CHRD Disclosure Statement
2. Resume
3. A typed, one-page goal statement discussing your aspirations to the counseling field
4. Two completed CHRD Recommendation Forms (do not use the Graduate School reference forms).

Based on the rating score of the applicant's file, the applicant will either be invited to the group screening interview to continue the admissions process or denied admission.

Criminal Background Check Requirement
Applicants who successfully complete the interview will be required to successfully complete and pay for a criminal background check before an official offer of admission is secured.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Curriculum and Instruction (M.Ed.) - Adult and Higher Education Specialization

Program Information
The degree in Curriculum and Instruction (C&I) is designed to meet the needs of individuals who work (or plan to work) in some kind of an instructional capacity. The degree does not lead to a South Dakota teaching certificate nor does it lead to an endorsement on the South Dakota teaching certificate.

Students are able to choose from either a program in which only coursework is required or a program in which they must complete a research project. If a student elects to take only coursework (Plan C), the student must complete a minimum of 35 credit hours in order to graduate. If the research option is chosen, the student must complete a minimum of 32 credit hours including 788 Research Problems.

The C&I degree is structured to allow a great deal of flexibility. It is expected that students will take a mixture of required courses and elective credits, depending on their areas of interest. These courses may be completed with no intention of seeking a degree, or may be used as part of the basis for completing a C&I degree.

Student Engagement and Support Opportunities
The Teaching, Learning, and Leadership Department has several assistantships for which students can apply.

Available Options for Graduate Degrees
Master of Education          Option B
                              Option C

Core Requirements
• AHED 711 - Assessment and Program Design Credits: 3
• AHED 720 - Principles of Postsecondary Education Credits: 3
• AHED 755 - Principles of College Teaching Credits: 3
• AHED 794 - Internship Credits: 2-6
• HDFS 614 - Adult Development Credits: 3
• EDFN 725 - Education in a Pluralistic Society Credits: 3
• EDFN 727 - Group Processes Credits: 3
• EDER 760 - Informational Literacy Credits: 3
• EDER 711 - Educational Assessment Credits: 3
• EDFN 790 - Seminar Credits: 1
• EDFN 794 - Internship Credits: 1
• AHED 788 - Research Problems in Adult Education Credits: 3 (Option B)
• Electives: 0-4

Total Credits: 32 (Option B), 35 (Option C)

Additional Admission Requirements for Curriculum and Instruction (M.Ed.)
GRE: Not required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

Applicants must provide a resume, goal statement, and two letters of professional reference to Teaching, Learning, and Leadership. Once all material is received, it is reviewed by the Department. Students are assigned an admission status of "unconditional," "conditional" or "not admitted."

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

92 Academic Programs
**Curriculum and Instruction (M.Ed.) - Early Childhood Education Specialization**

**Program Information**

The degree in Curriculum and Instruction (C&I) is designed to meet the needs of individuals who work (or plan to work) in some kind of an instructional capacity. The degree does not lead to a South Dakota teaching certificate nor does it lead to an endorsement on the South Dakota teaching certificate.

Students are able to choose from either a program in which only coursework is required or a program in which they must complete a research project. If a student elects to take only coursework (Plan C), the student must complete a minimum of 35 credit hours in order to graduate. If the research option is chosen, the student must complete a minimum of 32 credit hours including 788 Research Problems.

The C&I degree is structured to allow a great deal of flexibility. It is expected that students will take a mixture of required courses and elective credits, depending on their areas of interest. These courses may be completed with no intention of seeking a degree, or may be used as part of the basis for completing a C&I degree.

**Student Engagement and Support Opportunities**

The Teaching, Learning, and Leadership Department has several assistantships for which students can apply.

**Available Options for Graduate Degrees**

<table>
<thead>
<tr>
<th>Master of Education</th>
<th>Option B</th>
<th>Option C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Requirements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Required: 26**

- EDER 760 - Informational Literacy Credits: 3
- EDER 711 - Educational Assessment Credits: 3
- EDFN 730 - Current Issues in Education Credits: 3
- EDFN 700 - Exceptional Learners Credits: 3
- or EDFN 725 - Education in a Pluralistic Society Credits: 3
- EDFN 747 - Curriculum: Theory Into Practice Credits: 2
- EDFN 750 - Educational Technology Credits: 3
- ECE 711 - Child Development Theory and Application Credits: 3
- ECE 792 - Topics Cognitive Development Credits: 3
- ECE 795 - Practicum Credits: 1
- EDFN 794 - Internship Credits: 1
- EDFN 790 - Seminar Credits: 1

**Electives: 6-9 Credits**

- HDFS 742 - Family Theory and Research Credits: 3
- ECE 543 - Child Inquiry Credits: 2
- HDFS 510 - Parenting Credits: 3
- ECE 645 - Contemporary Perspectives in Early Childhood Education Credits: 3
- ECE 676 - Early Childhood Educational Administration and Practices Credits: 3
- EDER 788 - Research Problems in Education Credits: 3

**Total Credits: 32 (Option B), 35 (Option C)**

**Additional Admission Requirements for Curriculum and Instruction (M.Ed.)**

- GRE: Not required
- TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

Applicants must provide a resume, goal statement, and two letters of professional reference to Teaching, Learning, and Leadership. Once all material is received, it is reviewed by the Department. Students are assigned an admission status of "unconditional," "conditional" or "not admitted."

**General Requirements (Master's Degree)**

Graduate students should consult with their advisor before registering for graduate work.

See Master’s Degree Requirements.
Curriculum and Instruction (M.Ed.) - Elementary Education Specialization

Program Information
The degree in Curriculum and Instruction (C&I) is designed to meet the needs of individuals who work (or plan to work) in some kind of an instructional capacity. The degree does not lead to a South Dakota teaching certificate nor does it lead to an endorsement on the South Dakota teaching certificate.

Students are able to choose from either a program in which only coursework is required or a program in which they must complete a research project. If a student elects to take only coursework (Plan C), the student must complete a minimum of 35 credit hours in order to graduate. If the research option is chosen, the student must complete a minimum of 32 credit hours including 788 Research Problems.

The C&I degree is structured to allow a great deal of flexibility. It is expected that students will take a mixture of required courses and elective credits, depending on their areas of interest. These courses may be completed with no intention of seeking a degree, or may be used as part of the basis for completing a C&I degree.

Student Engagement and Support Opportunities
The Teaching, Learning, and Leadership Department has several assistantships for which students can apply.

Available Options for Graduate Degrees
Master of Education
   Option B
   Option C

Core Requirements
- EDER 760 - Informational Literacy Credits: 3
- EDER 711 - Educational Assessment Credits: 3
- EDFN 730 - Current Issues in Education Credits: 3
- EDFN 700 - Exceptional Learners Credits: 3
  or EDFN 725 - Education in a Pluralistic Society Credits: 3
- EDFN 745 - Effective Teaching: Theory Into Practice
- EDFN 747 - Curriculum: Theory Into Practice Credits: 2
- ELED 748 - Elementary Curriculum Practicum Credits: 1
- EDFN 750 - Educational Technology Credits: 3
- EPSY 740 - Advanced Educational Psychology Credits: 3
- EDFN 790 - Seminar Credits: 1
- EDFN 794 - Internship Credits: 1
- EDER 788 - Research Problems in Education Credits: 3 (Option B)
- Elective Credits: 0-6

Total Credits: 32 (Option B), 35 (Option C)

Additional Admission Requirements for Curriculum and Instruction (M.Ed.)
GRE: Not required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

Applicants must provide a resume, goal statement, and two letters of professional reference to Teaching, Learning, and Leadership. Once all material is received, it is reviewed by the Department. Students are assigned an admission status of "unconditional," "conditional" or "not admitted."

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Curriculum and Instruction (M.Ed.) - Secondary Education Specialization

Program Description
The degree in Curriculum and Instruction (C&I) is designed to meet the needs of individuals who work (or plan to work) in some kind of an instructional capacity. The degree does not lead to a South Dakota teaching certificate nor does it lead to an endorsement on the South Dakota teaching certificate.

Students are able to choose from either a program in which only coursework is required or a program in which they must complete a research project. If a student elects to take only coursework (Plan C), the student must complete a minimum of 35 credit hours in order to graduate. If the research option is chosen, the student must complete a minimum of 32 credit hours including 788 Research Problems.

The C&I degree is structured to allow a great deal of flexibility. It is expected that students will take a mixture of required courses and elective credits, depending on their areas of interest. These courses may be completed with no intention of seeking a degree, or may be used as part of the basis for completing a C&I degree.

Student Engagement and Support Opportunities
The Teaching, Learning, and Leadership Department has several assistantships for which students can apply.
Available Options for Graduate Degrees

Master of Education

<table>
<thead>
<tr>
<th>Option</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Core Requirements: 18 credits&lt;br&gt;EDER 760 - Informational Literacy Credits: 3&lt;br&gt;EDER 711 - Educational Assessment Credits: 3&lt;br&gt;EDFN 700 - Exceptional Learners Credits: 3&lt;br&gt;EDFN 725 - Education in a Pluralistic Society Credits: 3&lt;br&gt;EDFN 730 - Current Issues in Education Credits: 3&lt;br&gt;EDFN 745 - Effective Teaching: Theory Into Practice Credits: 3&lt;br&gt;EDFN 747 - Curriculum: Theory Into Practice Credits: 3&lt;br&gt;SEED 748 - Secondary Curriculum Practicum Credits: 1&lt;br&gt;EDFN 750 - Educational Technology Credits: 3&lt;br&gt;EDFN 790 - Seminar Credits: 1&lt;br&gt;EDFN 794 - Internship Credits: 1&lt;br&gt;EDER 788 - Research Problems in Education Credits: 3 (Option B)&lt;br&gt;Elective Credits: 0-6&lt;br&gt;Total Credits: 32 (Option B), 35 (Option C)</td>
</tr>
<tr>
<td>C</td>
<td>Core Requirements: 24 credits&lt;br&gt;EDER 760 - Informational Literacy Credits: 3&lt;br&gt;EDER 711 - Educational Assessment Credits: 3&lt;br&gt;EDFN 700 - Exceptional Learners Credits: 3&lt;br&gt;EDFN 725 - Education in a Pluralistic Society Credits: 3&lt;br&gt;EDFN 730 - Current Issues in Education Credits: 3&lt;br&gt;EDFN 745 - Effective Teaching: Theory Into Practice Credits: 3&lt;br&gt;EDFN 747 - Curriculum: Theory Into Practice Credits: 3&lt;br&gt;EDFN 750 - Educational Technology Credits: 3&lt;br&gt;EDFN 790 - Seminar Credits: 1&lt;br&gt;EDFN 794 - Internship Credits: 1&lt;br&gt;EDER 788 - Research Problems in Education Credits: 3 (Option B)&lt;br&gt;Elective Credits: 0-6&lt;br&gt;Total Credits: 32 (Option B), 35 (Option C)</td>
</tr>
</tbody>
</table>

Additional Admission Requirements for Curriculum and Instruction (M.Ed.)
GRE: Not required<br>TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

Applicants must provide a resume, goal statement, and two letters of professional reference to Teaching, Learning, and Leadership. Once all material is received, it is reviewed by the Department. Students are assigned an admission status of "unconditional," "conditional" or "not admitted."

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.

Data Science (M.S.)

Program Information
The SDSU M.S. in Data Science is a one-year program that provides graduates with the statistical, mathematical, and computational skills needed to meet the large-scale data science challenges of today's professional world. The curriculum incorporates current techniques in statistics, operations research, predictive modeling, data mining, forecasting, big data programming and management, and data visualization. The program's focus is on application and interpretation of modern data analysis techniques of known value in today's professional world, both private and public sector.

Available Options for Graduate Degrees

Master of Science

<table>
<thead>
<tr>
<th>Option</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Core Requirements: 18 credits&lt;br&gt;INFS 762 - Data Warehousing and Data Mining (DSU) Credits: 3&lt;br&gt;INFS 772 - Programming for Data Analytics (DSU) Credits: 3&lt;br&gt;INFS 774 - Big Data Analytics (DSU) Credits: 3&lt;br&gt;STAT 700 - Statistical Programming Credits: 3&lt;br&gt;STAT 701 - Modern Applied Statistics I Credits: 3&lt;br&gt;STAT 702 - Modern Applied Statistics II Credits: 3&lt;br&gt;Electives: 12&lt;br&gt;The following courses will be the default elective curriculum beyond the core courses in the MS in Data Science program.&lt;br&gt;MATH 575 - Operations Research Credits: 3&lt;br&gt;STAT 545 - Nonparametric Statistics Credits: 3&lt;br&gt;STAT 551 - Predictive Analytics I Credits: 3&lt;br&gt;STAT 560 - Time Series Analysis Credits: 3&lt;br&gt;The following courses are available to students with appropriate mathematical and statistical prerequisite knowledge.&lt;br&gt;MATH 541 - Applied Probability Theory Credits: 3&lt;br&gt;MATH 775 - Operations Research II Credits: 3&lt;br&gt;STAT 715 - Multivariate Analysis I Credits: 3&lt;br&gt;STAT 721 - Statistic Computing/Simulation Credits: 3&lt;br&gt;STAT 742 - Spatial Statistics Credits: 3&lt;br&gt;STAT 751 - Predictive Analytics II Credits: 3</td>
</tr>
</tbody>
</table>

Academic Programs 95
• 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 792 - Topics Credits: 3

Total Credits: 30

**Additional Admission Requirements**

GRE: Not required.
TOEFL: Program requirement minimum score of 550 paper-based, 79 internet-based, 213 computer-based OR
IELTS: Program requirement minimum score of 6.5

In addition to meeting Graduate School admission requirements, applicants for graduate study for the M.S. in Data Science must have:

- Baccalaureate degree from an institution of higher education with full regional accreditation for that degree.
- The applicant must have an undergraduate grade point average of at least 3.0 on 4.0 scale.
- Transcript should show completion of courses in key areas equivalent to:
  - Database design/programming including familiarity with SQL (STAT 410/510 or equivalent)
  - Understanding of the principles of programming (CSC 150 or INFO 101 or equivalent)
  - Understanding of statistical principles (STAT 441/541 or equivalent)
- Students may be required to take undergraduate or foundation classes in order to make up for deficiencies.
- Undergraduate preparatory courses required of entering students include two semesters of calculus, one course in matrix or linear algebra, one introductory course in calculus-based probability and statistics. SDSU courses that would satisfy these requirements would be:
  - MATH 123 Calculus I
  - MATH 125 Calculus II
  - MATH 215 Matrix Algebra OR MATH 315 Linear Algebra
  - STAT 381 Introduction to Probability and Statistics
- Students with other educational backgrounds may be admitted conditionally. They will be required to complete the necessary coursework to eliminate deficiencies in their background during their first semester in the program.

**General Requirements (Master's Degree)**

Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

**Dietetics (M.S.)**

**Program Information**

Dietetics prepares Registered Dietitian Nutritionists to practice dietetics at an advanced level and/or pursue doctoral study. The program seeks to develop research skills, stimulate independent thought, and provide up-to-date knowledge in foods, nutrition, and food service/business management. This program prepares individuals to integrate and apply the principles ranging from the biomedical sciences, human behavior, and management to design, and to lead effective food, nutrition, health and wellness programs in a variety of settings. This online program will be a degree tailored for credentialed, practicing dietetics professionals who seek to enhance their knowledge in a specific area of dietetics practice or to retool for new career opportunities in dietetics practice.

**Course Delivery Format**

The program consists of lecture, laboratory, and experiential learning opportunities.

**Student Support and Engagement Opportunities**

The Department of Health and Nutritional Sciences aims to provide premier academic programs and high-quality services to students. A limited number of research and teaching assistantships and scholarships may be available to qualified graduate students.

**Available Options for Graduate Degrees**

Master of Science
- Option A
- Option B
- Option C

**Core Requirements**

- STAT 541 - Statistical Methods II Credits: 3
- NFS 734 - Research Methods in Dietetics Credits: 3
- NFS 735 - Current Trends in Dietetics Practices Credits: 3
- NFS 760 - Vitamins and Minerals in Human Nutrition Credits: 3
- HNS 798 - Thesis (Option A) Credits: 6
  or HNS 788 - Individual Research and Study (Option B) Credits: 3
  or Option C requires a comprehensive written exam.
  The student's option and schedule of courses must be approved by his/her faculty advisor and graduate committee.
- Elective Credits: 18-24
Additional Admission Requirements
GRE: Not required
TOEFL: required score of 550 paper-based, 213 computer-based, 79-80 Internet-based
IELTS: 6.0

Students must be credentialed as a Registered Dietitian by the Commission on Dietetic Registration (CDR) of the Academy of Nutrition and Dietetics, submitting a copy of a current RD or RDN card as documentation.

General Requirements (Master's Degree)
The student's Option and schedule of courses must be approved by his/her faculty advisor and graduate committee.
See Master's Degree Requirements.

Economics (M.S.)
Program Information
The graduate curriculum in economics prepares students for professions in business and government as well as for further graduate study. The program is built on a core curriculum of economic theory, which consists of courses in advanced microeconomics, advanced macroeconomics, and econometrics, and allows students to design individualized programs in one of the following four areas of emphasis:

- Agricultural Business
- Agricultural and Resource Economics
- Business Economics
- General Economics

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.

Contact the Graduate Coordinator for further information.

Student Support and Engagement Opportunities
The Department of Economics prides itself on providing excellent academic programs and offers high-quality services to students. A limited number of research and teaching assistantships and scholarships may be available to qualified graduate students. The Economics Graduate Student Association (EGSA) supports graduate-student engagement opportunities, as well.

Available Options for Graduate Degrees
Master of Science Option A
Option B

Core Requirements
- 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 798 - Thesis Credits: 5
  or ECON 788 - Research Paper Credits: 2
- Approved Electives

Total Required Credits: 30(Option A), 32(Option B)

No converted graduate credit will be granted for ECON 301 Intermediate Microeconomics and ECON 302 Intermediate Macroeconomics.

Additional Admission Requirements
GRE: Not required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

The minimum prerequisites for unconditional admission into the program are successful completion of ECON 301, ECON 302, and undergraduate courses in statistics and calculus.
Two letters of reference are required.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.
**Educational Administration (M.Ed.) - Elementary Education Specialization**

**Program Information**
The M.Ed. degree in Educational Administration is designed to meet the needs of individuals who work (or plan to work) in an administrative capacity. The department of Teaching, Learning, and Leadership provides professional preparation for those who expect to become qualified administrators in schools where certification is required, and for other institutions, businesses, industries and service-orientated agencies where an administrative program is of value.

The elementary specialization in Educational Administration meets the requirements for endorsement as a principal in South Dakota. Those seeking to complete the requirements for the principalship will have very limited flexibility in the coursework taken. See below for the coursework. These requirements are designed to meet the ELCC Standards as required by law.

The South Dakota State Board of Education requires that in order to be endorsed, individuals must have three years of verified teaching experience on a valid teaching certificate in a K-12 school, one year of which includes classroom experience or direct services to student.

 Students are able to choose from either a program in which only coursework is required or a program in which they must complete a research project. If a student elects to take only course work (Plan C), the student must complete a minimum of 35 credit hours in order to graduate. If the research option is chosen, the student must complete a minimum of 32 credit hours including EDER 788 Research Problems (Plan B).

**Course Delivery Format**
The program can be completed online through the Brookings Campus or face-to-face through West River Graduate Center in Rapid City which also offers coursework in Gillette, Wyoming.

**Student Engagement and Support Opportunities**
The Teaching, Learning, and Leadership Department has several assistantships for which students can apply.

**Available Options for Graduate Degrees**
Master of Education
- Option B
- Option C

**Core Requirements**
- EDAD 695 - Practicum Credits: 1
- EDAD 700 - Introduction to School Administration Credits: 2
- EDAD 707 - The Principalship Credits: 2
- EDAD 708 - Elementary Principalship Practicum Credits: 1
- EDAD 715 - Supervision Credits: 3
- EDAD 730 - School Finance Credits: 2
- EDAD 735 - School Law Credits: 3
- EDAD 794 - Internship Credits: 1-6
- EDAD 741 - Community and Public Relations Credits: 2
- EDFN 730 - Current Issues in Education Credits: 3
- EDFN 745 - Effective Teaching: Theory Into Practice Credits: 3
- EDFN 747 - Curriculum: Theory Into Practice Credits: 2
- ELED 748 - Elementary Curriculum Practicum Credits: 1
- EDER 760 - Informational Literacy Credits: 3
- EDFN 790 - Seminar Credits: 1

And one of the following:
- EDFN 700 - Exceptional Learners Credits: 3
- EDFN 725 - Education in a Pluralistic Society Credits: 3
- EDFN 750 - Educational Technology Credits: 3

**Option B:**
- EDER 788 - Research Problems in Education Credits: 3

Total Credits: 33-41

**Additional Admission Requirements for Educational Administration (M.Ed.)**
GRE: Not required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

Applicants must provide a resume, goal statement, and two letters of professional reference to Teaching, Learning, and Leadership. Once all material is received, it is reviewed by the Department. Students are assigned an admission status of "unconditional," "conditional" or "not admitted."

**General Requirements (Master's Degree)**
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
**Educational Administration (M.Ed.) - Secondary Education Specialization**

**Program Information**

The M.Ed. degree in Educational Administration is designed to meet the needs of individuals who work (or plan to work) in an administrative capacity. The department of Teaching, Learning, and Leaderships provides professional preparation for those who expect to become qualified administrators in schools where certification is required, and for other institutions, businesses, industries and service-orientated agencies where an administrative program is of value.

The secondary specialization in Educational Administration meets the requirements for endorsement as a principal in South Dakota. Those seeking to complete the requirements for the principalship will have very limited flexibility in the coursework taken. See below for the coursework. These requirements are designed to meet the ELCC Standards as required by law.

The South Dakota State Board of Education requires that in order to be endorsed, individuals must have three years of verified teaching experience on a valid teaching certificate in a K-12 school, one year of which includes classroom experience or direct services to student.

Students are able to choose from either a program in which only coursework is required or a program in which they must complete a research project. If a student elects to take only coursework (Plan C), the student must complete a minimum of 35 credit hours in order to graduate. If the research option is chosen, the student must complete a minimum of 32 credit hours including EDER 788 Research Problems (Plan B).

**Course Delivery Format**

The program can be completed online through the Brookings Campus or face-to-face through West River Graduate Center in Rapid City which also offers coursework in Gillette, Wyoming.

**Student Engagement and Support Opportunities**

The Teaching, Learning, and Leadership Department has several assistantships for which students can apply.

**Available Options for Graduate Degrees**

Master of Education
- Option B
- Option C

**Core Requirements**

- EDAD 695 - Practicum Credits: 1
- EDAD 700 - Introduction to School Administration Credits: 2
- EDAD 707 - The Principalship Credits: 2
- 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 794 - Internship Credits: 1-6
- EDAD 741 - Community and Public Relations Credits: 2
- EDFN 730 - Current Issues in Education Credits: 3
- EDFN 745 - Effective Teaching: Theory Into Practice Credits: 3
- EDFN 747 - Curriculum: Theory Into Practice Credits: 2
- SEED 748 - Secondary Curriculum Practicum Credits: 1
- EDER 760 - Informational Literacy Credits: 3
- EDFN 790 - Seminar Credits: 1

And one of the following:
- EDFN 700 - Exceptional Learners Credits: 3
- EDFN 725 - Education in a Pluralistic Society Credits: 3
- EDFN 750 - Educational Technology Credits: 3

Option B:
- EDER 788 - Research Problems in Education Credits: 3

Total Credits: 33-41

**Additional Admission Requirements for Educational Administration (M.Ed.)**

GRE: Not required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

Applicants must provide a resume, goal statement, and two letters of professional reference to Teaching, Learning, and Leadership. Once all material is received, it is reviewed by the Department. Students are assigned an admission status of "unconditional," "conditional" or "not admitted."

**General Requirements (Master's Degree)**

Graduate students should consult with their advisor before registering for graduate work. See Master’s Degree Requirements.
**Electrical Engineering (M.S.)**

**Program Information**
The program offers a variety of courses that encompass a broad range of Electrical Engineering areas including: alternative energy and power systems; computer engineering, communications and fiber optics; electronic materials, devices and sensors; nano technology, photovoltaic devices and systems; and signal and image processing. The department’s graduate faculty conduct active research in these areas using modern research facilities and equipment.

**Program Objectives**
The EE graduate program objectives are to equip individuals to
- Discover and disseminate knowledge relevant to the discipline of electrical engineering.
- Provide leadership for increasingly complex roles in electrical engineering and industry.
- Contribute to the advancement of the science of electrical engineering serving regional and national needs.

**Course Delivery**
A majority of the courses are taught on campus in smart classrooms. The smart classrooms allow for a variety of methods for student engagement and faculty are able to record and post their lectures on-line.

**Facilities and Services**
With more than $12 million invested in classrooms and laboratories, graduate students benefit from modern lecture rooms and gain valuable experience using state-of-the-art equipment. The recently dedicated modern Daktronics Engineering Hall is home to the Electrical Engineering program with over 15,000 square feet of dedicated research space. The department boasts a 5-bay multi-million dollar clean room, several class one gloveboxes, and nano-characterization labs for developing both organic and inorganic electronics, as well as numerous other labs for research in fiber optics, power and alternative energy systems, and sensors.

**Available Options for Graduate Degrees**
Master of Science
- Option A
- Option B

**Core Requirements**
- Coursework from approved track Credits: 12-13
  - MSEE Electronic Materials, Devices, Photovoltaics
    - EE 560 - Sensors and Measurements and Lab Credits: 3
    - EE 562L - Electronic Materials Laboratory Credit: 1
    - EE 735 - Photovoltaics Credits: 3
    - EE 737 - Organic Photovoltaics Credits: 3
  - MSEE Power Systems
    - EE 751 - Linear Systems Theory Credits: 3
    - EE 692 - Topics: Power Systems Operation and Control Credits: 3
    - EE 692 - Topics: Power Electronics Credits: 3
    - EE 536 - Photovoltaic Systems Engineering Credits: 3
  - MSEE Image & Signal Processing
    - EE 770 - Information and Signal Processing Credits: 3
    - EE 575 - Digital Image Processing Credits: 3
    - EE 792 - Topics: Optical Sensors Credits: 3
    - STAT 560 - Time Series Analysis Credits: 3
    - or STAT 742 - Spatial Statistics Credits: 3
    - or STAT 786 - Regression Analysis I Credits: 3
    - EE 790 - Seminar Credit: 1
    - EE 798 - Thesis Credits: 5-7
    or EE 788 - Engineering Research or Design Paper Credits: 2-3
  - Electives: 11-18
    - Option A: Elective Credits: 11-12
    - Option B: Elective Credits: 17-18

Total Credits: 30 (Option A), 32 (Option B)

**Additional Admission Requirements**
GRE: General scores required
TOEFL: Department requirement of 575 paper-based, 233 computer-based, 90-91 Internet-based

**General Requirements (Master's Degree)**
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
English (M.A.)

Program Information
SDSU’s English Department offers the M.A. degree in English. There are two emphases available to students: Studies in Literature and Studies in Language and Rhetoric. Within these areas of study, the department offers two options. Students may choose either Option A (thesis) or Option C (non-thesis). Option A requires a thesis. The thesis may reflect traditional scholarship in literature, language and rhetoric, or linguistics; or in conjunction with appropriate coursework, it may include a creative component. Option C requires additional coursework hours plus a comprehensive examination.

Either option or plan of study is suitable for anyone who wishes to further pursue the study of English, including teachers of English in secondary schools or in community colleges, those who plan to continue on to the doctorate, and those preparing for technical writing/editing positions. A full-time student can complete the course requirements in one academic year. Graduate assistants should be able to complete these requirements in four semesters.

Student Support and Engagement Opportunities
The department offers a number of graduate teaching assistantships for the nine-month academic year. GTAs teach two sections of composition per semester. They receive a stipend, are provided office space, have faculty library status, and pay one-third of resident tuition. To apply for a graduate teaching assistantship, contact the Department Head or the Graduate Advisor. This application to receive a Graduate Teaching Assistantship is in addition to the application to graduate school.

Graduate Teaching Assistants begin their duties in the fall semester of the academic year; therefore, applications for Teaching Assistantships are due on or before April 15. Students applying to begin during the spring semester will not be considered for a Graduate Teaching Assistantship until the following fall semester.

Available Options for Graduate Degrees
Master of Arts          Option A
                       Option C

Core Requirements
• ENGL 704 - Introduction to Graduate Studies Credits: 3
• ENGL 705 - Seminar in Teaching Composition Credits: 3 required for all Teaching Assistants
• Elective Credits: 24-30 with approval of program advisor
• Reading knowledge of a modern foreign language or two years undergraduate credit in a modern foreign language on the transcript

Total Credits: 30 (Option A), 36 (Option C)

Additional Academic Requirements
Under Option A, the candidate is required to present a minimum of 30 hours of graduate work in one of the emphases listed, including 6 hours of thesis (ENGL 798); at least 20 hours must be taken in residence. The candidate will present a thesis which reports the results of research directed by a member of the faculty in English. The thesis may reflect scholarship in literary or cultural studies, language and rhetoric, or linguistics; or in conjunction with appropriate coursework, it may include a creative component. In an oral examination the candidate will be required to defend the thesis and to demonstrate knowledge relative to coursework in the chosen emphasis.

Under Option C, the candidate is required to complete 36 hours of coursework in English followed by successful completion of written examinations under the direction of the Graduate Coordinator.

The two emphases of study for the MA degree in English are:
• *Studies in Literature:* at least 24 semester credits mostly in literature with at least two courses in English literature and two in American Literature, plus six hours of thesis. This emphasis is well suited to those who plan to continue toward the Ph.D. degree in literature or to enter college or community college teaching.
• *Studies in Language and Rhetoric:* at least 24 semester credits mostly in composition, rhetoric, criticism, and linguistics, plus six hours of thesis. This emphasis is well suited to those who plan to teach in a community college or to pursue a Ph.D. degree in rhetoric or linguistics.

Either the literature emphasis or the language/rhetoric emphasis would offer appropriate advanced work for continuing secondary school teachers.

Additional Admission Requirements
To be admitted into the M.A. Program in English, the applicant should have a minimum of 24 semester hours of undergraduate credit in English or receive the consent of the department head.

GRE: Not required
TOEFL: Department requirement of 600 paper-based, 250 computer-based, 100 Internet-based

Minimum GPA of 3.25 in English courses.

All applicants are required to submit both a writing sample and a brief statement of interest, goals, etc.

The Department of English requires applicants to have two (2) letters of recommendation sent directly to:
Dr. Sharon Smith
Graduate Advisor
In addition, applicants who wish to apply for a Teaching Assistant position need to send to the address listed above - a scholarly writing sample (8-10 pages) along with a brief letter stating the applicant's intention to apply for the position. Note: Teaching Assistants begin their duties in the fall semester of the academic year; therefore, applications for Teaching Assistants are due on or before April 15. Students applying to begin during the spring semester will not be considered for a Graduate Teaching Assistantship until the following fall semester.

**General Requirements (Master's Degree)**

Graduate students should consult with their advisor before registering for graduate work.

See Master’s Degree Requirements.

---

**Geography (M.S.)**

**Program Information**

The Department of Geography offers graduate students the opportunity to earn a Master of Science Degree. The curriculum, organized through formal courses, seminars, internship experiences, and supervised research, is designed to prepare students for positions in such professional areas as planning, remote sensing, geographic information sciences, government service, research, business, and teaching. The program also is designed to provide students with the education needed to pursue further graduate study. Students seeking this degree are expected to select courses that will provide a sound foundation in geography (philosophical, physical and human, and research techniques) supported, if appropriate, by courses outside the department. Students may also seek out opportunities such as the cooperative program with the EROS Data Center and/or internships, generally available with planning districts, governmental agencies, business, and industry.

**Course Delivery**

Geography is not only a classroom subject but one that also includes laboratory research, fieldwork, and travel, as well as limited online coursework.

**Facilities and Services**

The department houses the Geospatial Sciences Center of Excellence and produces its own annual Geography Convention, the longest running such event in the United States.

**Student Engagement Opportunities**

The department provides numerous opportunities for student engagement. For example, the Geography Club is a student organization centered on both academic and social functions. Membership is open to anyone interested. Additionally, the South Dakota State Geography Convention.

Students and faculty regularly travel including attendance at regional and national geography meetings, as well as travel to other parts of the world in pursuit of their individual scholarly interests. SDSU Geography also has a connection with a university in Romania. The exchanges that result from this relationship provide invaluable international experience for students, which is critical in the increasingly globalized world.

**Available Options for Graduate Degrees**

<table>
<thead>
<tr>
<th>Option</th>
<th>Core Requirements</th>
<th>Additional Admission Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option A</td>
<td>GEOG 710 - Evolution of Geographic Thought: 3</td>
<td>GRE: Required</td>
</tr>
<tr>
<td>Option B</td>
<td>GEOG 714 - Research and Writing: 3</td>
<td>TOEFL: Department requirement of 550 paper-based, 197 computer-based, 71 Internet-based</td>
</tr>
</tbody>
</table>

The Department of Geography has listed the following additional admission requirements:

1. Submission of Graduate Record Examination (GRE) scores
2. Submission of 1-2 page statement describing applicants' interests in the master's program in Geography at SDSU.
3. Submission of two (2) letters of recommendation from persons acquainted with the academic ability and professional competency of the applicant.
4. Bestow conditional status on those applicants who have not completed the following courses or their equivalents prior to entering the program:
   - GEOG 131 (Physical Geography: Weather & Climate)
   - GEOG 132 (Physical Geography: Natural Landscapes)
   - GEOG 200 (Human Geography)
   - GEOG 382 (Research Methods)

   These courses may be completed pass/fail.

**General Requirements (Master's Degree)**

Graduate students should consult with their advisor before registering for graduate work.

See Master’s Degree Requirements.
Human Sciences (M.S.) - Adult Development in the Workplace Specialization

Program Information
The goal of the MS specializing in Adult Development in the Workplace graduate program is to provide advanced, professional education and research expertise that focuses on improving individual, family, and community well-being. Students pursuing this degree specialization will be prepared to become knowledgeable training and development specialists in business and industry to ensure the needs of adults are understood and met in the workplace. Students who successfully complete this specialization will earn a Master of Science in Human Sciences specializing in Adult Development in the Workplace.

Course Delivery Format
The department offers coursework through face to face instruction on campus in Brookings with some limited online courses.

Available Options for Graduate Degrees
Master of Science  Option A  Option C

Core Requirements
- HDFS 510 - Parenting Credits: 3
- HDFS 525 - Family Resiliency Credits: 3
- HDFS 602 - Research and Evaluation in Counseling and Human Development Credits: 3
- HDFS 614 - Adult Development Credits: 3
- HDFS 710 - Program Design, Evaluation, and Implementation Credits: 3
- CHRD 716 - Human Resources Management in Business and Industry Credits: 3
- HDFS 730 - Grant Writing Credits: 3
- HDFS 745 - Work and Family Credits: 3
- HDFS Electives Credits: 12
  - HDFS 798 - Thesis (Option A)
  - HDFS Coursework (Option C)

Total Credits: 36

Additional Admission Requirements
GRE: not required
TOEFL: Department Requirements of 525 paper-based, 197 computer-based, 71 Internet-based

STEP 1: Applicant Applies to the Graduate School
- Apply to the Graduate School at least two months before the FCS/ADW deadline to allow for processing
- Graduate School applications received after the FCS/ADW deadline will be denied and referred to the next semester
- The minimum GPA to apply is 2.75, however a 3.0 or higher is desired
- GRE is not required

STEP 2: Applicant Applies to the FCS or AWD Program
- Applicants to the FCS/ADW programs must submit the documents below by April 1 for fall admission or October 1 for spring admission. Late or incomplete applications will be denied.
  - Resume
  - A one page, typed goal statement explaining your professional goals and how completion of this degree will assist you in meeting those goals
  - Three letters of recommendation prepared within the past year; one letter must come from an academic professor.

STEP 3: Admissions Decision
- Complete admission files will be reviewed by faculty for an admissions decision. The Graduate School will notify the applicant via email about their admission status.

General Requirements (Master’s Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
**Human Sciences (M.S.) - Family and Community Services Specialization**

**Program Information**
The goal of the online MS specializing in Family and Community Services is to provide advanced, professional education and research expertise that focuses on improving individual, family, and community well-being. This specialization is delivered entirely online through GPIDEA and is designed to meet the educational needs of military service members and their spouses. Students who successfully complete this specialization will earn a Master of Science in Human Sciences specializing in Family and Community Services.

**Course Delivery Format**
The online program has been developed by faculty from the Great Plains Interactive Distance Education Alliance (GP-IDEA). Courses will be entirely Internet based and will be taught by faculty within the Alliance (Iowa State University, Kansas State University, Montana State University, North Dakota State University, Oklahoma State University, South Dakota State University, University of Missouri, and University of Nebraska). Courses are offered fall, spring and summer semesters.

**Available Options for Graduate Degrees**
Master of Science
- Option A
- Option C

**Core Requirements**
- HDFS 501 - Foundations and Principles of Community Service Credits: 3
- HDFS 510 - Parenting Credits: 3
- HDFS 525 - Family Resiliency Credits: 3
- HDFS 605 - Program Administration and Management Credits: 3
- HDFS 610 - Family Resource Management 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 710 - Program Design, Evaluation, and Implementation Credits: 3
- HDFS Electives Credits: 6
  - HDFS 798 - Thesis (Option A)
  - Elective Coursework (Option C)

Total Credits: 36

**Additional Academic Requirements**
GRE: not required
TOEFL: Department Requirements of 525 paper-based, 197 computer-based, 71 Internet-based

**STEP 1: Applicant Applies to the Graduate School**
- Apply to the Graduate School at least two months before the FCS/ADW deadline to allow for processing
- Graduate School applications received after the FCS/ADW deadline will be denied and referred to the next semester
- The minimum GPA to apply is 2.75, however a 3.0 or higher is desired
- GRE is not required

**STEP 2: Applicant Applies to the FCS or AWD Program**
- Applicants to the FCS/ADW programs must submit the documents below by April 1 for fall admission or October 1 for spring admission. Late or incomplete applications will be denied.
- Resume
- A one page, typed goal statement explaining your professional goals and how completion of this degree will assist you in meeting those goals
- Three letters of recommendation prepared within the past year; one letter must come from an academic professor.

**STEP 3: Admissions Decision**
- Complete admission files will be reviewed by faculty for an admissions decision. The Graduate School will notify the applicant via email about their admission status.

**General Requirements (Master's Degree)**
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
Human Sciences (M.S.) - Family and Consumer Sciences Education Specialization

Program Information
There is a strong demand for family and consumer sciences teachers nationwide. Through the online GPIDEA program, graduates will earn a Master's of Science in Human Sciences with a specialization in Family and Consumer Sciences Education. Student in the program plan curriculum for teaching, create a physical and psychological learning environment, engage students in the learning process, examine the relationship of diverse groups and the educational process, analyze the historical and philosophical underpinnings of FCS, assume professional responsibilities, and apply research to practice.

Accreditation, Licensure, Certification
The programs in Teaching, Learning, and Leadership are 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). In order to become a licensed/certified family and consumer sciences educator, students may require additional content courses, tests or other individual state requirements.

Course Delivery Format
The online program has been developed by faculty from the Great Plains Interactive Distance Education Alliance (GP-IDEA). Courses will be entirely Internet based and will be taught by faculty within the Alliance (Iowa State University, Kansas State University, Montana State University, North Dakota State University, Oklahoma State University, South Dakota State University, University of Missouri, and University of Nebraska). Courses are offered fall, spring and summer semesters.

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
- FCSE 611 - History and Philosophy of Family and Consumer Sciences Credits: 3
- FCSE 721 - Occupational Programs in Family and Consumer Sciences Credits: 3
- EDFN 730 - Current Issues in Education Credits: 3
- FCSE 761 - Advanced Methods and Assessment in Family & Consumer Sciences Education Credits: 3
- EDFN 792 - Topics Credits: 3
- Electives: 6-9
  - EDFN 700 - Exceptional Learners Credits: 3
  - EPSY 723 - Adolescent Psychology Credits: 3
  - EDFN 725 - Education in a Pluralistic Society Credits: 3
- Select one of the following: 10-15
  - A - Teacher Preparation:
    - FCSE 751 - Curriculum of Family/Consumer Sciences Education Credits: 3
    - FCSE 595 - Practicum Credits: 1-3
    - FCSE 673 - Supervised Student Teaching in Family and Consumer Sciences Education Credits: 6-9
  - B - Professional Practice:
    - FCSE 792 - Topics - FCS Methods I Credits: 3
    - FCSE 792 - Topics - Supervision of Student Teachers or Administration of SCS Education Programs Credits: 3
    - FCSE 792 - Topics - Advising FCCLA Credits: 3
    - HDFS 602 - Research and Evaluation in Counseling and Human Development Credits: 3
- Select one of the following: 0-6
  - FCSE 798 - Thesis (Option A) Credits: 6
  - FCSE 788 - Master's Research Project (Option B) Credits: 1-3
  - Electives (Option C) Credits: 0-6

Total Credits: 36-45

Additional Admission Requirements
GRE: not required
TOEFL: Department Requirements of 525 paper-based, 197 computer-based, 71 Internet-based

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work. See Master’s Degree Requirements.
Human Sciences (M.S.) - Family Financial Planning Specialization

Program Information
The online M.S. in Human Sciences – Family Financial Planning program will allow students to enhance personal finance knowledge, gain eligibility to sit for the CFP® Certification Examination, increase networking opportunities, and improve career options. Family financial planning is an emerging area with job opportunities in areas related to insurance, real estate, investments, retirement, tax and estate planning. Financial planners are increasingly in demand as Americans seek advisors to help manage their income, assets, and debts.

The curriculum consists of twelve 3-credit courses taken in any order with the Financial Planning Case Study course designed as a capstone to the program. The remaining six credit-hours are supervised experiences or projects in family financial planning.

Accreditation, Certification, and Licensure
The Family Financial Planning graduate program is registered by the CERTIFIED FINANCIAL PLANNER™ Board of Standards. CFP® and CERTIFIED FINANCIAL PLANNER™ are federally registered service marks of the CERTIFIED FINANCIAL PLANNER™ Board of Standards, Inc. They are granted by the CFP® Board to those persons who have fulfilled a comprehensive educational requirement, passed the CFP® Certification Examination, satisfied a work experience requirement and agreed to abide by the CFP® Board code of ethical conduct.

- The graduate certificate in Financial Planning does not guarantee a student will pass the CFP® exam.
- In earning the graduate certificate in Financial Planning through the Great Plains IDEA, students receive the education required to take the exam.
- After completing the necessary educational requirements, students work with the CFP Board on examination, experience and ethics requirements for CFP® certification.

Certified Financial Planner™ professionals have the satisfaction of helping people solve their financial problems and reach their financial goals. The CFP Board website at www.cfp.net has extensive CFP® certification information.

Students admitted to the Great Plains IDEA online degree program are advised to obtain the Guide to CFP® Certification. The guide includes an application for the exam, exam fee information, exam procedures and information on the required work experience.

- Certified Financial Planner Board of Standards Inc. owns the marks CFP®, CERTIFIED FINANCIAL PLANNER™, and CFP (with flame logo™), which it awards to individuals who successfully complete initial and ongoing certification requirements.
- Great Plains IDEA institutions do not certify individuals to use the CFP®, CERTIFIED FINANCIAL PLANNER™ and CFP (with flame logo™) certification marks. CFP® Certification is granted only by the Certified Financial Planner Board of Standards Inc. to those persons who, in addition to completing an educational requirement such as this CFP Board-Registered Program, have met its ethics, experience and examination requirements.

Course Delivery Format
The online program has been developed by faculty from the Great Plains Interactive Distance Education Alliance (GP-IDEA). Courses will be entirely Internet based and will be taught by faculty within the Alliance (Iowa State University, Kansas State University, Montana State University, North Dakota State University, Oklahoma State University, South Dakota State University, University of Missouri, and University of Nebraska). Courses are offered fall, spring and summer semesters.

Available Options for Graduate Degrees
Master of Science Option A
Option B
Option C

Core Requirements
- CA 612 - Financial Counseling Credits: 3
- CA 621 - Financial Theory and Research I Credits: 3
- CA 640 - Fundamentals of Family Financial Planning Credits: 3
- CA 660 - Investing for Family’s Future Credits: 3
- CA 680 - Insurance Planning for Families Credits: 3
- CA 704 - Estate Planning for Families Credits: 3
- CA 725 - Family, Employment Benefits and Retirement Planning Credits: 3
- CA 735 - Personal Income Taxation Credits: 3
- CA 755 - Financial Planning Case Study Credits: 3

Electives Credits: 9
Coursework for Option C (coursework only) requires 9 credits from the Electives courses listed below. Students choosing Option A (Thesis) or Option B (Research Project) instead of Option C, then choose any remaining credit hours from the electives list.
Select electives from the following list:
- CA 595 - Practicum Credits: 3-6
- CA 645 - Military Personal Financial Readiness Credits: 3
- CA 715 - Housing and Real Estate in FFP Credits: 3
- CA 721 - Financial Theory and Research II Credits: 3
- CA 745 - Professional Practices in Financial Planning Credits: 3
- CA 790 - Seminar Credits: 3
- STAT 541 - Statistical Methods II Credits: 3
Option A:
- CA 798 - Thesis Credits: 6
- Electives: 3
Option B:
- CA 788 - Master's Research Problems/Projects (Option B) Credits: 3
- Electives: 6
Option C:
- Electives: 9

Total Credits: 36

Additional Admission Requirements
GRE: not required
TOEFL: Department Requirements of 525 paper-based, 197 computer-based, 71 Internet-based

Students enter the Great Plains IDEA program through application and admission to the South Dakota State University Graduate School. The Graduate School requires a minimum undergraduate GPA of 3.0 for unconditional admission into any program. The program accounts for life experience as a part of conditional admission to the program. Three Letters of Recommendation from persons acquainted with the academic ability or professional competency of the applicant should be sent directly to Dr. Morrison at Kathryn.Morrison@sdstate.edu.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

**Human Sciences (M.S.) - Merchandising Specialization**

**Program Information**
The MS in Human Sciences specialization in Merchandising provides an understanding of merchandising at every level, with emphasis on current trends in the United States and the global marketplace, factors that will distinguish graduates among their peers. Students can obtain a focus on the merchandising aspect of the business. The additional expertise offered through the merchandising certificate may position individuals for career advancement or a new career in merchandising. Graduates of the program are prepared to work in product development, promotions, and retail management in this ever-expanding industry.

**Course Delivery Format**
The online program has been developed by faculty from the Great Plains Interactive Distance Education Alliance (GP-IDEA). Courses will be entirely Internet based and will be taught by faculty within the Alliance (Kansas State University, North Dakota State University, Oklahoma State University, South Dakota State University, and University of Nebraska). Courses are offered fall, spring and summer semesters.

**Available Options for Graduate Degrees**
Master of Science
- Option A
- Option B
- Option C

**Core Requirements**
- 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 610 - History 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
- 6 credits from the following options (creative component)
  - MRCH 695 - Practicum 1-6 credits and electives for a total of 6 credits
  - MRCH 788 - Master's Research Problems/Projects 1-3 credits and electives for a total of 6 credits
  - MRCH 798 - Thesis 6 credits

*The thesis option is reserved only for those students who are willing and able to travel to SDSU main campus in Brookings, SD several times during their graduate studies.*

Total Credits: 36

**Additional Admission Requirements**
GRE: not required
TOEFL: Department Requirements of 525 paper-based, 197 computer-based, 71 Internet-based
General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.

Mass Communication (M.M.C.)

Program Information
The Master of Mass Communication (M.M.C.) consists of advanced studies in professional or vocational fields. While it has theoretical underpinnings, the primary purpose is to enhance knowledge and skills for application in professional practice. Fifty percent or more of the courses must be skills-based. This degree targets mid-career professionals in journalism, advertising and public relations and builds on students' current levels of experience and skills making them more marketable in their fields. The Masters of Mass Communication prepares students for the increasingly competitive workforce and changing disciplines in mass communications.

Student Learning Outcomes
- Understand and apply the principles and laws of freedom of speech and press for the country in which the institution that invites ACEJMC is located, as well as receive instruction in and understand the range of systems of freedom of expression around the world, including the right to dissent, to monitor and criticize power, and to assemble and petition for redress of grievances;
- Demonstrate an understanding of the history and role of professionals and institutions in shaping communications;
- Demonstrate an understanding of gender, race, ethnicity, sexual orientation and, as appropriate, other forms of diversity in domestic society in relation to mass communications;
- Demonstrate an understanding of the diversity of peoples and cultures and of the significance and impact of mass communications in a global society;
- Understand concepts and apply theories in the use and presentation of images and information;
- Demonstrate an understanding of professional ethical principles and work ethically in pursuit of truth, accuracy, fairness and diversity;
- Think critically, creatively and independently;
- Conduct research and evaluate information by methods appropriate to the communications professions in which they work;
- Write correctly and clearly, in forms and styles appropriate for the communications professions, audiences and purposes they serve;
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness;
- Apply basic numerical and statistical concepts;
- Apply tools and technologies appropriate for the communications professions in which they work.

Course Delivery Format
All courses for the M.M.C. program are delivered online.

Available Options for Graduate Degrees
Master of Mass Communication
Option B
Option C

Core Requirements
- MCOM 705 - Introduction to Master of Mass Communication Credits: 3
- MCOM 710 - Cross-Platform Storytelling Credits: 3
- MCOM 730 - Media Law Case Studies Credits: 3
- MCOM 746 - Cross-Platform Campaigns Credits: 3
- MCOM 786 - Conducting Professional Research Credits: 3
- MCOM 788 - Master's Research Problems/Projects Credits: 2 (Option B)
- Electives: 15 (Option B), 21 (Option C)
  - MCOM 513 - International Media Credits: 3
  - MCOM 517 - History of Journalism Credits: 3
  - MCOM 519 - Women in Media Credits: 3
  - MCOM 574 - Media Administration and Management Credits: 3
  - MCOM 615 - Opinion Writing Credits: 3
  - MCOM 653 - Mass Communications Teaching Methods Credits: 3
  - MCOM 742 - Health Campaigns Credits: 3
  - MCOM 760 - Social Marketing for Health and Behavioral Change Credits: 3
  - MCOM 785 - Health Journalism Credits: 3
  - MCOM 794 - Internship Credits: 3

Total Credits: 32 (Option B), 36 (Option C)

Additional Admission Requirements
GRE: Not required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
Mathematics (M.S.)

Program Information
The focus of the M.S. in Mathematics Program is the development of sophisticated mathematical models and their implementation on high performance computing platforms. The curriculum features a balance of application, computation, and theory with particular emphasis in the areas of operations research, computational science, and the development of probabilistic and deterministic models. Areas of faculty and graduate student research activity include computational biology, computational finance, molecular dynamics simulation, operations research, optimization, and Ramsey theory. The program is particularly effective at preparing graduates to work in business, industry, or government as well as preparing students to continue on to the CSS Ph.D. or other Ph.D. program.

Student Support and Engagement Opportunities
The department has graduate research and teaching assistantships and fellowships are available for a number of qualified applicants.

Facilities and Services
The department offices are located in Harding Hall. The Math Help Center, located in Harding Hall 128 and in the Biostress Basement 0020, provides free walk-in tutoring for students in several undergraduate courses.

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
- During the first year, complete one of the sequences listed below and pass the corresponding comprehensive exam*:
  
  Students Beginning Fall of Odd Years - Select one sequence
  MATH 575 - Operations Research Credits: 3
  and MATH 775 - Operations Research II Credits: 3
  OR MATH 571 - Numerical Analysis I Credits: 3
  and MATH 774 - Advanced Scientific Computation Credits: 3

  Students Beginning Fall of Even Years - Select one sequence
  MATH 742 - Partial Differential Equation Credits: 3
  and MATH 732 - Ordinary Differential Equations Credits: 3
  OR MATH 571 - Numerical Analysis I Credits: 3
  and MATH 771 - Numerical Analysis II Credits: 3

- MATH 798 - Thesis (Option A) Credits: 5
- OR MATH 788 - Research Paper (Option B) Credits: 2
- OR Approved Electives (Option C)
- Additional electives as needed to complete Option requirements

Total Credits: 30 (Option A), 32 (Option B), 35 (Option C)

Additional Admission Requirements
GRE: Not required
TOEFL: For the Masters program, a department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Mathematics (M.S.) - Statistics Specialization

Program Information
The Department of Mathematics and Statistics is a large, diverse, and active organization. The department's mission 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. The department offer students the opportunity to pursue master's and doctoral level graduate studies in a collegial environment with small class sizes and high faculty-student interaction and research activity.

The focus of the M.S. in Mathematics Program is the development of sophisticated mathematical models and their implementation on high performance computing platforms. The curriculum features a balance of application, computation, and theory with particular emphasis in the areas of operations research, computational science, and the development of probabilistic and deterministic models. Areas of faculty and graduate student research activity include computational biology, computational finance, molecular dynamics simulation, operations research, optimization, and Ramsey theory. The program is particularly effective at preparing graduates to work in business, industry, or government as well as preparing students to continue on to the CSS Ph.D. or other Ph.D. program.

Student Support and Engagement Opportunities
The department has graduate research and teaching assistantships and fellowships are available for a number of qualified applicants.
Facilities and Services
The department offices are located in Harding Hall. The Math Help Center, located in Harding Hall 128 and in the Biostress Basement 0020, provides free walk-in tutoring for students in several undergraduate courses.

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
- Complete one of the core sequences listed for math degree and one of the core sequences listed for the statistics degree, and pass the two corresponding comprehensive exams*:

  Math Sequences - Fall of Odd Years
  - MATH 575 - Operations Research Credits: 3
    and MATH 775 - Operations Research II Credits: 3
  - MATH 571 - Numerical Analysis I Credits: 3
    and MATH 774 - Advanced Scientific Computation Credits: 3

  Math Sequences - Fall of Even Years
  - MATH 742 - Partial Differential Equation Credits: 3
    and MATH 732 - Ordinary Differential Equations : 3
  - MATH 571 - Numerical Analysis I Credits: 3
    and MATH 771 - Numerical Analysis II Credits: 3

  Statistics Sequences
  - Statistical Inference: STAT 784 - Statistical Inference I Credits: 3
    and STAT 785 - Statistical Inference II Credits: 3
  - Regression: STAT 786 - Regression Analysis I Credits: 3
    and STAT 787 - Regression Analysis II Credits:

  - MATH 798 - Thesis (Option A) Credits: 5
    OR MATH 788 - Research Paper (Option B) Credits: 2
    OR Approved Electives (Option C)

  Additional electives as needed to complete Option requirements

Total Credits: 30 (Option A), 32 (Option B), 35 (Option C)

Additional Admission Requirements
GRE: Not required
TOEFL: For the Masters program, a department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Mechanical Engineering (M.S.)
Program Information
The Mechanical Engineering Department offers courses for the degree Master of Science in Engineering. Also, course offerings can be used in co-major or minor programs for students of other departments. The graduate program in mechanical engineering concentrates on advanced study, including design and research, in such areas as thermofluid science, solid mechanics and dynamics, and industrial and quality control engineering. Students are encouraged to broaden their education by participating in supporting programs in established departments such as mathematics, computer science and other fields of engineering.

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
The formal course offerings for Master of Science in Engineering are divided into three groups:
1. Core courses in major field or program area
2. Courses in supporting areas
3. Thesis or design/research paper
The core courses shall be taken to provide disciplinary strength and enable the student to pursue thesis research or advanced design projects. See individual department sections for specific core course requirements.

The supporting courses are chosen from electives in the major program area and supporting subject areas such as: mathematics, physics, chemistry, biology, and computer science. These courses shall be chosen after consultation with the departmental advisory committee.

Additional Admission Requirements
GRE: Not required
TOEFL: Department requirement of 525 paper based, 197 computer-based, 71 Internet-based

General Requirements (Master’s Degree)
Graduate students should consult with their advisor before registering for graduate work. See Master's Degree Requirements.

Nursing (M.S.) - Clinical Nursing Leadership Specialization
Program Information
The Masters of Science, Nursing major program prepares professional leaders with specialized knowledge and skills to meet the nation's needs in clinical practice, nursing administration, and nursing education. The aim of the program is to prepare nurses to practice at an advanced level in nursing as a nurse educator, administrator, or clinician which includes clinical nurse leader.

Program Objectives
The graduate of the Master of Science in Nursing program will:
• Demonstrate evidence based practice and lifelong learning.
• Serve South Dakota and the region in nursing administration, nurse education, or in roles as clinical nurse leaders.
• Serve leadership roles in healthcare.
• Incorporate knowledge and theories from nursing and other supportive disciplines into advanced nursing practice.
• Display competence within the legal scope of practice for the chosen specialization.
• Evaluate, conduct, and utilize research within advanced nursing practice.
• Integrate cultural learning into nursing practice to effectively tailor health care to the diverse lifeways of clients.
• Seek to decrease health disparities among populations by addressing socioeconomic, political or cultural determinants of health.
• Use leadership, administration, and teaching strategies to improve nursing practice and health care delivery,
• Assume accountability to influence health policy, improve health care delivery, address the diversity of health care needs, and advance the nursing profession.
• Contribute to the advancement of the science of nursing serving rural and underserved populations.

Accreditation, Certification, and Licensure
Accreditation
The master's degree in nursing at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

Licensure
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

Certification
After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

<table>
<thead>
<tr>
<th>National Certification Eligibility</th>
<th>Certifying Body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Nurse Leader (CNL)*</td>
<td>Commission on Nurse Certification (CNC)</td>
</tr>
<tr>
<td>*requires completion of minimum of 400 total clinical hours (300 of which must be in practice in the CNL role during a clinical immersion experience).</td>
<td><a href="http://www.aacn.nche.edu/cnc/pdf/resources.pdf">http://www.aacn.nche.edu/cnc/pdf/resources.pdf</a></td>
</tr>
</tbody>
</table>

Upon completion of the M.S. in Nursing - Clinical Nursing Leadership Specialization - Clinical Nurse Leader Emphasis, students may be eligible for the following certifications:

Upon Completion of the M.S. in Nursing - Clinical Nursing Leadership Specialization - Nurse Administrator Emphasis, students may be eligible for the following certifications:

<table>
<thead>
<tr>
<th>National Certification Eligibility</th>
<th>Certifying Body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Executive - Board Certified (NE-BS)*</td>
<td>American Nurses Credentialing Center (ANCC)</td>
</tr>
<tr>
<td>*requires candidate to have held an administrative position at the nurse executive level, OR a faculty position teaching graduate students nursing administration, OR a nursing management or executive consultation position, for at least 24 months full time equivalent in the last 5 years.</td>
<td><a href="http://www.nursecredentialining.org/#">http://www.nursecredentialining.org/#</a></td>
</tr>
</tbody>
</table>

Nurse Executive - Advanced Board Certified (NEA-BC)*
*requires candidate to have held an administrative position at the nurse executive level, OR a faculty position teaching graduate students nursing administration, for at least 24 months full time equivalent in the last 5 years.

American Nurses Credentialing Center (ANCC)
http://www.nursecredentialining.org/#
Certified Nurse Manager and Leader (CNML)*
*requires 2 years of experience (minimum of 1,040 hours per year) in a nurse manager role.

American Organization of Nurse Executives (AONE)
http://www.aone.org

Certified in Executive Nursing Practice (CENP)*
*requires 2 years of experience in an executive nursing role.

American Organization of Nurse Executives (AONE)
http://www.aone.org

### Available Options for Graduate Degrees

**Master of Science**  
Option A  
Option B  
Option C

### Core Requirements

**Clinical Nursing Leadership Specialization: Nurse Administrator Emphasis**
Prepares graduates to assume leadership positions in health care agencies utilizing concepts and theories from nursing management and health administration. This graduate demonstrates skills in personnel management and budgetary resources.

- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues
  - Credits: 3
- NURS 626 - Research Methods for Advanced Practice Nursing
  - Credits: 3
- NURS 670 - Health Policy, Legislation, Economics and Ethics
  - Credits: 3
- NURS 675 - Cultural Competence in Health Care
  - Credits: 3
- NURS 750 - Transformational Leadership in Nursing
  - Credits: 3
- NURS 860 - Health Operations and Financial Management for Nurse Managers
  - Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan
  - Credits: 3
- NURS 774 - Nurse Administrator: Practicum
  - Credits: 5
- Electives (as approved by academic advisor) - Credits: 0-9 *
  - Option A – Thesis = 0 elective credits
  - Option B - Project = 4 elective credits
  - Option C – Coursework Only = 9 elective credits
- NURS 788 - Problems in Nursing Research (Option B): Credits 2
- OR NURS 798 - Thesis (Option A) Credits: 5

Total Credits: 31 (Option A), 32 (Option B), 35 (Option C)

**Clinical Nursing Leadership Specialization: Clinical Nurse Leader Emphasis**
Prepares graduates for coordination of care and clinical leadership in all health care settings. This graduate demonstrates skills in managing microsystems of care and is prepared to implement outcomes-based practice and quality improvement strategies.

- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues
  - Credits: 3
- NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing
  - Credits: 4
- NURS 626 - Research Methods for Advanced Practice Nursing
  - Credits: 3
- NURS 631 - Advanced Assessment Across the Lifespan
  - Credits: 3
- NURS 645 - CNL I: Improvement Science: A Microsystem Approach
  - Credits: 5
- NURS 646 - CNL II: Clinical Immersion and Capstone Project
  - Credits: 6
- NURS 670 - Health Policy, Legislation, Economics and Ethics
  - Credits: 3
- NURS 675 - Cultural Competence in Health Care
  - Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan
  - Credits: 3
- NURS 860 - Health Operations and Financial Management for Nurse Managers
  - Credits: 3
- PHA 645 - Pharmacotherapeutics: Application to Advanced Practice
  - Credits: 2

Total Credits: 38 (Option C)

For additional information, refer to the Graduate Nursing Department webpage.

### Additional Admissions Requirements for Master of Science in Nursing

**GRE:** Not required
**TOEFL:** Department requirement of 600 paper-based, 250 computer-based, 100 Internet-based, OR IELTS: 7.0 total band

In addition to meeting basic requirements for admission to the Graduate School, applicants for graduate study in nursing must have:

1. Bachelor's degree in nursing from an NLNAC or CCNE accredited program with an upper division major in nursing with a "B" average (3.0 or higher on a 4.0 point grading system).
2. Current licensure as an RN or eligibility for licensure.
3. Professional nursing liability insurance.
4. 1500 hours of documented nursing practice experience prior to first clinical lab/practicum (N631).
5. Completed approved statistical methods course with a grade of 'C' or higher within the past 5 years.
6. Completed application to the Graduate Nursing program. These documents can be obtained at Graduate Nursing Program.
7. FBI background check. Drug screening.

Total enrollment in the Master of Science in Nursing program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the master's program. Applicants should check with the Graduate Nursing office for application deadlines.

**General Requirements**
Graduate students must consult with their advisor prior to registration for graduate work. Registration is completed by the Graduate Nursing Department. See Master’s Degree Requirements.

**Nursing (M.S.) - Family Nurse Practitioner Specialization**

**Program Information**
Graduates of this program are prepared to deliver evidence-based direct patient care at an advanced practice level to individuals across the lifespan in primary care settings.

**Program Objectives**
The graduate of the Master of Science in Nursing program will:
- Demonstrate evidence-based practice and lifelong learning.
- Serve South Dakota and the region in nursing administration, nurse education, or in roles as clinical nurse leaders.
- Serve leadership roles in healthcare.
- Incorporate knowledge and theories from nursing and other supportive disciplines into advanced nursing practice.
- Display competence within the legal scope of practice for the chosen specialization.
- Evaluate, conduct, and utilize research within advanced nursing practice.
- Integrate cultural learning into nursing practice to effectively tailor health care to the diverse lifeways of clients.
- Seek to decrease health disparities among populations by addressing socioeconomic, political or cultural determinants of health.
- Use leadership, administration, and teaching strategies to improve nursing practice and health care delivery.
- Assume accountability to influence health policy, improve health care delivery, address the diversity of health care needs, and advance the nursing profession.
- Contribute to the advancement of the science of nursing serving rural and underserved populations.

**Accreditation, Certification, and Licensure**

**Accreditation**
The master's degree in nursing at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

**Licensure**
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

**Certification**
After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

**Available Options for Graduate Degrees**
Master of Science
- Option A
- Option B
- Option C

**Core Requirements**
- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues Credits: 3
- NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing Credits: 4
- NURS 626 - Research Methods for Advanced Practice Nursing Credits: 3
- NURS 631 - Advanced Assessment Across the Lifespan/NURS 631L - Advanced Assessment - Lifespan Clinical Laboratory Credits: 4
- NURS 670 - Health Policy, Legislation, Economics and Ethics Credits: 3
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan Credits: 3
- NURS 765 - Family Nurse Practitioner Practicum I Credits: 6
- NURS 771 - Family Nurse Practitioner Practicum II Credits: 7
- NURS 776 - Family Nurse Practitioner III - Small Group Instruction Credits: 3
- NURS 777 - Family Nurse Practitioner: Practicum III Credits: 9
- Select One of the Following Options:
  - Option A: NURS 798 - Thesis Credits: 5
  - Option B: NURS 788 - Problems in Nursing Research Credits: 2
  - Option C: Coursework Only
- PHA 645 - Pharmacotherapeutics: Application to Advanced Practice Credits: 4
Additional Admissions Requirements for Master of Science in Nursing

GRE: Not required
TOEFL: Department requirement of 600 paper-based, 250 computer-based, 100 Internet-based, OR
IELTS: 7.0 total band

In addition to meeting basic requirements for admission to the Graduate School, applicants for graduate study in nursing must have:

1. Bachelor's degree in nursing from an NLNAC or CCNE accredited program with an upper division major in nursing with a "B" average (3.0 or higher on a 4.0 point grading system).
2. Current licensure as an RN or eligibility for licensure.
3. Professional nursing liability insurance.
4. 1500 hours of documented nursing practice experience prior to first clinical lab/practicum (N631).
5. Completed approved statistical methods course with a grade of 'C' or higher within the past 5 years.
6. Completed application to the Graduate Nursing program. These documents can be obtained at Graduate Nursing Program.
7. FBI background check. Drug screening.

Total enrollment in the Master of Science in Nursing program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the master's program. Applicants should check with the Graduate Nursing office for application deadlines.

General Requirements
Graduate students must consult with their advisor prior to registration for graduate work.
Registration is completed by the Graduate Nursing Department.
See Master’s Degree Requirements.

Nursing (M.S.) - Nurse Educator Specialization

Program Information
The program prepared graduates to utilize theories of teaching and learning in a variety of settings with emphasis on nursing education. The graduate demonstrates the ability to plan, implement and evaluate nursing education offerings.

Program Objectives
The graduate of the Master of Science in Nursing program will:
- Demonstrate evidence based practice and lifelong learning.
- Serve South Dakota and the region in nursing administration, nurse education, or in roles as clinical nurse leaders.
- Serve leadership roles in healthcare.
- Incorporate knowledge and theories from nursing and other supportive disciplines into advanced nursing practice.
- Display competence within the legal scope of practice for the chosen specialization.
- Evaluate, conduct, and utilize research within advanced nursing practice.
- Integrate cultural learning into nursing practice to effectively tailor health care to the diverse lifeways of clients.
- Seek to decrease health disparities among populations by addressing socioeconomic, political or cultural determinants of health.
- Use leadership, administration, and teaching strategies to improve nursing practice and health care delivery.
- Assume accountability to influence health policy, improve health care delivery, address the diversity of health care needs, and advance the nursing profession.
- Contribute to the advancement of the science of nursing serving rural and underserved populations.

Accreditation, Certification, and Licensure

Accreditation
The master's degree in nursing at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

Licensure
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

Certification
After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

Graduate Students may be eligible for certification after completing their program of study.

Upon completion of the M.S. in Nursing - Nurse Educator Specialization, students may be eligible for the following certifications:

<table>
<thead>
<tr>
<th>National Certification Eligibility</th>
<th>Certifying Body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified Nurse Educator*</td>
<td>National League for Nursing (NLN)</td>
</tr>
<tr>
<td>*Individuals must meet eligibility requirements before they can take the CNE examination. An active <a href="http://www.nln.org/index.cfm">http://www.nln.org/index.cfm</a></td>
<td></td>
</tr>
</tbody>
</table>
registered nurse license is necessary. Students must also have a master's or doctoral degree in nursing and full-time experience in a nurse faculty role within the past five years. If the college degree emphasized on nursing instruction, individuals will need two years of experience in a nurse faculty role. Four years of experience is required if the graduate nursing degree did not emphasize on education.

Available Options for Graduate Degrees

Master of Science

Option A

Option B

Option C

Core Requirements

- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues Credits: 3
- NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing Credits: 4
- NURS 626 - Research Methods for Advanced Practice Nursing Credits: 3
- NURS 631 - Advanced Assessment Across the Lifespan Credits: 4
- NURS 670 - Health Policy, Legislation, Economics and Ethics Credits: 3
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 710 - Curriculum Development in Nursing Credits: 3
- NURS 720 - Technology-Based Instruction for Nurse Educators Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan Credits: 3
- NURS 778 - Nurse Educator Practicum Credits: 6
- NURS 795 - Practicum in Advanced Health Concepts for Nurse Educators Credits: 3
- NURS 788 - Problems in Nursing Research Credits: 2
  OR NURS 798 - Thesis Credits: 5

Total Credits: 44 (Option A), 41 (Option B), 39 (Option C)

For additional information, refer to the Graduate Nursing Department webpage.

Additional Admissions Requirements for Master of Science in Nursing

GRE: Not required
TOEFL: Department requirement of 600 paper-based, 250 computer-based, 100 Internet-based, OR
IELTS: 7.0 total band

In addition to meeting basic requirements for admission to the Graduate School, applicants for graduate study in nursing must have:

1. Bachelor's degree in nursing from an NLNAC or CCNE accredited program with an upper division major in nursing with a "B" average (3.0 or higher on a 4.0 point grading system).
2. Current licensure as an RN or eligibility for licensure.
3. Professional nursing liability insurance.
4. 1500 hours of documented nursing practice experience prior to first clinical lab/practicum (N631).
5. Completed approved statistical methods course with a grade of 'C' or higher within the past 5 years.
6. Completed application to the Graduate Nursing program. These documents can be obtained at Graduate Nursing Program.
7. FBI background check. Drug screening.

Total enrollment in the Master of Science in Nursing program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the master's program. Applicants should check with the Graduate Nursing office for application deadlines.

General Requirements

Graduate students must consult with their advisor prior to registration for graduate work.
Registration is completed by the Graduate Nursing Department.
See Master’s Degree Requirements.

Nutrition, Exercise, and Food Sciences (M.S.) - Exercise Science Specialization

Program Information

The M.S. in Nutrition, Exercise and Food Sciences provides an opportunity to specialize in Nutritional Sciences, Exercise Science or Food Science. Students are prepared for careers in clinical, industry, or research fields. A partial list includes clinical dietitians, public health nutritionists, research dietitians, clinical exercise physiology, strength and conditioning, research assistants or coordinators, instructors, or public health officials. Careers in food science include food product development, packaging development, food production manager, and quality control, among others.

Course Load Information

Students enrolled in six or more state-supported credits within a given semester will be charged the current special discipline fee.
Student Support and Engagement Opportunities
The Department of Health and Nutritional Sciences aims to provide premier academic programs and high-quality services to students. A limited number of research and teaching assistantships and scholarships may be available to qualified graduate students.

Available Options for Graduate Degrees
Master of Science
  Option A
  Option B

Core Requirements
Nutrition, Exercise and Food Sciences Core:
  • HNS 790 - Seminar Credits: 1
  • HNS 788 - Individual Research and Study Credits: 1-7
  • HNS 798 - Thesis Credits: 1-7
  • Advanced Research Methods Course
  • Advanced Statistics Course

Exercise Science Specialization Requirements:
  • PE 550 - Clinical Exercise Physiology Credits: 3
  • PE 750 - Advanced Exercise Physiology Credits: 3
  • PE 751 - Laboratory Techniques in Exercise Physiology and Lab Credits: 2
  • PE 755 - Applied Exercise Physiology Credits: 3
  • Elective Credits: 6-14

Total Credits: 30 (Option A), 36 (Option B)

Additional Admissions Requirements
GRE: Required
TOEFL: required score of 550 paper-based, 213 computer-based, 79-80 Internet-based
IELTS: 6.0

Letter of application stating to include the following: primary area of interest (nutrition, food science, etc); desired research focus; long-term goals outlining career goals; interest in assistantship (teaching or research); reason(s) for attending graduate school; current professional certifications and credentials; an interview (in person or via phone) is highly encouraged but not required.

Master's Nutritional Sciences Admission Requirements:
Entering students for the Master's degree will be required to have a Bachelor's degree in dietetics, exercise science, nutrition, biology, chemistry, epidemiology, or other related field from an accredited institution. Students with other educational backgrounds may be admitted conditionally. They will be required to complete the necessary coursework to eliminate deficiencies in their background during their first semester in the program.

Prerequisites for the Master's degree include STAT 281 or equivalent, NFS 315, CHEM 106/108 or CHEM 112/114 or equivalent, BIO 221, BIOL 325, and PE 350 or equivalent for students in the Exercise Science Specialization.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.

Nutrition, Exercise, and Food Sciences (M.S.) - Food Science Specialization

Program Information
The M.S. in Nutrition, Exercise and Food Sciences provides an opportunity to specialize in Nutritional Sciences, Exercise Science or Food Science. Students are prepared for careers in clinical, industry, or research fields. A partial list includes clinical dietitians, public health nutritionists, research dietitians, clinical exercise physiology, strength and conditioning, research assistants or coordinators, instructors, or public health officials. Careers in food science include food product development, packaging development, food production manager, and quality control, among others.

Courseload Information
Students enrolled in six or more state-supported credits within a given semester will be charged the current special discipline fee.

Student Support and Engagement Opportunities
The Department of Health and Nutritional Sciences aims to provide premier academic programs and high-quality services to students. A limited number of research and teaching assistantships and scholarships may be available to qualified graduate students.

Available Options for Graduate Degrees
Master of Science
  Option A
  Option B
Core Requirements
Nutrition, Exercise, and Food Sciences Core Requirements:
- HNS 790 - Seminar Credits: 1
- HNS 788 - Individual Research and Study Credits: 1-7
- HNS 798 - Thesis Credits: 1-7
- Advanced Research Methods Course
- Advanced Statistics Course

Food Science Specialization Requirements:
- NFS 550 - Food Analysis and Lab Credits: 4
- NFS 551 - New Food Product Development and Lab Credits: 4
- NFS 634 - Techniques of Food and Nutrition Research and Lab Credits: 3
- Electives 5-13

Total Credits: 30 (Option A), 36 (Option B)

Additional Admission Requirements
GRE: Required
TOEFL: required score of 550 paper-based, 213 computer-based, 79-80 Internet-based
IELTS: 6.0

Letter of application stating to include the following: primary area of interest (nutrition, food science, etc); desired research focus; long-term goals outlining career goals; interest in assistantship (teaching or research); reason(s) for attending graduate school; current professional certifications and credentials; an interview (in person or via phone) is highly encouraged but not required.

Master's Nutritional Sciences Admission Requirements:
Entering students for the Master's degree will be required to have a Bachelor's degree in dietetics, exercise science, nutrition, biology, chemistry, epidemiology, or other related field from an accredited institution. Students with other educational backgrounds may be admitted conditionally. They will be required to complete the necessary coursework to eliminate deficiencies in their background during their first semester in the program.
Prerequisites for the Master's degree include STAT 281 or equivalent, NFS 315, CHEM 106/108 or CHEM 112/114 or equivalent, BIO 221, BIOL 325, and PE 350 or equivalent for students in the Exercise Science Specialization.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.

Nutrition, Exercise, and Food Sciences (M.S.) - Nutritional Science Specialization
Program Information
The M.S. in Nutrition, Exercise and Food Sciences provides an opportunity to specialize in Nutritional Sciences, Exercise Science or Food Science. Students are prepared for careers in clinical, industry, or research fields. A partial list includes clinical dietitians, public health nutritionists, research dietitians, clinical exercise physiology, strength and conditioning, research assistants or coordinators, instructors, or public health officials. Careers in food science include food product development, packaging development, food production manager, and quality control, among others.

Courseload Information
Students enrolled in six or more state-supported credits within a given semester will be charged the current special discipline fee.

Student Support and Engagement Opportunities
The Department of Health and Nutritional Sciences aims to provide premier academic programs and high-quality services to students. A limited number of research and teaching assistantships and scholarships may be available to qualified graduate students.

Available Options for Graduate Degrees
Master of Science Options A
- Options B

Core Requirements
Nutrition, Exercise, and Food Sciences Core Requirements:
- HNS 790 - Seminar Credits: 1
- HNS 788 - Individual Research and Study Credits: 1-7
- HNS 798 - Thesis Credits: 1-7
- Advanced Research Methods Course
- Advanced Statistics Course

Nutritional Science Specialization Requirements:
- NFS 522 - Advanced Human Nutrition Credits: 4
- NFS 760 - Vitamins and Minerals in Human Nutrition Credits: 3
- NFS 761 - Nutrition and Aging Credits: 3
• Electives: 7-15

Total Credits: 30 (Option A), 36 (Option B)

Additional Admissions Requirements
GRE: Required
TOEFL: required score of 550 paper-based, 213 computer-based, 79-80 Internet-based
IELTS: 6.0

Letter of application stating to include the following: primary area of interest (nutrition, food science, etc); desired research focus; long-term goals outlining career goals; interest in assistantship (teaching or research); reason(s) for attending graduate school; current professional certifications and credentials; an interview (in person or via phone) is highly encouraged but not required.

Master's Nutritional Sciences Admission Requirements:
Entering students for the Master's degree will be required to have a Bachelor's degree in dietetics, exercise science, nutrition, biology, chemistry, epidemiology, or other related field from an accredited institution. Students with other educational backgrounds may be admitted conditionally. They will be required to complete the necessary coursework to eliminate deficiencies in their background during their first semester in the program.

Pre-requisites for the Master's degree include STAT 281 or equivalent, NFS 315, CHEM 106/108 or CHEM 112/114 or equivalent, BIO 221, BIOL 325, and PE 350 or equivalent for students in the Exercise Science Specialization.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master's Degree Requirements.

Operations Management (M.S.)
Program Information
The Master of Science degree in Operations Management (MSOM), offered through the Jerome J. Lohr College of Engineering, is a program for professionals interested in expanding their ability to manage technical functions in an organization as the next logical step in their career path.

Students may elect to pursue the traditional thesis route under Option A: this is valuable for individuals who anticipate future graduate work toward achieving the terminal degree in a related field. Most students select the research/design paper route under Option B: this requirement generally takes the form of a project in collaboration with local or regional industry to solve a problem or to improve a system or process. A third option, Option C, is a non-thesis program that provides more coursework in lieu of the research component. Option C requires approval of the faculty advisor.

Regardless of the option selected, the student works with his/her Major Advisor to develop the program of study plan, make consistent progress toward completion of the degree, and to show proficiency in integrating and applying management concepts through the Final Oral Exam.

Course Delivery
Program coursework is delivered on campus, with limited coursework offered online.

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
• OM/GE 569 - Project Management Credits: 2-3*
• OM 660 - Operations Management Credits: 3*
• OM 670 - Research Methods in Management Credits: 3
• OM 690 - Seminar Credits: 1-3*

*OM 569, OM 660, and OM 670 are part of a professional development certificate

Select one (1) course from each topic area:
• Resources
  • CHRD 716 - Human Resources Management in Business and Industry Credits: 3
  • CSC 740 - Management Information Systems Credits: 3
  • ECON 610 - Financial Management Credits: 3
  • GE 603 - Designing the Work Place for Production Credits: 3
  • OR approved elective

• Operations
  • GE 650 - Manufacturing Systems Management Credits: 3
  • ME 761 - Operations Research Credits: 3
  • ME 760 - Quality Control Credits: 3
  • OR approved elective
• **Analysis**
  - OM 767 - Decision Theory Credits: 3
  - STAT 541 - Statistical Methods II Credits: 3
  - STAT 582 - Statistics for Physical Science Credits: 3
  - OR approved elective

• OM/GE 798 - Thesis (Option A) Credits: 5-7
  OR OM/GE 788 - Master’s Research Problems/Project (Option B) Credits: 2-3

• Electives:
  - Option A: 6-7
  - Option B: 13-14
  - Option C: 18-19

Total Credits: 30 (Option A), 32 (Option B), 36 (Option C)

**Additional Admissions Requirements**
GRE: Not required (recommended)
TOEFL: Operations Management requirement of 575 minimum paper-based, 233 computer-based, 90-91 Internet-based

Application must include a written statement of how the MSOM program is aligned with your professional development plans (1000 word limit).

Refer to the Construction and Operations Management Department Graduate Program page information for specific details.

**General Requirements (Master's Degree)**
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

---

**Plant Science (M.S.)**

**Program Information**
The Plant Science Department is an integrated department that includes programs in crop production, plant breeding, entomology, plant pathology, soils, GIS, water management, weed science, and biotechnology. The primary goals of the department are to conduct research in the above areas, to transmit the results to the public, and to help prepare students for quality lives which includes preparation for an occupation in one or more of the above-mentioned disciplines. Graduate training includes classroom instruction, seminars designed to hone oral and written skills, and meaningful experience in laboratory and field research techniques. Departmental diversity encourages collaborations among disciplines and research programs that inform graduate training.

**Course Delivery**
The program coursework is available on campus, in classroom and laboratory settings, as well as field-based settings.

**Facilities and Services**
The department is housed in six buildings across campus. These buildings provide research and teaching laboratories, greenhouses, seed house facilities and access to the functional genomics core facility. The on-campus facilities also include the SDSU Seed Testing Laboratory, SDSU Plant Diagnostics Clinic, Seed Certification, and Foundation Seed Stocks Division, which operates as services for the public. In addition, the department conduct research at three research farms near campus and four research stations across the state. The Field Specialists are housed in six regional extension offices across the state. The latest addition is the new McCrory Gardens Education and Outreach Center.

**Student Engagement Opportunities**
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.

**Available Options for Graduate Degrees**
- Master of Science
  - Option A
  - Option B

**Core Requirements**
MS students required to have 2 credits of Graduate Seminar, one oral and one in poster format. All students are required to have teaching experience.
- Enrollment in PS 781 - Plant Science Graduate Seminar (Two Semesters)
- Enrollment in PS 792 - Topics Teaching Experience (One Semester)

**Additional Admission Requirements**
GRE: recommended, but not required
TOEFL: minimum requirement of 560 paper-based, 220 computer-based, 83 Internet-based

Students must be accepted by an advisor before admission is granted.
General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Public Health (M.P.H.)
Program Information
The Master of Public Health (M.P.H.) degree program is a collaborative degree offering of South Dakota State University and the University of South Dakota. The MPH degree is the most widely recognized professional credential for leadership and practice in public health. As outlined by the Council on Education for Public Health, which accredits M.P.H. programs, the M.P.H. curriculum covers the five core areas of public health education:
- Biostatistics
- Epidemiology
- Health Services Administration
- Social and Behavioral Sciences
- Environmental Health

Course Delivery Format
Coursework is provided through distance delivery (online, DDN, etc.) using lecture formats and asynchronous presentations.

Student Engagement and Support Opportunities
The program offers student engagement through research and practice opportunities. Ongoing partnerships exist with entities such as the South Dakota Area Health Education Center (AHEC), Indian Health Services, and the South Dakota Department of Health.

Facilities and Services
The Master of Public Health (M.P.H.) degree program is an interdisciplinary graduate program of the Graduate School, involving departments and colleges across the university.

Available Options for Graduate Degrees
Master of Public Health 42 Credits

Core Requirements
(instruction of some courses shared between USD and SDSU campuses)
Required Courses: 36
- BIOL 720 - Biostatistics Credits: 3 (USD)
- HSAD 770 - Advanced Health Care Management Credits: 3 (USD)
- HSC 733 - Environmental Health Credits: 3
- HSC 760 - Program Evaluation Credits: 3
- OCTH 733 - Promotion of Health and Prevention of Disability Credits: 3 (USD)
- PUBH 710 - Epidemiology Credits: 3 (USD)
- PUBH 720 - Public Health Practice (COM) Credits: 3
- PUBH 730 - Public Health Project (COM) Credits: 6
- PUBH 740 - Rural Health Policies and Education Credits: 3 (USD)
- PUBH 750 - Social and Behavioral Sciences in Public Health Credits: 3 (USD)
- SPCM 540 - Health Communication Credits: 3 (USD)

Electives: 6
Select from the following choices:
- BIOL 567 - Parasitology Credits: 3
- BIOS 663 - Advanced Concepts in Infectious Disease Credits: 6
- HSC 533 - Occupational Health Credits: 3
- HSC 785 - Advanced Epidemiology Credits: 3
- NFS 660 - Maternal and Child Nutrition Credits: 3
- NFS 761 - Nutrition and Aging Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan Credits: 3
- PHA 741 - Public Health and Wellness Credits: 2
- PHA 752 - Drugs of Abuse and Addiction Credits: 2
- PHA 753 - Women and Children's Health Credits: 2

Electives offered at USD:
- ADS 754 - Public Policy and Addiction Credits: 3
- CPHID 601 - Introduction to Bioinformatics Credits: 3
- CPHID 610 - Experimental Design and Analysis Credits: 3
- EDER 860 - Advanced Statistics I Credits: 3
- EDER 861 - Advanced Statistics II Credits: 3
- HSAD 710 - Advanced Strategic Management of Health Care Orgs Credits: 3
• HSAD 740 - Advanced Health Care Systems Credits: 3
• HSC 575 - Process and Outcomes Evaluation Credits: 3
• PSYC 514 - Drugs and Behavior Credits: 3
• PSYC 778 - Survey Research Methods Credits: 3
• PUBH 7XX - Public Health and Native American Communities Credits: 3
• SOC 510 - Methods of Social Research Credits: 3
• SOCW 640 - Diversity and Social Justice Credits: 3

Sociology (M.S.)
Program Information
Masters students receive advanced training in theory, methods, and the practical application of sociological knowledge. At South Dakota State University, master's students may choose from two academic tracks: thesis, and non-thesis options. Students traveling down the thesis and non-thesis tracks take advanced courses in sociological theory and methods; only the details vary. Students opting for the applied option specialize in community development. The thesis and non-thesis options are detailed in A Guidebook to the Thesis and Non-Thesis Masters Programs in Sociology. Information on graduate assistantships is also available.

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
• SOC 790 - Seminar Credits: 1
• SOC 701 - The Research Process Credits: 3
• SOC 702 - Sociological Inquiry Credits: 3
• SOC 709 - Evaluation Research Credits: 3
• SOC Research and Theory Elective Credits: 6-12
  • Option A Credits: 6
  • Option B Credits: 6
  • Option C Credits: 12
• SOC Elective Credits: 9-13
  • Option A Credits: 9
  • Option B Credits: 13
  • Option C Credits: 13
• SOC 798 - Thesis (Option A) Credits: 5
• SOC 788 - Master's Research Problems/Projects (Option B) Credits: 3
Total Credits: 30 (Option A), 32 (Option B), 35 (Option C)

Additional Admission Requirements
GRE: Required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

Each applicant should have two signed letters of recommendation from individuals familiar with the student's academic record as part of the graduate school application process. In addition, we highly recommend that interested applicants submit a writing sample (past term paper for example) and a personal statement. The personal statement should outline the applicant's academic goals and describe how those goals connect with SDSU faculty expertise and interests.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Sociology (M.S.) - Community Development Specialization
Program Information
The Community Development specialization provides students the opportunity to study with leading educators and researchers from several different universities representing a diversity of fields including Community and Regional Planning, Architecture, Sociology, Native American Studies, Economics and Natural Resources. This program is designed for people doing community development work in non-profit organizations, colleges, communities, community organizations and governments. The program welcomes those working in all areas to help communities and regions build their capacity for an inclusive, sustainable future; those who volunteer their time and resources to support community; and most of all those with a passion for working toward a brighter future and a willingness to share their experience and wisdom with others via the Internet community. A student guide to the program is located at: www.sdstate.edu/cee/degrees/upload/GPIDEA-Community-Development-Student-Guide.pdf

Available Options for Graduate Degrees
Master of Science
Option A
Option B
Option C

Core Requirements
Required:
- 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 and Strategies of Community Change Credits: 3
- Elective Credits: 3-6 credits of electives

Select from the Following Tracks and Courses
Option A and B Credits: 9-12
Option C Credits: 18-24

Working with Native Communities
- CD 613 - Introduction to Native Community Development Credits: 3
- CD 624 - Building Native Community in Economic Capacity Credits: 3
- CD 634 - Native American Natural Resource Management Credits: 3
- CD 617 - Tribal Colleges in Economic Development Credits: 1

Building Economic Capacity
- CD 626 - Economic Development Strategy Credits: 3
- CD 623 - Ecological Economics Credits: 3
- CD 631 - Evaluation of Organizations/Programs Credits: 3

Natural Resource Management
- CD 623 - Ecological Economics Credits: 3
- CD 631 - Evaluation of Organizations/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/Politics Coastal Areas Credits: 3

Non-Profit Management
- CD 631 - Evaluation of Organizations/Programs Credits: 3
- CD 641 - Leadership for Change Credits: 3
- CD 642 - Grant Writing Credits: 3
- CD 643 - Nonprofit Management Credits: 3

Electives:
Options A and B Credits: 3-6
Option C Credits: 0-6
- CD 637 - Immigration and Communities Credits: 3
- CD 612 - Housing and Development Credits: 3
- CD 792 - Topics Credits: 3

Research
- Option A: SOC 798 - Thesis Credits: 5
- Option B: SOC 791 - Independent Study Credits: 2
  and SOC 794 - Internship and Written Report Credits: 3

Total Credits: 36 (Options A & B), 40 (Option C)

Additional Admission Requirements
See Distance Education for further information.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work. See Master’s Degree Requirements.
Sport and Recreation Studies (M.S.)

Program Information
The Sport and Recreation Studies program is designed to prepare students for careers in sport and recreation administration and/or to improve their knowledge and expertise as coaches and teachers in leadership positions. The goals of the program are to provide students with knowledge and experiences which improve the depth and breadth of professional competency, enhance written and oral communication, promote an appreciation for the ways research can inform practice and/or prepare them for advanced study at the doctorate level.

Student Support and Engagement Opportunities
The Department of Health and Nutritional Sciences aims to provide premier academic programs and high-quality services to students. A limited number of research and teaching assistantships and scholarships may be available to qualified graduate students.

Available Options for Graduate Degrees
Master of Science
- Option A
- Option B
- Option C

Core Requirements
- EDFN 727 - Group Processes Credits: 3
- HNS 783 - Research Methods in Health and Nutritional Sciences Credits: 3
- RECR 515 - Recreation and Sport Facility Management Credits: 3
- OR PE 705 - Sports Medicine Credits: 3
- PE 732 - Analyses and Strategies of Teaching and Supervision of PE and Sports Credits: 3
- PE 742 - Psychological Aspects of Sport and Exercise Credits: 3
- PE 770 - Advanced Administration of Interschool Athletics Credits: 2
- PE 771 - Current Trends in HPER and Athletics Credits: 3
- PE 772 - Financial Aspects of Sport Management Credits: 3
- HNS 798 - Thesis Credits: 5 (Option A)
- OR HNS 788 - Individual Research and Study Credits: 3 (Option B)
- OR Approved Electives (Option C)
- Additional electives taken as needed to complete program option. Credits 0-8

Total Credits: 30 (Option A), 32 (Option B), 35 (Option C)

Additional Admission Requirements
- GRE: Not required
- TOEFL: required score of 550 paper-based, 213 computer-based, 79-80 Internet-based
- IELTS: 6.0

General Requirements (Master’s Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Statistics (M.S.)

Program Information
The focus of the M.S. in Statistics Program is the development of sophisticated statistical models and their implementation on high performance computing platforms. The curriculum features a balance of application, computation, and theory with particular emphasis in the areas of biostatistics/informatics and analytics. Areas of faculty and graduate student research activity include bioinformatics, biostatistics, business and financial analytics, forensic statistics, and general statistics. The program is particularly effective at preparing graduates to work in business, industry, or government as well as preparing students to continue on to the CSS Ph.D. or other Ph.D. program.

Student Support and Engagement Opportunities
The department has graduate research and teaching assistantships and fellowships are available for a number of qualified applicants.

Facilities and Services
The department offices are located in Harding Hall. The Math Help Center, located in Harding Hall 128 and in the Biostress Basement 0020, provides free walk-in tutoring for students in several undergraduate courses.

Available Options for Graduate Degrees
Master of Science
- Option A
- Option B
- Option C

Core Requirements
Statistics
Take the two following Core Statistics sequences and pass the corresponding comprehensive exams*:
- Statistical Inference: STAT 784 - Statistical Inference I Credits: 3
- and STAT 785 - Statistical Inference II Credits: 3
- Regression: STAT 786 - Regression Analysis I Credits: 3
- and STAT 787 - Regression Analysis II Credits:
• STAT 798 - Thesis (Option A) Credits: 5
  or STAT 788 - Research Paper (Option B) Credits: 2
  or Approved Electives (Option C)
• Additional electives as needed to complete Option requirements

Total Credits: 30 (Option A), 32 (Option B), 35 (Option C)

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.

Wildlife and Fisheries Sciences (M.S.)

Program Information
SDSU has an extensive graduate program in wildlife and fisheries sciences. The Department of Natural Resource Management offers graduate programs in both Biological Science and Wildlife and Fisheries Sciences. Both degree programs award M.S. and Ph.D. degrees.

Wildlife and Fisheries Sciences
The M.S. degree program in Wildlife and Fisheries Sciences 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. Placement rates for M.S. graduates into positions as fisheries biologists, wildlife biologists, and other natural resource positions with state and federal agencies is extremely high.

Biological Sciences
Students interested in careers in ecology, environmental science, and range science often utilize the Biological Sciences M.S. degree programs.

Student Learning Outcomes
1. Be knowledgeable regarding biological systems at a level appropriate to a M.S. degree holder.
2. Be able to effectively express themselves orally and in written form.
3. Understand the scientific method of solving problems.
4. Be computer and statistically capable.
5. Be specialized in some area of wildlife or fisheries, but still be broadly based in knowledge.
6. Be able to conduct scholarly research.
7. Understand the relationships between biological information and socioeconomic factors.
8. Demonstrate professional development, especially in regard to the need for continued learning after their degree program.
9. Develop a concern and feeling for the natural resources of the world.

Certification
Certification is available through the American Fisheries Society and The Wildlife Society.

Course Delivery Format
The Wildlife and Fisheries Sciences graduate program is primarily an on-campus program. However, field research may require extended time periods away from campus.

Facilities and Services
The department is housed within the Northern Plains Biostress Laboratory at SDSU. The Department houses the Oak Lake Biological Field Station and also hosts the South Dakota Cooperative Fish and Wildlife Research Unit, the National Wetlands Inventory, and the South Dakota GAP Analysis Project.

Available Options for Graduate Degrees
Master of Science Option A

Core Requirements
Students are expected to take departmental coursework as well as courses in statistical methods and graduate seminars.

Additional Admission Requirements
GRE: Required
TOEFL: Department Requirement of 525 paper-based, 197 computer-based, 71 Internet-based

Admission to all degree programs requires that a faculty member from the department agrees to serve as the major advisor.

General Requirements (Master's Degree)
Graduate students should consult with their advisor before registering for graduate work.
See Master’s Degree Requirements.
### Agricultural, Biosystems and Mechanical Engineering (Ph.D.)

**Program Information**

The Ph.D. in Agricultural, Biosystems and Mechanical Engineering shares a common core between the department of Agricultural and Biosystems Engineering and department of Mechanical Engineering. All students will be required to complete 14 credits of core course work shown below. Core courses will provide a broad foundation covering basic graduate concepts in A.B.M.E., compliance and research ethics. Several core courses are unique in the nation and make this program novel and highly integrated. Elective coursework will provide students with the opportunity for greater depth in a topical area and will usually be directly related to their dissertation research topic. Students entering with a Bachelor's degree must complete 90 credits (30 coursework and 60 dissertation) and students entering with a master's degree must complete 60 credits (20 coursework and 40 dissertation).

Students who undertake this graduate degree normally have as their goal a better understanding of the current theories, principles, issues, and problems in agricultural, biological and mechanical systems. Graduate studies improve the student's ability to think critically and creatively, and to synthesize, analyze, and integrate ideas for decision-making and problem solving. This program offers students an opportunity to undertake research and advanced study in specialization areas such as:

- biorenewable energy and bioresource conversion technologies,
- engineering of advanced precision agriculture systems used in production agriculture,
- natural resources engineering for utilization and conservation of soil and water resources, and
- advanced manufacturing and quality control technologies focused on composition, properties, and integrity of materials.

**Course Delivery Format**

The program engages students in lecture, laboratory, and in hands-on, field-based learning experiences.

**Student Engagement and Support Opportunities**

Financial assistance in the form of research assistantships and project assistantships is available on a highly competitive basis.

**Available Options for Graduate Degrees**

<table>
<thead>
<tr>
<th>Doctor of Philosophy</th>
<th>60 Credit Plan</th>
<th>90 Credit Plan</th>
</tr>
</thead>
</table>

**Core Requirements**

- ABE 763 - Instrumentation Credits: 3
- ABME 790 - Seminar Credits: 1
- ABME 792 - Topics (Experimental Design and Project Management for ABME) Credits: 3
- ABME 898D - Dissertation Credits: 40 (60 Hour Plan), 60 (90 Hour Plan)
- GSR 601 - Research Regulations Compliance Credits: 1
- ME 735 - Modeling and Simulation Credits: 3
- ME 735L - Modeling and Simulation Laboratory Credits: 0
- STAT 541 - Statistical Methods II Credits: 3
- Electives Credits: 6 (60 Hour Plan), 16 (90 Hour Plan) *(Selected by the individual with committee approval)*

**Additional Admission Requirements**

- GRE: Not required
- TOEFL: Score of 550 paper-based, 213 computer-based, 79 Internet-based
- IELTS: 5.5

**General Requirements (Ph.D.)**

Graduate students must consult with their advisor before registering for graduate work.

For additional information see Doctor of Philosophy Degree Requirements.

---

### Animal and Range Sciences (Ph.D.)

**Program Information**

The Department of Animal Science offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees in Animal Science, or the Doctor of Philosophy degree in Biological Sciences. Faculty and graduate students are actively involved in basic and/or applied research in the fields of nutrition, reproductive physiology, muscle biology, animal breeding, meat science, and animal production.

With the multi-disciplinary approaches towards production efficiency, product enhancement, and natural resources management, graduate students gain strong skill sets. The graduate programs are administered in collaboration with the Departments of Animal Science, Dairy Science, Veterinary and Biomedical Sciences, and Agricultural and Biosystems Engineering. The Department is committed to providing graduate students with quality educational and research experiences and preparing them to meet the challenges of a competitive job market upon graduation.

This program allows for considerable latitude in the education and training of students. Identification of a major professor with resources to support the student's thesis project is required for unconditional acceptance into the program. An advisory committee will be formed for each student. The advisory committee will work with the student to design a unique and individualized plan of study to meet the interests and needs of the student.
While the training of most students is largely directed to a single discipline represented within one of the participating departments, cross-discipline training is available and encouraged.

Facilities
Training and experience in research methods are among the most important facets of a well-rounded graduate student education. Excellent facilities and large herds and flocks of livestock are available for Animal Science research at South Dakota State University. To ensure continued access to modern research facilities in the future, a major effort is underway to renovate or replace livestock production research facilities. A facility for ruminant nutrition is presently under construction, and funding has recently been approved for a new swine research facility. A new facility for sheep physiology and management research is in the planning stages. Renovation of off-campus research facilities is also a priority. Plans are also being implemented for on-campus construction of multi-departmental facilities to house research related to environmental stress of plants and animals.

Student Engagement and Support Opportunities
The department conducts cutting edge research that creates opportunities for graduate students. Qualified students may apply for a Graduate Research Assistant position and the Darwin Britzman Graduate Assistant Scholarship.

Available Options for Graduate Degrees
Doctor of Philosophy
- 60 Credit Plan
- 90 Credit Plan

Core Requirements
- Present a seminar on the student's thesis/dissertation work (non-credit)
- AS 790 - Seminar Credits: 1   (Ph.D. Requires 2 Credits)
- Minor or supporting courses required:
  - 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 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
  - DS 731 - Laboratory Techniques in Dairy Science Credits: 3
  - STAT 541 - Statistical Methods II Credits: 3
  - STAT 761 - Design of Experiments II Credits: 3
  - PS 756 - Quantitative Genetics Credits: 3
  - VET 523 - Advanced Mammalian Physiology Credits: 4
- Develop a plan of study and a research proposal by the end of the first year

Additional Admission Requirements
GRE: Not required
TOEFL: required score of 550 paper-based, 213 computer-based, 79-80 Internet-based
Two letters of reference, a letter of interest and intent, and a resume.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

Biochemistry (Ph.D.)
Program Information
The Department's biochemistry faculty research programs focus on the chemistry and biochemistry of cell membranes, multi-scale modeling of signal transduction in macromolecular assemblies, development of FRET imaging technologies to measure the location and dynamics of direct protein interactions, biophysical chemistry underlying cell-surface control of leukocyte function, structural biology, proteomics, protein function, the cellular biochemistry of disease and cancer, and photo-biochemistry.

This program is unique in that a student can choose their dissertation research over a broad range of research projects available in the Department or in the laboratories of participating program faculty at Sanford Research and the Avera Research Institute in Sioux Falls, SD. The partnerships with the biomedical research programs at Sanford Research and the Avera Research Institute also provide a unique opportunity for research that translation basic science into clinical treatments that directly impact patient treatment. For additional information about these options student should review the descriptions of current faculty research interests at chembiochem.sdatete.edu.

Research Instrumentation
The Department is equipped with modern instrumentation core facilities to support its research program. These facilities are readily available to graduate students for "hands-on" experience after successfully completing a short training course.

126   Academic Programs
• **NMR core facility** includes 600, 400, and 200 MHz solution FT-NMR spectrometers and 400, 300, 100 MHz wide-bore solid-state NMR spectrometers

• **Core campus mass spectrometry facility** consists of a 7T ESI FTMS; a high-resolution magnetic sector mass spectrometer with EI and CI sources and GC, HPLC, pyrolysis and fast-atom bombardment capabilities, a MALDI-TOF mass spectrometer; an Eksigent/Thermo LTQ ESI LC-MS/SM dedicated to "bottom-up" proteomics studies and an Applied Biosystems SCIEX QTRAP ESI LC-MS/MS dedicated to small molecule and metabolomics characterizations; and a Varian GCMS.

• **Core campus proteomics facility** has all the necessary equipment to prepare samples for mass-spectrometry-based proteomics characterizations.

• **Optical Spectroscopy lab** containing 2 FT-IR spectrometer with far-IR capabilities; time-resolved spectrofluorometer; atomic absorption and diode-array UV-Vis spectrophotometers.

• **Powder x-ray diffractometer**

In addition to these departmental resources, individual research groups also maintained instrumentation including supercritical fluid chromatography and extraction, for FRET microscopy, laser light scattering, and computational chemistry. Campus super-computer facilities and on-line computer access to Web of Science, Chemical Abstracts Services and other on-line information sources are readily available.

**Facilities**

The Department is housed in the newly constructed Avera Health Science Center South and newly renovated Avera Health and Science Center North. Combined, these connected facilities provide 100,000 sq. ft. of research and instructional space.

**Available Options for Graduate Degrees**

*Doctor of Philosophy*

<table>
<thead>
<tr>
<th>Plan</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 Credit Plan</td>
<td></td>
</tr>
<tr>
<td>90 Credit Plan</td>
<td></td>
</tr>
</tbody>
</table>

**Core Requirements**

The core coursework (16 credits of coursework and 2 credits of laboratory rotations) covering basic concepts in biochemistry and research ethics provides disciplinary breadth and a foundation for a student's plan of study. To support the interdisciplinary nature of the planned dissertation research project and provide depth in a subspecialty within the field 9 credits of elective coursework are chosen by the student and their graduate advisory. The remaining credits in the 60-90 credit plan of study are dissertation research. Students must develop their program of study in consultation with their graduate research advisor and graduate advisory committee during the first semester in residence.

**Required:**

- CHEM 705 - Principles of Biochemistry Credits: 3
- CHEM 760 - Laboratory Rotations in Biochemistry Credits: 2
- CHEM 767 - Biophysical Chemistry Credits: 3
- CHEM 790 - Seminar Credits: 3
- CHEM 898D - Dissertation Credits: 63
- BIOS 662 - Advanced Molecular and Cellular Biology Credits: 6
- GSR 601 - Research Regulations Compliance Credits: 1

**Electives:**

- Courses may be selected from STEM disciplines (e.g. BIOL, BIOS, CHEM, MATH, or STAT prefixes)

**Total Credits:** 90

For students entering with a master's degree, the proposed curriculum will consist of 60 credits total. The student's graduate advisory committee will assess the academic transcripts and approve a combination of coursework and dissertation credit that ensures that all degree requirements are met.

**Candidacy Examinations**

The Department uses a cumulative examination process as its written candidacy (comprehensive) examination for the doctorate in Chemistry or Biochemistry. A student must pass a total of 5 cumulative examinations in at least 3 subdisciplines over a period of two calendar years (24 possible tests). The oral candidacy (comprehensive) exam takes place within 6 months of completion of the cumulative exams. For this examination students are required to develop an original research proposal, written and defend it orally. In order to successfully defend such a proposal the student must be able to integrate their course work into a research environment, and its defense reflects that expectation.

**Additional Admission Requirements**

International students wishing to be considered for an assistantship should submit a complete application no later than March 15 for Fall admission and October 1 for Spring admission.

**GRE:** General and subject score are recommended but not required

**TOEFL:** Score of 580 paper-based, 237 computer-based, 92-93 Internet-based

**General Requirements (Ph.D.)**

Graduate students must consult with their advisor before registering for graduate work.

For additional information see Doctor of Philosophy Degree Requirements.
**Biological Sciences (Ph.D.)**

**Program Information**
The masters and doctoral programs in Biological Sciences allow for considerable latitude in the education and training of students. The plan of study can be designed to meet the interests and individual needs of the student. While the training of most students is largely directed to a single discipline represented within one of the participating departments, cross-discipline training is available. Generally, identification of a major professor with resources to support the student's dissertation project is required for unconditional acceptance into the program. Therefore, interested persons should make application for program admission well in advance of the anticipated date of enrollment. Please refer to each departmental section for a listing of the graduate faculty and details regarding the areas of study offered in this program. Inquiries should be made directly to the department representing the discipline of interest.

**Doctor of Philosophy**
This is a cooperative program leading to the Doctor of Philosophy degree in Biological Sciences. Departments that cooperate in the program are Agricultural and Biosystems Engineering, Animal Science, Biology and Microbiology, Dairy Science, Health and Nutrition Science, Natural Resource Management, Plant Science, Veterinary and Biomedical Sciences, at South Dakota State University.

**Biological Sciences Program Objectives**
Graduates of the Doctor of Philosophy in Biological Sciences will:

- Have a thorough understanding and knowledge of biological principles related to the chosen discipline
- Demonstrate the ability to conduct innovative research to create new knowledge
- Demonstrate the ability to write grant proposals to secure research funding
- Utilize appropriate statistical methods to make inferences from research
- Write a coherent dissertation and submit one or more manuscripts to a scientific journal
- Understand and articulate the potential applications of basic research
- Demonstrate the ability to use ethics in decision making and planning
- Demonstrate information literacy for science-based decision making and lifetime learning
- Be prepared to enter into careers related to research and development or academic institutions.
- Contribute to the advancement of science in the discipline

**Course Delivery**
Biological Sciences courses are delivered face-to-face and enhanced with web-based instruction. Online delivery may be offered for specific courses.

**Facilities and Services**
A variety of outstanding laboratories, green houses, McCreery Gardens and Arboretum, livestock units, and field stations are available for education and research. Many Biological Sciences faculty hold appointments in the South Dakota Agricultural Experiment Station.

**Available Options for Graduate Degrees**
Doctor of Philosophy: 60 Credit Plan
Doctor of Philosophy: 90 Credit Plan

**Core Requirements**
The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation Credits: 30-40 - Students are required to present a seminar on their dissertation

**Additional Admission Requirements**
GRE: Not a general requirement, but individual departments may require GRE
TOEFL: required score of 525 paper-based, 197 computer-based, 71 Internet-based
(Individual departments may have different requirements for GRE and TOEFL.)

**General Requirements (Ph.D.)**
Graduate students must consult with their advisor before registering for graduate work. For additional information see Doctor of Philosophy Degree Requirements.
**Biological Sciences (Ph.D.) - Agricultural and Biosystems Engineering Specialization**

**Program Information**
Graduate work in the Department of Agricultural and Biosystems Engineering leads to Master of Science in Agricultural and Biosystems Engineering and Doctor of Philosophy in Biological Sciences degrees. The Ph.D. in Biological Sciences with a specialization in Agricultural and Biosystems Engineering shares a common core with several other departments. The core requirements are defined in this Catalog in the Biological Sciences (Ph.D.) section. Additional classes are selected by the individual with the approval of the committee.

Students who undertake graduate studies in Agricultural and Biosystems Engineering normally have as their goal a better understanding of the current theories, principles, issues, and problems in agricultural and biological systems. Graduate studies improve the student's ability to think critically and creatively, and to synthesize, analyze, and integrate ideas for decision-making and problem solving.

The department offers students an opportunity to undertake research and advanced study in specialization areas such as machine vision, food and biomaterial processing, physical properties of biological materials, natural resource engineering, structures, indoor environment, waste management and machine design.

**Course Delivery Format**
The program engages students in lecture, laboratory, and in hands-on, field-based learning experiences.

**Facilities and Services**
The Agricultural and Biosystems Engineering Department is housed in the Agricultural Engineering Building. The entire building is dedicated to undergraduate instruction and research and outreach projects that support the engineering needs of production agriculture, natural resource conservation, and value added processing of the food and fiber produced in the region. Additional research and outreach projects take place at multiple field locations in the region. There are almost 17,000 square feet of space dedicated to industry-sponsored student design projects and cutting edge research, including a full fabrication shop and two computer labs to support these efforts. The department is also home to the Water Resources Institute, dedicated to the proper stewardship of the state’s water resources.

**Student Engagement and Support Opportunities**
Many students participate in activities such as designing and building the Quarter-scale tractor, internships, and research projects. Other ABE opportunities are available via our student branch of the American Society of Agricultural and Biological Engineers (ASABE). In addition, engineering opportunities are available via organizations such as Society of Women Engineers, Engineers Without Borders, and others. The most outstanding students are honored by induction into the ABE honorary society of Alpha Epsilon and engineering honor societies such as Tau Beta Pi.

**Available Options for Graduate Degrees**
Doctor of Philosophy
- 60 Credit Option
- 90 Credit Option

**Core Requirements**
For details see specific program: Ph.D. in Biological Sciences.

- ABE 791 - Independent Study Credits: 1-3
- ABE 898D - Dissertation Credits: 30 for 60 hr plan/45 for 90 hr plan
- ABE 771 - Graduate Seminar Credits: 1
- GSR 601 - Research Regulations Compliance Credits: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- Electives selected by the individual with committee approval

**Additional Admission Requirements**
GRE: Not required
TOEFL: Score of 550 paper-based, 213 computer-based, 79 Internet-based
IELTS: 5.5

**General Requirements (Ph.D.)**
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.
**Biological Sciences (Ph.D.) - Biology Specialization**

**Program Information**
The Department of Biology and Microbiology provides students with a wide range of opportunities for advanced study. The graduate faculty offer expertise and graduate student advisement in subdisciplines from molecular biology through ecology. Faculty members are very successful in obtaining extramural funds to support graduate student projects. Graduate students have modern research laboratories, equipment and field research sites available to carry out their research projects. The learning environment, scholarly excellence and quality of teaching are areas of strength in the department's Graduate Program.

**Available Options for Graduate Degrees**
Doctor of Philosophy  
- 60 Credit Plan  
- 90 Credit Plan

**Core Requirements**
For details see specific program: *Ph.D. in Biological Sciences*.

The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar  Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation  Credits: 30-40 - Students are required to present a seminar on their dissertation

**Ph.D. Graduation Requirements**
- Yearly evaluation (research progress + coursework)
- Comprehensive written exam (mid-program)
- Comprehensive oral exam (defense of written exam/research progress) (mid-program)
- Oral presentation of Dissertation (public) during last semester of program
- Oral defense of Dissertation (committee) during last semester of program
- Dissertation completion

**Additional Admission Requirements**
GRE: Scores ranking above the 50th percentile will strengthen the case for admission
TOEFL: Score of 575 paper-based, 233 computer-based, 90 Internet based, or 6.5 for IELTS.
At least two letters of reference or Personal References must be sent to the Department. A personal statement that includes a description of the applicants involvement in research, the applicants research interest, and career goals is also required.

Retention in the program is dependent on formation of a committee and completion of review matrix by the end of the first year. In ensuing years, students must have a committee meeting and complete review annually.

**General Requirements (Ph.D.)**
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

---

**Biological Sciences (Ph.D.) - Dairy Science Specialization**

**Program Information**
The Dairy Science Department provides research opportunities leading to Masters and Ph.D. degrees. SDSU is one of two universities in the US with a Dairy Science Program that offers Dairy Production and Manufacturing majors. It is equipped with excellent laboratories, and a state of the art dairy processing plant which has the capability of processing fluid milk, cheese, butter, ice cream, concentrated and dried products, and other products. It also has a dairy research and training facility where a herd of 300 Holstein and Brown Swiss cattle for teaching and research is maintained. Metabolism and surgical facilities in the Animal Science Complex, and specialized laboratory equipment the Genomics Lab and other departments on campus, including, Veterinary and Biomedical Sciences, and Health and Nutritional Sciences programs are also available. Graduate students accepted in the program will have opportunities to utilize these facilities to develop basic and/or applied research programs in dairy product processing, microbiology, chemistry, food safety, dairy cattle nutrition, metabolism, breeding, microbiology of the rumen, immunology, and management, while interacting with well qualified faculty. The SDSU Dairy Science Program, in collaboration with the Food Science and Nutrition Program at the University of Minnesota and the Food Science and Human Nutrition Program at Iowa State University, is the Midwest Dairy Foods Research Center. This provides graduate students in the manufacturing area a unique opportunity to be involved with current issues and research needs.

**Student Engagement and Support Opportunities**
An application to the graduate program serves as an application for a graduate assistantship. Qualified applicants may be eligible for financial aid in the form of departmental research assistantships for masters and doctoral students. Graduate assistants pay one-third the resident tuition per credit, per semester for tuition and fees. The department also offers some limited scholarships for qualified students.

**Available Options for Graduate Degrees**
Doctor of Philosophy  
- 60 Credit Plan  
- 90 Credit Plan

---

130   Academic Programs
Core Requirements
For details see specific program: Ph.D. in Biological Sciences.

The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar  Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation  Credits: 30-40 - Students are required to present a seminar on their dissertation

Additional Admission Requirements
GRE: Not required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

At least two letters of reference and a personal statement that includes a description of the applicants' involvement in research, the applicants research interest, and career goals will be required from those applying for spring 2013 and beyond.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

**Biological Sciences (Ph.D.) - Microbiology Specialization**

Program Information
The Department of Biology and Microbiology provides students with a wide range of opportunities for advanced study. The graduate faculty offer expertise and graduate student advisement in subdisciplines from molecular biology through ecology. Faculty members are very successful in obtaining extramural funds to support graduate student projects. Graduate students have modern research laboratories, equipment and field research sites available to carry out their research projects. The learning environment, scholarly excellence and quality of teaching are areas of strength in the department's Graduate Program.

Available Options for Graduate Degrees
Doctor of Philosophy
- 60 Credit Plan
- 90 Credit Plan

Core Requirements
For details see specific program: Ph.D. in Biological Sciences.

The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar  Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation  Credits: 30-40 - Students are required to present a seminar on their dissertation

Ph.D. Graduation Requirements
- Yearly evaluation (research progress + coursework)
- Comprehensive written exam (mid-program)
- Comprehensive oral exam (defense of written exam/research progress) (mid-program)
- Oral presentation of Dissertation (public) during last semester of program
- Oral defense of Dissertation (committee) during last semester of program
- Dissertation completion

Additional Admission Requirements
GRE: Scores ranking above the 50th percentile will strengthen the case for admission
TOEFL: Score of 575 paper-based, 233 computer-based, 90 Internet based, or 6.5 for IELTS.

At least two letters of reference or Personal References must be sent to the Department. A personal statement that includes a description of the applicants involvement in research, the applicants research interest, and career goals is also required.

Retention in the program is dependent on formation of a committee and completion of review matrix by the end of the first year. In ensuing years, students must have a committee meeting and complete review annually.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.
Biological Sciences (Ph.D.) - Molecular Biology Specialization

Program Information
The Department of Biology and Microbiology provides students with a wide range of opportunities for advanced study. The graduate faculty offer expertise and graduate student advisement in subdisciplines from molecular biology through ecology. Faculty members are very successful in obtaining extramural funds to support graduate student projects. Graduate students have modern research laboratories, equipment and field research sites available to carry out their research projects. The learning environment, scholarly excellence and quality of teaching are areas of strength in the department's Graduate Program.

Available Options for Graduate Degrees
Doctor of Philosophy
60 Credit Plan
90 Credit Plan

Core Requirements
For details see specific program: Ph.D. in Biological Sciences.

The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation Credits: 30-40 - Students are required to present a seminar on their dissertation

Ph.D. Graduation Requirements
- Yearly evaluation (research progress + coursework)
- Comprehensive written exam (mid-program)
- Comprehensive oral exam (defense of written exam/research progress) (mid-program)
- Oral presentation of Dissertation (public) during last semester of program
- Oral defense of Dissertation (committee) during last semester of program
- Dissertation completion

Additional Admission Requirements
GRE: Scores ranking above the 50th percentile will strengthen the case for admission
TOEFL: Score of 575 paper-based, 233 computer-based, 90 Internet based, or 6.5 for IELTS.

At least two letters of reference or Personal References must be sent to the Department. A personal statement that includes a description of the applicants involvement in research, the applicants research interest, and career goals is also required.

Retention in the program is dependent on formation of a committee and completion of review matrix by the end of the first year. In ensuing years, students must have a committee meeting and complete review annually.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

Biological Sciences (Ph.D.) - Plant Molecular Biology Specialization

Program Information
The Plant Science Department is an integrated department that includes programs in crop production, plant breeding, entomology, plant pathology, soils, GIS, water management, weed science, and biotechnology. The primary goals of the department are to conduct research in the above areas, to transmit the results to the public, and to help prepare students for quality lives which includes preparation for an occupation in one or more of the above-mentioned disciplines. Graduate training includes classroom instruction, seminars designed to hone oral and written skills, and meaningful experience in laboratory and field research techniques. Departmental diversity encourages collaborations among disciplines and research programs that inform graduate training.

Course Delivery
The program coursework is available on campus, in classroom and laboratory settings, as well as field-based settings.

Facilities and Services
The department is housed in six buildings across campus. These buildings provide research and teaching laboratories, greenhouses, seed house facilities and access to the functional genomics core facility. The on-campus facilities also include the SDSU Seed Testing Laboratory, SDSU Plant Diagnostics Clinic, Seed Certification, and Foundation Seed Stocks Division, which operates as services for the public. In addition, the department conduct research at three research farms near campus and four research stations across the state. The Field Specialists are housed in six regional extension offices across the state. The latest addition is the new McCrory Gardens Education and Outreach Center.
Student Engagement Opportunities
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.

Available Options for Graduate Degrees
Doctor of Philosophy
- 60 Credit Plan
- 90 Credit Plan

Core Requirements
For details see specific program: Ph.D. in Biological Sciences.

The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation Credits: 30-40 - Students are required to present a seminar on their dissertation

Additional Admission Requirements
GRE: recommended, but not required
TOEFL: minimum requirement of 560 paper-based, 220 computer-based, 83 Internet-based

Students must be accepted by an advisor before admission is granted.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

Biological Sciences (Ph.D.) - Plant Science Specialization

Program Information
The Plant Science Department is an integrated department that includes programs in crop production, plant breeding, entomology, plant pathology, soils, GIS, water management, weed science, and biotechnology. The primary goals of the department are to conduct research in the above areas, to transmit the results to the public, and to help prepare students for quality lives which includes preparation for an occupation in one or more of the above-mentioned disciplines. Graduate training includes classroom instruction, seminars designed to hone oral and written skills, and meaningful experience in laboratory and field research techniques. Departmental diversity encourages collaborations among disciplines and research programs that inform graduate training.

Course Delivery
The program coursework is available on campus, in classroom and laboratory settings, as well as field-based settings.

Facilities and Services
The department is housed in six buildings across campus. These buildings provide research and teaching laboratories, greenhouses, seed house facilities and access to the functional genomics core facility. The on-campus facilities also include the SDSU Seed Testing Laboratory, SDSU Plant Diagnostics Clinic, Seed Certification, and Foundation Seed Stocks Division, which operates as services for the public. In addition, the department conduct research at three research farms near campus and four research stations across the state. The Field Specialists are housed in six regional extension offices across the state. The latest addition is the new McCrory Gardens Education and Outreach Center.

Student Engagement Opportunities
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.

Available Options for Graduate Degrees
Doctor of Philosophy
- 60 Credit Plan
- 90 Credit Plan

Core Requirements
For details see specific program: Ph.D. in Biological Sciences.

The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation Credits: 30-40 - Students are required to present a seminar on their dissertation
Additional Admission Requirements
GRE: recommended, but not required
TOEFL: minimum requirement of 560 paper-based, 220 computer-based, 83 Internet-based

Students must be accepted by an advisor before admission is granted.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

Biological Sciences (Ph.D.) - Veterinary Microbiology Specialization

Program Information
Graduate education in the Department of Veterinary and Biomedical Science is focused on the one health concept, with major emphasis in infectious diseases of food-producing domestic species and zoonotic diseases. Research projects range from basic (mechanistic) to applied science. The interaction of service, discovery, and education that takes place within the Department of Veterinary and Biomedical Sciences results in new knowledge, timely information, and students prepared for careers that make a difference for animals and people alike.

The Department of Veterinary and Biomedical Sciences offers degrees in both Masters of Science and Doctor of Philosophy. The Ph.D. program is offered as a Doctorate in Biological Sciences and requires either 90 credits beyond a BS degree, or 60 credits beyond an MS from either a Canadian or American University.

Accreditation
American Association of Veterinary Laboratory Diagnosticians Accreditation

Facilities and Services
Animal Disease Research and Diagnostic Laboratory
Food Safety Microbiology Laboratory
Food Emergency Response Network

Available Options for Graduate Degrees
Doctor of Philosophy  60 Credit Plan
                                          90 Credit Plan

Core Requirements
For details see specific program: Ph.D. in Biological Sciences.

The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar  Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation  Credits: 30-40 - Students are required to present a seminar on their dissertation

Research in pursuit of the dissertation requirement is expected to address a question of fundamental scientific importance and is expected to generate data of publication quality.

Additional Admission Requirements
GRE: Not required
TOEFL: Department requirement of 525 paper-based, 197 computer-based, 71 Internet-based

Admission to the program is dependent upon admission to the SDSU Graduate School and identification of a suitable mentor. Applicants are not accepted into the program unless an assistantship can be provided. Funding for assistantships comes from a variety of sources including the South Dakota Agricultural Experiment Station, federal granting agencies, and the animal health product industry. Those interested are encouraged to contact the Department to identify opportunities.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.
**Biological Sciences (Ph.D.) - Veterinary Pathobiology Specialization**

**Program Information**
Graduate education in the Department of Veterinary and Biomedical Science is focused on the one health concept, with major emphasis in infectious diseases of food-producing domestic species and zoonotic diseases. Research projects range from basic (mechanistic) to applied science. The interaction of service, discovery, and education that takes place within the Department of Veterinary and Biomedical Sciences results in new knowledge, timely information, and students prepared for careers that make a difference for animals and people alike.

The Department of Veterinary and Biomedical Sciences offers degrees in both Masters of Science and Doctor of Philosophy. The Ph.D. program is offered as a Doctorate in Biological Sciences and requires either 90 credits beyond a BS degree, or 60 credits beyond an MS from either a Canadian or American University.

**Accreditation**
American Association of Veterinary Laboratory Diagnosticians Accreditation

**Facilities and Services**
Animal Disease Research and Diagnostic Laboratory
Food Safety Microbiology Laboratory
Food Emergency Response Network

**Available Options for Graduate Degrees**
Doctor of Philosophy
- 60 Credit Plan
- 90 Credit Plan

**Core Requirements**
For details see specific program: Ph.D. in Biological Sciences.

The student, major advisor and Advisory Committee select the discipline specific emphasis area of the biological sciences. The courses will be identified on the student's Plan of Study no later than the end of the first year of study.

- XXX 790 or 890 Seminar Credit: 1 - Selected with advisory committee approval
- GSR 601 - Research Regulations Compliance Credit: 1
- Minimum of 3 credits of STAT courses numbered 500-level or higher
- XXX 898D Dissertation Credits: 30-40 - Students are required to present a seminar on their dissertation

Research in pursuit of the dissertation requirement is expected to address a question of fundamental scientific importance and is expected to generate data of publication quality.

**Additional Admission Requirements**
GRE: Not required
TOEFL: Department requirement of 525 paper-based, 197 computer-based, 71 Internet-based

Admission to the program is dependent upon admission to the SDSU Graduate School and identification of a suitable mentor. Applicants are not accepted into the program unless an assistantship can be provided. Funding for assistantships comes from a variety of sources including the South Dakota Agricultural Experiment Station, federal granting agencies, and the animal health product industry. Those interested are encouraged to contact the Department to identify opportunities.

**General Requirements (Ph.D.)**
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

---

**Chemistry (Ph.D.)**

**Program Information**
The Department's chemistry faculty research programs fall into the thematic focus areas of environmental chemistry and green chemistry, chemical sensor development, organic synthesis, materials chemistry, natural products chemistry, and chemical education. Within these multidisciplinary and interdisciplinary focus areas, students can select research projects that involve the traditional subdisciplines of chemistry; analytical, biochemistry, inorganic, organic and physical. Currently active research projects in the Department focus on various aspects of analytical chemistry, drug discovery and delivery, synthesis or photoactive materials including polymers, materials chemistry and self assembly, chromatography, the chemistry of cell membranes, environmental and green chemistry, chemistry of climate change, photo-physical chemistry, natural products synthesis, biophysical chemistry, computational chemistry, and solid-state NMR. For additional information student should review the descriptions of current faculty research interests at chembiochem.sdatete.edu.

**Research Instrumentation**
The Department is equipped with modern instrumentation core facilities to support its research program. These facilities are readily available to graduate students for "hands-on" experience after successfully completing a short training course.

- **NMR core facility** includes 600, 400, and 200 MHz solution FT-NMR spectrometers and 400, 300, 100 MHz wide-bore solid-state NMR spectrometers
- **Core campus mass spectrometry facility** consists of a 7T ESI FTMS; a high-resolution magnetic sector mass spectrometer with EI and CI sources and GC, HPLC, pyrolysis and fast-atom bombardment capabilities, a MALDI-TOF mass spectrometer; a Eksigent/Thermo LTQ
ESI LC-MS/SM dedicated to "bottom-up" proteomics studies and an Applied Biosystems SCIEX QTRAP ESI LC-MS/MS dedicated to small molecule and metabolomics characterizations; and a Varian GCMS.

- **Core campus proteomics facility** has all the necessary equipment to prepare samples for mass-spectrometry-based proteomics characterizations.
- **Optical Spectroscopy lab** containing 2 FT-IR spectrometer with far-IR capabilities; time-resolved spectrofluorometer; atomic absorption and diode-array UV-Vis spectrophotometers.
- **Powder x-ray diffractometer**

In addition to these departmental resources, individual research groups also maintained instrumentation including supercritical fluid chromatography and extraction, for FRET microscopy, laser light scattering, and computational chemistry. Campus super-computer facilities and on-line computer access to Web of Science, Chemical Abstracts Services and other on-line information sources are readily available.

### Facilities

The Department is housed in the newly constructed Avera Health Science Center South and newly renovated Avera Health and Science Center North. Combined, these connected facilities provide 100,000 sq. ft. of research and instructional space.

### Available Options for Graduate Degrees

<table>
<thead>
<tr>
<th>Doctor of Philosophy</th>
<th>60 Credit Plan</th>
<th>90 Credit Plan</th>
</tr>
</thead>
</table>

### Core Requirements

Students are required to complete 21 credits of course work that includes 12 credits of core coursework and 9 credits specific to the research project, and 3 credit hours of seminar. The remaining credits in the 60-90 credit plan of study are dissertation research. Students must develop their program of study in consultation with their graduate research advisor and graduate advisory committee during the first semester in residence.

### Candidacy Examinations

The Department uses a cumulative examination process as its written candidacy (comprehensive) examination for the doctorate in Chemistry or Biochemistry. A student must pass a total of 5 cumulative examinations in at least 3 subdisciplines over a period of two calendar years (24 possible tests). The oral candidacy (comprehensive) exam takes place within 6 months of completion of the cumulative exams. For this examination students are required to develop an original research proposal, written and defend it orally. In order to successfully defend such a proposal the student must be able to integrate their course work into a research environment, and its defense reflects that expectation.

### Additional Admission Requirements

International students wishing to be considered for an assistantship should submit a complete application no later than March 15 for Fall admission and October 1 for Spring admission.

GRE: General and subject score are recommended but not required
TOEFL: Score of 580 paper-based, 237 computer-based, 92-93 Internet-based

### General Requirements (Ph.D.)

Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

### Civil Engineering (Ph.D.)

#### Program Information

The program is designed to provide breadth and depth within the civil engineering main sub-disciplines including structural, environmental, transportation, geotechnical, hydraulic, and water resources engineering. The department's graduate faculty members conduct research in the fields of bridge engineering, earthquake engineering, traffic operations and safety, transportation infrastructure, breaking waves and river hydraulics, fate and transport of contaminants, water/wastewater treatment processes and biological filtration, and soil stability and deep foundations.

#### Program Objectives

The Ph.D. program's objectives are to prepare graduates to:
1. Generate and disseminate new discovery in civil engineering disciplines
2. Develop resilient civil engineering infrastructure to withstand man-made and natural hazards
3. Advance sustainable civil engineering systems to serve the needs of future generations and preserve natural resources

#### Course Delivery Format

The majority of the courses will be taught on campus in a classroom setting. Some courses will be offered through the "Access Grid" system in collaboration with other regental institutions in the state of South Dakota.

#### Facilities and Services

The Department of Civil and Environmental Engineering is home for state-of-the-art experimental and research facilities. The Lohr Structures Laboratory is a 400 square meters high-bay/strong-floor structural testing facility that is configured to accommodate large-and full-scale test specimens. The Fluid Mechanics Laboratory has a 25-m-long, 0.90-m-wide and 0.75-m-deep research flume which can be used either as an open channel or as a wave tank. The HDR Environmental Laboratory is designed to perform three major functions: Teaching, Analysis, and Research. The research area of the HDR laboratory contains space for graduate work, a ventilated room for biological research, and an area with a
high ceiling to accommodate pilot plant work. In addition, the materials, geotechnical, and asphalt laboratories are equipped with basic and advanced testing equipment which can support experimental research.

**Student Engagement and Support Opportunities**

Students seeking a Ph.D. degree in civil engineering will be conducting research in their area of interest under the mentorship of highly qualified and dedicated faculty. Research and teaching assistantships will be offered to qualified students. Students will also be expected to engage in scholarly activities through publishing of peer-reviewed journal papers and dissemination of research results at national conferences.

**Available Options for Graduate Degrees**

**Doctor of Philosophy**  
60 Credit Plan

**Core Requirements**
- CEE 790 - Seminar Credits: 3
- CEE 898D - Dissertation Credits: 36
- Emphasis Required Core (select from Non-Environmental Emphasis or Environmental Emphasis)
  - **Non-Environmental Emphasis:**
    - EM 741 - Finite Element Analysis Credits: 3
    - CEE 749 - Geotechnical Testing Credits: 3
    - CEE 749L - Geotechnical Testing Lab Credits: 0
  - **Environmental Emphasis:**
    - CEE 725 - Biological Principles of Environmental Engineering Credits: 3
    - CEE 726 - Physical and Chemical Principles of Environmental Engineering Credits: 3
    - CEE 726L - Physical and Chemical Principles of Environmental Engineering Laboratory Credits: 0
- Supporting Electives Credits: 15

Total Credits: 60

**Additional Admission Requirements**

GRE: General scores required
TOEFL: Department requirement of 575 paper-based, 233 computer-based, 90-91 Internet-based

**General Requirements (Ph.D.)**

Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

**Computational Science and Statistics (Ph.D.)**

**Program Information**

The CSS Ph.D. Program is designed to train students to integrate computational and statistical methodologies to formulate, model, analyze, and solve research problems of interest to the natural, physical, and social sciences, including biology, chemistry, physics, engineering, geography/GIS, pharmacy, medicine, economics, and finance. Broadly speaking, the program has strong research components in biostatistics, bioinformatics, and computational methods. More specifically, the program leads to research in a variety of areas that may include: artificial neural networks and fuzzy logic modeling, biological modeling, bioinformatics, biostatistics, computational biology, computational chemistry, computational mathematics, computational statistics, computational physics, computational finance, computer science, data visualization and data mining, ecological modeling, spatial-temporal data modeling, and transport processes.

**Available Options for Graduate Degrees**

**Doctor of Philosophy**  
60 Credit Plan

**Core Requirements**
- Pass qualifying exams over emphasis-area-specific preparatory courses Credits: 0-12
- CSS 890 - Seminar in Computational Science and Statistics (must be taken three times for credit) Credits: 3
- Dissertation Support Elective Credits: 6-12

For further details about program requirements review the department's webpage and the program handbook online.

**Additional Graduation Requirements**

Must pass a qualifying exam based on the core sequence of the student's emphasis area.  
Must pass written and oral comprehensive exams, as designed by the student's advisory committee.

**Additional Admission Requirements**

GRE: Not required
TOEFL: For the Ph.D. program, a department requirement of 575 paper-based or 230 computer-based

**General Requirements (Ph.D.)**

Graduate students must consult with their advisor before registering for graduate work.  
For additional information see Doctor of Philosophy Degree Requirements.
**Electrical Engineering (Ph.D.)**

**Program Information**
The program offers a variety of courses that encompass a broad range of Electrical Engineering areas including: alternative energy and power systems; computer engineering, communications and fiber optics; electronic materials, devices and sensors; nano technology, photovoltaic devices and systems; and signal and image processing. The department's graduate faculty conduct active research in these areas using modern research facilities and equipment.

**Program Objectives**
The EE graduate program objectives are to equip individuals to
1. Discover and disseminate knowledge relevant to the discipline of electrical engineering.
2. Provide leadership for increasingly complex roles in electrical engineering and industry.
3. Contribute to the advancement of the science of electrical engineering serving regional and national needs.

**Course Delivery**
A majority of the courses are taught on campus in smart classrooms. The smart classrooms allow for a variety of methods for student engagement and faculty are able to record and post their lectures on-line. Additionally, some courses are offered remotely via "Access Grid" in collaboration with other Ph.D. granting institutions in the state.

**Facilities and Services**
With more than $12 million invested in classrooms and laboratories, graduate students benefit from modern lecture rooms and gain valuable experience using state-of-the-art equipment. The recently dedicated modern Daktronics Engineering Hall is home to the Electrical Engineering program with over 15,000 square feet of dedicated research space. The department boasts a 5-bay multi-million dollar clean room, several class one gloveboxes, and nano-characterization labs for developing both organic and inorganic electronics, as well as numerous other labs for research in fiber optics, power and alternative energy systems, and sensors.

**Available Options for Graduate Degrees**
**Doctor of Philosophy**
60 Credit Plan

**Core Requirements**
- EE 7XX Elective Credits: 9
- EE 790 - Seminar Credits: 3
- Additional Supporting Elective Credits: 12
- EE 898D - Dissertation Credits: 36

Total Credits: 60

**Additional Admission Requirements**
GRE: General scores required
TOEFL: Department requirement of 575 paper-based, 233 computer-based, 90-91 Internet-based

**General Requirements (Ph.D.)**
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

**Geospatial Science & Engineering (Ph.D.)**

**Program Information**
The Geospatial Science and Engineering Ph.D. is a novel interdisciplinary program that integrates advanced coursework in the sciences and engineering with cutting-edge research to advance the emerging field of Geographic Information Sciences (GIsc). The focus of GIsc is on understanding geospatial data and transforming the data into relevant information through its acquisition, processing, characterization, analysis, and modeling.

The program consists of faculty from the Geospatial Sciences Center of Excellence, Electrical Engineering & Computer Science, Civil & Environmental Engineering, Geography, and Natural Resource Management. Current faculty research interests range broadly, and include quantitative remote sensing, sensor design and calibration, land cover and land use change, geography, hydrology, landscape ecology, climate change, and fire science as well as applications of geospatial technologies in natural resource management, public health, agriculture, and other fields. The program seeks highly motivated students with strong backgrounds in the geospatial sciences or a closely-related field to compliment these efforts.

**Course Delivery**
Program coursework is offered in classroom, laboratory, and field-based settings.

**Facilities and Services**
The program facilities are housed in various locations on campus at SDSU, including the Geographic Information Science Center of Excellence in Wecota Hall, Image Processing Laboratory in Daktronics Engineering Hall, as well as at the United States Geological Survey's Center for Earth Resources Observation and Science near Baltic, South Dakota.
Available Options for Graduate Degrees
Doctor of Philosophy
- 60 Credit Plan
- 90 Credit Plan

Students may declare a specialization in Remote Sensing Geography or Remote Sensing Engineering; or elect to pursue a degree in interdisciplinary geospatial science.

Core Requirements
- GSE 740 - Introduction to Geospatial Science and Engineering Credits: 3
- GSE 790 - Seminar in Geospatial Science and Engineering Credits: 3
- Specialization Coursework Credits: 6
- Supporting Coursework Credits: 12-15
- GSE 898 - Dissertation Credits: 36

Additional Admission Requirements
Admission to the GSE program is competitive and limited by the availability of personnel, facilities, and funding necessary to provide quality graduate education. GSE is a multidisciplinary program with participating faculty members from several departments. The scope of the geospatial sciences is broad, and individual faculty members will only advise students within their particular area of specialization. Financial support for students is provided by individual faculty members through their research grants or other funding sources. Students can also bring their own funding, which could be obtained through a fellowship program or through the support of their employer. For these reasons, the application process is highly competitive, and meeting the minimum standards does not guarantee admission. In particular, the critical criterion for admission into the Ph.D. program is that a GSE faculty member must agree to serve as the student's advisor.

Before applying to the program, prospective students are strongly encouraged to contact individual faculty to identify prospective advisors, discuss their research interests and educational goals, and determine if graduate research assistantships are available. Prospective students may also contact Dr. Michael Wimberly, the program coordinator, for additional information.

All applications must meet the admission criteria of the Graduate School before being accepted into the GSE program, and formal offers of graduate assistantships will not be made until students have been officially accepted by the Graduate School.

GRE: Required
TOEFL: Score of 525 paper-based, 197 computer-based, 71 Internet-based

Two letters of recommendation from persons acquainted with the academic ability and professional competency of the applicant should be sent directly to the GSE graduate coordinator.

Applicants must provide a letter describing their research interests and academic goals in pursuing a Ph.D. and identifying one or more faculty members as potential advisors. The letter of intent should be sent directly to the GSE graduate coordinator.

General Requirements (Ph.D.)
Graduate students should consult with the Graduate Coordinator before registering for graduate work.
See Doctor of Philosophy Degree Requirements.

Nursing (Ph.D.)
Program Information
The Doctor of Philosophy in Nursing prepares nurse scientists to assume roles as health care researchers, faculty, and health care administrators with an emphasis on health promotion and disease prevention in underserved and rural populations. The Ph.D. program will educate nurse scientists in academic, research, practice and policy issues in urban, rural, frontier, and reservation areas.

Program Objectives
The graduate of the Doctor of Philosophy in Nursing program will demonstrate the following:
- Discover and disseminate knowledge relevant to the discipline of nursing with a focus on health promotion and disease prevention in underserved and rural populations.
- Provide leadership for increasingly complex roles in nursing research, practice, and education and/or healthcare organizations.
- Develop theoretical frameworks of phenomena related to nursing science.
- Provide leadership for the analysis and resolution of ethical healthcare issues in an interdisciplinary context.
- Integrate cultural learning into nursing practice to effectively tailor healthcare to the diverse lifeways of clients.
- Seek to decrease health disparities among populations by addressing socioeconomic-political-cultural determinants of health.
- Contribute to the advancement of the science of nursing serving rural and underserved populations.

Accreditation, Certification, and Licensure
Accreditation
The nursing programs at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

Licensure
Students who are Registered Nurses must provide evidence of professional registration by submitting a copy of the most current RN license. International students who are Registered Nurses must provide evidence of national registration in good standing in their home country.
Course Delivery
Nursing courses are delivered face-to-face and enhanced with web-based instruction. Online course delivery is also offered for specified courses. Courses are offered fall, spring and summer semesters. Selected nursing and elective courses are available in summer semesters.

Curriculum Plans
Nurse scientists are prepared with a foundation in research methods and statistics to develop proposals, study, analyze, and solve healthcare problems among those who carry an excess burden of illness. The doctoral program requires a minimum of 60 credits post master's for graduation. Full time is seven (7) credit hours per semester. Four and five year Curriculum Plans are the most common, although a three year plan is available.

Available Options for Graduate Degrees
Doctor of Philosophy 60 Credit Plan

Core Requirements
- HSC 631 - Biostatistics I Credits: 3
- HSC 731 - Biostatistics II Credits: 3
- NURS 810 - Doctoral Seminar Credits: 3
- NURS 815 - Philosophical Basis for Nursing Inquiry 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 Credits: 3
- NURS 895 - Practicum Credits: 3
- NURS 898 - Dissertation - Ph.D. Credits: 18-21
- Electives (Must include one additional statistics or research methods course) Credits: 12-15

Total Credits: 60

Additional Admission Requirements
GRE: Not required
TOEFL: Score of 600 paper-based, 250 computer-based, 100 Internet-based
IELTS: 7.0 total band

1. Current RN licensure. (International students who are nurses are required to show proof of current licensure/registration as a Registered Nurse (or equivalent), in good standing, in their home country, and maintain that licensure throughout the duration of the program.)
2. Bachelors degree in nursing from an accredited program
3. Master's degree in nursing or a related field of study from an accredited program
4. Minimum GPA of 3.3 in master's coursework.
5. Completed application to both SDSU Graduate School and the SDSU College of Nursing- Graduate Nursing Program.
6. Example of scholarly written work.
7. Interview with graduate faculty.

Students who are licensed practitioners are required to show proof of personal liability insurance at the $1 million/ $5 million OR $1 million/ $3 million level if appropriate during the time they are engaging with human subjects in dissertation research.

Applicants should check with the Graduate Nursing office for application deadlines.

General Requirements
Graduate students must consult with their advisor prior to registration for graduate work.
Registration is completed by the Graduate Nursing Department.
See Doctor of Philosophy Degree Requirements.

Nutrition, Exercise, and Food Sciences (Ph.D.)

Program Information
The Ph.D. in Nutrition, Exercise and Food Sciences will prepare graduates for careers as researchers in healthcare settings, government, industry, corporations, and universities. The research and teaching emphasizes molecular and biochemical nutrition, nutrigenomics, epidemiology, nutrition issues in developing countries, obesity prevention and behavior nutrition.

Courseload Information
Students enrolled in six or more state-supported credits within a given semester will be charged the current special discipline fee.

Student Support and Engagement Opportunities
The Department of Health and Nutritional Sciences aims to provide premier academic programs and high-quality services to students. A limited number of research and teaching assistantships and scholarships may be available to qualified graduate students.
Available Options for Graduate Degrees
Doctor of Philosophy  60 Credit Plan (Must have previously completed a Master's in Nutrition or a related field)

Core Requirements
- NFS 702 - Macronutrients in Human Nutrition Credits: 3
- NFS 760 - Vitamins and Minerals in Human Nutrition Credits: 3
- HNS 790 - Seminar Credits: 1
- GSR 601 - Research Regulations Compliance Credits: 1
- Advanced Research Methods
- Course Advanced Statistics Course

Total Credits: 60 (30 departmental courses and 30 electives)

Additional Admissions Requirements
GRE: Required
TOEFL: required score of 550 paper-based, 213 computer-based, 79-80 Internet-based
IELTS: 6.0

Letter of application stating to include the following: primary area of interest (nutrition, food science, etc); desired research focus; long-term goals outlining career goals; interest in assistantship (teaching or research); reason(s) for attending graduate school; current professional certifications and credentials; an interview (in person or via phone) is highly encouraged but not required.

Ph.D. Nutritional Sciences Admission Requirements:
Entering students for the Ph.D. degree will usually have a Master's degree in dietetics, exercise science, nutrition, biology, chemistry, epidemiology, or other related field from an approved accredited institution. In those cases where applicants do not have a Master's degree, departmental requirements will apply, either requiring completion of a Master's degree or permitting an individual to move directly into a doctoral program. Prerequisites for Ph.D. degree include Master's degree in a health related field (nutrition, dietetics, exercise physiology, public health, etc), NFS 422/522 or equivalent, STAT 541 or equivalent, or biochemistry.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

Pharmaceutical Sciences (Ph.D.)
Program Information
The Department of Pharmaceutical Sciences offers courses and research opportunities in pharmaceutical and biomedical sciences to fulfill the requirements for the Doctor of Philosophy (Ph.D.) degree in Pharmaceutical Sciences. The Department also offers a curriculum and research opportunity for combination Doctor of Pharmacy (Pharm.D.)/Ph.D. degrees in Pharmaceutical Sciences. The core courses, along with the concentration in a major area of research, provide a valuable broad background of preparation for an academic or industrial career. The major objective of the program is to provide the student an opportunity to gain high quality graduate education and research experience.

Student Learning Outcomes
Graduates of the Ph.D. in Pharmaceutical Sciences will:
1. Demonstrate knowledge in the pharmaceutical and biomedical sciences.
2. Carry out research/creative activities with skill and competence.
3. Provide high quality professional communication in both the written and verbal forms.
4. Demonstrate professionalism and ethical conduct.
5. Possess the necessary skills for careers in academia and industry.

Facilities and Services
The graduate programs are housed in the recently constructed Avera Health and Science Center, a first-class educational and research facility on the Brookings campus. The Avera Health and Science Center has enabled the College to incorporate new teaching strategies into the curriculum that will lead to pharmacy graduates that are better prepared to provide patient care utilizing modern technology and a team-based approach. The facility has modern research laboratories that support our growing research program.

Student Engagement and Support Opportunities
Graduate students may choose to take part in Peer Mentoring or get involved with the College's Honorary societies and other student organizations.

Available Options for Graduate Degrees
Doctor of Philosophy  90 Credit Option

Core Requirements
- PHA 820 - Advanced Concepts in Medicinal Chemistry Credits: 3
- PHA 840 - Advanced Concepts in Pharmacology Credits: 3
- PHA 846 - Techniques in Pharmaceutical Research Credits: 3
- PHA 847 - Grant Writing and Academic Development Credits: 3
- PHA 859 - Advanced Concepts in Pharmaceuticals Credits: 3
• PHA 890 - Seminar Credits: 2 *
• PHA 898 - Dissertation Credits: 50
• STAT 541 - Statistical Methods II Credits: 3
• Electives Credits: 20

Total Credits: 90
* The first credit will be taken at the early stage of the program and the second will be taken at the later stage of the program.

Additional Admission Requirements
GRE: General GRE required
TOEFL: Minimum score of 550 paper-based, 213 computer-based, 79 Internet-based

Students will need to complete the application form through the Internet by visiting this link. The application fees of $35.00 can be paid via credit card, online, or by mailing a check or money order to the graduate school (see the address below) with the rest of the application materials (see below). No application will be processed until the application fee is paid. After submitting an application, send the following documents by post to the graduate school.

1. Letters of Recommendation Two personal reference letters from people acquainted with the academic ability and professional competence of the applicant are required.
2. Official Transcripts Transcripts from all undergraduate and graduate coursework, provisional or degree certificates for all degrees held must be evaluated course by course by World Education Services (www.wes.org) or Educational Credential Evaluators (www.ece.org). Please request that the evaluation be sent directly to the Graduate School (see address listed below). International students must have completed four years of post-secondary education and must hold a Bachelor's degree before applications will be reviewed by the Graduate School or respective department.
3. TOEFL/GRE Scores Test of English as a Foreign Language (TOEFL) scores are required of all International students. Minimum scores of 550 paper-based, 213 computer-based, 79 Internet-based or above is required. The International English Language Testing System (IELTS) band score is also acceptable (6.0 or higher). No minimum score is set for GRE test. The Institutional Code for SDSU is 6653.
4. A Statement of Personal Goals and Philosophy The statement should be brief and no more than one page.
5. Financial Support All admitted students will be supported by a teaching or research assistantship from the department. No financial support statement is needed from applicants.
6. Physical Examination Record A record of two (2) immunizations for measles and two (2) for rubella is only required after the applicant is admitted to the program.

Application package must be received by the graduate school before April 15:
Graduate School
South Dakota State University
Administration Bldg. 130
Box 2201
Brookings, SD 57007-1998

For more information on applying to the Ph.D. in Pharmaceutical Sciences visit www.sdstate.edu/pha/Ph.D./howtoapplyPh.D..cfm.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work. For additional information see Doctor of Philosophy Degree Requirements.

Plant Science (Ph.D.)
Program Information
The Plant Science Department is an integrated department that includes programs in crop production, plant breeding, entomology, plant pathology, soils, GIS, water management, weed science, and biotechnology. The primary goals of the department are to conduct research in the above areas, to transmit the results to the public, and to help prepare students for quality lives which includes preparation for an occupation in one or more of the above-mentioned disciplines. Graduate training includes classroom instruction, seminars designed to hone oral and written skills, and meaningful experience in laboratory and field research techniques. Departmental diversity encourages collaborations among disciplines and research programs that inform graduate training.

Course Delivery
The program coursework is available on campus, in classroom and laboratory settings, as well as field-based settings.

Facilities and Services
The department is housed in six buildings across campus. These buildings provide research and teaching laboratories, greenhouses, seed house facilities and access to the functional genomics core facility. The on-campus facilities also include the SDSU Seed Testing Laboratory, SDSU Plant Diagnostics Clinic, Seed Certification, and Foundation Seed Stocks Division, which operates as services for the public. In addition, the department conduct research at three research farms near campus and four research stations across the state. The Field Specialists are housed in six regional extension offices across the state. The latest addition is the new McCrory Gardens Education and Outreach Center.
Student Engagement Opportunities
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.

Available Options for Graduate Degrees
Doctor of Philosophy
   60 Credit Plan
   90 Credit Plan

Core Requirements
Ph.D. students required to have 3 credits of Graduate Seminar, at least one oral and one in poster format. All students are required to have at least one teaching experience during their Ph.D. program.

- Enrollment in PS 781 - Plant Science Graduate Seminar (three semesters)
- Enrollment in PS 792 - Topics Teaching Experience (one semester)

Additional Admission Requirements
GRE: recommended, but not required
TOEFL: minimum requirement of 560 paper-based, 220 computer-based, 83 Internet-based

Students must be accepted by an advisor before admission is granted.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

Sociology (Ph.D.)
Program Information
The Department of Sociology and Rural Studies offers three graduate degree opportunities. The Master of Science and Ph.D. programs are offered on campus. The Master of Science in Sociology - Community Development Specialization is offered online.

The Ph.D. program in Sociology is designed to prepare students for professional careers in teaching, research and creative activity in academic, government and related areas. Students are encouraged to identify areas of interest that connect with faculty areas of expertise and interest. Students seeking admission must have an approved Master's degree, (thesis option), not necessarily in Sociology. If a thesis in a closely related field is not in evidence, Ph.D. students will be required to complete SOC 701 and SOC 702 in their first year of coursework Ph.D. program credits.

Available Options for Graduate Degrees
Doctor of Philosophy
   60 Credit Plan

Core Requirements
- 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 720 - Scholarship of Teaching and Learning for Sociologists Credits: 3
- SOC 790 - Seminar Credits: 1
- Statistics Coursework Credits: 6
  - STAT 541 - Statistical Methods II Credits: 3
  - STAT 545 - Nonparametric Statistics Credits: 3
  - GEOG 785 - Quantitative Methods in Geography Credits: 3
  - SOC 792 - Topics (if statistics) Credits: 3
- Specialization #1 Credits: 9
- Specialization #2 Credits: 8
- SOC 898D - Dissertation Credits: 18

Credits: 60

Additional Admission Requirements
GRE: Required
TOEFL: Department requirement of 550 paper-based, 213 computer-based, 79-80 Internet-based

Doctor of Philosophy: Students seeking entrance must have an approved Bachelor’s and Master’s degree, (thesis option), not necessarily in Sociology. Each applicant should have 2 signed letters of recommendation from individuals familiar with the student’s academic record.

It is highly recommended that applicants also include a writing sample and personal statement. The personal statement should identify the student’s academic goals and describe how those goals fit with the faculty expertise and interests.
General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.

Wildlife and Fisheries Sciences (Ph.D.)
Program Information
SDSU has an extensive graduate program in wildlife and fisheries sciences. The Department of Natural Resource Management offers graduate programs in both Biological Science and Wildlife and Fisheries Sciences. Both degree programs award M.S. and Ph.D. degrees.

Wildlife and Fisheries Sciences
The Ph.D. degree program in Wildlife and Fisheries Sciences is intended to educate students for upper-level management, research and administrative positions with state and federal agencies, and private companies. Academic career opportunities also exist for Ph.D. graduates in all the Departmental disciplines, preparing students for the responsibilities of teaching, research, and service, required 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.

Biological Sciences
Students interested in careers in ecology, environmental science, and range science often utilize the Biological Sciences Ph.D. degree programs. Refer to the Biological Sciences (Ph.D.) page for more information about the specifications required for these degree programs.

Student Learning Outcomes
1. Be knowledgeable regarding biological systems at a level appropriate to a Ph.D. degree holder.
2. Be able to effectively express themselves orally and in written form.
3. Understand the scientific method of solving problems.
4. Be computer and statistically capable.
5. Be specialized in some area of wildlife or fisheries, but still be broadly based in knowledge.
6. Be able to conduct scholarly research.
7. Understand the relationships between biological information and socioeconomic factors.
8. Demonstrate professional development, especially in regard to the need for continued learning after their degree program.
9. Develop a concern and feeling for the natural resources of the world.

Certification
Certification is available through the American Fisheries Society and The Wildlife Society.

Course Delivery Format
The Wildlife and Fisheries Sciences graduate program is primarily an on-campus program. However, field research may require extended time periods away from campus.

Facilities and Services
The department is housed within the Northern Plains Biostress Laboratory at SDSU. The Department houses the Oak Lake Biological Field Station and also hosts the South Dakota Cooperative Fish and Wildlife Research Unit, the National Wetlands Inventory, and the South Dakota GAP Analysis Project

Available Options for Graduate Degrees
Doctor of Philosophy 60 Credit Plan
90 Credit Plan

Core Requirements
Students must be proficient in departmental offerings, statistical methods, and computer application. Courses and experience are also required in college-level teaching and graduate and Ph.D. seminars.

Additional Admission Requirements
GRE: Required
TOEFL: Department Requirement of 525 paper-based, 197 computer-based, 71 Internet-based

Admission to all degree programs requires that a faculty member from the department agrees to serve as the major advisor.

General Requirements (Ph.D.)
Graduate students must consult with their advisor before registering for graduate work.
For additional information see Doctor of Philosophy Degree Requirements.
**Academic Programs - Professional Doctoral Degrees**

**Doctor of Nursing Practice (D.N.P.) (Post Master to D.N.P. - NPs, CRNAs, CNSs, and CNMs)**

**Program Information**
The Doctor of Nursing Practice prepares advanced practice nurses to transform clinical practice as expert clinicians and leaders with a special focus on rural and under-served populations.

**Program Objectives**
The graduate of the Doctor of Nursing Practice program will:

- Analyze significant practice issues with the theoretical and scientific underpinnings of knowledge-based practice
- Employ advanced clinical judgment to assess, design, deliver and evaluate evidence-based care of individuals in complex health and illness situations
- Apply a broad system perspective to design, implement and evaluate culturally congruent policies and practices to improve care for a diverse population
- Lead health care inter-professional and intraprofessional teams to transform care
- Initiate ethically sound practice changes to address complex interwoven organization, population, fiscal and policy trends
- Demonstrate proficiency in the use of information technology to improve health care within systems
- Implement evidence-based clinical prevention and health promotion activities to improve the health of populations

**Accreditation, Certification, and Licensure**

**Accreditation**
The Doctor of Nursing Practice at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

**Licensure**
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

**Course Delivery**
Nursing courses are delivered face-to-face and enhanced with web-based instruction. Online course delivery is also offered for specified courses. Courses are offered fall, spring and summer semesters. Selected nursing and elective courses are available in summer semesters.

**Facilities and Services**
The College of Nursing provides world-class facilities and a variety of students services and programs for graduate student engagement.

- Simulation Lab
- Honor Societies

**Purpose of the DNP Program**
To prepare APNs to transform clinical practice as expert clinicians and leaders with a special focus on rural and underserved populations.

The program is open to registered nurses with a Master's Degree in nursing with CNP, CRNA, CNS, and CNM. The program is designed for part-time study (including summers), and requires a 29-37 course credits. The program is delivered through an executive delivery model in Sioux Falls that includes online components.

**Available Options for Graduate Degrees**
Post Master Doctor of Nursing Practice 29-37 Credits

**Core Requirements**

- HSC 631 - Biostatistics I Credits: 3
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 750 - Transformational Leadership in Nursing Credits: 3
- NURS 835 - Ethical Issues Influencing Practice and Research in Health Credits: 3
- NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care Credits: 3
- NURS 855 - Translational Research in Health Care Credits: 3
- NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3
- NURS 875 - DNP Practicum Credits: 0-8
- NURS 880 - DNP Project Credits: 8

Total Credits: 29-37

For additional information, refer to the Graduate Nursing Department webpage.

**Additional Admissions Requirements for Post Master to Doctor of Nursing Practice**
In addition to meeting the Graduate School admission requirements, applicants for graduate study for the Post Master to Doctor of Nursing Practice (who possess current certification as a Nurse Practitioner, CRNA, CNM or CNS) must have:

2. National certification as a Nurse Practitioner (Nurse Anesthetist, Nurse Midwife or Clinical Nurse Specialist).
3. Master's degree in nursing with a (Nurse Practitioner, Nurse Anesthetist, Nurse Midwife or Clinical Nurse Specialist) focus from an NLNAC or CCNE accredited program with a minimum cumulative 3.3 GPA.
4. Completed application to both SDSU Graduate School and the SDSU College of Nursing - Graduate Nursing Program.
5. Submit written response to questions regarding educational goals, scholarly practice interests, and desired practice career.
6. Completed an approved statistical methods course with a grade of ‘C’ or higher within the past 5 years.
7. Interview with graduate faculty and/or graduate admissions committee member(s).

Total enrollment in the Doctor of Nursing Practice program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the program. Applicants should check with the Graduate Nursing office for application deadlines.

General Requirements
Graduate students must consult with their advisor prior to registration for graduate work. Registration is completed by the Graduate Nursing Department.

Doctor of Nursing Practice (D.N.P.) - Family Nurse Practitioner Specialization (Post Master to D.N.P.)

Program Information
The Doctor of Nursing Practice prepares advanced practice nurses to transform clinical practice as expert clinicians and leaders with a special focus on rural and under-served populations. The program is open to registered nurses with a Master's Degree in Nursing (non-clinical focus) from a NLNAC or CCNE accredited program. The program is designed for part-time study (including summers). The program has executive delivery model in Sioux Falls that includes online components.

The program is open to registered nurses with a Master's Degree in Nursing (non-clinical focus) from a NLNAC or CCNE accredited program. The program is designed for part-time study (including summers). The program has executive delivery model in Sioux Falls that includes online components.

Program Objectives
The graduate of the Doctor of Nursing Practice program will:

- Analyze significant practice issues with the theoretical and scientific underpinnings of knowledge-based practice
- Employ advanced clinical judgment to assess, design, deliver and evaluate evidence-based care of individuals in complex health and illness situations
- Apply a broad system perspective to design, implement and evaluate culturally congruent policies and practices to improve care for a diverse population
- Lead health care inter-professional and intraprofessional teams to transform care
- Initiate ethically sound practice changes to address complex interwoven organization, population, fiscal and policy trends
- Demonstrate proficiency in the use of information technology to improve health care within systems
- Implement evidence-based clinical prevention and health promotion activities to improve the health of populations

Accreditation, Certification, and Licensure

Accreditation
The Doctor of Nursing Practice at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

Licensure
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

Certification
After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

Upon completion of the Doctor of Nursing Practice, students may be eligible for the following certifications:

<table>
<thead>
<tr>
<th>Specialization</th>
<th>National Certification Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Nurse Practitioner Specialization</td>
<td>ANCC and AANP certification examinations</td>
</tr>
<tr>
<td></td>
<td>American Nurses Credentialing Center (ANCC)</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.nursecredentialing.org/#">http://www.nursecredentialing.org/#</a></td>
</tr>
<tr>
<td></td>
<td>American Academy of Nurse Practitioners</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.aanpcertification.org/">www.aanpcertification.org/</a></td>
</tr>
</tbody>
</table>

Course Delivery
Nursing courses are delivered face-to-face and enhanced with web-based instruction. Online course delivery is also offered for specified courses. Courses are offered fall, spring and summer semesters. Selected nursing and elective courses are available in summer semesters.
The College of Nursing provides world-class facilities and a variety of student services and programs for graduate student engagement.

- Simulation Lab
- Honor Societies

**Available Options for Graduate Degrees**

Post Master to Doctor of Nursing Practice 64-67 Credits

**Core Requirements**

- NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing* Credits: 4
- HSC 631 - Biostatistics I Credits: 3
- NURS 631 - Advanced Assessment Across the Lifespan and Lab* Credits: 4
- PHA 645 - Pharmacotherapeutics: Application to Advanced Practice * Credits: 4
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 750 - Transformational Leadership in Nursing Credits: 3
- NURS 765 - Family Nurse Practitioner Practicum I Credits: 6
- NURS 771 - Family Nurse Practitioner Practicum II Credits: 7
- NURS 776 - Family Nurse Practitioner III - Small Group Instruction Credits: 3
- NURS 777 - Family Nurse Practitioner: Practicum III Credits: 9
- NURS 835 - Ethical Issues Influencing Practice and Research in Health Care Credits: 3
- NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care Credits: 3
- NURS 855 - Translational Research in Health Care Credits: 3
- NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3
- NURS 875 - DNP Practicum Credits: 0-3
- NURS 880 - DNP Project Credits: 8

Total Credits: 64-67

* Students who have not previously completed either NURS 623, NURS 631 or PHA 645 OR equivalent coursework within the previous five years, will be required to complete those courses as part of this program option. All previous coursework will need to be evaluated for equivalency and approved by the Associate Dean for Graduate Nursing in order to be included on the student's Plan of Study.

For additional information, refer to the Graduate Nursing Department webpage.

**Additional Admissions Requirements for Post Master to Doctor of Nursing Practice**

In addition to meeting the Graduate School admission requirements, applicants for graduate study for the Post Master to Doctor of Nursing Practice (who possess a Master's Degree in a related field AND a Bachelor’s Degree in Nursing) must have:

2. Bachelor degree in nursing from an NLNAC or CCNE Accredited program with a minimum cumulative 3.3 GPA.
3. 1500 hours of documented nursing practice experience prior to the first clinical course.
4. Master's degree in a related field with a minimum cumulative 3.3 GPA
5. FBI background check.
6. Drug screening.
7. Basic Life Support for Healthcare Providers and ACLS certification prior to the first clinical practicum
8. Completed application to both SDSU Graduate School and the SDSU College of Nursing - Graduate Nursing Program.
9. Submit written response to questions regarding educational goals, scholarly practice interests and desired practice career.
10. Completed an approved statistical methods course within the past 5 years.
11. Interview with graduate faculty.

**General Requirements**

Graduate students must consult with their advisor prior to registration for graduate work. Registration is completed by the Graduate Nursing Department.

**Doctor of Nursing Practice (D.N.P.) - Family Nurse Practitioner Specialization (B.S.N. to D.N.P.)**

**Program Information**

The Doctor of Nursing Practice prepares advanced practice nurses to transform clinical practice as expert clinicians and leaders with a special focus on rural and under-served populations.

**Program Objectives**

The graduate of the Doctor of Nursing Practice program will:

- Analyze significant practice issues with the theoretical and scientific underpinnings of knowledge-based practice
- Employ advanced clinical judgment to assess, design, deliver and evaluate evidence-based care of individuals in complex health and illness situations
- Apply a broad system perspective to design, implement and evaluate culturally congruent policies and practices to improve care for a diverse population
- Lead health care inter-professional and intraprofessional teams to transform care
Initiate ethically sound practice changes to address complex interwoven organization, population, fiscal and policy trends
Demonstrate proficiency in the use of information technology to improve health care within systems
Implement evidence-based clinical prevention and health promotion activities to improve the health of populations

Accreditation, Certification, and Licensure

Accreditation
The Doctor of Nursing Practice at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

Licensure
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

Certification
After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

Upon completion of the Doctor of Nursing Practice, students may be eligible for the following certifications:

<table>
<thead>
<tr>
<th>Specialization</th>
<th>National Certification Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Nurse Practitioner Specialization</td>
<td>ANCC and AANP certification examinations</td>
</tr>
<tr>
<td></td>
<td>American Nurses Credentialing Center (ANCC)</td>
</tr>
<tr>
<td></td>
<td>American Academy of Nurse Practitioners</td>
</tr>
<tr>
<td></td>
<td><a href="www.aanpcertification.org/">www.aanpcertification.org/</a></td>
</tr>
</tbody>
</table>

Course Delivery
Nursing courses are delivered face-to-face and enhanced with web-based instruction. Online course delivery is also offered for specified courses. Courses are offered fall, spring and summer semesters. Selected nursing and elective courses are available in summer semesters.

Facilities and Services
The College of Nursing provides world-class facilities and a variety of students services and programs for graduate student engagement.

- Simulation Lab
- Honor Societies

Available Options for Graduate Degrees
Bachelor's to Doctor of Nursing Practice 78-81 Credits

Core Requirements
- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues Credits: 3
- NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing Credits: 4
- NURS 626 - Research Methods for Advanced Practice Nursing Credits: 3
- NURS 631 - Advanced Assessment Across the Lifespan Credits: 4
- HSC 631 - Biostatistics I Credits: 3
- NURS 670 - Health Policy, Legislation, Economics and Ethics Credits: 3
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 750 - Transformational Leadership in Nursing Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan Credits: 3
- NURS 765 - Family Nurse Practitioner Practicum I Credits: 6
- NURS 771 - Family Nurse Practitioner Practicum II Credits: 7
- NURS 776 - Family Nurse Practitioner III - Small Group Instruction Credits: 3
- NURS 777 - Family Nurse Practitioner: Practicum III Credits: 9
- NURS 835 - Ethical Issues Influencing Practice and Research in Health Credits: 3
- NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care Credits: 3
- NURS 855 - Translational Research in Health Care Credits: 3
- NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3
- NURS 875 - DNP Practicum Credits: 0-3
- NURS 880 - DNP Project Credits: 8
- PHA 645 - Pharmacotherapeutics: Application to Advanced Practice Credits: 4

Total Credits: 78-81

For additional information, refer to the Graduate Nursing Department webpage.

Additional Admission Requirements for Bachelor's to Doctor of Nursing Practice
GRE: Not required
TOEFL: Score of 600 paper-based, 220 computer-based, 100 Internet-based, OR
In addition to meeting the Graduate School admission requirements, applicants for graduate study for the Bachelors to Doctor of Nursing Practice must have:

2. Bachelor’s degree in nursing from an NLNAC or CCNE Accredited program with a minimum cumulative 3.3 GPA.
3. 1500 hours of documented nursing practice experience prior to the first clinical lab.
4. Completed application to both SDSU Graduate School and the SDSU College of Nursing - Graduate Nursing Program
5. FBI background check
6. Drug screening
8. ACLS certification prior to the first practicum course (N631 or N765).
9. Submit written response to questions regarding educational goals, scholarly practice interest and desired practice career.
10. Completed an approved statistical methods course with a grade of ‘C’ or higher within the past 5 years.
11. Interview with graduate faculty and/or graduate admissions committee member(s).

Total enrollment in the Doctor of Nursing Practice program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the program. Applicants should check with the Graduate Nursing office for application deadlines.

**General Requirements**

Graduate students must consult with their advisor prior to registration for graduate work. Registration is completed by the Graduate Nursing Department.

**Doctor of Nursing Practice (D.N.P.) - Family Mental Health Nurse Practitioner Specialization (B.S.N. to D.N.P.)**

**Program Information**

The Doctor of Nursing Practice prepares advanced practice nurses to transform clinical practice as expert clinicians and leaders with a special focus on rural and under-served populations. Family Mental Health Nurse Practitioner Specialty is offered in partnership with the University of Missouri-Columbia Sinclair School of Nursing. Students are prepared to deliver advanced primary mental health care to adults and are eligible for the ANCC psychiatric nurse practitioner examination.

**Program Objectives**

The graduate of the Doctor of Nursing Practice program will:

- Analyze significant practice issues with the theoretical and scientific underpinnings of knowledge-based practice
- Employ advanced clinical judgment to assess, design, deliver and evaluate evidence-based care of individuals in complex health and illness situations
- Apply a broad system perspective to design, implement and evaluate culturally congruent policies and practices to improve care for a diverse population
- Lead health care inter-professional and intraprofessional teams to transform care
- Initiate ethically sound practice changes to address complex interwoven organization, population, fiscal and policy trends
- Demonstrate proficiency in the use of information technology to improve health care within systems
- Implement evidence-based clinical prevention and health promotion activities to improve the health of populations

**Accreditation, Certification, and Licensure**

**Accreditation**

The Doctor of Nursing Practice at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

**Licensure**

Students must provide evidence of professional registration by submitting a copy of the most current RN license.

**Certification**

After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

Upon completion of the Doctor of Nursing Practice, students may be eligible for the following certifications:

<table>
<thead>
<tr>
<th>Specialization</th>
<th>National Certification Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Mental Health Nurse Practitioner Specialization</td>
<td>ANCC psychiatric nurse practitioner examination, American Nurses Credentialing Center (ANCC) <a href="http://www.nursecredentialing.org/">http://www.nursecredentialing.org/</a></td>
</tr>
</tbody>
</table>

**Course Delivery**

Nursing courses are delivered face-to-face and enhanced with web-based instruction. Online course delivery is also offered for specified courses. Courses are offered fall, spring and summer semesters. Selected nursing and elective courses are available in summer semesters.
The College of Nursing has agreements for distance education and hybrid courses with the University of Missouri-Kansas City for Neonatal Nurse Practitioner courses, and the University of Missouri-Columbia for Family Mental Health Nurse Practitioner, Pediatric Nurse Practitioner, and Pediatric Clinical Nurse Specialist courses. Students in these specializations receive their degree from SDSU.

Facilities and Services
The College of Nursing provides world-class facilities and a variety of students services and programs for graduate student engagement.
- Simulation Lab
- Honor Societies

Available Options for Graduate Degrees
Bachelor's to Doctor of Nursing Practice  86 Credits

Core Requirements
Offered in collaboration with the University of Missouri – Columbia

- HSC 631 - Biostatistics I  Credits: 3
- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues  Credits: 3
- NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing  Credits: 4
- NURS 626 - Research Methods for Advanced Practice Nursing  Credits: 3
- NURS 631 - Advanced Assessment Across the Lifespan and Lab  Credits: 4
- NURS 670 - Health Policy, Legislation, Economics and Ethics  Credits: 3
- NURS 675 - Cultural Competence in Health Care  Credits: 3
- NURS 750 - Transformational Leadership in Nursing  Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan  Credits: 3
- NURS 835 - Ethical Issues Influencing Practice and Research in Health Care  Credits: 3
- NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care  Credits: 3
- NURS 855 - Translational Research in Health Care  Credits: 3
- NURS 860 - Health Operations and Financial Management for Nurse Managers  Credits: 3
- PHA 645 - Pharmacotherapeutics: Application to Advanced Practice  Credits: 4

University of Missouri - Columbia courses:
- N7087 - Leadership and Technology Institute++ (one week, on-campus seminar)  Credits: 1
- N8310 - Health Disparities of Rural and Other Underserved Populations++  Credits: 3.5
- N8610 - Diagnostics & Psychopharmacology for Mental Health Nurses ++  Credits: 3.5
- N8620 - Brief Individual Psychotherapy for Mental Health Nurses ++  Credits: 3.5
- N8640 - Group Therapy and Social Skills Training ++  Credits: 3.5
- N8660 - Mental Health Nursing Interventions for Families ++  Credits: 3.5
- N8680 - Pediatric Mental Health Assessment & Treatment ++  Credits: 3.5
- N8920 - Quality, Safety & Performance Outcomes ++  Credits: 3
- N8930 – Health Program Design & Management ++  Credits: 3
- N9070 – DNP Clinical Residency ++  Credits: 8.5
- N9080 – DNP Residency Project ++  Credits: 3
- N9087 – Leadership & Transformational Role Institute ++ (one week, on-campus seminar)  Credits: 2

Total Credits: 86 (SDSU = 45; University of Missouri = 41)

++ Courses offered online by the Sinclair School of Nursing, University of Missouri - Columbia
On-campus requirement at the University of Missouri for clinical and Institute courses. Dates are posted on the University of Missouri Sinclair School of Nursing site.

University of Missouri coursework subject to change – contact the SDSU Graduate Nursing Department for updated information.

For additional information, refer to the Graduate Nursing Department webpage.

Additional Admission Requirements for Bachelor's to Doctor of Nursing Practice
GRE: Not required
TOEFL: Score of 600 paper-based, 220 computer-based, 100 Internet-based, OR
IETS: 7.0 total band

In addition to meeting the Graduate School admission requirements, applicants for graduate study for the Bachelors to Doctor of Nursing Practice must have:
2. Bachelor’s degree in nursing from an NLNAC or CCNE Accredited program with a minimum cumulative 3.3 GPA.
3. 1500 hours of documented nursing practice experience prior to the first clinical lab.
4. Completed application to both SDSU Graduate School and the SDSU College of Nursing - Graduate Nursing Program
5. FBI background check
6. Drug screening
8. ACLS certification prior to the first practicum course (N631 or N765).
9. Submit written response to questions regarding educational goals, scholarly practice interest and desired practice career.
10. Completed an approved statistical methods course with a grade of ’C’ or higher within the past 5 years.
11. Interview with graduate faculty and/or graduate admissions committee member(s).

Total enrollment in the Doctor of Nursing Practice program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the program. Applicants should check with the Graduate Nursing office for application deadlines.

General Requirements
Graduate students must consult with their advisor prior to registration for graduate work.
Registration is completed by the Graduate Nursing Department.

Doctor of Nursing Practice (D.N.P.) - Neonatal Nurse Practitioner Specialization (B.S.N. to D.N.P.)

Program Information
The Doctor of Nursing Practice prepares advanced practice nurses to transform clinical practice as expert clinicians and leaders with a special focus on rural and under-served populations. Neonatal Nurse Practitioner program (NNP) is offered in partnership with the University of Missouri-Kansas City School of Nursing. The program prepares graduates to provide assessment diagnosis, and medical management of neonates and their families from admission through discharge in collaboration with other health care providers in specific clinical settings. Graduates with this specialization are eligible for the neonatal nurse practitioner examination via the National Certification Corporation.

Program Objectives
The graduate of the Doctor of Nursing Practice program will:
- Analyze significant practice issues with the theoretical and scientific underpinnings of knowledge-based practice
- Employ advanced clinical judgment to assess, design, deliver and evaluate evidence-based care of individuals in complex health and illness situations
- Apply a broad system perspective to design, implement and evaluate culturally congruent policies and practices to improve care for a diverse population
- Lead health care inter-professional and intraprofessional teams to transform care
- Initiate ethically sound practice changes to address complex interwoven organization, population, fiscal and policy trends
- Demonstrate proficiency in the use of information technology to improve health care within systems
- Implement evidence-based clinical prevention and health promotion activities to improve the health of populations

Accreditation, Certification, and Licensure

Accreditation
The Doctor of Nursing Practice at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

Licensure
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

Certification
After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

Upon completion of the Doctor of Nursing Practice, students may be eligible for the following certifications:

<table>
<thead>
<tr>
<th>Specialization</th>
<th>National Certification Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neonatal Nurse Practitioner Specialization</td>
<td>Neonatal nurse practitioner examination</td>
</tr>
<tr>
<td></td>
<td>The National Certification Corporation</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.nccwebsite.org/Certification/Exam-detail.aspx?eid=16&amp;showId=1">www.nccwebsite.org/Certification/Exam-detail.aspx?eid=16&amp;showId=1</a></td>
</tr>
</tbody>
</table>

Course Delivery
Nursing courses are delivered face-to-face and enhanced with web-based instruction. Online course delivery is also offered for specified courses. Courses are offered fall, spring and summer semesters. Selected nursing and elective courses are available in summer semesters.

The College of Nursing has agreements for distance education and hybrid courses with the University of Missouri-Kansas City for Neonatal Nurse Practitioner courses, and the University of Missouri-Columbia for Family Mental Health Nurse Practitioner, Pediatric Nurse Practitioner, and Pediatric Clinical Nurse Specialist courses. Students in these specializations receive their degree from SDSU.

Facilities and Services
The College of Nursing provides world-class facilities and a variety of students services and programs for graduate student engagement.
- Simulation Lab
- Honor Societies

Available Options for Graduate Degrees
Bachelor's to Doctor of Nursing Practice 74 Credits
Core Requirements
Offered in collaboration with the University of Missouri – Kansas City

- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues Credits: 3
- NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing Credits: 4
- NURS 626 - Research Methods for Advanced Practice Nursing Credits: 3
- HSC 631 - Biostatistics I Credits: 3
- NURS 670 - Health Policy, Legislation, Economics and Ethics Credits: 3
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 750 - Transformational Leadership in Nursing Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan Credits: 3
- NURS 835 - Ethical Issues Influencing Practice and Research in Health Credits: 3
- NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care Credits: 3
- NURS 855 - Translational Research in Health Care Credits: 3
- NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3
- NURS 875 - DNP Practicum Credits: 5
- NURS 880 - DNP Project Credits: 8

University of Missouri-Kansas City courses:
- N5547N - Advanced Assessment of the Neonate Credits: 3
- N5548N - Physiology/Pathophysiology of the Neonates Credit: 2
- N5549N - Pharmacology for the Neonate Credits: 3
- N5564N - Neonatal Nursing I Credits: 3
- N5566N - Neonatal Nursing II Credits: 3
- N5572-NI - Preceptorship I Credits: 5
- N5572-NII - Preceptorship II Credits: 5

Total Credits: 74 (SDSU = 50; University of Missouri = 24)

NOTE:
A minimum of 600 preceptorship hours are required by the National Certification Corporation to be eligible for the NNP certification. Preceptorship hours are included in only the following courses (N5572-NI and N5572-NII).
Clinical Courses offered through the University of Missouri – Kansas City.

University of Missouri coursework is subject to change – contact the SDSU Graduate Nursing Department for updated information.

There are online campus requirements – refer to the Graduate Nursing webpage for additional information.

Additional Admission Requirements for Bachelor's to Doctor of Nursing Practice
GRE: Not required
TOEFL: Score of 600 paper-based, 220 computer-based, 100 Internet-based, OR
IELTS: 7.0 total band

In addition to meeting the Graduate School admission requirements, applicants for graduate study for the Bachelors to Doctor of Nursing Practice must have:
2. Bachelor’s degree in nursing from an NLNAC or CCNE Accredited program with a minimum cumulative 3.3 GPA.
3. Additional specific RN experience working with pediatric and/or neonatal populations may be required based on the University of Missouri requirements.
4. 1500 hours of documented nursing practice experience prior to the first clinical lab.
5. Completed application to both SDSU Graduate School and the SDSU College of Nursing - Graduate Nursing Program
6. FBI background check
7. Drug screening
9. Specialty certification, e.g. NALS (Neonatal Advanced Life Support) or as required by the University of Missouri-Kansas City.
10. Submit written response to questions regarding educational goals, scholarly practice interest and desired practice career.
11. Completed an approved statistical methods course with a grade of ‘C’ or higher within the past 5 years.
12. Interview with graduate faculty and/or graduate admissions committee member(s).

Total enrollment in the Doctor of Nursing Practice program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the program. Applicants should check with the Graduate Nursing office for application deadlines.

General Requirements
Graduate students must consult with their advisor prior to registration for graduate work.
Registration is completed by the Graduate Nursing Department.
**Doctor of Nursing Practice (D.N.P.) - Pediatric Clinical Nurse Specialist Specialization (B.S.N. to D.N.P.)**

**Program Information**
The Doctor of Nursing Practice prepares advanced practice nurses to transform clinical practice as expert clinicians and leaders with a special focus on rural and under-served populations. Pediatric Clinical Nurse Specialist is offered in partnership with the University of Missouri-Columbia Sinclair School of Nursing. Students are prepared didactically and clinically to deliver care for pediatric clients across the care continuum (acute/critical care, acute/chronic care, and primary care). Upon completion of the program, students are eligible for the ANCC pediatric clinical nurse specialist examination.

**Program Objectives**
The graduate of the Doctor of Nursing Practice program will:
- Analyze significant practice issues with the theoretical and scientific underpinnings of knowledge-based practice
- Employ advanced clinical judgment to assess, design, deliver and evaluate evidence-based care of individuals in complex health and illness situations
- Apply a broad system perspective to design, implement and evaluate culturally congruent policies and practices to improve care for a diverse population
- Lead health care inter-professional and intraprofessional teams to transform care
- Initiate ethically sound practice changes to address complex interwoven organization, population, fiscal and policy trends
- Demonstrate proficiency in the use of information technology to improve health care within systems
- Implement evidence-based clinical prevention and health promotion activities to improve the health of populations

**Accreditation, Certification, and Licensure**

**Accreditation**
The Doctor of Nursing Practice at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

**Licensure**
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

**Certification**
After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

Upon completion of the program, students may be eligible for the following certifications: Pediatirc Clinical Nurse Specialist Specialization

<table>
<thead>
<tr>
<th>Specialization</th>
<th>National Certification Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Clinical Nurse Specialist Specialization</td>
<td>ANCC pediatric clinical nurse specialist examination</td>
</tr>
<tr>
<td></td>
<td>American Nurses Credentialing Center (ANCC)</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.nursecredentialing.org/#">http://www.nursecredentialing.org/#</a></td>
</tr>
<tr>
<td>Pediatric Nurse Practitioner Specialization</td>
<td>ANCC pediatric nurse practitioner examination</td>
</tr>
<tr>
<td></td>
<td>American Nurses Credentialing Center (ANCC)</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.nursecredentialing.org/#">http://www.nursecredentialing.org/#</a></td>
</tr>
</tbody>
</table>

**Course Delivery**
Nursing courses are delivered face-to-face and enhanced with web-based instruction. Online course delivery is also offered for specified courses. Courses are offered fall, spring and summer semesters. Selected nursing and elective courses are available in summer semesters.

The College of Nursing has agreements for distance education and hybrid courses with the University of Missouri-Kansas City for Neonatal Nurse Practitioner courses, and the University of Missouri-Columbia for Family Mental Health Nurse Practitioner, Pediatric Nurse Practitioner, and Pediatric Clinical Nurse Specialist courses. Students in these specializations receive their degree from SDSU.

**Facilities and Services**
The College of Nursing provides world-class facilities and a variety of students services and programs for graduate student engagement.
- Simulation Lab
- Honor Societies

**Available Options for Graduate Degrees**
Bachelor's to Doctor of Nursing Practice 83.5 Credits

**Core Requirements**
Offered in collaboration with the University of Missouri – Columbia
- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan Credits: 3
- NURS 626 - Research Methods for Advanced Practice Nursing Credits: 3
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 670 - Health Policy, Legislation, Economics and Ethics Credits: 3
• NURS 835 - Ethical Issues Influencing Practice and Research in Health Credits: 3
• NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care Credits: 3
• HSC 631 - Biostatistics I Credits: 3
• NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3
• NURS 750 - Transformational Leadership in Nursing Credits: 3
• NURS 855 - Translational Research in Health Care Credits: 3

University of Missouri - Columbia courses:
• N7087 - Leadership & Technology Institute ++ (one-week, on-campus seminar) Credits: 1
• N7120 - Advanced Physiology and Pathophysiology ++ Credits: 3
• N7310 - Advanced Pediatric Health Assessment for Pediatric Nursing Practice ++ Credits: 3.5
• N7330 - Pediatric Pharmacology for Adv Nursing Practice ++ Credits:3
• N8210 - Special Health Needs of Children in School Setting ++ Credits:3.5
• N8310 - Health Disparities of Rural & Other Underserved Populations ++ Credits:3
• N8420 - Newborn through Adolescence Primary Care ++ ++ Credits:3.5
• N8540 - Advanced Diagnostics & Reasoning ++ Credits:3.5
• N8710: Clinical Mgmt of Acute & Critical Care Problems ++ 3.5 (2, 1.5) Credits:3.5
• N8720: Symptom Mgmt of Acute & Chronic Illness ++ Credits:3.5
• N8920 - Quality, Safety & Performance Outcomes ++ Credits:3
• N8930 - Health Program Design & Management ++ Credits:3
• N9070 - DNP Clinical Residency ++ Credits:8.5
• N9080 - DNP Residency Project ++ Credits:3
• N9087 - Leadership & Transformational Role Institute ++ (one-week, on-campus seminar) Credits:2

Total Credits: 83.5 (SDSU = 33; University of Missouri = 50.5)
++ Courses offered online by the Sinclair School of Nursing, University of Missouri - Columbia.
On-campus requirement at the University of Missouri for clinical and Institute courses. Dates are posted on the University of Missouri Sinclair School of Nursing site.

University of Missouri coursework subject to change – contact the SDSU Graduate Nursing Department for updated information.

For additional information, refer to the Graduate Nursing Department webpage.

Additional Admission Requirements for Bachelor's to Doctor of Nursing Practice
GRE: Not required
TOEFL: Score of 600 paper-based, 220 computer-based, 100 Internet-based, OR
IETS: 7.0 total band

In addition to meeting the Graduate School admission requirements, applicants for graduate study for the Bachelors to Doctor of Nursing Practice must have:
2. Bachelor’s degree in nursing from an NLNAC or CCNE Accredited program with a minimum cumulative 3.3 GPA.
3. Additional specific RN experience working with pediatric and/or neonatal populations may be required based on the University of Missouri requirements.
4. 1500 hours of documented nursing practice experience prior to the first clinical lab.
5. Completed application to both SDSU Graduate School and the SDSU College of Nursing - Graduate Nursing Program
6. FBI background check
7. Drug screening
9. Specialty certification, e.g. PALS (Pediatric Advanced Life Support), etc. or as required by the University of Missouri-Columbia.
10. Submit written response to questions regarding educational goals, scholarly practice interest and desired practice career.
11. Completed an approved statistical methods course with a grade of ‘C’ or higher within the past 5 years.
12. Interview with graduate faculty and/or graduate admissions committee member(s).

Total enrollment in the Doctor of Nursing Practice program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the program. Applicants should check with the Graduate Nursing office for application deadlines.

General Requirements
Graduate students must consult with their advisor prior to registration for graduate work.
Registration is completed by the Graduate Nursing Department.
**Doctor of Nursing Practice (D.N.P.) - Pediatric Nurse Practitioner Specialization (B.S.N. to D.N.P.)**

**Program Information**
The Doctor of Nursing Practice prepares advanced practice nurses to transform clinical practice as expert clinicians and leaders with a special focus on rural and under-served populations. Pediatric Nurse Practitioner Speciality is offered in partnership with the University of Missouri-Columbia Sinclair School of Nursing. Students are prepared to deliver advanced primary health care to pediatric clients and are eligible for the ANCC pediatric nurse practitioner examination.

**Program Objectives**
The graduate of the Doctor of Nursing Practice program will:
- Analyze significant practice issues with the theoretical and scientific underpinnings of knowledge-based practice
- Employ advanced clinical judgment to assess, design, deliver and evaluate evidence-based care of individuals in complex health and illness situations
- Apply a broad system perspective to design, implement and evaluate culturally congruent policies and practices to improve care for a diverse population
- Lead health care inter-professional and intraprofessional teams to transform care
- Initiate ethically sound practice changes to address complex interwoven organization, population, fiscal and policy trends
- Demonstrate proficiency in the use of information technology to improve health care within systems
- Implement evidence-based clinical prevention and health promotion activities to improve the health of populations

**Accreditation, Certification, and Licensure**

**Accreditation**
The Doctor of Nursing Practice at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

**Licensure**
Students must provide evidence of professional registration by submitting a copy of the most current RN license.

**Certification**
After completing the program of study, graduates may be eligible to complete certification through several professional organizations.

Upon completion of the Doctor of Nursing Practice, students may be eligible for the following certifications:

<table>
<thead>
<tr>
<th>Specialization</th>
<th>National Certification Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Nurse Practitioner Specialization</td>
<td>ANCC pediatric nurse practitioner examination</td>
</tr>
<tr>
<td></td>
<td>American Nurses Credentialing Center (ANCC)</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.nursecredentialing.org/#">http://www.nursecredentialing.org/#</a></td>
</tr>
</tbody>
</table>

**Course Delivery**
Nursing courses are delivered face-to-face and enhanced with web-based instruction. Online course delivery is also offered for specified courses. Courses are offered fall, spring and summer semesters. Selected nursing and elective courses are available in summer semesters.

The College of Nursing has agreements for distance education and hybrid courses with the University of Missouri-Kansas City for Neonatal Nurse Practitioner courses, and the University of Missouri-Columbia for Family Mental Health Nurse Practitioner, Pediatric Nurse Practitioner, and Pediatric Clinical Nurse Specialist courses. Students in these specializations receive their degree from SDSU.

**Facilities and Services**
The College of Nursing provides world-class facilities and a variety of students services and programs for graduate student engagement.
- Simulation Lab
- Honor Societies

**Available Options for Graduate Degrees**
Bachelor's to Doctor of Nursing Practice 83.5 Credits

**Core Requirements**
Offered in collaboration with the University of Missouri – Columbia
- NURS 615 - Advanced Nursing Practice -- Introduction to Roles and Issues Credits: 3
- NURS 760 - Health Promotion and Disease Prevention Across the Lifespan Credits: 3
- NURS 626 - Research Methods for Advanced Practice Nursing Credits: 3
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 670 - Health Policy, Legislation, Economics and Ethics Credits: 3
- NURS 835 - Ethical Issues Influencing Practice and Research in Health Credits: 3
- NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care Credits: 3
- HSC 631 - Biostatistics I Credits: 3
- NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3
- NURS 750 - Transformational Leadership in Nursing Credits: 3
• NURS 855 - Translational Research in Health Care Credits: 3

University of Missouri - Columbia courses:
• N7087 - Leadership & Technology Institute ++ (one week, on-campus seminar) Credits: 1
• N7120 - Advanced Physiology and Pathophysiology ++ Credits: 3
• N7310 - Adv Pediatric Health Assessment for Pediatric Nursing Practice ++ Credits: 3.5
• N7330 - Pediatric Pharmacology for Adv Nursing Practice ++ Credits: 3
• N8210 - Special Health Needs of Children in School Setting ++ Credits: 3.5
• N8310 - Health Disparities of Rural & Other Underserved Populations ++ Credits: 3
• N8420 - Newborn through Adolescence Primary Care ++ Credits: 3.5
• N8430 - Reproductive & Sexual Health Primary Care ++ Credits: 3.5
• N8540 - Advanced Diagnostics &Reasoning ++ Credits: 3.5
• N8680 - Pediatric Mental Health Assessment & Treatment ++ Credits: 3.5
• N8920 - Quality, Safety & Performance Outcomes ++ Credits: 3
• N8930 - Health Program Design & Mgmt ++ Credits: 3
• N9070 - DNP Clinical Residency ++ Credits: 8.5
• N9080 - DNP Residency Project ++ Credits: 3
• N9087 - Leadership & Transformational Role Institute ++ (one week, on-campus seminar) Credits: 2

Total Credits: 83.5 (SDSU = 33; University of Missouri = 50.5)

++ Courses offered online by the Sinclair School of Nursing, University of Missouri - Columbia.

On-campus requirement at the University of Missouri for clinical and Institute courses. Dates are posted on the University of Missouri Sinclair School of Nursing site.

University of Missouri coursework subject to change – contact the SDSU Graduate Nursing Department for updated information.

For additional information, refer to the Graduate Nursing Department webpage.

Additional Admission Requirements for Bachelor's to Doctor of Nursing Practice

GRE: Not required
TOEFL: Score of 600 paper-based, 220 computer-based, 100 Internet-based, OR
IETS: 7.0 total band

In addition to meeting the Graduate School admission requirements, applicants for graduate study for the Bachelors to Doctor of Nursing Practice must have:
2. Bachelor’s degree in nursing from an NLNAC or CCNE Accredited program with a minimum cumulative 3.3 GPA.
3. Additional specific RN experience working with pediatric and/or neonatal populations may be required based on the University of Missouri requirements.
4. 1500 hours of documented nursing practice experience prior to the first clinical lab.
5. Completed application to both SDSU Graduate School and the SDSU College of Nursing - Graduate Nursing Program
6. FBI background check
7. Drug screening
9. Specialty certification, e.g. PALS (Pediatric Advanced Life Support), etc. or as required by the University of Missouri-Columbia.
10. Submit written response to questions regarding educational goals, scholarly practice interest and desired practice career.
11. Completed an approved statistical methods course with a grade of ‘C’ or higher within the past 5 years.
12. Interview with graduate faculty and/or graduate admissions committee member(s).

Total enrollment in the Doctor of Nursing Practice program may vary depending upon available clinical facilities and qualified faculty. Applicants are selected competitively from those qualified for the program. Applicants should check with the Graduate Nursing office for application deadlines.

General Requirements

Graduate students must consult with their advisor prior to registration for graduate work.
Registration is completed by the Graduate Nursing Department.
Pharmacy (Pharm.D.)

Program Information
The College of Pharmacy offers a six-year course of study (2-year pre-pharmacy and 4-year professional program phase) leading to an entry level Doctor of Pharmacy degree. The Pharm.D. is a professional degree which enables graduates to pursue diverse career opportunities and ensures that their pharmacy education prepares them for future changes in the profession. The program provides unique opportunities for students who want to make a significant contribution to the health care needs of today's society.

Program Admission
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 and meet the admission requirements.

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 March 15. Students admitted to the professional program must submit a non-refundable pharmacy major fee to secure their position for the fall semester.

Program Format
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.

Curriculum Notes
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. 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.

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

1. Pharmacy GPA Calculation – Pharmacy GPA is calculated using all pharmacy PHA prefix courses, excluding 201 & 321.
   A. For pharmacy courses repeated at SDSU, only the repeated grade will be used to calculate the pharmacy GPA.
   B. For pharmacy courses repeated at another college of pharmacy, a grade of "C" will be used to calculate the pharmacy GPA in place of the grade received for the corresponding course at SDSU (grades of "D" or "F" for pharmacy courses from other pharmacy programs do not satisfy the course requirement).

2. Probation - A student will be placed on "pharmacy probation" when the student's pharmacy GPA for a semester falls below 2.0. Each subsequent semester while on "pharmacy probation" the student must earn a pharmacy GPA of 2.0 or better or the student will be placed on "refused status." The student will be on probation for a minimum of one semester while taking pharmacy courses (PHA prefix, excluding 201 & 321) and will remain on "pharmacy probation" until the student's cumulative Pharmacy GPA is 2.0 or greater.

3. Graduation - A student must earn a minimum 2.0 grade point average for all pharmacy courses (excluding PHA 201 & PHA 321) to qualify for graduation with a B.S. in Pharmaceutical Sciences or to progress to the P3 year.
A. Medication therapy management: Patient-centered - Apply knowledge of the biomedical sciences, pharmaceutical sciences, and medication therapy management principles to provide patient-centered care.

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 the 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 the 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):

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 109.
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.
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.

F. The student must successfully complete P4 capstone requirements including P4 seminar, the P4 knowledge exam, all items on the Student Activities Checklist, and all components of the P4 Assessment Activities. In addition, the student must maintain a portfolio of activities according to distributed portfolio guidelines.

Student Learning Outcomes

General Outcomes

A. Critical Thinking and Decision Making Abilities - Demonstrate critical thinking skills in making informed, rational, and responsible decisions.
   1. Demonstrate the use of critical thinking skills to identify problems, goals, and alternatives to assess, prioritize, and solve problems.
   2. Evaluate decisions by integrating factors such as, scientific, social, cultural, economic, and ethical issues in decision making.
   3. Take responsibility for the outcomes of each decision made.

B. Communication Abilities and Skills - Use appropriate and effective communication in all situations.
   1. Demonstrate appropriate comprehension and interpretation in reading, listening, and use of data.
   2. Demonstrate effective writing, speaking, reading, listening, and interpersonal skills.
   3. Demonstrate effective communication skills that apply aspects of cultural competency.

C. Self-Assessment and Life-Long Learning Skills - Demonstrate the ability and take responsibility for self-assessment and learning.
   1. Demonstrate the ability to accurately self-assess strengths and areas needing improvement.
   2. Take responsibility for maintaining professional competency through life-long learning.

D. Appreciation and Understanding of the Social Sciences, Humanities, Aesthetics (i.e., Fine Arts) and International and Multicultural experiences - Demonstrate an understanding and the ability to effectively use ideas and skills from social sciences, humanities, fine arts, and international and multicultural experiences.
   1. Demonstrate an understanding of concepts from areas such as, music, art, literature, political science, foreign cultures, psychology, religion, sociology, history, and philosophy.
   2. Appreciate the impact that these areas have on society and one's own personal and professional life.

E. Knowledge of the Principles and Application of the Scientific Method - Articulate and apply the principles of science and mathematics in experimental design, analysis of data, and evaluation of the scientific validity of investigational studies.

F. Leadership and Social Responsibility - Demonstrate an understanding of the concepts of leadership and social responsibility and apply these concepts to personal and professional life.

Professional Outcomes

A. Medication therapy management: Patient-centered - Apply knowledge of the biomedical sciences, pharmaceutical sciences, and medication therapy management principles to provide patient-centered care.
   1. Demonstrate a thorough understanding and ability to use critical thought processes in the following areas:
2. Biomedical Sciences,
3. Pharmaceutical Sciences,
4. Behavioral, Administrative and Social Sciences,
5. Clinical Sciences
6. Demonstrate professional competency in the provision of patient-centered medication therapy management which includes:
   • Preparation, dispensing and administration of medications in multiple practice settings
   • Design, implement, monitor, and evaluate safe and effective evidence-based medication therapy regimens to optimize patient outcomes
   • Communicate and collaborate with other health-care professionals to provide patient-centered care

B. Medication therapy management: Population-based - Apply knowledge of the biomedical sciences, pharmaceutical sciences, and medication therapy management principles to promote health, wellness and prevent disease with a population-based focus.
   1. Develop and implement population-specific, evidence-based programs and protocols to resolve public health problems.
   2. Communicate and collaborate with other health-care professionals and policy makers to promote public health and wellness.

C. Acquisition, Use and Communication of Professional Information - Obtain, evaluate, and effectively communicate information in professional settings.
   1. Demonstrate the ability to effectively counsel patients regarding medication therapy and to clearly and concisely document pharmacy practice activities in the patient medical records.
   2. Use current technology to retrieve, analyze, and correctly interpret the professional, lay and scientific literature to effectively communicate medical information and therapeutic recommendations to patients, families, health care providers and the community at large.
   3. Demonstrate the ability to effectively communicate through professional writing.
   4. Demonstrate effective intra- and/or inter-disciplinary skills.

D. Management Skills - Demonstrate appropriate knowledge and behaviors to effectively manage professional practices.
   1. Apply the laws, regulations, and standards of pharmacy practice in professional settings.
   2. Apply management concepts to effectively manage professional resources.
   3. Demonstrate an understanding of U.S. health care systems and their effect on management, decision-making and operations.

E. Professional Development and Professional Contributions - Demonstrate the ability for continuous professional development and understand the importance of contributions to the profession.
   1. Demonstrate the ability for continuous professional development, and contribute to the profession.
   2. Understand the role and value of professional organizations, and the importance of individual participation.

F. Values, Ethical Principles, and Professionalism - Demonstrate values and ethical principles and maintain professionalism in all situations.
   1. Integrate ethical principles and theories, with the thoughts and values of self and others, to make decisions in personal, societal, and professional situations.
   2. Conduct personal behavior in a professional manner at all times.

Accreditation, Certification, and Licensure

Accreditation

The Pharm.D. program is accredited by the Accreditation Council for Pharmacy Education, 135 S. LaSalle Street, Suite 4100, Chicago, IL 60603-4810

Certification and Licensure

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 the North American Pharmacist Licensure Examination and the Multistate Pharmacy Jurisprudence Examination in order to practice as a pharmacist.

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.

Facilities and Services

The graduate programs are housed in the recently constructed Avera Health and Science Center, a first-class educational and research facility on the Brookings campus. The Avera Health and Science Center has enabled the College to incorporate new teaching strategies into the curriculum that will lead to pharmacy graduates that are better prepared to provide patient care utilizing modern technology and a team-based approach. The facility has modern research laboratories that support our growing research program.

Student Engagement and Support Opportunities

Graduate students may choose to take part in Peer Mentoring or get involved with the College's Honorary societies and other student organizations.

Available Options for Graduate Degrees

Doctor of Pharmacy (Pharm.D.) 218 Credits

Core Requirements

System General Education Requirements*: 34
   • Goal #1 Written Communication: ENGL 101* and ENGL 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
• 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 and Lab(COM) Credits: (3, 1)
• BIOL 325-325L - Physiology and Lab (COM) Credits: 4
• CHEM 326-326L - Organic Chemistry I and Lab(COM) Credits: (3, 1)
• MICR 231-231L - General Microbiology and 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
• PHA 415 - Biopharmaceutics and Pharmacokinetices 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**
• PHA 610 - Introductory Practice Experience II Credits: 3
• 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 Resources Management Credits: 3
• PHA 741 - Public Health and Wellness Credits: 2
• PHA 742 - 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 - 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**: Credits 10
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
• 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

Advanced Pharmacy Practice Experiences (APPEs) are completed during Summer sessions, Fall, and Spring semesters.
• Elective Advanced Pharmacy Practice Experiences \(^*\); Credits: 10
Choose 10 credits from the following:
  • 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 712 - Nuclear Pharmacy Practice Experience Credits: 5
  • PHA 713 - Managed Care Practice Experience Credits: 5
  • PHA 780 - International Pharmacy Practice Experience Credits: 5

  APPEs not utilized from list of Assigned APPEs

• Elective Credits: 10
  • General Electives Credits: 6
  • Pharmacy Electives, PHA 700 level, nonAPPE Credits: 4

Total Credits: 218

Footnotes
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 Students must meet progression standards and capstone requirements in order to advance within the program.
3 PHA 410 must be completed during the summer between the P1 and P2 years.
4 General Electives are a College of Pharmacy requirement and can be from any discipline but must be completed by the end of the P2 year. For all students, general elective credits can include credits in excess of System Graduation Requirements (SGR) or SDSU Core (IGR). Students starting at SDSU summer 2012 or more recently will complete 8 IGR credits according to the catalog, students starting fall 2012 or later will complete 5 IGR credits (including PHA 109 for 2 credits) and BIOL 151.
5 PHA 610 must be completed during the summer between the P2 and P3 years.

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. The 34 SGR credits include 2 extra Mathematics credits from Math 121-121L and 2 extra Natural Sciences credits from the CHEM 112-112L and CHEM 114-114L.
** 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 Admission Requirements
Applicants to the Doctor of Pharmacy (Pharm.D.) Program will submit:
  • The completed application
  • Official transcripts
  • Contact information for two references
  • Documentation of your ACT, SAT, or PCAT scores
  • A short essay on the topic of "Why I want to obtain a Doctor of Pharmacy Degree at SDSU"
  • A completed shadowing form

The program requires an interview with the Pharmacy Admissions Committee before we make the final selections for the new Fall class.

Those selected are required to send a non-refundable deposit to secure enrollment for the fall semester.

Students must pass a criminal background check before final approval for admission into the professional program. Applicants receive notification of acceptance into the professional program by March 15.

For more information see frequently asked questions (FAQ).

General Requirements (Pharm.D.)
For additional information see Doctor of Pharmacy Degree Requirement.
Academic Programs – Graduate Minors

Geographic Information Sciences Minor

Program Information
The Graduate Minor in Geographic Information Sciences is offered by the department of Geography and compliments a variety of graduate programs. The program allows students to gain hands-on experience with computerized Geographic Information System (GIS) that integrate hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. GIS allows researchers to work with data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts. With GIS's capability to enhance geo-spatial data analysis, there is a demand for GIS trained college graduates by many local, state, and federal governmental agencies, including the US Geologic Survey.

Course Delivery Format
The Geographic Information Sciences program includes lecture, discussion, laboratory research, fieldwork, and travel, with limited online coursework.

Facilities and Services
The department houses the Geospatial Sciences Center of Excellence and produces its own annual Geography Convention, the longest running such event in the United States.

Student Engagement Opportunities
The department provides numerous opportunities for student engagement. For example, the Geography Club is a student organization centered on both academic and social functions. Membership is open to anyone interested. Additionally, the South Dakota State Geography Convention.

Students and faculty regularly travel including attendance at regional and national geography meetings, as well as travel to other parts of the world in pursuit of their individual scholarly interests. SDSU Geography also has a connection with a university in Romania. The exchanges that result from this relationship provide invaluable international experience for students, which is critical in the increasingly globalized world.

Core Requirements
- GEOG 573 - GIS Data Creation/Integration Credits: 3
- GEOG 574 - GIS: Vector & Raster Modeling Credits: 3
- GEOG 786 - Geographic Information Systems Credits: 3
- Electives Credits: minimum of 2 additional credit hours from following list:
  - ABE 732 - Advanced Hydrology in Agriculture Credits: 2
  - ABE 733 - Ground Water Engineering in Agriculture
  - CSC 533 - Computer Graphics Credits: 3
  - STAT 541 - Statistical Methods II Credits: 3
  - WL 712 - Wetlands Ecology and Management and Lab Credits: 3
  - SOC 762 - Applied Demography Credits: 3

Total Credits: 11

Additional Admission Requirements
Refer to major program of study for further details about admission requirements.
Academic Programs – Graduate Certificates

Animal Science Certificate

Program Description
The Animal Science Certificate program is designed to provide students with courses in the major disciplinary areas of animal science. The goal of the program is to provide foundation courses across many facets of animal science, serving as a basis for further study in one of the disciplines or in a particular animal species. Because the courses are delivered via the World Wide Web they allow for greater flexibility and access to course content than traditional classroom based courses. The Animal Science Certificate program will be marketed to working professionals who wish to further their education but lack the flexibility to devote themselves to a full-time graduate program.

Course Delivery Format
The online graduate certificate program in Animal Science has been developed to support continuing education needs of the workforce in food animal agriculture. The consortium offering the certificate is affiliated with AG IDEA and is governed by its structure. The institutions involved in this effort consist of South Dakota State University, North Carolina State University, Clemson University, and the University of Georgia. The program is also intended to benefit traditional graduate programs through additional course availability.

The courses in this program are online and taught by the same instructors who teach on campus at the participating universities. Curriculum is specially adapted for the online environment to ensure students receive the same quality education as they would experience on campus.

Course schedules are determined by the teaching institution but do not have set class times, allowing students to access course content when it is convenient for them. Students meet deadlines as outlined by the instructors, and interact with instructors and other students through e-mail, chats, discussion boards, and other interactive methods. Students must have access to a computer, e-mail, and the Internet.

Requirements for Animal Science Certificate

- AS 541 - Advanced Meat Science Credits: 3
- AS 720 - Advanced Selection of Domestic Animals Credits: 3
- AS 732 - Advanced Physiology of Reproduction Credits: 3
- Select one of the following courses:
  - AS 712 - Ruminant Nutrition Credits: 3
  - AS 736 - Monogastric Nutrition Credits: 3

Total Credits: 12

Additional Admission Requirements
Please refer to the following for additional information
- Graduate School Admission
- Distance Education

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

Bioenergy and Sustainable Technology Certificate

Program Description
The rapidly expanding industry of bioenergy and biobased products requires a well trained workforce. Chemical feedstocks, materials, and fuels derived from biomass have received increasing emphasis nationally and are seen as being very desirable for many reasons. With a rising interest in green chemistry and sustainability, and escalating crude oil prices, private industry now actively recruits individuals with specific training in bioprocessing and biobased materials. SDSU's Bioenergy and Sustainable Technology Graduate Certificate program is designed to serve the needs of these emerging industries and provide post-baccalaureate educational opportunities for industry practitioners who do not require a full graduate degree program. Students develop an interdisciplinary background and can tailor the program of study to specific interests.

The certificate may be suitable for individuals who are placebound in the target industries and need additional knowledge in their disciplines while requiring distance education options. Students pursuing the certificate or taking courses to support their graduate degree must be admitted to the graduate college of one of the consortia institutions. Students may take courses without pursuing the certificate to strengthen their plan of study in conventional graduate degree programs.

Course Delivery Format
The online graduate certificate program in Bioenergy and Sustainable Technology has been developed to support continuing education needs of the workforce in bio-based industries. The consortium offering the certificate is affiliated with AG IDEA and is governed by its structure. The institutions involved in this effort consist of South Dakota State University, Kansas State University, Oklahoma State University, and the University of Arkansas. The program is also intended to benefit traditional graduate programs through additional course availability in specialized disciplines.

Requirements for Bioenergy and Sustainable Technology Certificate

- Overview Course Credits: 9
  - ABE 551 - Fundamentals of Conversion Credits: 3
• ECON 662 - Bioenergy Economic/Sustainability Credits: 3
• PS 543 - Bioenergy Feedstock Production System Credits: 3
• Specialized Courses Credits: 6
  Select two specialization courses
  
  **Feedstock**
  • PS 723 - Simulation Models & Their Uses Credits: 3
  • PS 753 - Soil/Water Quality Bioenergy Feedstock Credits: 3

  **Conversion**
  • ABE 555 - Principles Biological Separation Processing and Lab Credits: 3
  • ABE 748 - Bioseparations Credits: 3
  • ABE 765 - Advanced Biomass Thermochemical Conversion Credits: 3

  **Sustainability**
  • CD 603 - Community Natural Resource Management Credits: 3
  • ECON 672 - Bioenergy & Resource Economics Credits: 3
  • ABE 662 - Life Cycle Assessment Credits: 3
  • ABE 632 - Environmental/Ecological Risk Assessment Credits: 3
  • ABE 590 - Seminar Credits: 1

Additional Admission Requirements
Please refer to the following for additional information
• Graduate School Admissions
• Distance Education

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

**Family Financial Planning Certificate**

**Program Information**
The graduate certificate program in Family Financial Planning is designed for students who want graduate coursework that meets the educational requirement to sit for the CFP® Certification Examination but who do not need a Master's degree. Family financial planning is an emerging area with job opportunities in areas related to insurance, real estate, investments, retirement, tax and estate planning. Financial planners are increasingly in demand as Americans seek advisers to help manage their income, assets, and debts.

**Accreditation, Certification, and Licensure**
The Family Financial Planning graduate program is registered by the CERTIFIED FINANCIAL PLANNER™ Board of Standards. CFP® and CERTIFIED FINANCIAL PLANNER™ are federally registered service marks of the CERTIFIED FINANCIAL PLANNER™ Board of Standards, Inc. They are granted by the CFP® Board to those persons who have fulfilled a comprehensive educational requirement, passed the CFP® Certification Examination, satisfied a work experience requirement and agreed to abide by the CFP® Board code of ethical conduct.

- The graduate certificate in Financial Planning does not guarantee a student will pass the CFP® exam.
- In earning the graduate certificate in Financial Planning through the Great Plains IDEA, students receive the education required to take the exam.
- After completing the necessary educational requirements, students work with the CFP Board on examination, experience and ethics requirements for CFP® certification.

Certified Financial Planner™ professionals have the satisfaction of helping people solve their financial problems and reach their financial goals. The CFP Board website at www.cfp.net has extensive CFP® certification information.

Students admitted to the Great Plains IDEA online degree program are advised to obtain the Guide to CFP® Certification. The guide includes an application for the exam, exam fee information, exam procedures and information on the required work experience.

- Certified Financial Planner Board of Standards Inc. owns the marks CFP®, CERTIFIED FINANCIAL PLANNERTM, and CFP (with flame logo)®, which it awards to individuals who successfully complete initial and ongoing certification requirements.
- Great Plains IDEA institutions do not certify individuals to use the CFP®, CERTIFIED FINANCIAL PLANNERTM and CFP (with flame logo)® certification marks. CFP® Certification is granted only by the Certified Financial Planner Board of Standards Inc. to those persons who, in addition to completing an educational requirement such as this CFP Board-Registered Program, have met its ethics, experience and examination requirements.

**Course Delivery Format**
The online program has been developed by faculty from the Great Plains Interactive Distance Education Alliance (GP-IDEA). Courses will be entirely Internet based and will be taught by faculty within the Alliance (Iowa State University, Kansas State University, Montana State University, North Dakota State University, Oklahoma State University, South Dakota State University, University of Missouri, and University of Nebraska). Courses are offered fall, spring and summer semesters.

**Requirements for Family Financial Planning Certificate**
- CA 660 - Investing for Family’s Future Credits: 3
• CA 680 - Insurance Planning for Families Credits: 3
• CA 704 - Estate Planning for Families Credits: 3
• CA 725 - Family, Employment Benefits and Retirement Planning Credits: 3
• CA 735 - Personal Income Taxation Credits: 3
• CA 755 - Financial Planning Case Study Credits: 3

Total Credits: 18

Notes
Students without a background in financial planning should take CA 640 - Fundamentals of Family Financial Planning

Additional Admission Requirements
Please refer to the following for additional information
• Graduate School Admissions
• Distance Education

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

Financial and Housing Counseling Certificate

Program Information
The program prepares students to apply for the Certified Housing Counselor (CHC) and the Accredited Financial Counselor (AFC) certifications, which are appropriate to meet the needs of military spouses, active duty service members, civilians providing services, and retired military or civilians in the areas of financial and housing counseling.

Certification and Licensure
In collaboration with the Association for Financial Planning and Counseling Education (AFCPE), students successfully completing the Financial & Housing Counseling (FHC) Certificate program will be able to sit for the Accredited Financial Counselor (AFC) examination or the Certified Housing Counselor (CHC) examination.

To become an Accredited Financial Counselor (AFC), candidates must have 1000 hours of experience in admissible financial counseling experience to enroll. To become a Certified Housing Counselor (CHC), candidates must have 1500 hours of admissible housing counseling experience. For additional information on AFC and CHC certification, visit the AFCPE website.

Course Delivery Format
The online program has been developed by faculty from the Great Plains Interactive Distance Education Alliance (GP-IDEA). Courses will be entirely internet based and will be taught by faculty within the Alliance (Kansas State University, North Dakota State University, Oklahoma State University, South Dakota State University and University of Nebraska). Courses are offered fall, spring and summer semesters.

Core Requirements
• CA 612 - Financial Counseling Credits: 3
• CA 621 - Financial Theory and Research I Credits: 3
• CA 640 - Fundamentals of Family Financial Planning Credits: 3
• CA 715 - Housing and Real Estate in FFP Credits: 3
• Electives: 6 (Select two)
  • CA 595 - Practicum Credits: 3
  • CA 645 - Military Personal Financial Readiness Credits: 3
  • CA 660 - Investing for Family’s Future Credits: 3
  • CA 680 - Insurance Planning for Families Credits: 3
  • CA 704 - Estate Planning for Families Credits: 3
  • CA 725 - Family, Employment Benefits and Retirement Planning Credits: 3
  • CA 735 - Personal Income Taxation Credits: 3

Total Credits: 18

Additional Admission Requirements
Please refer to the following for additional information
• Graduate School Admissions
• Distance Education

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.
**Grassland Management Certificate**

**Program Information**
Grasslands represent a fundamental resource of the region that determines the environmental and economic future of the Great Plains states. Many of the managers or advisors on these grasslands have B.S. degrees in natural resources or agriculture and want to further develop their expertise in grassland management through university programs. However, constraints associated with their work schedule and responsibilities limit their ability to pursue conventional on-campus coursework and graduate degrees. The Grassland Management Graduate Certificate Program was developed to address the needs of working professionals as well as other students interested in distance education opportunities. Students will interact with their institutional advisors to develop a plan of study most beneficial to the student. Coursework may be transferred in on a case-by-case basis with the approval of the student's advisor.

**Course Delivery Format**
This program is delivered fully online through the AG*IDEA Program, an affiliate of the Great Plains IDEA, a national consortium of universities offering programs and courses in agriculture disciplines. AG*IDEA's fully online program provides flexibility, enabling students to balance career advancement with professional, social and financial commitments.

**Requirements for Grassland Management Certificate**
- RANG 521 - Grassland Fire Ecology Credits: 3
- RANG 510 - Grassland Monitor & Assessment Credits: 2
- RANG 540 - Grassland Plant Identification Credits: 2
- Elective Credits: 6
  - RANG 710 - Principles of Forage Quality Credits: 3
  - RANG 520 - Watershed Management Credits: 3
  - RANG 530 - Ecology of Invasive Species Credits: 3

Total Credits: 13

**Additional Admission Requirements**
Please refer to the following for additional information
- Graduate School Admissions
- Distance Education

**Additional Information**
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at [www.sdstate.edu](http://www.sdstate.edu) (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

**Health Journalism Certificate**

**Program Information**
The Certificate in Health Journalism is designed for media professionals who seek expertise in communicating with Health Professionals in creating easy-to-understand and effective written text, marketing and social media for the general public.

**Course Delivery Format**
Program coursework is delivered online.

**Requirements for Health Journalism Certificate**
- MCOM 742 - Health Campaigns Credits: 3
- MCOM 760 - Social Marketing for Health and Behavioral Change Credits: 3
- MCOM 785 - Health Journalism Credits: 3
- MCOM 794 - Internship *(Optional, depending on professional experience in the field)* Credits: 3

Total Credits: 9-12

**Additional Admission Requirements**
Please refer to the following for additional information
- Graduate School Admissions

**Additional Information**
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at [www.sdstate.edu](http://www.sdstate.edu) (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.
Management Foundations Certificate

Program Information
The certificate in Management Foundations is designed with flexibility to meet the working professionals who want additional professional development, but also has the flexibility to meet the needs of students who want to supplement their graduate degree with additional credentials.

Course Delivery Format
Program coursework is delivered on campus.

Requirements for Management Foundations Certificate
- OM/GE 569 - Project Management Credits: 3
- OM 660 - Operations Management Credits: 3
- OM/ME 767 - Decision Theory Credits: 3
- OM 670 - Research Methods in Management Credits: 3

Total Credits: 12

Additional Admission Requirements
Please refer to the following for additional information
- Graduate School Admissions

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

Merchandising Certificate

Program Information
The certificate provides an introduction to merchandising, with emphasis on current trends in the United States factors that will distinguish graduates among their peers. Graduates with a certificate are prepared to work in product development, promotions, and retail management in this ever-expanding industry.

Course Delivery Format
The online program has been developed by faculty from the Great Plains Interactive Distance Education Alliance (GP-IDEA). Courses will be entirely Internet based and will be taught by faculty within the Alliance (Kansas State University, North Dakota State University, Oklahoma State University, South Dakota State University, and University of Nebraska). Courses are offered fall, spring and summer semesters.

Requirements for Merchandising Certificate
- 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
  or MRCH 540 - Promotional Strategies in Merchandising Credits: 3
- MRCH 550 - Retail Theory and Current Practice Credits: 3

Total Credits: 12

Additional Admission Requirements
Please refer to the following for additional information
- Graduate School Admissions
- Distance Education

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

Post Master Clinical Nurse Leadership Certificate

Program Information
The Post Master Clinical Nurse leader certificate is focused on integrating the vital work of Clinical Nurse Leaders into every hospital. This certificate program is designed for nurses who currently hold a Master's Degree in Nursing Education or Nursing Administration or Clinical Nurse Specialist.

Courses for the certificate are designed to meet the national AACN requirements for the student to become a certified Clinical Nurse Leader and assist students to meet the following CNL competencies: Critical thinking; Communication; Health Assessment; Nursing Technology and Resource Management; Health Promotion, Risk Reduction, and Disease Prevention; Illness and Disease Management; Information and Health Care Technologies; Ethics; Human Diversity; Global Health Care; Health Care Systems and Policy; Provider and Manager of Care; Designer/Manager/Coordinator of Care, and; Member of a Profession.
Accreditation, Certification, and Licensure

Accreditation
The post-graduate APRN certificate at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

Requirements for Post Master Clinical Nurse Leadership Certificate

- NURS 641 - Clinical Nurse Leader I: Application of Advanced Concepts of Nursing Care Credits: 3
- NURS 642 - Clinical Nurse Leader II: CNL as a Change Agent Credits: 3
- NURS 643 - Clinical Nurse Leader III: Effective Care Management Credits: 3
- NURS 644 - Clinical Nurse Leader IV: Capstone Practice and Clinical Improvement Project Credits: 5
- NURS 788 - Problems in Nursing Research Credits: 2
- NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3
- NURS 675 - Cultural Competence in Health Care Credits: 3

Total Credits: 22

Notes
The Post-Master's Clinical Nurse Leader Certification program of study is individualized. Interested applicants will contact the graduate nursing department to discuss options.

The following graduate level courses are required pre-requisites for admission to the Certificate Program: Advanced Physical Assessment (Lifespan), Advanced Pathophysiology (Lifespan), Advanced Pharmacology / Pharmacotherapeutics (Lifespan). If these were not completed within the previous five years, students may be required to repeat them.

For additional information, refer to the Graduate Nursing Department webpage.

Additional Admission Requirements
Please refer to the following for additional information
- Graduate School Admissions

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

Post Master Family Nurse Practitioner Certificate

Program Information
Nurses who have a master's in nursing but are not nurse practitioners are eligible to apply. Graduates of this program are prepared to deliver evidence-based direct patient care at an advanced practice level to individuals across the lifespan in primary care settings. Graduates are eligible to write certification examinations in Family Nurse Practitioner from either the American Nurses Credentialing Center (ANCC) or the American Academy of Nurse Practitioners Certification Program (AANPCP).

The program has many online courses, and some where intermittent in-person attendance is required. Students who have completed graduate nursing courses in pharmacology, pathophysiology and advanced health assessment in the last five years may be able to use those course towards certificate requirements. Students complete a minimum of 1000 hours of clinical practice preceptorship in a variety of settings, including mandatory practice in rural settings.

Requirements for Post Master Family Nurse Practitioner Certificate

- NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing Credits: 4
- NURS 631 - Advanced Assessment Across the Lifespan Credits: 4
- NURS 631L - Advanced Assessment - Lifespan Clinical Laboratory Credits: 0
- NURS 675 - Cultural Competence in Health Care Credits: 3
- NURS 765 - Family Nurse Practitioner Practicum I Credits: 6
- NURS 771 - Family Nurse Practitioner Practicum II Credits: 7
- NURS 776 - Family Nurse Practitioner III - Small Group Instruction Credits: 3
- NURS 777 - Family Nurse Practitioner: Practicum III Credits: 9
- PHA 645 - Pharmacotherapeutics: Application to Advanced Practice Credits: 4

Total Credits: 40

For additional information, refer to the Graduate Nursing Department webpage.
Additional Admission Requirements
Please refer to the following for additional information
- Graduate School Admissions

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

**Post Master Nursing Educator Certificate**

**Program Information**
The Post Master Nursing Educator certificate program prepares graduates to utilize theories of teaching and learning in a variety of settings with emphasis on nursing education. Graduates demonstrates the ability to plan, implement, and evaluate nursing education programs. Individuals who have earned a Master's in Nursing degree from SDSU or any other CCNE or NLNAC accredited nursing program are eligible to apply for the Nurse Educator Post-Master's Certificate program. Additionally, graduates may be eligible to earn National Certification as a Certified Nurse Educator.*

**Accreditation, Certification, and Licensure**

**Accreditation**
The post-graduate APRN certificate at South Dakota State University is accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, 202-887-6791.

**Requirements for Post Master Nursing Educator Certificate**
- NURS 631 - Advanced Assessment Across the Lifespan and Lab Credits: 4
- NURS 675 - Cultural Competence in Health Care Credits: 3
- PHA 645 - Pharmacotherapeutics: Application to Advanced Practice Credits: 2
- NURS 710 - Curriculum Development in Nursing Credits: 3
- NURS 720 - Technology-Based Instruction for Nurse Educators Credits: 3
- NURS 795 - Practicum in Advanced Health Concepts for Nurse Educators Credits: 3
- NURS 778 - Nurse Educator Practicum Credits: 5

Total Credits: 23

**Notes**
*Individuals must meet eligibility requirements before they can take the CNE examination. An active registered nurse license is necessary. Students must also have a master's or doctoral degree in nursing and full-time experience in a nurse faculty role within the past 5 years. If the college degree emphasized non nursing instruction, individuals will need 2 years of experience in a nurse faculty role. Four years of experience is required if the graduate nursing degree did not emphasize on education.

For additional information, refer to the Graduate Nursing Department webpage.

**Additional Admission Requirements**
Please refer to the following for additional information
- Graduate School Admissions
- College of Nursing

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

**Systems Management Certificate**

**Program Information**
Offered through the College of Engineering, the certificate in Systems Management has the flexibility to be used for a variety of students, including for corporate professional development. The Certificate in Systems Management is targeted at working professionals in a variety of managerial positions.

**Course Delivery Format**
Program coursework is delivered on campus.

**Requirements for Systems Management Certificate**
- CSC 740 - Management Information Systems Credits: 3
- GE 603 - Designing the Work Place for Production Credits: 3
- GE 650 - Manufacturing Systems Management Credits: 3
- ME 760 - Quality Control Credits: 3

Total Credits: 12
Additional Admission Requirements
Please refer to the following for additional information
- Graduate School Admissions

Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

Transdisciplinary Childhood Obesity Prevention Certificate
Program Information
The Transdisciplinary Childhood Obesity Prevention (TOP) graduate certificate program offered through South Dakota State University (SDSU) and the University of Nebraska Lincoln (UNL) is a graduate certificate program with experiential learning opportunities addressing childhood obesity. This program is unique and provides expertise in a job market that is desperate for trained health professionals in the prevention of childhood obesity. The program will expose students to a variety of disciplines involved in the prevention of childhood obesity and prepare students to conduct transdisciplinary research on the behavioral, social, biological, and environmental causes of childhood obesity. Students will develop skills required to implement evidence-based transdisciplinary approaches to prevention. Nutrition, Exercise Science, Health Promotion, Extension, Early Childhood Education, Nursing, and Statistics faculty are collaborating to implement the TOP graduate certificate program.

Students will obtain a TOP program certificate upon completion of the requirements for both the certificate and the Masters or Doctoral degree from their respective college.

Course Delivery Format
The TOP program consists of lecture, laboratory, and experiential learning projects.

Student Support and Engagement Opportunities
The College of Education and Human Sciences and the Department of Health and Nutritional Sciences offers a limited number of qualified graduate student applicants scholarships as well as funded assistantships. Additionally, the department offers a number of opportunities for students to be involved. The student organizations provide opportunities for professional development and social interaction through numerous events on campus as well as service learning projects. Travel opportunities are available, including regional and national conferences.

Program Support
The SDSU/UNL TOP graduate program is supported by the National Research Initiative Grant no. 2011-67002-30202 from the Food and Agriculture Division of Nutrition.

Requirements for Transdisciplinary Childhood Obesity Prevention Certificate
- NFS 750 - Transdisciplinary Childhood Obesity Prevention I Credits: 3
- NFS 751 - Transdisciplinary Childhood Obesity Prevention II Credits: 3
- NFS 795 - Practicum Credits: 1
- Elective Credits: 2-3 (Select from the following)
  - NFS 708 - Evidence Based Analysis Credits: 3
  - NFS 782 - Epidemiology Credits: 3
  - HSC 631 - Biostatistics I Credits: 3
  - HSC 520 - Methods of Health Instruction Credits: 2
  - SOC 711 - Qualitative Research Methods Credits: 3
  - CHRD 723 - Counseling the Family Credits: 3
  - ECE 711 - Child Development Theory and Application Credits: 3
  - EDAD 730 - School Finance Credits: 2
  - EDFN 725 - Education in a Pluralistic Society Credits: 3
  - FCSE 761 - Advanced Methods and Assessment in Family & Consumer Sciences Education Credits: 3
  - HDFS 711 - Child Development Theory and Application Credits: 3
  - HDFS 630 - Lifespan Development Credits: 3
  - HDFS 742 - Family Theory and Research Credits: 3
  - CD 613 - Introduction to Native Community Development Credits: 3

This certificate will be granted when the individuals meet the requirements for their respective graduate education majors (Ph.D. and Masters) and complete the course requirements listed above.

Total Credits: 9-10

Admission Requirements
Please refer to the following for additional information.
- Admission to the TOP program requires completion of the TOP application.
- TOP program webpage
Additional Information
Students enrolled in SDSU certificate programs are not eligible for federal student financial aid. The non-federal alternative loan programs may be used for students meeting the lender criteria as found at www.sdstate.edu (search alternative loans). For further information, please contact the SDSU financial aid office at 605-688-4695 or finaid@sdstate.edu.

Academic Programs - Coursework Only

History, Political Science, Philosophy, and Religion
Program Information
The Department of History, Political Science, Philosophy, and Religion offers dual listed, topics, independent study courses on an as needed basis. Occasional courses are offered for teachers needing in-service or continuing education credit. Graduate degrees are not available in these disciplines, but students may use these courses in an approved plan of study.

Modern Languages
Program Information
The Department of Modern Languages and Global Studies provides proficiency-oriented instruction in second languages, literatures, civilizations and cultures, as well as a variety of courses on Global Studies, in many cases in conjunction with other departments on campus. The Department offers bachelor degrees in French Studies, German, Global Studies and Spanish, but it does not offer advanced degrees. However, the Department does provide graduate level courses in all its major areas as needed.

Music
Program Information
The South Dakota State University Music Department is shaped by the university's Land Grant status and the spirit of the Morrill Act. Within that context, it is the mission of the Music Department to musically serve the university, state, and region through teaching/advising, research/creative activity, and outreach/general service. The Music Department does not offer an graduate level degree in music. However, students may enroll in graduate courses provided by the department.

Physics
Program Information
The Department of Physics does not offer a graduate degree program. However, the Physics program's coursework supports graduate degrees in a variety of departments in the science and engineering fields.

Psychology
Program Information
The psychology department provides a robust and challenging undergraduate curriculum. A graduate degree is not available, but students may use departmental courses in an approved plan of study.

Visual Arts
Program Information
The Department offers courses in animation, art education, art history, ceramics, computer graphics, drawing, film, interactive design, graphic design, painting, printmaking, sculpture and web design. The Department does not offer a graduate level degree. However, students may enroll in graduate courses provided by the department.
Course Information

Curriculum Entries

Colleges, Departments and Program Abbreviations

Miscellaneous Abbreviations

Course Types and Instructional Methods

Other Definition Types

x9x Common Course Types

Course Schedules

Course Descriptions
Course Descriptions

BIOL 101 Biology Survey I

Study of the nature, diversity, and classification of life; ecology; cells and cell cycles, Mendelian and modern Genetics. Intended for those not majoring in Biology. Duplicate credit for 101 and 151 not allowed.

1. Course prefix.
2. Course number. The first digit of the three-digit number indicates the level of instruction, as follows:
3. Name of the course.
4. Common Course within the Regental System.
5. Number of credits assigned to the course. One credit is usually interpreted as one hour of class work per week or as two to four hours of lab work per week.
6. A brief description of the course. This section will also include other information affecting your enrollment in the course. A course description might include, for instance: "P, MATH 102." This means that MATH 102 is a prerequisite and must be taken before enrollment in this course. Other information included in various course descriptions would be: "Alternate years," "Not open to majors," "May be repeated for a total of six credits," etc.

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.
Between the two may be extensive and intensive. May be used as a plan of study is negotiated by the faculty member and the students. Contact Courses focusing on design research and do not entail a dissertation or thesis.  

**Method:** T.

The plan of study is negotiated by the faculty member and the students. Contact Countries, performers. Includes: orchestra, bands, and choruses. Instructional Method: H.

**G.**

- **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: G.

**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.

**Other Important Definitions**

**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.

**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

**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 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.

87 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.

88 Master’s Research Problems/Projects
Independent research problems/projects that lead to a research or design paper but not to a thesis. The plan of study is negotiated by the faculty member and the candidate. Contact between the two may be extensive and intensive. Does not include research courses which are theoretical. Instructional Method: J.

789 Master’s Research Problems/Projects Sustaining
This is a zero credit hour instructional method type used to track students who are not currently working with faculty on thesis or doctoral activities. Universities may require students to register under this instructional method type to remain active degree candidates. Instructional Method: U.

798/ 898S/ 898D* Thesis/Dissertation
A formal treatise presenting the results of study submitted in partial fulfillment of the requirements for the applicable degree. The process requires extensive and intensive one-on-one interaction between the candidate and professor with more limited interaction between and among the candidate and other members of the committee. Instructional Method: T.

Course Schedules

Search for class sections in one of three ways.

- Course Schedule -including finals schedule (http://www.sdsu.edu/campus/records/class-schedules.cfm)
- WebAdvisor Schedule (https://wa-sdsu.prod.sdbor.edu/WebAdvisor/webadvisor)
- SDSU Schedule of Classes (http://sdsuadvisor.sdstate.edu/schedule/)

Contact Information:
Records and Registration
Enrollment Services Center
PO Box 511
605-688-6195
Fax: 605-688-6384
E-mail: sdsu.registrar@sdstate.edu

Course Information

A&S (Arts & Sciences)

A&S 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 and Biosystems Engineering)

ABE 533L - Advanced Irrigation Engineering Laboratory Credits: 0

ABE 543 - Fundamentals of Bioprocessing Credits: 3
This course is designed for students who want a clear understanding of Bioprocessing principles as applied to the emerging bio-based industry. This course covers the fundamentals of mass and energy balances, fluid dynamics, heat and mass transfer, as applied to Bioprocessing. The microbial growth, kinetics and fermenter operation as applicable to Bioprocessing will be covered in this course. Industrial Bioprocessing case studies that involve the integration of the course contents will be discussed. Prerequisites: MATH 123, CHEM 108, PHYS 211

ABE 544 - Unit Operations of Biological Materials Processing 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, reserve osmosis), mechanical separation processes, extrusion. Corequisites: ABE 544L. Prerequisites: Senior standing or instructor consent.

ABE 544L - Unit Operations of Biological Materials Processing Laboratory Credits: 0

ABE 551 - Fundamentals of Conversion Credits: 3
This web-based class is an overview of the technology involved in the conversion of biomass to energy; sustainability issues associated with this technology will also be covered. An overview of biomass structure and chemical composition will be presented. Biochemical and thermochemical conversion platforms will be covered. Important issues, such as energy crop production related to water consumption and soil conservation will be addressed. Topics include: biomass chemistry, logistics, and resources; biological processes; and thermochemical processes. Prerequisites: MATH 103; ENGL 101; CHEM 112 or BIOL 150 or PHYS 111.

ABE 553 - Biochemical Engineering for Renewable Resources Credits: 3
The analysis and design of biochemical processing systems with emphasis on fermentation kinetics, continuous fermentations, aeration, agitation, scale up, sterilization, and control. Notes: Suggested prerequisite chemical kinetics and reactor design course

ABE 555 - Principles Biological Separation Processing 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, metal affinity, hydrophobic interaction, and bio-affinity), membrane separation (Microfiltration, ultrafiltration, 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 555L.
ABE 555L - Principles of Biological Separation Processes Laboratory Credits: 0
Corequisites: ABE 555.

ABE 590 – Seminar Credits: 1
ABE 592 – Topics Credits: 1-3

ABE 632 - Environmental/Ecological Risk Assessment Credits: 3
This course will examine the process and methodologies associated with human environmental and ecological risk assessments. The participants will apply the methods learned in the course to a project to gain experience in defining and quantifying uncertainty associated with human perturbation, management and restoration of environmental and ecological processes.

ABE 662 - Life Cycle Assessment Credits: 3
This course will examine the process and methodologies associated with life cycle analysis. The participants will apply the methods developed in the course to a project to gain experience in defining and quantifying uncertainty associated with human perturbation, management and utilization of biofuels and other complex processes.

ABE 732 - Advanced Hydrology in Agriculture Credits: 2

ABE 733 - Ground Water Engineering in Agriculture Credits: 3

ABE 734 - Advanced Irrigation Engineering Credits: 3
Basic soil-water-crop relationships. Theory and design of pumping plants, surface, sprinkler, and drip irrigation systems. Corequisites: ABE 734L. Prerequisites: ABE 434

ABE 734L - Advanced Irrigation Engineering Lab Credits: 0
Laboratory to accompany ABE 734. Corequisites: ABE 734.

ABE 748 – Bioseparations Credits: 3
Study of separations important in food and biochemical engineering such as leaching, extraction, expression, absorption, ion exchange, filtration, centrifugation, membrane separation, and chromatographic separations. Prerequisites: CBE 218, ABE 444 or ABE 544.

ABE 752 - Theoretical Micro-Climatology Credits: 2
Derivation and application of physical laws to air layer near the ground occupied by plants and animals. Instruments used to take measurements in layer near ground. Prerequisites: MATH 125 and PHYS 211.

ABE 754 - Advanced Unit Operations of Food/Biomaterials Processing Credits: 3
Advanced study of engineering principles as they apply to unit operations for food preservation and processing, including effect of heat and time on the lethality of undesirable food microorganisms, heat transfer with foods and containers and its effect on food safety, freezing and refrigeration technology, high temperature short time extrusion processing, and aseptic processing. Corequisites: ABE 754L.

ABE 754L - Advanced Unit Operations of Food/Biomaterials Processing Laboratory Credits: 0
Corequisites: ABE 754.

ABE 763 – Instrumentation Credits: 3
Principles of transducers, amplifiers and terminating devices in measurement systems with emphasis on transducers and systems performance. Techniques and methods for use in engineering and scientific measurement. Corequisites: ABE 763L. Prerequisites: PHYS 213 and MATH 225.

ABE 763L - Instrumentation Laboratory Credits: 0
Corequisites: ABE 763.

ABE 765 - Advanced Biomass Thermochemical Conversion Credits: 3
Advanced study, evaluation, and application of thermochemical conversion pathways in biofuel production. Specific topics include biomass gasification, pyrolysis, liquefaction, and heterogeneous catalysis. Prerequisites: ME 314 and ABE 444.

ABE 771 - Graduate Seminar Credits: 1
Discussion and reports of current topics and investigations in Agricultural and Biosystems Engineering. Notes: Limit of 2 credits

ABE 773 - Programming Agricultural Systems Credits: 3
The use of programs and computers in advanced engineering for the solution of problems occurring in Agricultural and Biosystems Engineering studies. Gathering, processing, evaluating mass engineering and scientific data. Corequisites: ABE 773L. Prerequisites: CSC 130.

ABE 773L - Programming Agricultural Systems Laboratory Credits: 0

ABE 788 - Master's Research Problems/Projects Credits: 1-2
ABE 791 - Independent Study Credits: 1-3
ABE 792 – Topics Credits: 1-3

ABE 792L - Special Topics Laboratory Credits: 0

ABE 798 – Thesis Credits: 1-7
ABE 898D - Dissertation – PhD Credits: 1-12

ABME (Agricultural, Biosystems and Mechanical Engineering)

ABME 790 – Seminar Credits: 1
ABME 792 – Topics Credits: 3
ABME 898D – Dissertation – PhD Credits: 1-12

ACCT (Accounting)

ACCT 592 – Topics Credits: 1-4

ADV (Advertising)

ADV 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.

ADV 692 – Topics Credits: 1-3

AGEC (Agricultural Economics)

AGEC 521 - Farming and Food Systems Economics Credits: 3
Economic concepts and methods for analyzing farming system and food system alternatives, investments, and issues. Includes economic feasibility analysis methods for assessing potential farm/region, value-added, and other food enterprises. Economic structure and organization of food systems in US and other parts of the world are examined. Prerequisites: Senior standing, AGEC 271 or ECON 201.

AGEC 530 - Advanced Ag Marketing and 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: AGEC 354, STAT 281.

AGEC 571 - Advanced Farm and Ranch Management 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, AGEC 271, ECON 301, or instructor consent.

AGEC 591 - Independent Study Credits: 1-3
AGEC 592 – Topics Credits: 1-4
AGEC 593 – Workshop Credits: 1-3

AGEC 672 - Bioenergy & Resource Economics Credits: 3
Bioenergy and Resource Economics surveys the allocation and conservation of natural resources from a perspective of optimal use and sustainability. Emphasis
is placed on the trade-offs and issues related to the production of biomass and development of the biofuels market including resource allocation, valuation methodology, economic growth, and market development. Prerequisites: ECON 201, MATH 121 or MATH 123.

**AGED (Agricultural Education)**

AGED 690 – Seminar Credits: 1-2

AGED 788 – Research Problems in Agricultural Education Credits: 1-2

A problem is selected, analyzed, and reported in form approved by the research advisor. Course is repeatable for additional credit. Pre-requisite: Required of all graduate students in education qualifying for the degree under Option B. Can be elected under Option C, if desired.

**AHED (Adult Higher Education)**

AHED 691 - Independent Study Credits: 1-3

AHED 693 – Workshop Credits: 1-3

AHED 711 - Assessment and Program Design Credits: 3

Organization and implementation of adult education programs. Particular emphasis on curriculum development, financing, staffing, marketing, and evaluation of adult programs.

AHED 720 - Principles of Postsecondary Education Credits: 3

This course provides an overview of the postsecondary education system in the U.S. It surveys the history, major features, and effects of this system.

AHED 755 - Principles of College Teaching Credits: 3

An analysis of teaching methodologies, planning procedures, evaluation techniques, and professional relationships. Emphasis will be on learning and using strategies suitable for teaching.

AHED 772 - Administration and Leadership in Student Affairs Credits: 3

This course provides an overview of administrative and leadership practice in the student affairs profession. The course will emphasize historical foundations of the profession and will utilize these foundations in understanding current practice. Students will gain broad knowledge about the role and function of student affairs functions in a variety of higher education settings. Cross-Listed: CHRD 772.

AHED 788 - Research Problems in Adult Education Credits: 1-2

A problem is selected, analyzed, and reported in form approved by the research advisor. Required of all graduate students in education qualifying for the degree under Option B. Can be elected under Option C, if desired. Course is repeatable for additional credit.

AHED 790 – Seminar Credits: 1-3

AHED 794 – Internship Credits: 1-6

**ANTH (Anthropology)**

ANTH 591 - Independent Study Credits: 1-3

ANTH 592 – Topics Credits: 1-3

**ARCH (Architecture)**

ARCH 521 - Drawing in Detail Credits: 2

Continued development of skills necessary to produce professional contract and construction documents, with an emphasis on building envelope assembly and large scale detailing. Computer aided drafting (CAD) and Building Information Modeling (BIM) will be covered. Prerequisites: ARCH 521.

ARCH 551 - Whole Building Studio I Credits: 6

First of a two semester studio sequence. Student will prepare a schematic building and site design using a complex program and considering all material, structural, environmental and life-safety conditions. Prerequisites: ARCH 351.

ARCH 552 - Whole Building Studio II Credits: 6

Second of a two-semester studio sequence. Students will prepare detailed and coordinated drawings, models and specifications of integrated assemblies and systems using their building proposals from the first course. Projects will document LEED points and address sustainable concepts. Prerequisites: ARCH 551.

ARCH 571 - Architectural Practice I: Regulation Credits: 2

This course introduces regulations as they relate to architectural registration, including building codes and ordinances, professional service contracts, environmental regulation, and other legal responsibilities connected with the profession. Prerequisites: ARCH 351.

ARCH 572 - Architectural Practice II: Economics Credits: 2

This course presents architectural production as an evolving cultural and professional practice. Topics include traditional delivery methods, the client's role, and alternative contemporary models. Prerequisites: ARCH 571.

ARCH 592 – Topics Credits: 3

ARCH 631 - Building Technology I Credits: 2

Introduction to basic building structural systems, daylighting, environmental systems, building services and envelope with an emphasis on sustainable technology. Prerequisites: ARCH 351.

ARCH 632 - Building Technology II Credits: 2

Introduction to complex building technology and systems, including sustainable practices, advance building envelope performance, and energy modeling. Prerequisites: ARCH 351.

ARCH 651 - Professional Design Practice I Credits: 6

Topic option studio relating to present day situations. Prerequisites: ARCH 552.

ARCH 652 - Professional Design Practice II Credits: 6

Topic option studio relating to present day situations. Prerequisites: ARCH 552.

ARCH 671 - Architectural Practice III: Stewardship Credits: 2

This course will cover the responsibilities architects have to society. Topics include sustainability, community outreach, collaboration, leadership, ethics, and professional judgment. Prerequisites: ARCH 572.

ARCH 672 - Architectural Practice IV: Management Credits: 2

This course introduces architectural project management and practice management. Topics include basic principles of project team selection, delivery methods, and professional organizational models. Prerequisites: ARCH 671.

ARCH 692 – Topics Credits: 3

**ART (Art)**

ART 592 – Topics Credits: 1-9

**ARTE (Art Education)**

ARTE 591 - Independent Study Credits: 1-3

**AS (Animal Science)**

AS 541 - Advanced Meat Science Credits: 3

In-depth study of muscle anatomy and physiology, postmortem metabolism, rigor mortis, meat proteins, meat quality, and meat tenderness.
AS 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 563 - Agricultural Waste Management  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 or PS 313. Cross-Listed: AST 563.

AST (Agricultural Systems Technology)

AS 563 - Agricultural Waste Management  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 or PS 313. Cross-Listed: AS 563.

AST 791 - Independent Study  Credits: 3

AT (Athletic Training)

AT 541 - Athletic Training Techniques I  Credits: 3
This course is designed to meet outcomes and guidelines set forth by the Education Council of the National Athletic Trainers' Association related to acute care provided by Athletic Trainers for Injuries and Illnesses. Students will obtain the knowledge, skills and clinical decision making to act efficiently and effectively in emergency situations related to life-threatening and non-life threatening conditions. Also, the course will address ethical and legal issues related to emergency care and the practice of Athletic Training. Corequisites: AT 541L. Prerequisites: Major in Athletic Training.

AT 541L - Techniques I Lab  Credits: 0
This course is designed to meet outcomes and guidelines set forth by the Education Council of the National Athletic Trainers' Association related to acute care provided by Athletic Trainers for Injuries and Illnesses. Students will obtain the knowledge, skills and clinical decision making to act efficiently and effectively in emergency situations related to life-threatening and non-life threatening conditions. Also, the course will address ethical and legal issues related to emergency care and the practice of Athletic Training. Corequisites: AT 541.

AT 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. Content includes techniques related to the prevention, recognition, and management of athletic injuries to the upper and lower extremities. Related topics include preseason screening, pre-participation physicals, and appropriate weight training techniques. Prerequisites: AT 441; Major in Athletic Training.

AT 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 543 includes a combination of material. One section of the class is devoted to the prevention, recognition, and management of athletic injuries related 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. Corequisites: AT 543L. Prerequisites: Major in Athletic Training.

AT 543L - Techniques III Lab  Credits: 0
This course is designed to meet outcomes and guidelines set forth by the Education Council of the National Athletic Trainers' Association related to prevention, evaluation and management of medical conditions and disabilities incurred by individuals involved in physical activity or sport. Students will obtain the knowledge, skill and clinical decision making to accurately assess and recognize general medical conditions (both acute and chronic), make appropriate referrals and work as part of a coordinated health care team to implement plans which allow individuals with medical conditions to participate safely in physical activity and sport. Corequisites: AT 543. Notes: AT majors only.

AT 544 - Athletic Training Techniques IV  Credits: 2
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. Notes: AT majors only.

AT 554 - Athletic Injuries Assessment – Lower Extremity Credits: 2
This course is designed to have the student athletic trainers develop a sound understanding of the assessment of athletic related injuries and conditions occurring to the lower extremities. The course will incorporate anatomy of the lower extremity, the athletic related injuries or conditions which may occur, and evaluation techniques used to assess this area of the body. Notes: AT majors only.

AT 556 - Athletic Injuries Assessment – Upper Extremity Credits: 2
This course is designed to have the student athletic trainers develop a sound understanding of the assessment of athletic related injuries and conditions occurring to the upper extremities. The course will incorporate anatomy of the upper extremity, the athletic related injuries or conditions which may occur, and evaluation techniques used to assess this area of the body. Notes: AT majors only.

AT 562 - Interventions I Credits: 3
First course in a 3-semester sequence, designed to teach students foundational principles and theories associated with the development of a treatment plan for an injured patient. The class is taught through lectures and demonstrations. Prerequisites: Athletic Training Major.

AT 564 - Interventions II Credits: 2
This course is designed to meet outcomes and guidelines set forth by the Education Council of the National Athletic Trainers’ Association related to therapeutic interventions. The second course in a 3-semester sequence, it is designed to have the student develop a basic understanding of the theory and application of therapeutic interventions including modalities and exercise in the treatment of the injured patient. The class will be taught through lectures and demonstrations. Prerequisites: Athletic Training Major.

AT 574 - Interventions III Credits: 2
This course is designed to meet outcomes and guidelines set forth by the Education Council of the National Athletic Trainers’ Association related to therapeutic interventions. The third course in a 3-semester sequence, it is designed to have the student develop an advanced level of understanding of the theory and application of therapeutic interventions including modalities and exercise in the treatment of the injured patient. The class will be taught through lectures and demonstrations. Notes: AT majors only.

AT 790 – Seminar Credits: 2

AT 795 – Practicum Credits: 1-3
Notes: Throughout the course of the two-year curriculum, students will complete five (5) separate one (1) credit AT 795 Practicum courses that are linked to students’ clinical experiences: AT 795 Practicum: Lower Extremity; AT 795 Practicum: Upper Extremity; AT 795 Practicum: Modalities; AT 795 Practicum: Fall Clinical Experience; and AT 795 Practicum: Rehabilitation.

BADM (Business Administration)

BADM 511 – Investments 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. Prerequisites: BADM 310.

BADM 538 - Entrepreneurship II 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.

BADM 576 - Marketing Research 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.

BADM 592 – Topics Credits: 1-4
BADM 593 – Workshop Credits: 1-3

BIOL (Biology)

BIOL 515 – Mycology Credits: 2-3

BIOL 515L - Mycology Laboratory Credits: 0-1

BIOL 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.

BIOL 553 - Advanced Genetics Credits: 3
Procedures in genetic studies as they relate to molecular and classical genetic applications. Prerequisites: BIOL 202, BIOL 204 or BIOL 371. Cross-Listed: PS 553.

BIOL 567 – Parasitology 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. Corequisites: BIOL 567L.

BIOL 567L – Parasitology Laboratory Credits: 0

BIOL 592 – Topics Credits: 1-5

BIOL 592L - Topics Laboratory Credits: 0

BIOL 645 - Microimaging Techniques Credits: 3
Preparation and observation of animal and plant tissues for microscopic and photomicroscopic study. Emphasis will be given to various techniques used in current research areas.

BIOL 645L - Microimaging Techniques Laboratory Credits: 1-3

BIOL 767 - Fire and Ecosystems Credits: 3
This course is a broad treatment of how fire and ecosystems combine to form the landscapes that we see. Course material examines the contributions of climate, topography, weather, and fuels to the fire environment and how these factors influence wildland fire behavior. We will explore the interactions between ecological processes and fire regimes in ecosystem dynamics and the ways in which human land use and land management affect the outcomes. Cross-Listed: GSE 767/GEOG 767.

BIOL 782 – Epidemiology Credits: 3
The course introduces concepts and methodologies for the study of health and disease in human populations. Different study designs and their methods of analysis will be discussed, as well as sources, handling, and interpretation of epidemiologic data. Cross-Listed: HSC 782/NFS 782.

BIOL 788 - Master's Research Problems/Project 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
This course will provide cutting-edge, comprehensive knowledge in molecular and cellular biology and pave a solid foundation for graduate study as they develop and conduct thesis and dissertation research. It will give students a perspective both on what is known and unknown about cellular structures, organization and their functions, cell chemistry and biosynthesis, genetic mechanisms, and cells in their social context. Notes: Undergraduate courses in genetics and cell biology are recommended prior to taking the course.
BIOS 663 - Advanced Concepts in Infectious Disease Credits: 6
This course will provide cutting-edge, comprehensive knowledge in molecular and cellular pathogenesis and the immune response. It will give a perspective both on what is known and current research in the areas of general pathology, immunology, virology, and bacteriology. The course will cover the importance of host-pathogen interactions in infectious disease, which will serve as the basis for further study within more specialized topics in higher-level courses. Prerequisites: BIOS 662; students with no background in infectious disease should enroll in undergraduate Immunology, Virology, or Medical Microbiology prior to taking this course.

BIOS 664 - Molecular Plant Physiology Credits: 6
This course will serve as the core to the plant biochemistry, physiology, growth and development students in the BIOS and PS graduate programs. The course will emphasize current theories and concepts of plant metabolism, the regulations of development, and the molecular genetic approaches used to elucidate our current understanding of these processes.

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 505 - Grasses and Grasslike Plants Credits: 3
A systematic study 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 grass and grasslike plants that make them economically and ecologically significant.

BOT 505L - Grasses and Grasslike Plants Laboratory Credits: 0

BOT 515 - Aquatic Plants 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. Corequisites: BOT 515L. Prerequisites: BIOL 103 or BIOL 153.

BOT 515L - Aquatic Plants Laboratory Credits: 0
Corequisites: BOT 515.

BOT 592 – Topics Credits: 1-5

BOT 664 - Molecular Plant Physiology Credits: 6
This course will serve as the core to the plant biochemistry, physiology, growth and development students in the BIOS and PS graduate programs. The course will emphasize current theories and concepts of plant metabolism, the regulations of development, and the molecular genetic approaches used to elucidate our current understanding of these processes.

BOT 715 - Advanced Plant Ecology Credits: 4
Analysis of the energy relationships of communities with emphasis on productivity. Literature readings. Laboratory work in techniques of community analysis.

BOT 715L - Advanced Plant Ecology Laboratory Credits: 0
Analysis of the energy relationships of communities with emphasis on productivity. Literature readings. Laboratory work in techniques of community analysis.

BOT 788 - Master's Research Problems Credits: 1-3
BOT 791 - Independent Study Credits: 1-4
BOT 792 – Topics Credits: 1-5

CA (Consumer Affairs)

CA 592 – Topics Credits: 1-3

CA 595 – Practicum Credits: 3-6

CA 612 - Financial Counseling Credits: 3
Theory and research regarding the interactive process between the client and the practitioner, including communication techniques, motivation and esteem building, the counseling environment, ethics, and methods of data intake, verification, and analysis. Other topics include legal issues, compensation, uses of technology to identify resources, information management, and current or emerging issues.

CA 621 - Financial Theory and Research I Credits: 3
Theories of family functioning, macroeconomic theory related to family resource allocation decisions, the family as an economic unit, and the interaction of the economy and families.

CA 640 - Fundamentals of Family Financial Planning Credits: 3
Issues and concepts related to the overall financial planning process, and establishing client-planner relationships. Services provided, documentation required and client and CFP licensee responsibilities are explored. Competencies related to gathering of client data, determining goals and expectations, and assessing the client's financial status by analyzing and evaluating data are developed. Emerging issues and the role of ethics in financial planning are an integral part of the course.

CA 645 - Military Personal Financial Readiness Credits: 3
This course gives an overview of the topics relevant to the financial planning process. The course adapts the topics to address the unique needs of and resources available to military service members and their families. Topics covered are: status of service member; financial readiness; financial management; record-keeping; cash flow management; risk management; credit and debt management; savings, education planning, and investment management; tax management; retirement management; estate management; and special topics.

CA 660 - Investing for Family’s Future Credits: 3
An in-depth study of investment options for clients, this course will include common stocks, fixed income securities, convertible securities, and related choices. Relationships between investment options and employee/employer benefit plan choices will be studied. Current and emerging issues, and ethics will be an integral part of the course.

CA 680 - Insurance Planning for Families Credits: 3
An in-depth study of risk management concepts, tools, and strategies for individuals and families, including life insurance; property and casualty insurance liability insurance; accident, disability, health and long-term care insurance; and government-subsidized programs; current and emerging issues, as well as ethical considerations, relative to risk management will be discussed. Case studies will provide experience in selecting insurance products suitable for individuals and families.

CA 704 - Estate Planning for Families Credits: 3
Fundamentals of the estate planning process will be studied, including estate settlement, estate and gift taxes, property ownership and transfer, and powers of appointment. Tools and techniques used in implementing an effective estate plan; ethical considerations in providing estate planning services and new and emerging issues in the field will be explored. Case studies will provide experience in developing estate plans suitable for varied family forms.

CA 715 - Housing and Real Estate in FFP Credits: 3
The role of housing and real estate in the family financial planning process, including taxation, mortgages, financial calculations, legal concerns, and ethical issues related to home ownership and real estate investments. Emphasis on emerging issues in the context of housing and real estate.

CA 721 - Financial Theory and Research II Credits: 3
Microeconomic theory as it relates to family resource allocation decisions, theories of household behavior, the lifecycle hypothesis, behavioral economics, behavioral finance, theories of behavioral change, and psychological theories of family well-being. Focus on empirical research investigating household financial decision-making. Prerequisites: CA 621.

CA 725 - Family, Employment Benefits & Retirement Planning Credits: 3
Study of micro and macro considerations for retirement planning. Survey of various types of retirement plans, ethical considerations in providing retirement planning services, assessing and forecasting financial needs in retirement, and integration of retirement plans with governmental benefits.
CA 735 - Personal Income Taxation Credits: 3
This course provides in-depth information of income tax practices and procedures including tax regulations, tax return preparation, the tax audit processes, the appeals process, preparation for an administrate or judicial forum, and ethical considerations of taxation. New and emerging issues related to taxation will be covered. Family/individual case studies provide practice in applying and analyzing tax information and recommending appropriate tax strategies.

CA 745 - Professional Practices in Financial Planning Credits: 3
Challenges of managing financial planning practices including, but not limited to: business evaluation, personnel, marketing, client services, ethics and technological applications. Relying both on a theoretical as well as an applied approach, students will analyze case studies that provide relevant, practical exposure to practice management issues, with a strong emphasis on current research findings.

CA 755 - Financial Planning Case Study Credits: 3
This course examines professional issues in financial planning, including ethical considerations, regulation and certifications requirements, communication skills, and professional responsibility. Students are expected to utilize skills obtained in other courses and work experiences in the completion of personal financial case studies, the development of a targeted investment policy, and other related financial planning assignments.

CA 788 - Master's Research Problems/Projects Credits: 3
This course provides an opportunity for students to engage in research and analysis on a topic of their choosing. The course is designed as a base knowledge course for students currently working within or in partnership with native communities or considering working in this area. Students taking this course will complete a holistic analysis and conceptual mapping of a tribe.

CD (Community Development)

CD 600 - Orientation to Community Development Credits: 1
This course is available only to graduate students registered in the Community Development specialization. This seminar will serve as an orientation to on-line learning and communities of practice as well as an introduction to the courses, faculty and curriculum connected to the on-line master's degree program in community development. In addition, students will have an opportunity to meet each other on-line and practice using the technology to support learning objectives.

CD 601 - Organizing for Community Change Credits: 3
This course will examine the role of civil society in community planning efforts and offer students a comparative approach to planning theories and approaches. It will also focus on change within communities and the roles of government, planners, and citizens in reacting to or shaping change. Students will have an opportunity to explore current issues related to planning and dealing with change by examining controversial practices such as covenants and land trusts, as well as by studying various community responses to change. Students will understand how citizens, firms and governments act to improve their community and region; the structure and implications of power; the relation between social relationships and economic activity, coalition building, concepts of inclusiveness (class, gender, ethnicity, geography), voice, and conflict and its management in communities and regions. The course will cover dimensions of social capital and the context of change. Students will learn to use this knowledge to promote equitable change at the community and regional level. They will study the implications of economic and demographic shifts on strategies and tactics for change and explore various resources for supporting these efforts. This course is available only to graduate students registered in the Community Development specialization.

CD 602 - Community and Regional Economic Policy & Analysis Credits: 3
A firm grounding in the reality of the local economy is necessary for successful programs in community economic development and for designing successful state and local policy and programs in economic development. The course introduces concepts of communities and regions, theories of economic growth, drivers of economic growth, the economic base of a community, course of growth or decline in the community, roles of local government and institutions, analytical tools, and strategies for local economic development. This course is available only to graduate students registered in the Community Development specialization.

CD 603 - Community Natural Resource Management Credits: 3
The course will introduce students to the breadth of consideration involved in community resource management. Included in the course are theoretical frameworks, methodological investigation and applied practices to enhance the ability of community development professionals to work with their communities to plan, develop, and monitor the conversation and development of natural resources with multiple functions. This course is available only to graduate students registered in the Community Development specialization.

CD 604 - Community Analysis Credits: 3
This course provides an introduction to research methods relevant to community development. Course topics include how to formulate and begin a research effort, methods of data collection and how conceptual frameworks are used to develop study questions and analyze data. Also included are strategies for reporting findings and applying findings in community action. The course will also look at methods of evaluating the entire research process. Significant attention is paid to issues of research ethics and inclusiveness throughout the course. This course is available only to graduate students registered in the Community Development specialization.

CD 605 - Principles and Strategies of Community Change Credits: 3
This interdisciplinary course analyzes principles and practices of community change and development, beginning with definitions of community and the role of communities in social and economic change. Using case studies and the students’ communities of reference, the course will relate Community Development approaches to conceptual models from diverse disciplines. Conceptual models include conflict, neo-classical economic growth, participatory democracy, and others. Students will be exposed to professional practice principles and will leave the course having constructed their personal framework for the practice of community development. This course is available only to graduate students registered in the Community Development specialization.

CD 611 - Impact Analysis Credits: 1
The course teaches the basics of economic and fiscal impact analysis. It includes the scenario construction, basics of input-output analysis, careful use of multipliers, estimations of local revenues and expenditures and discounting. This course is available only to graduate students registered in the Community Development specialization.

CD 612 - Housing and Development Credits: 3
Review and evaluation of historical and current housing issues, production, and financial systems. Examination of federal, state, and local policies and programs for community development.

CD 613 - Introduction to Native Community Development Credits: 3
This course is designed as a base knowledge course for students currently working within or in partnership with native communities or considering working in this area. Students taking this course will develop a basic understanding of the context of community development of the diversity of tribal structures and cultures and the unique history and jurisdictional considerations of these nations. Course topics will include: working with tribes, Federal and Indian relations, and governance and cultural issues. Students taking this course will complete a holistic analysis and conceptual mapping of a tribe. This course is required before students may take other courses in this track. This course is available only to graduate students registered in the Community Development specialization.

CD 616 - Public and Nonprofit Budgeting Credits: 3
The purpose of this three-credit hour graduate level distance education course is to introduce students to the fundamental theories and practices of budgeting in the public and nonprofit sectors. Topics include overview of budgeting and budget reform, taxation, expenditures, budget preparation and adoption, budget implementation, and performance budgeting.

CD 617 - Tribal Colleges in Economic Development Credits: 1
This course will focus on the role of tribally-chartered colleges and universities in economic development within Native communities. Students will learn the historical and contemporary case for tribal self-determination in higher education vis-a-vis economic development. Using a social capital analytical framework, students will examine and evaluate the tribal college model of economic development. Topics will include the use of bonding and bridging social capital as an analytical tool, the historical and contemporary case for tribally-chartered higher education, the economic impact of tribal colleges on their local economies, and opportunities and challenges of broad and diverse economic networks.

CD 623 - Ecological Economics Credits: 3
The course seeks a synthesis across the notion of utility as represented in traditional environmental/natural resource economics and the notion of ecology.
in the newer ecological economics. This course seeks ways to treat both economy and ecosystem as being par, each influencing the other. This synthesis results in a search for the win-win through recognizing the potential for a kind of symbiotic complementarity between the two perspectives, the two systems, and the forces each puts in place. We seek sustainability in both economy and community over longer time periods.

CD 624 - Building Native Community in Economic Capacity Credits: 3
This course will focus on non-western approaches to helping native communities build their capacity. Students will learn to take a participatory, culture-centered, and strength-based approach to development. This course is available only to graduate students registered in the Community Development specialization.

CD 626 - Economic Development Strategy Credits: 3
Course explores theories of local economic development and addresses the development issues faced by communities in the 21st century. Students will understand and apply concepts from economic development planning, economic analysis, business development, human resource development, community-based development, and high-technology development. This course is limited to GPIDEA student registration, pending student’s department approval.

CD 631 - Evaluation of Organizations/Programs Credits: 3
The purpose of this three-credit hour graduate level distance education course is to the philosophy, techniques, and methodologies of organizational and program evaluation. Topics covered include overview of program evaluation and theory, techniques to evaluate program processes and performance, evaluation design, assessing program deficiency, models to diagnose organizations, and methods to assess organizational performance.

CD 633 - Introduction to Environmental Law Credits: 3
This course offers students an introduction to American environmental law. We will begin with a basic introduction to sources of law and jurisdiction. We will survey tort law, as the historic and conceptual basis for environmental law in property law. We will emphasize administrative law and environmental legislation, as these are the areas of environmental law that most of you will encounter as professionals in community development. We will spend the majority of the course learning about agencies regulating private activities that affect land, air, water, and wildlife. Because we will consider the legal process largely from the perspective of someone working for or dealing with a public agency, we will deal with such topics as administrative procedure and judicial review of agency actions. We will also consider the roles of individuals and nonprofit organizations in the administrative and litigation processes. Therefore, we will pay close attention to such issues as standing to sue and the availability of attorney fees awards. The course will cover a wide range of substantive issues including such topics as the regulation of toxic waste, the Clean Air Act, the National Environmental Policy Act, the Endangered Species Act, common law environmental torts and the public trust doctrine. This course is available only to graduate students registered in the Community Development specialization.

CD 634 - Native American Natural Resource Management Credits: 3
This course will introduce students to the breadth of considerations involved in Native American resource management. Included in the course are theoretical frameworks, methodological investigations and applied practices by which we will explore the impact of structural inequality, globalization and sovereignty on planning, sustainability and development of natural resources on the reservation. This course is available only to graduate students registered in the Community Development specialization.

CD 635 - Sustainable Communities Credits: 3
This course links the management of natural capital to other community-based actions around resource allocation and the impacts on quality of life. The literature on community-based natural resource management will be examined and alternative ways of valuing natural capital will be assessed. Contrasting theories of the role of natural capital in communities and human society will be linked to their implications for community sustainability in terms of economic vitality, social well-being, and ecosystem health.

CD 636 - Policy/Politics Coastal Areas Credits: 3
This Coastal Policy course focuses on coastal zone management policy issues. Students learn more about the fragile coastal environment and what they can do to protect it. This course supplements the offerings in the Natural Resources track of the Community Development emphasis in the GPIDEA Community Development Program, of which SDSU is a partner.

CD 637 - Immigration and Communities Credits: 3
International migration has historically impacted rural and urban communities around the world. Taking a comparative approach, this course examines community-immigration interactions and how that influences community development and immigrant inclusion. Students will read and relate theories of immigrant and community change to case studies of immigrants and communities and gather primary data to assess the capacity of communities to include new international immigrants.

CD 638 - Com/Reg Economic Analysis II Credits: 3
Substantive grounding in the theories and practice of measuring community economic dynamics; build solid foundation skills for applied community economic analysis.

CD 641 - Leadership for Change Credits: 3
Course focus is on the role of leadership in community development and change, including situation leadership in the community development process, reviewing the effectiveness of different leadership styles, and relating leadership to community. Skills and processes that facilitate effective shared leadership, including facilitation, conflict resolution, use of participatory techniques, etc, are explained. This course is available only to graduate students registered in the Community Development specialization.

CD 642 - Grant Writing Credits: 3
The intricacies of grantsmanship provide the focus of this course. Topics covered will include identification of fund sources, procedures for proposal preparation, composition of grants, and the effects of organizational and personal linkages. Students will prepare a grant application based upon an RFP or to a continuous funding source (e.g. Kellogg Foundation, NW Foundation, or IDED). This course is available only to graduate students registered in the Community Development specialization.

CD 643 - Nonprofit Management Credits: 3
Managing nonprofits including the role of nonprofit organizations in addressing various social problems. Focus will be on the growth of the nonprofit sector and its impact on the community as a source of citizen empowerment. Topics include individual giving and volunteering, board and executive leadership, government and nonprofit relationship, ethics and accountability, and issues and challenges in nonprofit management. This course is available only to graduate students registered in the Community Development specialization.

CD 644 - Participatory Action Research Methods Credits: 3
A graduate level course to develop participatory action research knowledge and skills through real-world applications. PAR is a method of collecting information by community members in collaboration with a researcher that respects, places community central to, and reflects the experiences and culture of the people most directly impacted by the issue under consideration.

CD 645 - Community Developer as Community Education Credits: 3
A graduate level course on education strategies and tools for use in community development. This course will develop students’ identities as community educators and provide knowledge on appropriate methodologies for working with adults in community settings, as well as develop their creativity and critical thinking skills. Students will engage in peer-to-peer teaching and critical analysis of community education activities.

CD 791 - Independent Study Credits: 1-3
CD 792 – Topics Credits: 3
CD 794 – Internship Credits: 3
CD 795 – Practicum Credits: 3

CEE (Civil and Environmental Engineering)

CEE 511 - Bituminous Materials 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. Corequisites: CEE 511L. Prerequisites: CEE 216.

CEE 511L - Bituminous Materials Laboratory Credits: 0
Performance of standard tests on asphalt products and mixtures to determine various characteristics. Emphasis will be placed on the interpretation of test results.
CEE 522 - Environmental Engineering Instrumentation Credits: 3
Development of an understanding of standard analytical methods for parameters commonly measured in liquid environmental systems. Coerequisites: CEE 522L. Prerequisites: CEE 225 or instructor consent.

CEE 522L - Environmental Engineering Instrumentation Laboratory Credits: 0
Analysis of water and wastewater samples using environmental laboratory instrumentation. Development of laboratory skills in water and wastewater analysis.

CEE 523 - Municipal Water Distribution & 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.

CEE 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.

CEE 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 540 - Precast Concrete Structures Credits: 3

CEE 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. Prerequisites: CEE 346.

CEE 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. Students enrolling in CEE 547 will be held to a higher standard than those enrolling in CEE 447. Prerequisites: CEE 346.

CEE 552 - Prestressed Concrete Credits: 3
Theory and design of prestressed concrete including pre-tensioning and post-tensioning. Prerequisites: CEE 456.

CEE 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.

CEE 567 - Transportation Engineering Credits: 3
Engineering principles in various common modes of transportation. Prerequisites: CEE 363.

CEE 592 – Topics Credits: 1-3

CEE 630 - Open Channel Hydraulics Credits: 3
Energy and momentum principles in open channel flow, flow resistance, flow in uniform and nonuniform channels, flood routing. Prerequisites: CEE 432.

CEE 691 - Independent Study Credits: 1-3
CEE 692 – Topics Credits: 1-3

CEE 702 - Advanced Civil and Environmental Engineering Credits: 1
Introduction to graduate study and professional communication skills required for further study in Civil and Environmental Engineering. Course may be repeated as needed to meet plan of study requirements.

CEE 720 - Water Treatment Plant Design Credits: 3
Water supply sources, design of treatment plants, cost estimates of water supply systems. Coerequisites: CEE 720L. Prerequisites: CEE 323 or instructors consent.

CEE 720L - Water Treatment Plant Design Laboratory Credits: 0
Practical design problems in water treatment plant design.

CEE 722 - Hazardous and Toxic Waste Disposal Credits: 3
Legislation, regulation, business aspects and technology related to the management and disposal of hazardous and toxic wastes.

CEE 725 - Biological Principles of Environmental Engineering Credits: 3
Ecology, energetics and kinetics of biochemical systems. Analysis and modeling of suspended growth and fixed film biological processes used in environmental engineering. Laboratory procedures for developing biokinetic data. Prerequisites: CEE 323 or instructors consent.

CEE 725L - Biological Principles of Environmental Engineering Laboratory Credits: 0

CEE 726 - Physical and Chemical Principles of Environmental Engineering Credits: 3
Fundamental concepts of fluid/particle interactions, process kinetics, and equilibrium chemistry applied to natural and engineered aquatic environmental systems. Coagulation, fluid/particle separation, oxidation/reduction, precipitation/dissolution, carbonate systems, absorption, ion exchange, and gas/liquid interfaces. Corequisites: CEE 726L. Prerequisites: CEE 323 or instructors consent.

CEE 726L - Physical and Chemical Principles of Environmental Engineering Laboratory Credits: 0

CEE 729 – Wastewater Treatment Plant Design Credits: 3
Design of waste collection and disposal facilities, waste treatment plants, cost estimates of waste disposal and treatment systems. Prerequisites: CEE 323. Graduate standing.

CEE 729L - Wastewater Treatment Plant Laboratory Credits: 0
Practical design problems in wastewater treatment plant design.

CEE 732 - Advanced Foundation Engineering Credits: 3
Advanced treatment of foundations and earth retaining structures. Bearing capacity, lateral resistance and settlement of deep foundations; earth pressures on sheet pile walls, braced excavations and buried pipes; numerical methods and computer use in design and analysis applications. Prerequisites: CEE 346.

CEE 733 - Topics in 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 of water resources planning. Notes: Course may be repeated.

CEE 734 - Surface Water Quality Model Credits: 3
Modeling advective and dispersive mass transport in surface and engineered water systems. Analysis of reactions affecting the fate of dissolved oxygen, nutrients, toxic compounds and pathogens. Analytical and numerical solutions to derministic modeling equations. Application and use of the QUALI-IIIE and EPANET models. Prerequisites: CEE 423, MATH 321.

CEE 738 - Advanced Hydraulics Credits: 3
Introduction to topics related to water resources engineering including: dimensional analysis, similitude, mechanics of sediment transport, river engineering, coastal hydraulics and stream channel mechanics. Corequisites: CEE 738L. Prerequisites: CEE 432; graduate standing.

CEE 738L - Advanced Hydraulics Laboratory Credits: 0
CEE 749 - Geotechnical Testing Credits: 3

CEE 749L - Geotechnical Testing Lab Credits: 0

CEE 754 - Advanced Design of Steel Structures Credits: 3
Review of LRFD concepts and basic member design, fundamentals of ASD, column buckling, plate buckling, fundamentals of structural stability, frame stability and frame design. Design of plate girders, composite girders, bracing members and the basics of PR and FR connections. Prerequisites: CHEM 455.

CEE 755 - Advanced Reinforced Concrete Design Credits: 3
Design of rigid frames, effect of plastic behavior, details for complex structures, analysis of flat plate and other two-way floor systems. Design comparisons. Prerequisites: CEE 456.

CEE 756 - Reinforced Masonry Design Credits: 3

CEE 759 - Structural Dynamics Credits: 3
Dynamic analysis of structural system with one and several degrees of freedom. Determination of natural frequencies. Analysis of free and forced vibration systems including damping. Introduction to earthquake engineering. Prerequisites: CEE 353, CEE 456.

CEE 765 - Pavement Design Credits: 3
Introduction to pavement types, wheel loads, stresses and strains in pavement components, material characterization, basic principles of design and pavement evaluation. Prerequisites: CEE 363.

CEE 769 - Bridge Design Credits: 3
Determination of bridge loadings and bearings. Design of concrete and steel bridge systems. Specifications and detailing related to bridge. Prerequisites: CEE 455, CEE 456.

CEE 788 - Engineering Research or Design Paper Credits: 1-2
Conduct a research or design project and write a report on the work done using thesis format.

CEE 790 – Seminar Credits: 1
CEE 791 - Independent Study Credits: 1-3
CEE 792 – Topics Credits: 1-3
CEE 792L - Special Topics Laboratory Credits: 0
CEE 798 – Thesis Credits: 1-7
CEE 898D – Dissertation Credits: 1-12

CHEM (Chemistry)

CHEM 516 - Chemical Communication Skills Credits: 2
Searching chemical literature by traditional and computer assisted methods; techniques of written and oral communication of chemical information.

CHEM 691 - Independent Study Credits: 1-4

CHEM 701 - Advanced Organic Chemistry 1 Credits: 3
Review and discussion of nomenclature, stereochemistry, resonance theory, equilibria, elementary kinetics, intermediate and mechanisms. Chemistry of polymers, heterocyclics, and natural products. Prerequisites: CHEM 229, CHEM 328.

CHEM 703 - Advanced Physical Chemistry Credits: 3
A review of the principles and applications of physical chemistry. Topics such as thermochrometry, quantum mechanics, spectroscopy, kinetics, and electrochemistry considered. Prerequisites: CHEM 242 and MATH 123.

CHEM 704 - Advanced Inorganic Chemistry Credits: 3
Inorganic systems including theoretical, representative group and transition metal topics. Prerequisites: CHEM 242 and CHEM 452.

CHEM 705 - Principles of Biochemistry Credits: 2-5
Chemistry of biological processes occurring in plants and animals. Prerequisites: CHEM 464.

CHEM 706 - Advanced Analytical Chemistry Credits: 3
Theoretical treatment of principles involved in non-instrumental analytical chemistry including sampling and statistics. Prerequisites: CHEM 242 and CHEM 332.

CHEM 710 - Philosophy of Science Credits: 2
In this course, differing viewpoints about the enterprise of science, research, and teaching will be explored, including Kuhnian, Popperian, Vygotksian, and Feyeralandid traditions. A portion of the course will also focus on the social aspects in the learning and teaching of science. Students will be expected to develop a personal teaching philosophy built upon their beliefs of how science works.

CHEM 711 - Chemical Education Research Credits: 2
Course will provide an introduction to the primary literature on research in chemical education. Students will survey the fundamental areas of focus such as learning theories, pedagogical methodology, assessment, and current topics of interest. Prerequisites: Instructor consent.

CHEM 713 - Qualitative Research Methods Credits: 2
A survey of theoretical traditions in qualitative methods for chemical education. Research will include methods of data collection, analysis, and reporting for each tradition. Emphasis will be placed on differences between qualitative and quantitative research methods in chemical education research. Prerequisites: Instructor consent.

CHEM 714 - Quantitative Research Methods Credits: 2
The course will include fundamental issues regarding the use of statistical analysis in chemical education research. Topics will include different quantitative strategies such as descriptive statistics, nonexperimental designs, single-subject designs, inferential statistics, and an introduction to current statistical program packages. Prerequisites: Instructor consent.

CHEM 715 - Chemistry Instruction in Higher Education Credits: 2
Instructional processes, learning theories, and issues specific to chemistry instruction in higher education. Topics including learning theory in the context of chemistry, lecture and laboratory settings, assessment strategies, demonstrations, and group work. Prerequisites: Instructor consent.

CHEM 722 - Synthesis of Natural Products Credits: 3
Synthetic strategies and pathways for the formation of natural products. Prerequisites: CHEM 328.

CHEM 724 - Structural Determination of Organic Compounds Credits: 3
Determination of the structure of organic compounds primarily by spectroscopic techniques. Corequisites: CHEM 324L. Prerequisites: CHEM 328.

CHEM 724L - Structural Determination of Organic Compounds Laboratory Credits: 0

CHEM 726 - Advanced Organic Chemistry II Credits: 3
Physical organic, reaction mechanisms, M.O. calculations, orbital symmetry, and E.S.R. spectroscopy. Prerequisites: CHEM 328 and CHEM 344.

CHEM 728 - Bioorganic Chemistry Credits: 3
Interpretation and categorization of biochemical reactions in terms of principles of organic chemistry. Synthesis of biologically active macromolecules and models for enzyme catalysis. Prerequisites: CHEM 328 and CHEM 705.

CHEM 731 - Advanced Environmental Chemistry Credits: 3
In-depth treatment of the principles of the environmental chemistry and geochemistry of the atmospheric, aquatic and lithospheric environments. Prerequisites: CHEM 342, instructor consent.

CHEM 732 - Aquatic Chemistry Credits: 3
Principles of aquatic acid-base, redox, and complexation, and photo-chemistry of the aquatic environment.

CHEM 733 - Atmospheric Chemistry Credits: 3
Structure and functions of the atmosphere; principles of atmospheric chemical processes; chemical reactions and fate of pollutants in the atmospheric environment. Prerequisites: CHEM 342.
CHEM 734 - Environmental Surface Chemistry Credits: 3
Chemical and physical processes at environmental interfaces. Prerequisites: CHEM 342, instructor consent.

CHEM 738 - Electroanalytical Chemistry Credits: 3
The principles of electrochemistry as applied to analytical methods will be presented in this course. Topics covered will include polarography, potentiometry, conductance, coulometry, and related topics. Prerequisites: CHEM 434.

CHEM 739 - Chromatography and Separation Credits: 3
Theory and practice of solvent extraction and paper, thin layer, gas and liquid chromatographic techniques. Prerequisites: CHEM 232.

CHEM 740 - Analytical Spectroscopy Credits: 3
In-depth treatment of the quantitative applications and theory of modern spectroscopy, techniques including atomic absorption, emission, and fluorescence; molecular absorption and fluorescence; and X-ray spectroscopy. Prerequisites: CHEM 434.

CHEM 741 - Quantum Chemistry I Credits: 3
The application of wave mechanics to simple atomic and molecular systems, properties of wave functions, and approximate methods. Prerequisites: CHEM 703 and MATH 321.

CHEM 742 - Quantum Chemistry II Credits: 3
Continuation of CHEM 741. Prerequisites: CHEM 741.

CHEM 744 - Chemical Thermodynamics Credits: 3
Discussion of the laws and theories of classical and statistical thermodynamics as related to macroscopic chemical systems. Prerequisites: CHEM 344.

CHEM 745 - Statistical Thermodynamics Credits: 3
Fundamental principles of statistical thermodynamics with applications to chemical systems. Prerequisites: CHEM 703 and CHEM 744.

CHEM 748 - Chemical Kinetics Credits: 3
Experimental methods and theoretical approaches to the study of reaction rates. Prerequisites: CHEM 328 and CHEM 344.

CHEM 753 - Organometallic Chemistry Credits: 3
The study of metal compounds containing organic moieties and related inorganic compounds. Major emphasis will be focused on transition metal-carbon compounds such as the carbonyls, aromatic hydrocarbons and nonaromatic olefins and acetylene complexes. Homogenous catalysts will be discussed. Prerequisites: CHEM 352.

CHEM 760 - Laboratory Rotations in Biochemistry Credits: 2
Investigative laboratory experiences for doctoral students in biochemistry, as supervised by faculty members participating in the Biochemistry PhD.

CHEM 764 - Biochemistry I Credits: 3
Study of metabolism of carbohydrates and lipids. Includes aspects on enzyme kinetics and regulation as well as principles and characteristics of ATP-synthesizing complexes. Prerequisites: CHEM 701.

CHEM 766 - Biochemistry II Credits: 3
Study of the metabolism of amino acids, proteins, nucleotides and nucleic acids. Includes some aspects of enzymology and the mechanism of intra and intercellular communication. Prerequisites: CHEM 705.

CHEM 767 - Biophysical Chemistry Credits: 3
Discussion of the theoretical and practical aspects of biophysical methods. These will include an examination of electrophoresis, centrifugation, light scattering, optical rotary dispersion, X-ray diffraction, viscosity/diffusion, and spectroscopy. Prerequisites: CHEM 540 and CHEM 705.

CHEM 770 - Atomic Theory & Bonding Credits: 3
This course will examine topics in atomic theory including wave-particle duality, wavefunctions, atomic spectra, quantum numbers, and the relationship between electronic structure and the periodic table. These topics will provide a foundation to explain molecular bonding. Topics of molecular bonding will include ionic and covalent bonding, electronegativity, polarizability, valence-shell-electron-pair-repulsion (VSEPR), valence-bond theory, and molecular orbitals. Student participation in discussions will lead to enhanced pedagogical skills for the secondary science teacher. Prerequisites: Instructor consent.

CHEM 771 - Intermolecular Interactions & Phases of Matter Credits: 3
This course will examine the impact on a variety of physical properties made by attractive forces between molecules, atoms, and ions. Topics will include explaining the existence and predicting the strengths of intermolecular interactions, predicting physical properties such as viscosity, boiling points, and melting points based on the presence of intermolecular forces, and the impact of intermolecular interactions on phases of matter. Student participation in discussions will lead to enhanced pedagogical skills for the secondary science teacher. Prerequisites: Instructor consent.

CHEM 772 – Thermodynamics Credits: 3
This course will focus on the relationship between energy, entropy, and the progress of chemical reactions. Major topics will include the relationship between heat and chemical reactions, calorimetry, reaction entropy, standard enthalpy, entropy, and free energy. An emphasis will be made on the mathematical techniques used to calculate these relationships and on how these concepts explain chemical behavior. Student participation in discussions will lead to enhanced pedagogical skills for the secondary science teacher. Prerequisites: Instructor consent.

CHEM 773 - Equilibria & Acid-Base Chemistry Credits: 3
This course will examine the reversibility of chemical reactions. The concept of dynamic equilibria will be studied and the law of mass action used to quantify the condition of equilibrium. Students will be able to predict the extent and direction of a chemical reaction and quantify species at equilibrium. Le Chatelier's principle will be used to understand the impact different factors on the equilibrium status of a chemical reaction. Topics in acid/base chemistry will be used to further explain equilibria processes. Additionally, Bronsted-Lowry and Lewis theories, molecular structure relationships to acid/base behavior, weak acid/ base behavior, the acidic/basic behavior of salts, titration, and buffer solutions will be discussed. Student participation in discussions will lead to enhanced pedagogical skills for the secondary science teacher. Prerequisites: Instructor consent.

CHEM 774 - Kinetics, Nuclear, & Electrochemistry Credits: 3
This course will focus on three important topics in chemistry: kinetics, nuclear, and electrochemistry. Students will utilize mathematical methods to study the speed of chemical reactions including average and instantaneous rates of reaction, rate laws, the law of initial methods, and integrated rate laws. Additionally, discussion of changes within the nucleus of an atom resulting in the alteration of that atom will occur by identifying fundamental processes of nuclear chemistry. Biological effects related to nuclear reactions will also be discussed both qualitatively and quantitatively. Finally, this course will focus on oxidation/reduction reactions as students manipulate redox reactions by balancing chemical reactions, predicting spontaneity of redox reactions, and explaining the function of voltaic cells. Student participation in discussions will lead to enhanced pedagogical skills for the secondary science teacher. Prerequisites: Instructor consent.

CHEM 775 - Organic & Biochemistry Credits: 3
This course will focus on topics in organic and biochemistry that provide a basis for future instruction in these content areas. Topics in organic chemistry will include nomenclature, functional groups, and basic organic reactions and mechanisms. Biochemistry topics will include nomenclature and structures of simple molecules including carbohydrates, proteins, and nucleic acids. Student participation in discussions will lead to enhanced pedagogical skills for the secondary science teacher. Prerequisites: Instructor consent.

CHEM 776 - Laboratory Development Credits: 2
This course will focus on the development of laboratory strategies for the secondary chemistry classroom. Students will receive guided instruction in laboratory development techniques from content experts. The outcome of the course will be the development of several new laboratory exercises which will be shared among participants. Prerequisites: Instructor consent.

CHEM 777 - Action Research in the Secondary Classroom Credits: 3
This course will engage science instructors in processes used to assess the efficacy of using specific strategies for teaching in the classroom. The methodology for conducting educational research in the classroom will be the initial focus. One outcome of the course will be the inception of a project that could be implemented by the science instructor to investigate the use of a new teaching strategy in the classroom. Prerequisites: Instructor consent.
CHEM 778 - Chemistry Teaching Strategies Credits: 3
This course will focus on pedagogical and curricular strategies and the educational research which supports using these methods. The incorporation of pedagogical methods into science classrooms as modifications for or enhancement of traditional instruction will be the goal for participants. Additionally the development of integrated curricula which use multiple content areas will be discussed. Pedagogical and curricular strategies developed during the course will be peer-evaluated and tested in individual classrooms. Prerequisites: Instructor consent.

CHEM 781 - Bioinorganic Chemistry Credits: 3
A study of biological systems stressing the role of metals ions, primarily the transition metals. Model systems included in the discussion. Prerequisites: CHEM 120 (4 credits), CHEM 352 or instructor consent.

CHEM 788 - Research Problems in the Chemistry Classroom Credits: 1-2
This capstone course will involve the application of the project conceived of during CHEM 616. Students will be expected to design, implement, and assess the outcomes of the project in their classroom. Results from this work will be summarized and defended in an oral exam format. Prerequisites: Instructor consent and CHEM 776.

CHEM 790 – Seminar Credits: 1
CHEM 792 – Topics Credits: 1-6
CHEM 798 – Thesis Credits: 1-7
CHEM 898D - Dissertation - Ph.D. Credits: 1-12

CHRD (Counseling & Human Resource Development)

CHRD 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 601 - Introduction to Professional Issues and Ethics Credits: 1
This course provides an introduction and orientation to the counseling profession with a focus on ethics. More specifically, ethical standards of ACA and other related specialty areas will be covered along with the use of ethical decision-making models.

CHRD 602 - Research and Evaluation in Counseling and Human Development Credits: 3
The course explores various research designs and methodologies applicable to the field of counseling. The course will emphasize qualitative and quantitative research, critical evaluation of research reports, the use of internet databases for writing a research paper, a thorough understanding of APA format. Cross-Listed: HDFS 602.

CHRD 610 - Developmental Issues in Counseling Credits: 3
Provides an understanding of the developmental needs of humans across the life span and adolescents and appropriate intervention methods to be used in counseling.

CHRD 661 - Theories of Counseling Credits: 3
This course takes a practice-based approach to teaching students counseling theory. The course focuses on several major theories, such as Adlerian, Person-Centered, Cognitive-Behavioral, and Family Systems theories. Students are encouraged to understand the utility of theory-based practice. Course work involves applying theory to case studies and developing treatment plans based on the tenets and techniques of the theories studied.

CHRD 690 - Seminar: Current Issues in Student Affairs Credits: 3
CHRD 691 - Independent Study Credits: 1-3
CHRD 692 – Topics Credits: 1-3
CHRD 693 – Workshop Credits: 1-3

CHRD 701 - Professional Issues and Ethics II Credits: 1
This course serves as an advanced view of the ethical standards of ACA and other related specialty areas. Application of the code and an ethical decision-making model is expected. Prerequisites: Consent.

CHRD 713 - Administration and Management of Mental Health Organizations Credits: 3
Developing and managing a comprehensive counseling program in agencies. Emphasis on the planning process, management, budgeting, organizational structure, supervision, evaluation and consultation.

CHRD 716 - Human Resources Management in Business and Industry Credits: 3
This course will focus on the human factors affecting the workplace. Specific topics to be covered will include employee assistance programs, wellness programs, management training, conflict resolution, and career planning.

CHRD 721 - School Counseling Credits: 3
A study of the role and function of a K-12 school counselor including individual counseling, small group counseling, classroom guidance, and consultation with parents, teachers, administrators.

CHRD 722 - Administration and Management of School Counseling Programs Credits: 3
Developing and managing a comprehensive counseling program in a school setting. Emphasis on the planning process, management, budgeting, organizational structure, supervision, evaluation and consultation.

CHRD 723 - Counseling the Family Credits: 3
Counseling the Family is a course which describes the major systems of family therapy and the resulting impact upon the counseling process. An inter-psycho, systematic framework will be formulated as a supplemental way to view familial problems and promote change.

CHRD 731 - Multicultural Counseling and Human Relations Credits: 3
This course aims to provide an understanding of the cultural context of relationships, issues and trends in a multicultural and diverse society related to such factors as culture, ethnicity, nationality, age, gender, sexual orientation, mental and physical characteristics, education, family values, religious and spiritual values, socioeconomic status and unique characteristics of individuals, couples, families, ethnic groups, and communities.

CHRD 736 - Appraisal of the Individual Credits: 3
Assessment methods used in studying individuals. Standardized instruments, self-report inventories, observation, case study techniques and other non-standardized assessment tools are used. Recording, analyzing, compiling and interpreting data for use in counseling setting.

CHRD 742 - Career Counseling and Planning Credits: 3
Examination of the career development and counseling process through the life span. Assist those intending to counsel at elementary, secondary, higher education and the community/workplace. Explores strategies and resources for career/life planning. Various interest inventories and personality assessment methods are used.

CHRD 751 - Overview of Rehabilitation and Mental Health Counseling Credits: 3
Provides an orientation to the field of rehabilitation and mental health counseling. Includes historical antecedents, philosophical and traditional connections with the field of rehabilitation counseling, assessment, planning and service delivery methods for those intending to work in rehabilitation focused programs serving persons with psychiatric disabilities.

CHRD 752 - Medical and Psychological Aspects of Disability Credits: 3
Provides instruction in the causes and processes of medical diseases and conditions that result in severe and persistent disability. Basic anatomy, physiology, and central nervous system functions will be reviewed. The course will explore the relationship between physical and psychiatric processes. Individual and family adjustment to disability will be covered. Students will be oriented to current approaches and concepts in prosthetics, assistive technology, medication, and wellness.

CHRD 753 - Case Management Principles & Plan Development Credits: 3
Covers practice and provides methods for managing cases and making caseload management decisions. Principles and practice in areas covered include intake interview; medical, psychological, and vocational evaluation, career and lifestyle alternatives, plan development, transitions, placement, and community integration. The course will also provide instruction in writing professional case reports, proposals, and progress notes. Time and work flow management strategies will be examined.
CHRD 755 - Clinical Diagnosis and Treatment Planning Credits: 4
This course is designed to introduce students to the DSM-IV and to help develop their diagnostic and treatment planning skills. Students will focus on particular disorders and how to effectively treat those disorders in clinical and school settings. Among the disorders and treatment plans that will be covered in class are: depressive disorders, anxiety disorders, substance abuse disorders, schizophrenia, disorders first diagnosed in infancy, childhood and adolescence, as well as personality disorders.

CHRD 756 - Counseling the Addictive Client Credits: 3
Counseling the addictive client is a course which describes how one can identify and treat addictive behaviors. Emphasis is on preventive and remedial action.

CHRD 757 - Advanced Testing: Intellectual Assessment Credits: 3
Examines the role, function, and use of intellectual assessment instruments. Emphasis is placed on administration and interpretation of the assessment instruments.

CHRD 759 - Advanced Testing: Personality Assessment Credits: 3
Examines the role, function, and use of personality assessment instruments. Emphasis will be placed on the administration and interpretation of personality assessment instruments.

CHRD 766 - Group Counseling Credits: 3
Processes and procedures used in small group counseling. Students participate in group counseling, facilitate in-class counseling sessions and develop structured units for specific populations. Prerequisites: CHRD 601, CHRD 610, CHRD 661 and EDER 760 or CHRD 602.

CHRD 770 - Student Development: Theory and Practice Credits: 3
This course introduces various theories of college student development and includes attention to developmental issues of special populations, such as minority students, international students, and nontraditional students. Research in several areas of student affairs work is emphasized.

CHRD 771 - Student Personnel Services Credits: 3
Two basic orientations provide the framework for this course: understanding the transition from theory to practice, and becoming a reflective, ethical practitioner. Students will gain a broad knowledge of student affairs functions as well as good overview of current issues in higher education.

CHRD 772 - Administration and Leadership in Student Affairs Credits: 3
This course provides an overview of administrative and leadership practice in the student affairs profession. The course will emphasize historical foundations of the profession and will utilize these foundations in understanding current practice. Students will gain broad knowledge about the role and function of student affairs functions in a variety of higher education settings. Cross-Listed: AHED 772.

CHRD 785 - Pre-Practicum Credits: 3
This course provides an introduction to basic therapeutic skills and structures compatible with a wide range of theoretical approaches. Students learn to conduct counseling interviews in order to successfully identify clients' conflicts, determine clients' desire for change, explore options and assist client action. This course serves as a foundation of CHRD 786 Counseling Practicum. Prerequisites: CHRD 601, CHRD 610, CHRD 661 and EDER 760 or CHRD 602.

CHRD 786 - Counseling Practicum Credits: 3-5
This course builds on the basic counseling skills learned in CHRD 785 Pre-Practicum and preferably directly follows that course in students' course work. In addition to enhancing basic counseling skills, this course is designed to help students integrate theory and practice. As part of their course work, students are asked to develop theory-based conceptualizations of client concerns. The faculty reserve the right to deny admission to CHRD 786 if they have reason to suspect a student might be unable to provide quality counseling services to clients. A minimum of 20 semester credit hours, including, CHRD 601, 602, 610, 661, 766, and 785, with a grade of B or better in 766 and 785. Retakes limited to two retakes. Prerequisites: CHRD 601 and CHRD 602 or CHRD 610, CHRD 661 and EDER 760.

CHRD 788 - Research Problems in Counseling and Guidance Credits: 1-3
A problem is selected, analyzed, and reported in a form approved by the research advisor. Required of all graduate students in counseling qualifying for Master's degree under Option B. Can be elected under Option C if desired.

CHRD 791 - Independent Study Credits: 1-3
CHRD 794 – Internship Credits: 2-6
CHRD 798 – Thesis Credits: 1-6

CJUS (Criminal Justice)

CJUS 591 - Independent Study Credits: 1-3
CJUS 592 – Topics Credits: 3

CSC (Computer Science)

CSC 533 - Computer Graphics Credits: 3
Principles of computer graphics. A study of the algorithms used to generate raster and vector graphics. Prerequisites: CSC 285, MATH 215 and MATH 125

CSC 547 - Artificial Intelligence Credits: 3
Introduction to ideas, issues and applications of Artificial Intelligence. Knowledge representation, problem solving, search, inference techniques, theorem proving. Expert systems. Artificial intelligence programming languages. Prerequisites: CSC 290.

CSC 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 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 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 592 – Topics Credits: 1-3
CSC 601 - Accelerated Computer Science Fundamentals Credits: 3
This course teaches the fundamental and advanced techniques of graduate computer programming using C++. The C++ language is used for this course because it is the standard language used for most graduate courses. In this course, students will learn how to write efficient and reliable code through advanced programming techniques.

CSC 630 - Principles Data Base System Design Credits: 3

CSC 705 - Design and Analysis of Computer Algorithms Credits: 3
Design and analysis of algorithms to determine their time and space requirements. The study of efficient algorithms for various computational problems. Analysis of specific algorithms for internal sorting, hashing, and string search. Sorting manipulation of data structures, graphs, matrix multiplication, the Fast Fourier Transform, arithmetical operations and pattern matching. Study and implication of advanced topics on lists, stacks, trees, sets and dynamic allocation. Prerequisites: CSC 300.

CSC 710 - Structure and Design of Programming Languages Credits: 3

CSC 720 - Theory of Computation Credits: 3
Formal models of computation. Recursive function theory, computable functions, decidable and enumerable sets, unsolvable programs, correctness of programs, undecidability, and incompleteness and complexity of computation. Prerequisites: CSC 445.
CSC 740 - Management Information Systems  Credits: 3
Computer appreciation course providing technical background for understanding and raising issues treated in other courses. Structure and operation of computer systems. Hardware technology and software development. Tools and methods for developing computer applications. Structure and components of Management Information Systems. Using the computer to support operations of management in planning and control and decision making. MIS development, organization, management and evaluation. Acquiring computer resources. The computer industry and profession. Prerequisites: CSC 325.

CSC 750 - Recent Advances in Parallel Process  Credits: 3

CSC 770 - Software Engineering Management  Credits: 3
Management issues arise in the development of software systems. The topics include planning documentation for requirements, design, implementation and testing, cost projection and modeling, documentation standards, code control, tracking of defects management psychology, group interaction and communication, and the management of reviews and walkthroughs. Prerequisites: CSC 470 or instructor consent.

CSC 790 – Seminar  Credits: 1
CSC 791 - Independent Study  Credits: 1-3
CSC 792 – Topics  Credits: 1-3
CSC 798 – Thesis Credits: 1-7

CSS (Computational Science and Statistics)

CSS 890 - Seminar in Computational Science and Statistics  Credits: 1
CSS 891 - Independent Study Credits: 1-3
CSS 892 – Topics Credits: 1-3

CTE (Career and Technical Education)

CTE 519 - Methods of Teaching  Credits: 3
This course will feature lesson presentation and methods of delivering instruction in vocational technical education. The course is designed for individuals who are presently teaching in the vocational technical education field. Content builds upon existing knowledge of the program participants in order to increase comprehension of the field of vocational technical education. Instructional techniques appropriate for vocational technical education are developed based on the models identified in competency-based or performance-based philosophy. Participants are actively involved in current teaching assignments which creates an enormous opportunity for reflection and debate.

CTE 520 - Entrepreneurship in Career 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 consideration, 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 525 - Development of Career and Technical Education Thought and Practice Credits: 3
Philosophy, origins, and development of vocational, technical and practical arts, education programs at adult, post-secondary, secondary, and pre-vocational levels. Prerequisites: Current and emerging principles, practices, and issues are stressed.

CTE 530 - Cooperative Education Coordination Techniques Credits: 3
This course emphasizes the organization and coordination 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 540 - Curriculum Design in Career Education  Credits: 3
This course addresses principles in developing vocational education curriculum research, development, implementation, and evaluation at the secondary, post-secondary and adult levels. Concepts include: coordination and organization of vocational education curriculum, curriculum design models (including competency-based education and applied academics); trends in state and national programs; long-range planning; articulation between secondary, post-secondary and 4-year programs.

CTE 563 - Technical and Industrial Experiences  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 591 - Independent Study  Credits: 1-4
CTE 592 – Topics Credits: 1-3
CTE 791 - Independent Study Credits: 1-3
CTE 792 – Topics Credits: 1-3
CTE 794 – Internship Credits: 1-3

DS (Dairy Science)

DS 513 - Physiology of Lactation  Credits: 3
Anatomy, physiology, and biochemistry of mammary glands. Factors affecting quality and quantity of milk. Prerequisites: VET 223 or equivalent.

DS 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. Prerequisites: DS 313.

DS 711 – Ruminology Credits: 3
Biochemical, physiological, and microbiological activity occurring in the rumen and the relation of rumen function to animal response. Prerequisites: CHEM 464 and VET 223 or instructor consent. Cross-Listed: AS 711.

DS 722 - Advanced Dairy Microbiology  Credits: 3
Emerging concepts in dairy microbiology related to food preservation, microbial detection techniques, molecular aspects of lactic acid bacteria and applications as probiotics, bacterial pathogenesis, and food safety management systems. Corequisites: DS 722L. Prerequisites: DS 301 or MICR 311 or instructor consent.

DS 722L - Advanced Dairy Microbiology Laboratory  Credits: 0

DS 731 - Laboratory Techniques in Dairy Science  Credits: 3
Research design, laboratory techniques, and data management and presentation in Dairy Science. Laboratory procedures include photometry, gas chromatography, and microbiological (aerobic and anaerobic) assays.

DS 790 – Seminar Credits: 1-3
DS 791 - Independent Study Credits: 1-4
DS 792 – Topics Credits: 1-4
DS 798 – Thesis Credits: 1-10
DS 898D - Dissertation – PhD Credits: 1-12

ECE (Early Childhood Education)

ECE 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 543 - Child Inquiry Credits: 2
Students will gain an understanding of inquiry based learning and of model programs such as those found at Reggio Emilia, Italy. Students will critically review, reflect upon, and evaluate theory, literature, and current research related to Developmentally Appropriate Early Childhood Education that supports child inquiry. Students will learn to draw on quality assessment, observation, and documentation for curriculum development, including collaborative long-term inquiry based investigations with children, and for conducting action research.

ECE 591 - Independent Study Credits: 1-3
ECE 592 – Topics Credits: 1-3
ECE 645 - Contemporary Perspectives in Early Childhood Education Credits: 3
The course is designed to present contemporary perspectives in the field of early childhood education. Current influences from Dewey to Reggio Emilia on curriculum development and assessment and teaching and learning will be explored.

ECE 676 - Early Childhood Educational Administration and Practices Credits: 1-4
ECE 711 - Child Development Theory and Application Credits: 3
In-depth study of human development. Emphasis upon current theories and their application to an understanding of the developmental growth processes; relationship between cognitive, social, physical and emotional development and behavior; range of normality in growth and behavior. Focus on normal development but with consideration of impact of deviance from normative development on child, family, neighborhood.

ECE 788 - Individual Research and Study Credits: 1-7
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 503 - History of Economic Thought 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.

ECON 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 instructor consent.

ECON 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 201, STAT 281.

ECON 540 - Economics of the 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, 202, and ECON 301 or 302 or 330.

ECON 550 - Industrial Organization Credits: 3
Industrial organization studies how different industry structures influence firm performance and business practices, and how government policies affect competitiveness and the economy.

ECON 553 - 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 560 - Economic Development 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 instructor consent.

ECON 572 - Resource and Environmental Economics 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.

ECON 576 - Marketing Research Credits: 3
Marketing problems confronting agribusinesses and businesses. Descriptive and analytical techniques in a research methods approach. Marketing research techniques. (Offered on demand)

ECON 591 - Independent Study Credits: 1-3
ECON 601 - Economic Study in Industrial Management Credits: 3
Intensive study of economic choice and value theory, financial statement structure and analysis, and financial management. Not open to economics majors.

ECON 610 - Financial Management Credits: 3
Advanced techniques for managing working capital, capital budgeting, analysis of financial structure and cost of capital, valuation, financial planning and control. Prerequisites: BADM 310, STAT 281, or instructor consent.

ECON 660 - Operations Management Credits: 3
Product planning, demand forecasting and management, capacity planning, scheduling, inventory planning and timing, materials management, quality, work standards and measurement. Prerequisites: BADM 360, ECON 301 and STAT 281.

ECON 662 - Bioenergy Economic/Sustainability Credits: 3
This course will provide an understanding of the economic issues relating to overall supply chains producing bioenergy and bio-based products. The course will address the economic, sustainability and social dimensions of these industries. Participants will gain an understanding of triple bottom line objectives, life cycle analysis and the principles of feasibility analysis.

ECON 663 - Bio-Energy Feasibility and Commercialization Credits: 3
This course will introduce the student to the concepts involved in feasibility and commercialization of bio-fuel and bio-based projects. Participants will gain an understanding of issues and processes in moving a project from pilot scale into commercialization. Prerequisites: ECON 201.

ECON 672 - Bioenergy & Resource Economics Credits: 3
Bioenergy and Resource Economics surveys the allocation and conservation of natural resources from a perspective of optimal use and sustainability. Emphasis is placed on the tradeoffs and issues related to the production of biomass and development of the biofuels market including resource allocation, valuation methodology, economic growth, and market development. Prerequisites: ECON 201, MATH 121 or MATH 123.

ECON 691 - Independent Study Credits: 1-3
ECON 692 – Topics Credits: 1-4
ECON 703 - Advanced Macroeconomics Credits: 3
Advanced Macroeconomics studies the economy as a whole. The course investigates the sources of long-run economic growth and short-run aggregate shocks. Some of the models examined include Solow, Infinite Horizon, Overlapping Generations, New Growth, and Real Business Cycle. Also theories of incomplete nominal adjustment, rational expectations, unemployment and inflation, and monetary and fiscal policies are studied. Prerequisites: ECON 428 or instructor consent.

ECON 704 - Advanced Microeconomics Credits: 3
Rigorous analysis of topics in microeconomics including: methodology of economic science, economic choice, production, resource allocation, distribution, welfare economics, and general equilibrium. Prerequisites: ECON 428 or instructor consent.
Practice in the application of micro- and macro-economic theory to solutions of real and hypothetical problems. Selection and use of appropriate statistical and other analytical methods suitable for complex problems. Prerequisites: ECON 423 and ECON 428.

Planning and conducting empirical research in applied economics. The organization of research, philosophy and the aim of science and research. Project proposal and presentation are required.

Examine how the money supply and other nominal economic variables, including inflation rates and nominal interest and exchange rates, relate to real economic variables, including real output, income, and employment. Examine this relationship theoretically, empirically, and in the context of the US experience from 1931 to the present.

The course will apply econometrics, advanced statistics, and differential calculus to the process of stock analysis and pricing, portfolio composition, options pricing, and risk management. Its focus is on minimizing risk while seeking a target rate of return.

A broad overview of administration. Will examine administration as an applied science and analyze the organizational, political, and human relations systems as forces affecting administration. Specific topics will include conflict resolution, crisis management, planning, staff development, evaluation, and communications theory. Corequisites: EDAD 695.

An introduction to (1) the organization, administration, and control of public education, and (2) the profession of educational administration, including task, process, and activity analysis.

Emphasis is on the principal as an instructional leader with major topics focusing on staff recruitment, supervision and evaluation, student services, rights and responsibilities, research on effective schools, parent community relationships and the principal's role in dealing with current issues facing our schools. Corequisites: EDAD 709.


A problem is selected, analyzed, and reported in form approved by the research advisor. Required of all graduate students in education qualifying for the degree under Option B. Can be elected under Option C if desired. Course is repeatable for additional credit.

Maintaining working relationships between school and community from the perspective of the building administrator. Includes working with community organizations and public relations. This course is a prerequisite or co-requisite for EDAD 794, Internship.

A problem is selected, analyzed, and reported in form approved by the research advisor. Required of all graduate students in education qualifying for the degree under Option B. Can be elected under Option C if desired. Course is repeatable for additional credit.

Examine the theory and principles of educational assessment.

A particular emphasis is placed on the knowledge needed to be an informed and effective consumer of research. This course helps students become critical consumers of professional information by addressing the location, evaluation, use, and communication of information.

Notes: Course is repeatable for additional credit.

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.

Notes: Course is repeatable for additional credit.
EDFN 566 - Literacy in Primary Grades and Lab 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 566L-566.

EDFN 566L - Literacy in Primary Grades Laboratory Credits: 0
Lab to teach reading methods in local elementary primary classrooms. This will be an application of material learned in EDFN 466.

EDFN 590 – Seminar Credits: 1-3
EDFN 592 – Topics Credits: 1-3
EDFN 691 - Independent Study Credits: 1-3

EDFN 700 - Exceptional Learners Credits: 3
Assist regular classroom teachers to better understand and more effectively teach students with special learning needs. Focuses on learning disabilities, mental retardation, and behavior disorders. Also includes short sections regarding hearing impairments, visual impairments, orthopedic or health impairments, speech/language disorders, and the gifted. Regular classroom curricular adaptations and modifications are included.

EDFN 725 - Education in a Pluralistic Society Credits: 3
Focus on school issues surrounding pluralism in a democratic society. This course relates to working with the diversity of populations within our schools. This diversity is represented in our schools by the multi-cultural nature of American society, and differences associated with exceptionality, gender, age, religion, and socio-economic status. The course will focus on preparing educators to confront issues relating to pluralism and diversity and to work productively in a variety of settings.

EDFN 727 - Group Processes Credits: 3
A survey of small group constructs, research, and principles of application. Emphasis on learning methods and skills of group observation as well as developing knowledge of group roles and dynamics. Members will learn experimentally about groups by participating, observing and analyzing opportunities to experience their own behaviors and styles as they deem appropriate.

EDFN 730 - Current Issues in Education Credits: 3
Analysis of current trends and issues in education. Focus on the change process in educational and social settings.

EDFN 745 - Effective Teaching: Theory Into Practice Credits: 3
Approaches instruction from the perspective of Effective Teaching Research integrated with a focus on thinking skills. Students study various instructional models, focus on selection and implementation of appropriate strategies and consider other classroom issues related to effective teaching.

EDFN 747 - Curriculum: Theory Into Practice Credits: 2
A study of the nature and principles of curriculum and curriculum development in schools. Process of curriculum change, development and evaluation will be examined. Roles of teachers, administrators, students and the public in curriculum change will be studied. Corequisites: ELED 748 and SEED 748.

EDFN 750 - Educational Technology Credits: 3
This course provides an advanced grounding in the educational uses of computing and communications technology. It includes integration of technology into the classroom, distance education, multimedia production, and school management systems.

EDFN 751 - Teaching Reading Across Disciplines Credits: 3
Examines the latest research on how readers comprehend and learn from written texts, and the classroom applications of this research. Intended for teachers of content subjects (science, English, math, history, etc.) in grades 4 through the early years of college.

EDFN 754 - Clinical Practice in Reading Credits: 1-3
Supervised experience in utilizing best techniques and materials to effect desirable solution to reading difficulties; practical experience in writing case studies, in diagnosing reading disability. Proposing effective remediation, keeping records and in evaluating progress of student.

EDFN 790 – Seminar Credits: 1
EDFN 792 – Topics Credits: 1-3
EDFN 794 – Internship Credits: 1-6

EE (Electrical Engineering)

EE 536 - Photovoltaic Systems Engineering Credits: 3
Fundamentals of hybrid photovoltaic power systems. Topics may include: an overview of energy and electricity use; solar resource characteristics; load assessment; the fundamentals of solar cells, batteries, power electronics, and generators and other power sources; power system design; the National Electric Code; and energy economics. Corequisites: EE 536L.

EE 536L - Photovoltaic Systems Engineering Laboratory Credits: 1
This lab provides practical experience in the design of hybrid photovoltaic power systems. Corequisites: EE 536.

EE 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 healthcare facilities. Prerequisites: EE 321.

EE 560 - Sensors and Measurements Credits: 2
Introduction to the operation, design, testing and applications of modern sensors in use and under development. Signal conditioning and system integration are also reviewed. Corequisites: EE 560L.

EE 560L - Sensors and Measurements Laboratory Credits: 0

EE 562L - Electronic Materials Laboratory Credits: 1
An introduction to microelectronic fabrication including evaporative and sputter deposition, photolithography, mask design, and packaging. Prerequisites: Instructor consent.

EE 571 - Fiber Optics Communications Credits: 3
Theory and application of optical fibers and communication systems. Topics include fundamentals of optical fiber waveguides, instructions, single-mode and multimode, propagation, coupling consideration, photo-detectors, signal degradation, fabrication and cabling, and transmission linked analysis. Corequisites: EE 571L. Prerequisites: EE 316.

EE 571L - Fiber Optics Communications Laboratory Credits: 1
This laboratory reinforces the theoretical concepts presented in the lecture course, EE 471/571. Topics include basic knowledge and skills needed for handling and testing optical fibers, characteristics of optical components, fiber optic communication systems and fiber optic sensing systems.

EE 575 - Digital Image Processing Credits: 3
Introductions to the fundamentals of digital image processing. Topics include image formation, transforms, enhancement, restoration, compression, and analysis. Prerequisites: EE 317.

EE 591 - Independent Study Credits: 1-4
EE 592 – Topics Credits: 1-3
EE 592L - Topics in Laboratory Experience Credits: 1
EE 691 - Independent Study Credits: 1-3
EE 692 – Topics Credits: 1-3

EE 702 - Theory and Application of Nanoscale Materials Credits: 3
Introductory quantum mechanics, ability to solve ordinary differential equations and linear systems. The course will survey current research in nanoscience and nanotechnology, providing the essential background and theory at a level accessible to students from varied scientific and engineering backgrounds. Special emphasis will be placed on nano-scaled materials and their practical applications. Cross-Listed: NANO 702 at SDSM&T; CHEM 718 at USD.

EE 716 - Printed Electronics Materials and Processes Credits: 3
The principles of interfacial phenomenon, solution thermodynamics and colloidal chemistry will be used in illuminated process by which metallic nanoparticulates can be formed and incorporated into inks for use in manufacturing printed electronics by various direct write technologies. Students will learn 1) the methods and science behind the manufacture of a variety of nanoparticles, including gold, silver, copper conducting particles, 2) the methods of incorporating these particles into inks and printing of these inks for printed electronics applications and 3) the interfacial processes involved in line spreading and curing of the printed traces. Cross-Listed: MES 677 and NANO 677 at SDSM&T; CHEM 716 at USD.
EE 720 - Synthesis and Characterization of Nanomaterials Credits: 3
A survey and analysis of synthetic materials and characterization techniques for nano-structured materials will be presented. The classes of materials that will be studied include: inorganic nanocrystals (metals, semi-conductors, metal oxides), nano-wires, porous materials, carbon nanostructures, and higher order materials, such as supported catalysts. Solution-phase synthetic routes will be emphasized, including sol-gel synthesis, non-hydrolytic molecular decomposition, and micelle-templated synthesis, with lesser emphasis on solid state and gas-phase reactions. Methods of characterization will be discussed, including: transmission electron microscopy (TEM), scanning electron microscopy (SEM), powder X-ray diffraction (XRD), UV-visible absorption/fluorescence, X-ray absorption spectroscopy, gas sorption analysis, atomic force microscopy (AFM), scanning tunneling microscopy (STM), and photoelectron spectroscopy. Cross-Listed: CHEM 720 at USD.

Advanced concepts of probability and random processes; linear systems and random processes; performance of amplitude angle and pulse modulation systems in noisy environments; digital data transmission; and basic concepts of information theory.

EE 723 - Luminenseent Spectroscopy Materials Credits: 3
Fundamentals of luminescent behavior and photodynamics of solid state materials and spectroscopic methods of characterization will be discussed. Applications of novel solid state materials as phosphors, sensors, and in optoelectronics devices will be considered. Cross-Listed: CHEM 723 at USD.

EE 735 – Photovoltaics Credits: 3
This course will cover modern silicon photovoltaic (PV) devices, including the basic physics, ideal and nonideal models, device parameters and design, and device fabrication. The emphasis will be on crystalline and multicrystalline devices, but thin films will also be introduced. PV applications and economics will also be discussed.

EE 736 - Advanced Photovoltaics Credits: 3
This course will cover advanced photovoltaic concepts, including thin films, compound semiconductors, spectral conversion devices, and organic and polymeric devices. Advanced device designs will be emphasized. Evaluation will include a research paper addressing a current PV topic. Prerequisites: EE 735.

EE 737 - Organic Photovoltaics Credits: 3
Organic photovoltaics provides a variety of interesting and new properties which facilitate solar energy utilization. The objectives of this course are to introduce material properties of polymers, small molecules, dyes, and nanomaterials for photovoltaics; describe device mechanisms and behavior or organic photovoltaics; understand the photophysical processes in organic photovoltaics; and introduce different processing techniques for device fabrication.

EE 751 - Linear Systems Theory Credits: 3
State variables, Laplace transform theory, matrix analysis and complex variable theory as applied to problems in circuit analysis. Topology, network theorems and network functions.

EE 765 - Electric Properties of Materials Credits: 3
Topics covered include electromigration, diffusion, theory of rate processes, relaxation, effects, phase transformations, physics of failure in electrical circuit applications.

EE 766 - Advanced Electronic Materials Credits: 3
This course will focus on the theory of state-of-the-art micro and nano materials and fabrication techniques. Emphasis will be on the selection of appropriate electronic and optical materials as well as the processes that control form and structure which can be designed to yield desired physical properties. Specific materials and processes to be studied will be decided by the course instructor

EE 770 - Information and Signal Processing Credits: 3
Foundation of information theory and its relationship to the measure and transmission of information; comparison of analog and digital system implementations. Topics include random processes, signal representation, spectral analysis, channel capacity, rate distortion, coding, data compression, Z-transforms and digital filtering. Prerequisites: EE 310 or EE 316.

EE 785 - Microwave Theory Credits: 3
Transmission lines, resonant cavities, waveguide junctions, and components. Active devices, lasers, masers. Prerequisites: EE 385.

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: 1-6

EES (Ecology and Environmental Science)

EES 525 - Disturbance Ecology Credits: 4
Introduction to basic concepts of disturbance ecology. Demonstration and discussion of linkages between basic biology and management of natural resources. Introduction to design, implementation and analysis of biological monitoring and assessment of habitat changes associated with pollution and other forms of ecological disturbance. Corequisites: EES 525L.

EES 525L - Disturbance Ecology Laboratory Credits: 0
Corequisites: EES 525.

EES 592 – Topics Credits: 1-7

EES 692 – Topics Credits: 1-7

ELED (Elementary Education)

ELED 592 – Topics Credits: 1-3

ELED 593 – Workshop Credits: 1-3

ELED 748 - Elementary Curriculum Practicum Credits: 1
Field-based problem-centered experience. Corequisites: EDFN 747 and SEED 748.

EM (Engineering Mechanics)

EM 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 or equivalent.

EM 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: EM 522 or instructor consent.

EM 624 - Theory of Plates and Shells Credits: 3

EM 731 - Advanced Fluid Mechanics Credits: 3
Fundamental notions of continuum, stress at a point velocity field, and vorticity. General principles of kinematics and dynamics of a fluid. Potential flow and vortex motion. Prerequisites: EM 331, MATH 331.

EM 741 - Finite Element Analysis Credits: 3
Theoretical basis of the method of finite element analysis-an approximate method which analyzes problems using small, but finite elements rather than the infinitesimal elements of the calculus. Two- and three dimensional stress analysis, plate bending and shell problems, static, dynamic and stability problems. Geometric and material non-linearities. Introduction to both heat and fluid flow problems. Prerequisites: MATH 321.

ENGL (English)

ENGL 522 – Chaucer Credits: 3
Major works of Chaucer, with some attention to his sources and his language.
ENGL 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 527 - Advanced Shakespeare Credits: 3
Selected plays of Shakespeare and significant Shakespearean criticism.

ENGL 528 - English Renaissance Literature Credits: 3
Major writers of the 16th and early 17th centuries excluding Shakespeare.

ENGL 534 - English 18th Century Literature Credits: 3
Literature of the later 17th and 18th centuries (1660-1800), including major works and developments in literature and thought.

ENGL 537 - English Romantic Literature Credits: 3
English literature of the romantic movement (1789-1832).

ENGL 538 - English Victorian Literature Credits: 3
English literature of the Victorian Period (1840-1900).

ENGL 539 - Modern English Literature to WW II Credits: 3
English literature from 1900 to WWII.

ENGL 540 - Contemporary English Literature Credits: 3
English literature since WW II.

ENGL 553 - American Renaissance Literature Credits: 3
American literature of the mid nineteenth-century, including the Transcendentalists and Romantics.

ENGL 554 - American Realist and Naturalist Literature Credits: 3
American literature of the realist and naturalist movements of the late 19th and early 20th centuries.

ENGL 559 - American Literature Between the Wars Credits: 3
American literature of the modernist movement from 1917 to 1945.

ENGL 560 - Contemporary American Literature Credits: 3
American literature since WW II.

ENGL 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.

ENGL 583 - Advanced Creative Writing Credits: 3
A course allowing students with experience in creative writing to specialize in a particular genre (poetry, fiction, etc.). Prerequisites: Pre-requisite: ENGL 383 or instructor consent.

ENGL 591 - Independent Study Credits: 1-4
ENGL 592 - Topics Credits: 1-3

ENGL 704 - Introduction to Graduate Studies Credits: 3
An introduction to literary criticism and study of bibliographic tools (including electronic sources) and research methods needed for scholarly writing in the Humanities. Required of all candidates for the M.A. degree in English.

ENGL 705 - Seminar in Teaching Composition Credits: 3
Study of the methods, theories, and history of writing instruction. Prerequisites: A course for English GTAs and required of them.

ENGL 710 - Seminar in Rhetoric Credits: 3
Intensive study of selected periods or topics in rhetoric, with special emphasis on their relation to issues in criticism and composition.

ENGL 724 - Seminar in English Literature To 1660 Credits: 3
Intensive study of a selected type, theme, author, or period of English Literature from the beginning to 1660.

ENGL 725 - Seminar in English Literature Since 1660 Credits: 3
Intensive study of a selected type, theme, author, or period of English literature since 1660.

ENGL 728 - Seminar in American Literature To 1900 Credits: 3
Intensive study of a selected type, theme, author, or period of American literature to 1900.

ENGL 729 - Seminar in American Literature Since 1900 Credits: 3
Intensive study of a selected type, theme, author, or period of American literature since 1900.

ENGL 742 - Seminar in American Indian Literature Credits: 3
Intensive study of American Indian literature of the past or present with concentration on the Plains Indians.

ENGL 755 - Seminar in Minority Literature Credits: 3
American literature of specific cultural or ethnic minorities other than Native American (African American, Asian American, Hispanic, Jewish, or woman writers, for example). May be repeated once with different content.

ENGL 791 - Independent Study Credits: 1-3
ENGL 792 - Topics Credits: 1-4
ENGL 798 - Thesis Credits: 1-7

ENTR (Entrepreneurship)

ENTR 538 - Entrepreneurship II Credits: 3
This course focuses on the processing 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.

EPSY (Educational Psychology)

EPSY 526 - Psychology of Early Adolescent Learner Credits: 3
To guide students in the personal construction and application of an early adolescent development knowledge base. The learning environment of the early adolescent/middle school student will be the context of study in this course. A theoretical base related to intellectual development, identity development, and social development will be used as a basis for exploring the benefits and needed changes in current educational settings of the 10- to 15-year-old. Students will study the impact of various influences on the healthy and positive development of the learner. Students will apply the knowledge base to evaluate and critique personal experiences, issues, and programs designed for early adolescent learners. Prerequisites: Admitted to education program. Junior standing or graduate student.

EPSY 723 - Adolescent Psychology Credits: 3
This course covers the mental, social, and emotional development of boys and girls during the adolescent period.

EPSY 740 - Advanced Educational Psychology Credits: 3
A study of theories of learning. The goal of the course is for each student to gain insight into their own beliefs about how learning occurs.

EXPL (Exploratory Studies)

EXPL 578 - 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 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.

FCSE (Family and Consumer Sciences Education)

FCSE 591 - Independent Study Credits: 1-3
FCSE 592 - Topics Credits: 1-3
FCSE 595 – Practicum Credits: 1-3
**FCSE 611 - History & Philosophy of Family & Cons. Sciences** Credits: 3
The history, mission, philosophy and development of Family and Consumer Sciences (FCS) and career and technical education; the societal context for families and communities and the impact of selected legislation and consumer sciences programs.

**FCSE 673 - Supervised Student Teaching in Family and Consumer Sciences Education Credits:** 6-9
Student teaching is the capstone experience in a comprehensive program for the professional development of teacher candidates. MS-FCS teacher education candidates will spend 10-16 weeks in family and consumer sciences classrooms working directly with teaching-learning situations under the guidance of cooperating teachers and a university supervisor.

**FCSE 721 - Occupational Programs in Family and Consumer Sciences Credits:** 3
This course will include the planning and implementing of occupational FCS programs in career and technical education. Emphasis on cooperative education, career pathways and work-based education.

**FCSE 741 - Supervision of Family/Consumer Sciences Education Credits:** 2
This course will cover the philosophy, responsibilities, and techniques of supervision in the family and consumer sciences classroom and other learning environments.

**FCSE 751 - Curriculum of Family/Consumer Sciences Education Credits:** 2
The analysis and development of curriculum and methods of teaching family and consumer sciences in the context of the National Standards for Family and Consumer Sciences Students, the National Standards for Teachers of Family and Consumer Sciences and appropriate state standards. This course will include the content topics of learners and the learning environment, program leadership, beginning instructional strategies, Family, Career and Community Leaders of America (FCCLA); curriculum development; integration of technology in the FCS classroom and assessment.

**FCSE 761 - Advanced Methods and Assessment in Family & Consumer Sciences Education Credits:** 3
This course will address the application of theories of learning and human development in selecting teaching strategies and instructional resources for family and consumer sciences. The course will include long-range planning, classroom management, laboratory management, assessment and program evaluation, marketing/public relations, FCCLA and methods of teaching.

**FCSE 788 - Master’s Research Project Credits:** 1-3
**FCSE 792 - Topics Credits:** 1-3
**FCSE 798 – Thesis Credits:** 1-7

---

**FREN (French)**

**FREN 591 - Independent Study Credits:** 1-3

**GE (General Engineering)**

**GE 510 - Human Factors in Design Credits:** 3
Human factors engineering (HFE), sometimes called ergonomics, deals with optimizing working and living conditions through designing for human use. The central approach of HFE involves the systematic application of relevant information about user characteristics, behavior and expectations in the design of man-made products, equipment, facilities, and environments. The objectives of HFE are (1) to enhance the effectiveness and efficiency of work and other human activities; and (2) to enhance the product user's comfort, safety, health and satisfaction. Prerequisites: MATH 102.

**GE 525 – Occupational Health and Safety Credits:** 3
Industrial accidents are caused by error-making human beings. Safety results achieved only through "safety engineering" and OSHA compliance are limited. Optimum levels of accident prevention can only be achieved through a coordinated program of both safety engineering and safety management. The focus on modern safety management includes: management's direction of safety, measuring safety performance, behavior modifications, motivating safety performance, profiling, program organization, products safety, and safety in the adjacent fleet.

**GE 569 - Project Management Credits:** 2-3
An overview of project management as it relates to integrated systems, product/project life cycle, and organizational change. Defining, estimating, scheduling, risk management, and project team leadership issues will be covered as they relate to projects.

**GE 591 - Independent Study Credits:** 1-3
**GE 592 – Topics Credits:** 1-3

**GE 603 - Designing the Work Place for Production Credits:** 3
Designing the workplace to support the structuring of interpersonal communication and action in the workspace and to optimize the use of human energy through the total integration of corporate policy and culture with the physical environment. Includes the evaluation of operation procedures, the construction of behavior, computer assisted facilities management, developing control and order in the workplace, perceived stability as corporate support, flexibility as a catalyst to successful innovation.

**GE 650 - Manufacturing Systems Management Credits:** 3
Production planning and control methods to improve efficiency. Study and application of low cost production for small to large systems. Workplace organization, value stream mapping, demand flow, and other management tools will be covered. Prerequisites: STAT 541 or STAT 582.

**GE 690 – Seminar Credits:** 1-3
**GE 691 - Independent Study Credits:** 1-3
**GE 696 - Field Experience Credits:** 1-6
**GE 788 - Research Problems/Projects Credits:** 1-2
**GE 798 – Thesis Credits:** 1-7

---

**GEOG (Geography)**

**GEOG 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.

**GEOG 521 - Qualitative Research Methods in Geography Credits:** 3
The theory and application of qualitative methods in geographic studies. Emphasis on the purpose and effective use of archival, visual, interview, survey, focus group, observation, and ethnography techniques. Design and implementation of research projects using qualitative methods as the primary data collection and analysis tool.

**GEOG 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 561 - 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 573 - GIS Data Creation/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 574 - GIS: Vector & Raster Modeling Credits:** 3
This course introduces basic concepts of vector and raster modeling in Geographic Information Systems (GIS) with special emphasis on construction and use of raster digital elevation models (DEM). 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 findings, 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 582 - Travel Studies Credits: 1-4
This travel study course is designed to provide extra-ural education 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 590 – Seminar Credits: 1-4
GEOG 591 - Independent Study Credits: 1-4
GEOG 592 – Topics Credits: 1-4
GEOG 710 - Evolution of Geographic Thought Credits: 3
The history and development of geography and its theories, schools of thought, and current ideas.

GEOG 714 - Research and Writing Credits: 3
Development of geographic research and writing skills including a survey of data sources and literature, and preparation of reports, papers, articles, and the master’s thesis.

GEOG 734 – Climatology Credits: 3

GEOG 741 - Quantitative Remote Sensory for Terrestrial Monitoring Credits: 3
The course will describe the science, algorithms, and computational approaches to generate and assess derived satellite products for long term Earth system monitoring. Emphasis will be on the principles of optical remote sensing and state-of-the-art quantitative algorithms for estimating biophysical and geophysical land surface variables from remotely sensed observations. Prerequisites: STAT 541 and GEOG 484 or consent. Cross-Listed: GEOG 741.

GEOG 742 - Cultural Geography Credits: 3
Consideration of culture in a geographic context including such concepts as cultural origins and diffusion, ecology, landscapes, and regions.

GEOG 743 - Geospatial Analysis Credits: 3
This course covers concepts and methods of spatial data analysis, focusing on the analysis of broad-scale geographic datasets characterizing physical, biological, and socioeconomic landscape features. Students learn to develop scientific hypotheses about spatial relationships, and to test these hypotheses using appropriate spatial datasets and analytical techniques. Topics include exploratory data analysis, methods for quantifying spatial pattern, development of explanatory models to test spatial hypotheses, and development of predictive models for spatial interpolation. Prerequisites: One graduate level course in statistics (e.g. STAT 541 or equivalent). Cross-Listed: GEOG 743.

GEOG 760 - Advanced Methods in Geospatial Modeling: Topical Credits: 3
Selected topics in advanced methods in geospatial modeling. May be repeated for credit. Specific topics covered will change each semester. Cross-listed: GEOG 760. Prerequisites: Graduate standing in a degree program. Specific pre-requisites dependent on topic.

GEOG 765 - Advanced Studies in Land Utilization Credits: 1-4
The physical and cultural factors affecting the nature and pattern of land utilization. Local and/or regional utilization, planning, and problems will be studied in detail in relation to the topic. Course may be repeated under different topic.

GEOG 766 - Advanced Remote Sensing Application Credits: 3
Selected topics in advanced applications in remote sensing. May be repeated for credit. Specific topics covered will change each semester. Prerequisites: Graduate standing in a degree program. Specific pre-requisites dependent on topic. Cross-Listed: GEOG 766.

GEOG 767 - Fire and Ecosystems Credits: 3
This course is a broad treatment of how fire and ecosystems combine to form the landscapes that we see. Course material examines the contributions of climate, topography, weather, and fuels to the fire environment and how these factors influence wildland fire behavior. We will explore the interactions between ecological processes and fire regimes in ecosystem dynamics and the ways in which human land use and land management affect the outcomes. Cross-Listed: GSE 767/BIOL 767.

GEOG 785 - Quantitative Methods in Geography Credits: 3
Descriptive and Inferential Statistics will be studied in this course. The traditional regression and correlation routines will be addressed as well as probabilities. Statistical routines on the mainframe computer will be utilized in problem solving involving real-world geographic-sociological situations.

GEOG 786 - Geographic Information Systems Credits: 3
Practical applications of GIS to problems and land-use planning, management of natural resources, transportation, as well as demographic data. Hands-on experience in the making of maps with computers, digitization, the storing and retrieving of geographic data, and the design of simple GIS.

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: 1-4
GEOG 794 – Internship Credits: 1-3
GEOG 798 – Thesis Credits: 1-7

GER (German)

GEOG 591 - Independent Study Credits: 1-3

GSE (Geospatial Science and Engineering)

GSE 740 - Introduction to Geospatial Science and Engineering Credits: 3
The interdisciplinary course provides an overview of the science and technology of Earth observation, including the fundamentals of remote sensing, geographic information systems, computational and analytical approaches, and professional practices, including research information resources, graphical and oral presentation, proposal writing, publishing, and research ethics. Prerequisites: Admission to the GSE Ph.D program.

GSE 741 - Quantitative Remote Sensing for Terrestrial Monitoring Credits: 3
The course will describe the science, algorithms, and computational approaches to generate and assess derived satellite products for long term Earth system monitoring. Emphasis will be on the principles of optical remote sensing and state-of-the-art quantitative algorithms for estimating biophysical and geophysical land surface variables from remotely sensed observations. Prerequisites: STAT 541 and GEOG 484 or consent. Cross-Listed: GEOG 741.

GSE 743 - Geospatial Analysis Credits: 3
This course covers concepts and methods of spatial data analysis, focusing on the analysis of broad-scale geographic datasets characterizing physical, biological, and socioeconomic landscape features. Students learn to develop scientific hypotheses about spatial datasets and analytical techniques. Topics include exploratory data analysis, methods for quantifying spatial pattern, development of explanatory models to test spatial hypotheses, and development of predictive models for spatial interpolation. Prerequisites: One graduate level course in statistics (e.g. STAT 541 or equivalent). Cross-Listed: GEOG 743.

GSE 760 - Advanced Methods in Geospatial Modeling: Topical Credits: 3
Selected topics in advanced methods in geospatial modeling. May be repeated for credit. Specific topics covered will change each semester. Cross-listed: GSE 760. Prerequisites: Graduate standing in a degree program. Specific pre-requisites dependent on topic.

GSE 765 - Advanced Methods in Geospatial Modeling: Topical Credits: 3
Selected topics in advanced methods in geospatial modeling. May be repeated for credit. Specific topics covered will change each semester. Recent topics have included: Image Geometry and Photogrammetry; Change Analysis; Land Cover Mapping. Prerequisites: Graduate standing in a degree program. Specific prerequisites dependent on topic. Cross-Listed: GSE 765.

GSE 766 - Advanced Remote Sensing Applications: Topical Credits: 3
Selected topics in advanced applications in remote sensing. May be repeated for credit. Specific topics covered will change each semester. Recent topics have included: Water Resources; Conservation; Weather & Climate. Prerequisites: Graduate standing in a degree program. Specific pre-requisites dependent on topic.

Course Information  197
GSE 767 - Fire and Ecosystems  Credits: 3
This course is a broad treatment of how fire and ecosystems combine to form the landscapes that we see. Course material examines the contributions of climate, topography, weather, and fuels to the fire environment and how these factors influence wildland fire behavior. We will explore the interactions between ecological processes and fire regimes in ecosystem dynamics and the ways in which human land use and land management affect the outcomes. Cross-Listed: GEOG 767/BIOL 767.

GSE 790 - Seminar in Geospatial Science and Engineering  Credits: 1
GSE 791 - Independent Study  Credits: 1-3
GSE 792 – Topics  Credits: 1-3
GSE 898 – Dissertation  Credits: 1-12

GSR (Graduate School Research)

GSR 600 - Graduate School Tracking Credits: 0
Course used to track students who are enrolled at a different university for a given semester. The course keeps students active so they can qualify for financial aid at SDSU. Restrictions: Advisor or Department Head Approval.

GSR 601 - Research Regulations Compliance Credits: 1
The course consists of lecture/seminars on compliance with governmental regulations in research at SDSU. The course includes completion of educational modules and associated paperwork required for the performance of research at South Dakota State University. The course also serves as the foundation for SDSU's education program for compliance with current and pending regulatory guidelines. Topics to be covered include: Animal Care and Use, Human Subjects Research, Recombinant DNA, Radiation Safety, Laboratory/Biological Safety, Integrity in Research, Conflict of Interest in Research, Financial Accountability, and Intellectual Property Issues.

HDFS (Human Development and Family Studies)

HDFS 501 - Foundations and Principles of Community Service Credits: 3
An introduction to the field of family studies and related professions that involve working with families and communities.

HDFS 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 525 - Family Resiliency Credits: 3
Literature on stress experienced by individuals and families with an emphasis on a systematic analysis of the conceptual/clinical literature of individual and family resiliency 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 this course.

HDFS 586 - Service Learning Credits: 1-3
Service learning in Human Development and Family Studies, including service planning, interaction with community, and reflection.

HDFS 591 - Independent Study Credits: 1-3
HDFS 592 – Topics Credits: 1-3

HDFS 601 - Orientation in Graduate Study Credits: 1
An orientation to graduate studies including exposure to graduate procedures and policies as well as writing skills. Notes: Taught online.

HDFS 602 - Research and Evaluation in Counseling and Human Development Credits: 3
The course explores various research designs and methodologies applicable to the field of counseling. The course will emphasize qualitative and quantitative research, critical evaluation of research reports, the use of internet databases for writing a research paper, a thorough understanding of APA format.

HDFS 605 - Program Administration and Management Credits: 3
An introduction to the development, administration, and management of youth, family, and community service organizations.

HDFS 610 - Family Resource Management Credits: 3
Survey course of personal finance and family resource management literature to provide an overview of how individual and family members develop and exercise their capacity to obtain and manage resources to meet life needs. Resources include the self, other people, time, money, energy, material assets, space, and environment.

HDFS 614 - Adult Development Credits: 3
Study of research, theoretical adult development; physical, intellectual and personality development of the adult integrates issues of individual, family, gender, and career development and provides opportunity for application in working with adults.

HDFS 620 - Family Dynamics Credits: 3
An examination of theories of family function and dysfunction, techniques of assessment, and models of family intervention.

HDFS 630 - Lifespan Development Credits: 3
An examination of human development from both lifespan and bio-ecological perspectives focusing on major theories of development and current research on micro-macro relationship.

HDFS 635 - Crises Across the Lifespan Credits: 3
Exploration of resources related to managing stress and coping with crises across the lifespan including the bio-psychosocial nature of stress; methods of coping with stress, anxiety, and conflict; models of effective family functioning in the presence of stress and crises; and the current literature on how families cope with a variety of life transitions and crises.

HDFS 640 - Interpersonal Relationships Credits: 3
An in-depth examination of interpersonal relationships, including theoretical perspectives, research methods, relationship forms, relationship processes, and how context affects relationships.

HDFS 710 - Program Design, Evaluation, and Implementation Credits: 3
An overview of the program development process and outcome evaluation of community, children, and family programs. Modes of outcome scholarship and their implications for community-based programs are discussed. Students will develop knowledge through participating in a community-based project involving the practical application of program design and evaluation methods.

HDFS 711 - Child Development Theory and Application Credits: 3
In-depth study of human development. Emphasis upon current theories and their application to an understanding of the developmental growth processes; relationship between cognitive, social, physical and emotional development and behavior; range of normality in growth and behavior. Focus on normal development but with consideration of impact of deviance from normative development on child, family, neighborhood.

HDFS 730 - Grant Writing Credits: 3
An overview of the complete grant writing process and potential outcomes. Students will develop knowledge through the actual grant writing, budgeting, and reviewing grant proposals.

HDFS 742 – Family Theory and Research Credits: 3
Current theoretical approaches to family interactions; impact of various forces (social, personal, intrapersonal) upon dynamic aspects of family relationships; patterns and sequences of coalitions and alliances; factors which result in stress and breakdown or enhanced and rewarding relationships. Emphasis upon normal families but families but family problems are also studied.

HDFS 745 - Work and Family Credits: 3
The Work and Family course utilizes a biocultural perspective to explore the challenges individuals, families, employers, and communities of managing work and family in today’s world. Topics include the history of the work-family relationship, gender roles and the work-family relationship, demographic and cultural changes within the workforce, leisure and the work-family relationship, and organizational work-family policies.
### HDFS 790 – Seminar Credits: 1-3
The impact of the professional in shaping family policy and effecting positive family policy formation; study of family policy priority issues and alternative strategies.

### 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 592 – Topics Credits: 1-4**

#### HMGT (Hospitality Management)

**HMGT 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 administrator 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 788 - Individual Research & Study Credits: 1-7**
**HMGT 798 – Thesis Credits: 1-7**

#### HNS (Health and Nutritional Science)

**HNS 590 – Seminar Credits: 1**
**HNS 591 - Independent Study Credits: 1-3**
**HNS 592 – Topics Credits: 1-3**
**HNS 593 – Workshop Credits: 1-3**
**HNS 594 – Internship Credits: 1-6**
**HNS 595 – Practicum Credits: 1-3**
**HNS 596 - Field Experience Credits: 1-6**
**HNS 597 - Cooperative Education Credits: 1-6**

**HNS 783 - Research Methods in Health and Nutritional Sciences Credits: 3**
By studying prevalent quantitative and qualitative research techniques, students will become critical consumers and potential producers of research relevant to Health, Nutrition, Physical Education, Sport, and Recreation. Computer work, development of grant and research proposals, and preparation for writing for professional papers.

**HNS 788 - Individual Research and Study 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 890D – Dissertation Credits: 1-12**

#### HO (Horticulture)

**HO 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. Prerequisites: HO 111 or module instructor consent.

**HO 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.

**HO 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; greenhouse 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. Prerequisites: HO 111 or instructor consent.

**HO 592 – Topics Credits: 1-3**

#### HSC (Health Science)

**HSC 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.

**HSC 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 611 - Biostatistics I Credits: 3**
Basic principles of statistics applied to health science. Emphasis is on the role of statistics in evaluation of human health data and the use of a statistical computing package to input and manipulate datasets; explore, analyze, and interpret data; and present results. Topics include probability distributions, point and interval estimations, hypothesis tests, linear regression, correlation tests of association for categorical data, and analysis of variance.

**HSC 731 - Biostatistics II Credits: 3**
Continuation of Biostatistics I. Intermediate principles and methods of statistics applied to health science. Emphasis is on the role of statistics in evaluation of human health data and the use of a statistical computing package to input and manipulate datasets; explore, analyze, and interpret data; and present results. Topics include introductions to multiple linear regression, logistic regression, survival analysis, selected ANOVA designs, and selected multivariate. Prerequisites: HSC 631.

**HSC 733 - Environmental Health Credits: 3**
This is a survey course of major topic areas of environmental health. It will examine sources, routes, media, and health outcomes associated with biological, chemical, and physical agents in the environment. It will cover how these agents affect human health, water and air quality, food safety, and land resources in community and occupational settings. Prerequisites: Admission into the Master of Public Health program or permission of instructor.

**HSC 760 - Program Evaluation Credits: 3**
An introduction to the fundamentals of research study design, methods and data collection. It serves as an introduction to quantitative, qualitative, mixed method and participatory approaches to research, as well as ethical issues in conducting research. Through course work, students will build skills for conducting research and evaluation. Prerequisites: Admission into the Master of Public Health program or permission of instructor.

**HSC 782 – Epidemiology Credits: 3**
The course introduces concepts and methodologies for the study of health and disease in human populations. Different study designs and their methods of analysis will be discussed, as well as sources, handling, and interpretation of epidemiologic data. Cross-Listed: BIOL 782/NFS 782.
HSC 785 - Advanced Epidemiology  Credits: 3
This is an advanced course on epidemiologic methods designed to improve the student's ability to conduct and interpret epidemiologic studies. Prerequisites: PUBH 710 or BIOL 782/HSC 782/NFS 782.

HSC 832 - Mixed Methods Research  Credits: 3
An introduction to the design and conduct of mixed methods research in health and human sciences including theoretical underpinnings, method designs, sampling strategies, analysis, and ethical issues common to mixed methods. Students will develop skills in conducting and evaluating mixed methods research. Prerequisites: NURS 825 and NURS 830. Cross-Listed: NURS 832.

LING (Linguistics)

LING 520 - The New English  Credits: 3
Diverse new theories and applications in English linguistics: lexicography, pragmatics, stylistics, sociosemantics, semiotics, and discourse theory.

LING 525 - The Structure of English  Credits: 3
Use of traditional, structural, and transformational grammars for describing the English language. Practical application in teaching. Strongly recommended for majors planning to teach.

LING 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 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.

MATH (Mathematics)

MATH 511 - Theory of Numbers  Credits: 3
A study of the theory of prime numbers, distribution of primes, congruencies, quadratic reciprocity, numerical functions, Diophantine equations, simple continued fractions, and algebraic numbers.

MATH 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, cash-flow duration and immunization. Prerequisites: STAT 225.

MATH 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: Pre-requisite: STAT 381 or instructor consent.

MATH 571 - Numerical Analysis I  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 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.

MATH 575 - Operations Research  Credits: 3
Philosophy and techniques of operations research, including game theory; linear programming, simplex method, and duality; transportation and assignment problems; introduction to dynamic programming; and queuing theory. Applications to business and industrial problems. Pre-requisites: Introductory statistics and one year of calculus; STAT 575 and CSC 575, or instructor consent.

MATH 591 - Independent Study  Credits: 1-3
MATH 592 - Topics Course  Credits: 1-3

MATH 716 - Theory of Algebraic Structures I  Credits: 3
Abelian Groups, homomorphisms, permutation groups, Sylow theorems, group representations and characters. Prerequisites: MATH 413.

MATH 717 - Theory of Algebraic Structures II  Credits: 3
Rings, Modules, Fields, Galois theory, solvable groups, commutative rings and modules. Prerequisites: MATH 716.

MATH 725 - Advanced Calculus I  Credits: 3
Topics will include set theory; point set topology in Rn and in metric spaces; limits and continuity; infinite series; sequences of functions. Prerequisites: MATH 425.

MATH 732 - Ordinary Differential Equations  Credits: 3
Existence theorems for solutions of ordinary differential equations, theory of linear differential equations and systems of linear differential equations oscillation theory. Prerequisites: MATH 321 and MATH 725 or MATH 321 and MATH 425.

MATH 733 - Complex Variables I  Credits: 3
Algebra of complex numbers, classifications of functions, differentiation, integration, mapping, transformations, infinite series. Prerequisites: MATH 725.

MATH 742 - Partial Differential Equation  Credits: 3
Series, solutions, total differential equations, simultaneous equations, approximate solutions, partial differential equations of first and second orders, applications. Prerequisites: MATH 321 and MATH 225.

MATH 771 - Numerical Analysis II  Credits: 3
Continuation of MATH 571 including approximation theory, matrix iterative methods and boundary value problems for ordinary and partial differential equations. Prerequisites: MATH 571.

MATH 774 - Advanced Scientific Computation  Credits: 3
Advanced topics in scientific computation. This course may cover topics such as matrix factorizations, finite element methods, multivariable optimizations, stochastic differential equations, and parallel programming for scientific computations. Prerequisites: MATH 771.

MATH 775 - Operations Research II  Credits: 3
A continuation of Operations Research I. Topics include the theory of the simplex method, duality theory and sensitivity analysis, game theory, transportation and assignment problems, network optimization models, and integer programming. Prerequisites: MATH 475-575.

MATH 788 - Research Paper  Credits: 1-2
MATH 791 - Independent Study  Credits: 1-3
MATH 792 - Topics  Credits: 1-3
MATH 798 – Thesis  Credits: 1-7

MCOM (Mass Communication)

MCOM 513 - International Media  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 516 - Mass Media in Society  Credits: 3
Rights and responsibilities of the press; relation of the media to individuals and society; role of media in a free society.

MCOM 517 - History of Journalism  Credits: 3
Development, impact and importance of individual journalists and media in U.S.

MCOM 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 advertising.
MCOM 530 - Media Law 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 574 - Media Administration and Management Credits: 3
Business practices, newspaper, magazine, and broadcast management.

MCOM 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 592 – Topics Credits: 1-5
MCOM 615 - Opinion Writing Credits: 2
Opinion function of periodicals; great editorialists and editorial writers; writing editorials, shaping policy.

MCOM 653 - Mass Communications Teaching Methods Credits: 1-4
Techniques, materials and resources for teaching mass communication in the classroom and supervising student media. For secondary school or college instructors and publication advisors. Notes: Mass Communications teacher education candidates are required to earn at least 3 credits.

MCOM 682 - 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 691 - Independent Study Credits: 1-3
MCOM 692 – Topics Credits: 1-3
MCOM 693 – Workshop Credits: 1-4

MCOM 704 - Introduction to Graduate Studies Credits: 3
This course provides orientation to graduate students in MCOM including graduate procedures and polices, online library resources, foundational literature, and an introduction to research.

MCOM 705 - Introduction to Master of Mass Communication Credits: 3
This course introduces students to the online professional master's degree program in Mass Communication. Students will become familiar with graduate procedures, program requirements, coursework, D2L, and online university resources.

MCOM 710 - Cross-Platform Storytelling Credits: 3
In this course, students will explore several forms of professional journalistic and media writing. Students create a portfolio of writing samples.

MCOM 730 - Media Law Case Studies Credits: 3
In this course, students will examine current legal issues that effect professional media practice. Students produce a collaborative case study.

MCOM 742 - Health Campaigns Credits: 3
Health campaigns often cut across a number of disciplines including advertising, journalism and marketing for the health and wellness issues and the healthcare professions. This course provides both background and practical experience in the design, implementation and evaluation of multimedia health campaigns.

MCOM 746 - Cross-Platform Campaigns Credits: 3
In this course, students will investigate and create public relations, marketing and social media campaigns. Includes research, design, implementation and evaluation.

MCOM 760 - Social Marketing for Health & Behavioral Change Credits: 3
This course is designed to give students a thorough orientation to marketing for the public good and its application to a range of problems in health contexts. Students will acquire practical skills in the design, implementation, and evaluation of health intervention initiatives that use social marketing.

MCOM 785 - Health Journalism Credits: 3
In this course, students will learn to identify health news, translate medical jargon, question experts, interview patients, and get published. In addition to many in-class exercises, you write a magazine-style article. Guest speakers introduce aspects of writing for various healthcare audiences.

MCOM 786 - Conducting Professional Research Credits: 3
In this course, students will learn the application of research methods commonly used in the media professions, including but not limited to surveys, elementary statistical procedures, focus groups and media analytics.

MCOM 787 - Research Methods in Communication Credits: 3
Application of social science research methods and techniques to the study of inter-personal and mass communication. Prerequisites: Elementary statistical procedures.

MCOM 788 - Master's Research Problems/Projects Credits: 1-6

MCOM 791 - Independent Study Credits: 1-3

MCOM 794 – Internship Credits: 3

MCOM 798 – Thesis Credits: 1-6

ME (Mechanical Engineering)

ME 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 516 - Renewable Energy Systems Credits: 3
Students will learn to apply the principles of energy conversion, energy conservation, and value engineering to the analysis of energy conversion systems, renewable energy generation equipment and systems. Students will become familiar with energy consumption requirements for conventional systems and the applications of renewable energy systems to provide alternative energy sources. Energy efficiency and global environmental sustainability are emphasized. A background in basic thermodynamics is assumed.

ME 517 - Computer-Aided Engineering Credits: 3
Introduction to applied structural and thermal design and analysis using the ANSYS finite element software package. One-, two-, or three-dimensional static structural problems modeled using the direct generation method as well as solid modeling techniques. Steady-state and transient thermal analyses are performed. Thermally-induced stressed and displacements that occur in non-uniform temperature structures, solutions of two- or three-dimensional fluid mechanics problems, and optimization techniques are discussed. Corequisites: ME 517L required.

ME 517L - Lab/Computer Aided Engineering Credits: 0
Corequisites: ME 517 required.

ME 533 - Non-Destructive Testing and Evaluation Credits: 3
Various non-destructive testing techniques will be introduced with emphasis on ultrasound techniques. For ultrasound, physical principles of acoustic waves in solid media will be introduced, and acoustic sensor design and properties will be discussed. For other techniques, including eddy current techniques, X-ray techniques, acoustic emission, etc., basic physics of the method and modern applications will be introduced. Experiments and demonstrations will be conducted to enhance students' understanding of the concepts and applications. Corequisites: ME 533L.

ME 533L - Non-Destructive Testing and Evaluation Lab Credits: 0
Various non-destructive testing techniques will be introduced with emphasis on ultrasound techniques. For ultrasound, physical principles of acoustic waves in solid media will be introduced, and acoustic sensor design and properties will be discussed. For other techniques, including eddy current techniques, X-ray techniques, acoustic emission, etc., basic physics of the method and modern applications will be introduced. Experiments and demonstrations will be conducted to enhance students' understanding of the concepts and applications. Corequisites: ME 533.

ME 537 - Gas Dynamics 1 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 and MATH 331.

ME 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 of FORTRAN and instructor consent.

ME 542 - Applications of Computational Fluid Dynamics Credits: 3
This course provides a background and working knowledge of software analysis tools, techniques and methodologies utilized in modern engineering practice in computational fluid dynamics (CFD). The course builds upon fundamental concepts of thermodynamics, fluid mechanics, and computer-aided design and analysis and applies these principles within high-fidelity computational models to solve theoretical and practical problems commonly encountered with thermal fluid and energy systems. This course provides students with team-centered collaborative opportunities to practice CFD analysis in engineering design applications.

ME 590 – Seminar Credits: 1-2
ME 592 – Topics Credits: 1-5
ME 691 - Independent Study Credits: 1-5
ME 692 – Topics Credits: 1-3

ME 700 – Graduate Colloquium Credits: 0
A topical course in which graduate students present the results of their work for review and critique by faculty members and peers prior to scheduling the final oral exam. Students will normally enroll in this course in the final term of their graduate study. Pre-requisite: Instructor permission

ME 703 - Thermo-Fluid Energy Systems Credits: 3
Review of viscous fluid, basic modes of heat transfer, thermodynamics, and energy conversion. Discussion of energy sources, uses, conversion, transmission, and economics. Analysis of conventional energy generation, storage, and transmission systems, criteria for design and analysis of energy systems such as nuclear, wind, solar, geothermal, etc.

ME 711 - Advanced Heat Transfer I Credits: 3

ME 712 - Convection Heat Transfer Credits: 3

ME 721 - Viscous Flow I Credits: 3

ME 731 - Advanced Analytical Methods Credits: 3

ME 735 - Modeling and Simulation Credits: 3
A systems approach to the analysis of electrical, mechanical and hydraulic systems. Generalized modeling methods, governing equations, system response, synthesis and design of dynamic systems, and specific applications of modeling technique. Corequisites: ME 735L.

ME 735L - Modeling and Simulation Laboratory Credits: 0
Corequisites: ME 735 required.

ME 729 - Advanced Metallurgy Credits: 3
Crystal lattices and diffraction by crystals. Structure determination, defects, registration by microscopic methods, single crystal orientation and analysis of stress caused by phase transformation.

ME 741 - Advanced Stress Analysis Mechanical Design Credits: 3

ME 745 - Advanced Machine Design Credits: 3

ME 760 - Quality Control Credits: 3
Application of statistical techniques to the control of quality and the development of economical inspection methods. Collection analysis, and interpretation of operations data; control charts and sampling procedure. Prerequisites: STAT 281 or STAT 381. Cross-Listed: STAT 760.

ME 761 - Operations Research Credits: 3
History and organization of operations research, mathematical and statistical models in industrial decisions. The evaluation of alternatives by means of linear programming, queuing theory, deterministic and stochastic inventory models, game theory and simulation.

ME 763 - Topics in Reliability Engineering Credits: 3
Probability concepts and typical models involved in the statistical prediction of reliability. Methods for estimating required parameters from experimental data. Reliability and maintainability techniques in practice, and a survey of recent developments in the field.

ME 765 - Systems Analysis Credits: 3
Analysis of industrial problems as systems of servicing stations with deterministic and stochastic inputs and service times using queuing theory as a principal approach. Development of theoretical models. Digital computer simulation of complex systems.

ME 767 - Decision Theory Credits: 3
Examination and evaluation of modern techniques of decision making. Mathematical models and measurement theory. Certainty, risk, and uncertainty.

ME 788 - Master's Research Problems/Projects Credits: 1-9
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 500 - Topics: French, German, and 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 590 – Seminar Credits: 1-2
MFL 592 – Topics Credits: 1-4
MFL 595 – Practicum Credits: 1-6
MFL 596 - Field Experience Credits: 3-12

MICR (Microbiology)

MICR 514 - Anaerobic Microbiology Credits: 3
Anaerobic metabolism and ecology of bacteria, cultivating techniques for anaerobic microorganisms.

MICR 514L - Anaerobic Microbiology Studio Credits: 0

MICR 521 - Soil Microbiology Credits: 3
Microbial species of agricultural soils, environmental factors affecting their numbers and activity, and biochemical changes brought about by these
MICR 524 - Medical and Vet Virology Credits: 3
Basic course discussing the characterization, structure, and replication of viruses and the pathogenesis of viral disease in man and animals. Laboratory exercises emphasize techniques in virus isolation, characterization, and detection by immunological assays. Prerequisites: MICR 433. Cross-Listed: VET 524.

MICR 533 - Medical Microbiology 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.

MICR 550 - Application of Microbiology & 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 251.

MICR 592 - Topics Credits: 1-4
Corequisites: MICR 592L.

MICR 592L - Topics Laboratory Credits: (1-4)

MICR 788 - Master's Research Problems/Project Credits: 1-3
Prerequisites: MICR 231.

MICR 791 - Independent Study Credits: 1-3
Corequisites: Department consent.

MRCH 510 - Consumer Behavior in Merchandising Credits: 3
Evaluation of psychological, sociological, and cultural theories of consumers' behavior through the examination of factors influencing consumers' decision-making process.

MRCH 520 - Professional Advancement in Merchandising Credits: 3
Analysis of leadership and how it affects organizational culture and change through a prism of past and current experiences. Various leadership styles will be examined and a personal leadership philosophy will be developed for professional advancement in merchandising.

MRCH 530 - Product Design, Development, and Evaluation Credits: 3
Advanced study of issues and management strategies necessary to design and produce a competitively priced product. Examination of the role of globalization and rapidly changing technology on the development of a successful product.

MRCH 540 - Promotional Strategies in Merchandising Credits: 3
Examination of integrated marketing communications. Prerequisites: (i.e. promotional strategies and techniques) while fostering cultural and global awareness, social responsibility and ethical decision-making in the field of promotion.

MRCH 550 - Retail Theory and Current Practice Credits: 3
Theoretical and applied analysis of merchandising strategies; assessment of internal and external environmental forces impacting strategic decisions by retail firms; synthesis of past and present trends in order to forecast probable future patterns.

MRCH 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. Prerequisites: Department consent.

MRCH 591 - Independent Study Credits: 1-3

MRCH 610 - History and Contemporary Issues in Trade Credits: 3
Examination of fiber, textile, and apparel industries in a global context. Specifically, a look at the historical development of the global and US textile and apparel industries and how the global environment (economic, political, and social systems) affects textile and apparel production and trade.

MRCH 620 - International Merchandise Management Credits: 3
Comprehensive understanding of theory, practices and trends on international merchandise management. An analysis of global retail systems and the way goods are distributed to consumers in various countries.

MRCH 630 - Research Methods in Merchandising Credits: 3
Overview of the research process used in social science, including an overview and analysis of research methodologies. This class will also include a review of current merchandising literature with implications for future research.

MRCH 640 - Financial Merchandising Implications Credits: 3
The advanced study of financial trends in the merchandising industries; implications related to sole proprietorships, partnerships, franchises, S corporations, and C corporations. Foci will be on the financial implications of recent advances in the field that assist graduate students as they embark on careers in academia and/or merchandising industries.

MRCH 650 - Strategic Planning in Merchandising Credits: 3
Examination of the executive planning process utilized to develop successful corporate strategies: emphasis on the importance of a market orientation for building customer value and sustaining a competitive advantage.

MRCH 690 – Seminar Credits: 1-2

MRCH 695 – Practicum Credits: 1-6

MRCH 788 – Master's Research Problems/Projects Credits: 1-3

MRCH 798 – Thesis Credits: 1-6

MUS (Music)

MUS 591 - Independent Study Credits: 1-3

MUS 592 – Topics Credits: 1-5

NFS (Nutrition and Food Science)

NFS 522 - Advanced Human Nutrition Credits: 4
Principles of physiological chemistry and physiology applied to nutrition.

NFS 523 – Medical Nutrition Therapy I 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.

NFS 523L - Medical Nutrition Therapy I Laboratory Credits: 0

NFS 524 - Community Nutrition Credits: 3
Application of learning principles, teaching methods and knowledge of nutrition in community nutrition education programs and out-patient nutrition counseling. Corequisites: NFS 524L required. Prerequisites: NFS 315 and NFS 323.

NFS 524L - Community Nutrition Laboratory Credits: 0
Corequisites: NFS 524 required.

NFS 525 - Medical Nutrition Therapy II Credits: 3
Continuation of NFS 523. Prerequisites: NFS 523.

NFS 525L - Medical Nutrition Therapy II Laboratory Credits: 0

Course Information 203

Students are advised to check for most current descriptions at: www.catalog.sdstate.edu
For x9x common course descriptions (for example 590, 690, 591, 592) see pages 176-177.
NFS 550 - Food Analysis Credits: 4
Principles and techniques of physical and chemical analysis of food products. It will include proximate analysis of moisture, protein, lipids and carbohydrates and chemical or instrumental analysis of vitamins, minerals and food additives.

NFS 550L - Food Analysis Laboratory Credits: 0

NFS 551 - New Food Product Development 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.

NFS 551L - New Food Product Development Laboratory Credits: 0

NFS 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 590 – Seminar Credits: 1-2
NFS 591 - Independent Study Credits: 1-6
NFS 593 – Workshop Credits: 1-3

NFS 634 - Techniques of Food and Nutrition Research Credits: 3
Laboratory experience using methods, measurements and instruments for obtaining nutritional data. Topics covered will include methods of conducting field, applied and metabolic studies in food and human nutrition.

NFS 634L - Techniques of Food and Nutrition Research Laboratory Credits: 0

NFS 660 - Maternal and Child Nutrition Credits: 3
Fundamental principles of nutrition during pregnancy, lactation, infancy, and childhood. Topics include: the physiologic and genetic events that occur during the process of conception, pregnancy and growth; nutritionally critical periods during pregnancy, lactation and growth; implications of nutrition on health, growth and mental/emotional development; development of food habits in children; and the current educational and support programs available to the mother and child.

NFS 662 - Socio-cultural Aspect of Nutrition Credits: 2
The study of diverse dietary patterns and their impact on nutritional health including food attitudes, socioeconomic structures, cultural patterns of food intake and their effect on nutrient composition of the diet.

NFS 702 - Macronutrients in Human Nutrition Credits: 3
The course is an overview of macronutrients, including carbohydrates, lipids and proteins. It will cover recent findings on their functions in human nutrition and health.

NFS 704 – Phytochemicals Credits: 2
The course is an overview of phytochemicals (non-nutritive biologically active compounds) from fruits, vegetables, cereals, and oilseeds. It will cover recent findings on chemistry, physiological functions, potential health implications of phytochemicals. It has been developed as an Internet-based course.

NFS 705 - Functional Foods: Disease Prevention Credits: 3
Integrate and evaluate the regulatory principles, food science, nutrient science, and nutritional metabolism for the development of functional foods, nutraceuticals, and dietary supplements for chronic disease prevention

NFS 706 - Nutrition and Immunology Credits: 3
Principles and issues related to nutrition and immunology. Impact of nutrients and nutritional status on immune responses. Impact of disease states on nutritional status.

NFS 708 - Evidence Based Analysis Credits: 3
This course will cover the process of evidence-based analysis which uses scientific evidence to formulate and standardize practice guidelines and to develop programs. A variety of disciplines such as dietetics, athletic training, medicine, psychology and education use evidence-based practice and/or programs. The emphasis of the course will be on a transdisciplinary process and how it can be utilized in a student’s chosen field. When possible, students will be encouraged to use his/her thesis or dissertation topic in order to complete required assignments and activities.

NFS 710 - Dietary and Herbal Supplements Credits: 3
Explore the safety and efficacy of botanical/herbal and dietary supplements in health applications including: dietary supplementation in the prevention and treatment of chronic disease. It is advised for students to complete Human Physiology prior to enrollment. Course is designed to meet professional education for the registered dietitian. Notes: Online.

NFS 715 - Nutrition Counseling/Ed Methods Credits: 3
Nutrition education for groups and individuals in clinical and community settings. Includes discussion and experience in applying learning theory, assessing educational needs, stating goals and objectives, selecting learning activities, implementing and evaluating instruction, and documenting care provided.

NFS 723 - Nutrition Focus on Life Stages Credits: 3
The influence of normal physiological stresses on nutritional needs throughout the life span will be explored. Evaluating dietary intake and identifying appropriate community nutrition services will be included in the on-line discussion. Specific considerations, such as the influence of age and cultural heritage, will be incorporated. An opportunity will be given to each student to plan, present, and evaluate a mini nutrition education lesson.

NFS 724 - Nutrition Education in the Community Credits: 3
Principles and practices of teaching individuals and groups to translate nutrition knowledge into action. Emphasis on research in and evaluation of nutrition education for registered dietitians. Notes: Online.

NFS 725 - Nutrition and Human Performance Credits: 3
This course is designed to develop an understanding of nutrition, based upon knowledge of the biochemical and physiological process and functions of specific nutrients in meeting nutritional requirements. Emphasis will be placed upon the relationship of optimal nutrition and physical efficiency and performance.

NFS 726 - Nutrition and Wellness Credits: 3
Course will address wellness promotion through nutrition. Nutritional risk and protective factors will be examined as they relate to public health and individual nutrition.

NFS 727 - Obesity Across the Lifespan Credits: 3
Exploration of the effects that obesity has on public health, the healthcare system, and society in general. Overview of strategies to prevent obesity across the lifespan.

NFS 728 - Pediatric Clinical Nutrition Credits: 3
This course examines the physiological, biochemical, and nutritional aspects of disease processes relevant to infants and children up to 18 years of age. Medical nutrition therapy for a variety of medical conditions found in this population will be discussed including inborn errors of metabolism, food hypersensitivity, obesity, and diseases of all major organ systems.

NFS 729 - International Nut/Worl Hunger Credits: 3
Advanced study of the magnitude, cause, and nature of hunger and undernutrition in low income countries; emphasis on programs, policies, and planning directed toward alleviating hunger.

NFS 730 - Nutritional Aspects of Oncology Credits: 3
Students will gain understanding of basic cancer biology and methodology used to study nutrition and cancer relationships. Using current research as a basis, the role of nutrition in specific cancers will be explored. Students will learn about sources of information for cancer prevention programs, and how to apply this information to clinical patient management. Course is designed to meet professional education for the registered dietitian. Notes: Online.

NFS 734 - Research Methods in Dietetics Credits: 3
Dietetics, including the use of various research designs for answering research questions, methods for conducting research, evaluation of research articles, development of research proposals, communication of research findings, and development of understanding of ethical issues in research. Basic components of the research process and the application of various research methods in dietetics.
NFS 735 - Current Trends in Dietetics Practices  Credits: 3
Review of current issues in the economic, social, ethical, political, legal, technological, and ecological environments and the effect of these changes on dietetics practice. Notes: Online.

NFS 741 - Grant Writing in Dietetics  Credits: 3
Grant writing, identifying external funding, managing grants, preparing manuscripts for peer reviewed publications, and preparing papers and posters for presentation at professional meetings.

NFS 742 - Entrepreneurship in Dietetics  Credits: 3
Development and management of small businesses or private practice within the dietetics industry. Business plan development, marketing, cost considerations. Overview of consulting to healthcare and hospitality operations and examination of skills required for success.

NFS 743 - Foundations in Leadership  Credits: 3
This course builds upon leadership theories to develop the fundamental concepts and skills to bridge the gap between theory and practice. After completing this course, students will be able to successfully evaluate leadership theories (classic and contemporary); investigate current trends in leadership and identify positive applications in the dietetic community. Students will formulate a plan for professional growth as a leader in the field of dietetics and nutrition. The student will be asked to respond to critical thinking opportunities and demonstrate their understanding of key concepts through exercises, discussion questions, quizzes, a Learning Journal, and their Leadership Growth Plan.

NFS 750 - Transdisciplinary Childhood Obesity Prevention I  Credits: 3
This course will expose students to the transdisciplinary nature of childhood obesity prevalence, prevention, and treatment. Using a transdisciplinary team of experts in childhood obesity, students will be introduced to the interrelationship of topics such as: school environments, nutrition environments, physical activity environments, messaging environments, and weight bias & stigmas. Invited guest lecturers will introduce the complex issues surrounding childhood obesity and students will have the opportunity to explore topics that directly impact childhood obesity, but may not be their primary area of study. An emphasis will be placed on student interdisciplinary teamwork to address the transdisciplinary issues surrounding childhood obesity prevention.

NFS 751 - Transdisciplinary Childhood Obesity Prevention II  Credits: 3
The purpose of this course is to allow students to gain knowledge of and experience with transdisciplinary obesity prevention research. Students will be taught how to find obesity prevention related grant opportunities, expose students to different types of funding opportunities, allow them to learn the common components of grant applications, and gain experience writing grants in transdisciplinary teams. Students will be introduced to community-based participatory research, the clinical approach to childhood obesity prevention, and the art of partnership and working in transdisciplinary groups. The course will also teach scientific writing techniques for peer reviewed journals, abstract writing, poster creation, and how to write articles for the lay public. Prerequisites: HNS 783.

NFS 760 - Vitamins and Minerals in Human Nutrition  Credits: 3
The study of the functional roles of vitamins and minerals in human nutrition. Course content will include: identification of essential functions for the vitamins and minerals; health implications of varying amounts vitamins and minerals in the diet; interactions between vitamins; interactions between minerals; vitamin and mineral interactions and the process of establishing nutrient requirements.

NFS 761 - Nutrition and Aging  Credits: 3
Physiological and behavioral changes associated with aging and their impact on nutrition. Effect of nutrition on aging and lifespan. Common health problems of the aged and their implications.

NFS 765 - Diététique Accounting Concepts  Credits: 3
An emphasis on financial statement analysis is the main objective of the course. A review of all major accounts in the income statement, balance sheet, and statement of cash flows is made in determining a firm's performance and financial condition in relation to what matters most to shareholders and investors.

NFS 769 - Healthcare Administration for Dietetics  Credits: 3
Comprehensive review of current health care institutions and their response to the economic, social/ethical, political/legal, technological, and ecological environments. Current issues in today's healthcare environment and challenges which must be met by healthcare administrators. Notes: Online.

NFS 770 - Food Writing for Professionals  Credits: 3
Understanding and appreciating how to communicate effectively in writing about food and food-related topics. Hands-on experience in research and writing for various audiences and types of media. Course is designed for the registered dietitian.

NFS 775 - Nutrigenomics and Health  Credits: 3
Nutritional genomics (nutrigenomics), the junction between health and diet can be seen as the combination of molecular nutrition and genomics. Diet is the most important environmental factor influencing expression of genetic information because of the constant exposure to nutrients in foods. The advent of omics-based sciences has created unprecedented opportunities for increasing our understanding of how nutrients modulate gene expression, influence cellular and organismal metabolism and ultimately influence health. The course will be taught using integrative concepts of nutritional biochemistry, gene function, signal transduction and molecular biology in context of human diseases. Prerequisites: CHEM 464 and BIOL 371 (waiver by petition only).

NFS 782 – Epidemiology  Credits: 3
The course introduces concepts and methodologies for the study of health and disease in human populations. Different study designs and their methods of analysis will be discussed, as well as sources, handling, and interpretation of epidemiologic data. Cross-Listed: BIOL 782/HSC 782.

NFS 795 – Practicum  Credits: 3
NFS 798 – Thesis  Credits: 1-7

NRM (Natural Resource Management)

NRM 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 elements cycles and patterns of energy flow through ecosystems, including how those fluxes and their controls differ for different ecosystems. Linkages between ecosystem structure and function will be emphasized. Prerequisites: BIOL 311

NRM 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.

NRM 592 – Topics  Credits: 1-3

NRM 706 - Landscape Ecology  Credits: 3
Study of the structure function and management of landscape ecosystems. Integrates the study of plants, animals and the physical environment at larger spatial scales, and application of these concepts to land management issues. An understanding of ecological principles is recommended prior to enrollment. Corequisites: NRM 790L

NRM 706L - Landscape Ecology Laboratory  Credits: 0
NRM 790 – Seminar  Credits: 1

NURS (Nursing)

NURS 565 - Intro Clinic 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 615 – Adv. Nursing Practice – Introdu. to Roles & Issues  Credits: 3
Includes analysis of differentiated advanced practice nursing roles, critique and application of various theories from nursing and other disciplines including change theory, leadership and collaboration skills, culturally sensitive care, rural health care delivery, evidence based practice and teaching/learning process.

NURS 623 - Pathophysiology Across the Lifespan - Application to Advanced Practice Nursing  Credits: 4
Normal physiologic and pathophysiologic concepts will be examined with emphasis on problems of the major body systems. Changes in normal function that result in symptoms indicative of illness and assessment of an individual's
response to illness will be interpreted. Pathophysiologic changes will be examined in relation to expected growth and development throughout the lifespan. Prerequisites: NURS 615 (or Concurrent).

NURS 626 - Research Methods for Advanced Practice Nursing Credits: 3
Advanced nursing concepts, knowledge, and skills to analyze, utilize, and design research, including the evaluation of research, problem identification within an area of specialization, awareness of practice outcomes, and the application of research findings to clinical practices or specialty area. Prerequisites: NURS 615 (or concurrent).

NURS 631 - Advanced Assessment Across the Lifespan Credits: 3-4
This course builds on basic skills of individual health assessment. It includes assessment of physiological and psychosocial processes relevant to the health of all age groups, and the assessment of selected human pathologies. Advanced assessment skills and tools necessary to identify health care needs and apply health maintenance protocols are included. Corequisites: NURS 631L. Prerequisites: NURS 615.

NURS 631L - Advanced Assessment - Lifespan Clinical Laboratory Credits: 0

NURS 641 - Clinical Nurse Leader I: Application of Advanced Concepts of Nursing Care Credits: 3
Demographic data and health statistics will be used as tools to respond to current and changing health care priorities. Advanced concepts of epidemiology, environmental variances, and cultural influence will be applied to aggregate client populations. Interrelationships of health, culture, environment, social systems, and values of client populations will be analyzed. This clinical practicum will be arranged in an appropriate setting for the Clinical Nurse Leader student. Prerequisites: NURS 615, NURS 623, NURS 626, NURS 631, NURS 670, NURS 675, NURS 760, NURS 860 and PHA 645.

NURS 642 - Clinical Nurse Leader II: CNL as a Change Agent Credits: 3
Leadership concepts of change and program planning will be studied. This is a practicum course for the Clinical Nurse Leader. Nursing, leadership, and change theories will be applied to program planning in an advanced population-focused nursing practicum. Leadership experiences will be arranged in an appropriate clinical setting. Prerequisites: NURS 641.

NURS 643 - Clinical Nurse Leader III: Effective Care Management Credits: 3
The Clinical Nurse Leader student will focus on nursing practice within the complex health care system. Disparities in health care access will be studied for clients who experience marginalization, economic impoverishment, care management, resource limits, and global interconnectedness. Analysis of population-focused policy and programs will be discussed. Prerequisites: NURS 642.

NURS 644 - Clinical Nurse Leader IV: Capstone Practice and Clinical Improvement Project Credits: 5
The Clinical Nurse Leader student will focus on the business of health care. The student will experience various aspects of the cost, quality, and access issues to health care. This is a preceptored practicum where the student is matched with one or more preceptor managers involved in health policy development, fiscal management, cost-benefit analysis, and program and model evaluation. The student will complete a final project under NURS 788 along with this practicum. Prerequisites: NURS 643.

NURS 645 - CNL I: Improvement Science: A Microsystem Approach Credits: 2-5
The CNL student will focus on the nursing leader role within complex healthcare systems and across various healthcare settings using evidence based knowledge for strategic leadership. The CNL student will develop skills and knowledge in integrating patient evaluation, risk assessment information, and inter-professional communication. Using information systems within clinical practice experiences, students will perform in depth analyses of microsystems, population focused programs, and strategies that promote health, improve outcomes, and facilitate the design of high-performing systems. Prerequisites: NURS 615, NURS 626, NURS 670, NURS 675, NURS 760, and NURS 860.

NURS 646 - CNL II: Clinical Immersion and Capstone Project Credits: 1-6
This course provides the opportunity for the CNL student to demonstrate understanding of clinical role practice within various healthcare settings and specialties through a guided role immersion experience. Students practice 300 hours with an approved preceptor in a selected clinical setting and complete a quality improvement project. Prerequisites: NURS 645.

NURS 670 - Health Policy, Legislation, Economics and Ethics Credits: 3
Legal, political, economic, and ethical issues related to health policy will be examined from the perspective of advanced practice nursing roles. Prerequisites: NURS 615.

NURS 675 - Cultural Competence in Health Care Credits: 3
This course will increase the student's awareness regarding the dimensions and complexities involved in caring for people from diverse cultural backgrounds. The issues of health care delivery will be explored and contrasted with the choices that people must make when attempting to deal with health care issues. Prerequisites: Admission to a graduate program in nursing or instructor consent.

NURS 690 – Seminar Credits: 1-4
NURS 691 - Independent Study Credits: 1-3
NURS 692 – Topics Credits: 1-3

NURS 710 - Curriculum Development in Nursing Credits: 3
This course introduces the student to traditional and contemporary considerations for curriculum planning, design, instruction, and evaluation as applied to nursing education.

NURS 720 - Technology-Based Instruction for Nurse Educators Credits: 3
This course will explore the educational and psychological underpinnings of technology-based instruction and challenge the participants to apply those theories in the development of working products. Notes: Students will produce media-rich interactive programs for use in nursing education programs or continuing education courses.

NURS 750 - Transformational Leadership in Nursing Credits: 3
Analysis of effective and efficient methods of providing leadership and management for an education program, administrative unit or clinical area. Discussion of a variety of situations that leaders negotiate with regard to program and personnel development, strategic planning, budget preparation, fundraising, and program evaluation.

NURS 760 - Health Promotion and Disease Prevention Across the Lifespan Credits: 3
Critical analysis and applications of community preventive service guidelines, health promotion and disease prevention theories and models, and implementation strategies. Foundations of social, cultural, behavioral, genomic, political, and environmental factors impacting health. Exploration of provider roles in assessing the health of individuals and aggregates in planning health promotion, disease prevention, and health maintenance programs with a focus on chronic conditions and vulnerable, rural, and underserved populations. Corequisites: NURS 615.

NURS 765 - Family Nurse Practitioner Practicum I Credits: 6 (2, 4)
The emphasis of the course is on the application of evidence-based knowledge to clinical practice in primary care settings. Students will strengthen their health history and physical examination skills in the formulation of differential diagnoses and clinical decision-making relative to common primary care conditions and developmental variations such as pregnancy. Development of initial primary care procedural skills along with ordering and interpreting diagnostic testing will be included. This course provides the basis for integrating clinical data with knowledge of pathophysiology to formulate diagnostic hypotheses for clients across the lifespan. Prerequisites: NURS 615, NURS 623, NURS 626, NURS 631, NURS 631L, NURS 670, NURS 675, NURS 750, NURS 760, NURS 850, NURS 860, HSC 631 and PHA 645.

NURS 771 - Family Nurse Practitioner Practicum II Credits: 7
Emphasizes the integration of pathophysiology and specific disease and symptom complexes in the formulation of differential diagnoses and clinical management of acute and chronic health problems. Prerequisites: NURS 765 and PHA 645.

NURS 774 - Nurse Administrator: Practicum Credits: 5
Provides the opportunity to integrate principles and theories from support courses in health service administration and nursing courses to the administration of a nursing department or agency. Emphasis is placed on advanced nursing practice needed to administer the work of nursing. This is a supervised administrative practicum focused on broad participation in the administrative process in a health care organization. Corequisites: NURS 774L. Prerequisites: Instructor consent.
NURS 774L - Nurse Administrator Practicum Clinical Laboratory Credits: 0

NURS 776 - Family Nurse Practitioner III - Small Group Instruction Credits: 3

Emphasis is placed on the concept synthesis and outcome evaluation of the differential diagnoses and referral to multidisciplinary healthcare team members are emphasized in the development of appropriate interventions for the achievement and maintenance of optimal health. Transition from the student nurse practitioner role to professional practice is facilitated. Corequisites: NURS 777. Prerequisites: NURS 771.

NURS 777 - Family Nurse Practitioner: Practicum III Credits: 3-9

The clinical internship offers the advanced practice nursing student the opportunity to synthesize and apply theoretical concepts derived from nursing and other health-related disciplines to the clinical practice settings for the provision of primary care to clients across the lifespan. Independent and interdependent clinical decision making is expected and interdisciplinary collaboration and referral are emphasized. Corequisites: NURS 776. Prerequisites: NURS 771.

NURS 778 - Nurse Educator Practicum Credits: 5

This course is designed to provide teaching experiences in the classroom and clinical settings under the supervision of a faculty preceptor mentor. Students will design, implement, and evaluate classroom and clinical education under the direction of a selected nurse faculty mentor. Corequisites: NURS 778L. Prerequisites: NURS 615, NURS 710 and NURS 720.

NURS 778L - Nurse Education - Practicum Clinical Laboratory Credits: 0

NURS 788 - Problems in Nursing Research Credits: 1-2

Application of the nursing research process with particular emphasis on problems of inquiry in the health care system (project or non-thesis option). Requires five additional credits of electives. Prerequisites: NURS 626.

NURS 790 – Seminar Credits: 1-3

NURS 795 – Practicum Credits: 3

NURS 798 – Thesis Credits: 1-7

This course is designed to provide teaching experiences in the classroom and critical settings under the supervision of a faculty preceptor/mentor. Students will design, implement, and evaluate classroom and clinical education under the direction of a selected nurse faculty mentor. Corequisites: NURS 778L. Prerequisites: NURS 615, NURS 710 and NURS 720.

NURS 810 - Doctoral Seminar Credits: 1

A one credit doctoral seminar that is taken over two semesters except during summers. This seminar provides a forum for pre-candidates and dissertators to integrate and apply skills and content from coursework, life experience, and independent study to doctoral student academic situations while addressing relevant questions related to faculty, doctoral student, and researcher roles toward completion of degree requirements. The goal is to facilitate learning and socialization needed for successful student progression through pre-candidacy, candidacy, and completion of dissertation.

NURS 815 - Philosophical Basis for Nursing Inquiry Credits: 3

Analysis of philosophy of science traditions and their relationship to knowledge development in nursing. Prerequisites: Admitted to Phd in Nursing. Notes: Offered fall odd years.

NURS 820 - Theory Development in Nursing Credits: 3

Critical analysis of theory development and theory construction in nursing science. Evaluation of the relationship between theory construction and research methods to generate and test theories is explored. Emphasis is placed on continued analysis of theories and their relationships with research and practice. The focus is on the fit between theoretical and operational foundations of research. Students conduct an extensive review of the literature on phenomena of concern to nursing in order to generate theory and empirical referents. Strategies for synthesis of concepts, statements, and theories are practiced. Prerequisites: NURS 815. Notes: Offered spring even years.

NURS 825 – Qualitative Research Methods in Nursing Credits: 3

Analysis of qualitative research methods in nursing, paradigmatic, theoretical, and conceptual issues related to these approaches, and the nature of the nursing knowledge generated.

NURS 830 - Quantitative Methods in Nursing Research Credits: 3

Analysis of research designs, problems of measurement, methods of data collection, and analysis and interpretation of data in quantitative research. An integral part of the course is the development and analysis of a pilot research proposal investigating a current nursing problem. Notes: Offered summer even years.

NURS 832 - Mixed Methods Research Credits: 3

An introduction to the design and conduct of mixed methods research in health and in other health sciences including theoretical underpinnings, methodology, designs, sampling strategies, analysis, and ethical issues common to mixed methods. Students will develop skills in conducting and evaluating mixed methods research. Prerequisites: NURS 825 and NURS 830. Cross-Listed: HSC 832.

NURS 835 - Ethical Issues Influencing Practice and Research in Health Credits: 3

An in-depth critical analysis of ethical dimensions encompassing health care, politics, policy, medicine, research, and clinical practice. Interdisciplinary perspectives are utilized to synthesize ethical positions and viewpoints on health-related issues for individuals, groups, and populations in contemporary society. Prerequisites: Admitted to Phd in Nursing. Notes: Offered fall even years.

NURS 840 - Health Promotion Theory and Research in Underserved Populations Credits: 3

Study of the theoretical foundations of health behavior and health promotion as a basis for nursing research. The theory and principles of how health behavior patterns of individuals, families, and communities are acquired, maintained and changed in underserved populations are emphasized. The influence of social and psychological factors such as ethnicity, socioeconomic status, gender and social support is included. Research application of theories and models of health promotion evaluation procedures. Measurement issues with underserved populations are examined. Students will propose instrumentation development and psychometric evaluation of instrument items and items scales with a selected underserved population. Basic knowledge of concepts analysis and inferential statistics is expected prior to enrollment. Prerequisites: NURS 830. Notes: Offered spring odd years.

NURS 845 - Instrument Construction and Evaluation With Underserved Populations Credits: 3

Analysis of classical measurement theory and related measurement concepts. Induction and deductive processes of constructing and evaluating instruments to measure behavioral, biological, social, cultural and clinical phenomena are examined. Content includes instrument scaling techniques and psychometric evaluation procedures. Measurement issues with underserved populations are examined. Students will propose instrumentation development and psychometric evaluation of instrument items and item scales with a selected underserved population. Basic knowledge of concepts analysis and inferential statistics is expected prior to enrollment. Prerequisites: NURS 830. Notes: Offered spring odd years.

NURS 850 - Philosophical and Theoretical Foundations for Evidence-Based Care Credits: 3

This course will prepare the student to analyze significant practice issues with the theoretical and scientific underpinnings of knowledge-based practice. The student will compare and contrast models of health promotion in understanding and relevant research methodologies are applied to under-served populations, including the rural or underserved. Implications for new advanced nursing practice models based on research and culturally congruent policies and practices to improve care will be explored. Prerequisites: NURS 850.

NURS 855 - Translational Research in Health Care Credits: 3

DNF students will critique the quality of evidence derived from quantitative and qualitative research. Students will determine how evidence derived from research will guide advanced practice and inform quality care for diverse populations, including the rural or underserved. Implications for new advanced nursing practice models based on research and culturally congruent policies and practices to improve care will be explored. Prerequisites: NURS 850.

NURS 860 - Health Operations and Financial Management for Nurse Managers Credits: 3

Focuses on business skills needed by the nurse executive or advance practice nurse to lead, influence, and develop healthcare delivery systems. Principles of financial management, healthcare economics, human resource and productivity management, strategic management, marketing, and information management and their application to healthcare delivery systems will be examined. Students will apply these business skills to selected specialty areas.

NURS 865D - DNP Capstone Credits: 2-6

This capstone experience provides the DNP student with opportunity to apply theoretical concepts and research evidence to advanced nursing practice focused on quality health care with rural or underserved populations. Within the seminar, students will compare and contrast models of care delivery and organizational systems. This course has one hour of classroom instruction per week and fifteen hours of clinical experience per week for a total of 225 clinical hours. Corequisites: NURS 870. Prerequisites: NURS 875, NURS 750, NURS 835, NURS 850 and NURS 855.
NURS 870 - DNP Practice Innovation Project Credits: 1-6
Literature and evidence will be synthesized with stakeholders and inter-professional collaborators to develop and implement a practice innovation project for a rural or underserved population, health system, or community. The advanced practice nursing student will implement, evaluate, and defend an intervention that improves health care practice and quality of care for a rural or underserved population served by a health system. This course has a total of 240 clinical hours guided by a project major advisor whose expertise matches the intent of the practice innovation project. Corequisites: NURS 865. Prerequisites: NURS 675, NURS 750, NURS 835, NURS 850 and NURS 855.

NURS 875 - DNP Practicum Credits: 1-8
This course provides the opportunity for post-certified advance practice nurses (NPs, CRNAs, CNSs, and CNMs) to complete supervised clinical hours to achieve the hours required by accreditation (1000 hours post baccalaureate), or NP students to supplement required clinical courses. Students will work with the program advisor to plan experiences that augment previous practice expertise and interest. Corequisites: NURS 880. Prerequisites: NURS 675, NURS 750, NURS 835, NURS 850 and NURS 855.

NURS 880 – DNP Project Credits: 1-8
Literature and evidence will be synthesized with stakeholders and inter-professional collaborators to develop and implement a practice innovation project for a rural or underserved population, health system, or community. The advanced practice nursing student will implement, evaluate, and defend an intervention that improves health care practice and quality of care. Some seminar content will be followed by work with a project major advisor whose expertise matches the intent of the Practice Innovation Project (PIP). Prerequisites: NURS 675, NURS 750, NURS 835, NURS 850 and NURS 855.

NURS 895 – Practicum Credits: 1-3
NURS 898 – Dissertation – PhD Credits: 18-24

OM (Operations Management)

OM 569 - Project Management Credits: 2-3
An overview of project management as it relates to integrated systems, product/project life cycle, and organizational change. Defining, estimating, scheduling, risk management, and project team leadership issues will be covered as they relate to projects. Cross-Listed: GE 569.

OM 660 - Operations Management Credits: 3
Product planning, demand forecasting and management, capacity planning, scheduling, inventory planning and timing, materials management, quality, work standards and measurement.

OM 665 - 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 670 - Research Methods in Management Credits: 3
Principles and methods of applied research in business and industry. Examination of appropriate methods to conduct literature reviews, design methodology, develop proposals for research projects, and present results.

OM 690 – Seminar Credits: 1

OM 767 - Decision Theory Credits: 3
Examination and evaluation of modern techniques of decision making. Mathematical models and measurements theory. Certainty, risk, and uncertainty.

OM 788 – Master's Research Problems/Projects Credits: 1-2
OM 789 – Thesis Credits: 1-7

PE (Physical Education)

PE 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.

PE 555 - ECG and Clinical Stress Testing Credits: 3
This course is designed to fill the need 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 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: Consent.

PE 585 - 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.

PE 593 – Workshop Credits: 1-3

PE 705 - Sports Medicine Credits: 2
A review of the basic fundamentals of athletic training and exposure to recent developments in the sports medicine field. Undergraduate Prevention and Care of Athletic Injuries or consent.

PE 706 - Motor Learning and Development Credits: 3
The study of human behavior as it relates to the learning and performance of motor skills. The understanding of motor learning as an essential foundation underlying the development of successful instruction and training strategies critical for skill acquisition. Laboratory work. Prerequisites: Instructor consent.

PE 730 - Physical Education Teacher Education Credits: 3
Readings, lectures, and discussions designed to analyze the process of preparing physical educators for the teaching profession. Includes discussion of external influences, problems and possible solutions, socialization and effective teaching in the field. Prerequisites: Instructor consent.

PE 732 - Analyses and Strategies of Teaching and Supervision of PE and Sports Credits: 3
Study and application of theoretical and practical knowledge of effective teaching/coaching, designed to improve teaching and coaching in physical education, including techniques of analysis and supervision. Notes: Restricted to Sport and Recreation Studies majors only

PE 742 - Psychological Aspects of Sport and Exercise Credits: 3
Psychological theories and principles applied to physical education, sport, and exercise. Interpretation and analysis of human behavior. Prerequisite: instructor consent. Topics include personality, arousal and anxiety, motivation, self efficacy and self-esteem, attentional focus, audience effects, aggression, leadership, as well as intervention strategies.

PE 745 - Applied Biomechanics Credits: 3
This course provides students with an advanced application of mechanical principles to human movement. Specific topics will include the force-motion relation, kinetics and kinematics of human motion, and neuromuscular adaptations. Emphasis within these topics will be placed on evaluating and developing rehabilitation and performance techniques using motion capture, force platforms, and electromyography. Current research literature in each of the areas will be discussed and critically reviewed.

PE 750 - Advanced Exercise Physiology Credits: 3
Physiological basis of factors which influence physical fitness and physical performance; application of physiological measures to fitness programs, critical analysis of current literature; emphasis on bioenergetics, neuromuscular and circulatory-respiratory function, body composition and physical training. Prerequisites: NEFS Majors only.

PE 751 - Laboratory Techniques in Exercise Physiology Credits: 2
Laboratory experience using methods, measurements, and instruments for conducting research in the area of exercise physiology. Corequisites: PE 751L. Prerequisites: Consent.

PE 751L - Techniques in Exercise Physiology Laboratory Credits: 0
Laboratory to accompany PE 751 Corequisites: PE 751.
PE 755 - Applied Exercise Physiology  Credits: 3
Focuses on the applied aspect of exercise physiology. Includes areas of environmental influences on performance, optimizing performance by developing and implementing training programs appropriate to the individual. In addition, training and performance characteristics of adolescent athletes and older adults as well as gender differences will be discussed. Notes: For NEFS majors only.

PE 770 - Advanced Administration of Interschool Athletics Credits: 2
Budgets, public relations problems, subsidization, objectives of athletics, staff organization, control of athletics, both inter scholastic and intercollegiate, and general policies of athletics. Prerequisites: Instructor consent.

PE 771 - Current Trends in HPER and Athletics Credits: 3
The study of trends in athletics that affect the performance, safety, and attitude of athletes; administrative practices; and public perception and support of athletics.

PE 772 - Financial Aspects of Sport Management Credits: 3
A course that gives the student interested in sports administration an opportunity to take an in-depth look into various areas of financial management. Examples of some of these areas but not a complete list, are: fund raising, guarantees, budgeting, scholarship programs, TV and Radio, receipts, and marketing.

PE 780 - Introduction to Graduate Study and Research Credits: 1
Orientation to graduate studies, policies and procedures. Introduction to the development of research proposals, critical thinking, and critiquing research.

**PHA (Pharmacy)**

PHA 610 - Introductory Practice Experience II Credits: 3
Students apply the academic and theoretical knowledge they have acquired in didactic courses to practical situations within a pharmacy setting. The drug dispensing process, patient counseling, and management of the pharmacy will be emphasized during the course. Notes: Pass/fail grading.

PHA 645 - Pharmacotherapeutics: Application to Advanced Practice Credits: 2-4
To provide the student with the knowledge and skills to assess, diagnose and manage (including the prescription of pharmacologic agents) a client's common health problems throughout the lifespan in a safe, high quality, and cost-effective manner. Notes: Graduate nursing students only.

PHA 647 - Pharmacological Issues in Mental Health Counseling Credits: 3
An overview and discussion of medications and medication issues that mental health counselors encounter. The role of the counselor with clients requiring counseling and pharmacotherapy treatments will be emphasized.

PHA 650 - Introduction to Advanced Concepts in Pharmaceutical Sciences Credits: 3
An introduction to advanced concepts in pharmaceutical sciences. Prerequisites: Instructor consent.

PHA 700 - Directed Studies Practice Experience Credits: 4-5
Advanced experiential course in pharmacy.

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
Clerkship experience at an affiliated site. Prerequisites: 6th year standing.

PHA 715 - First Steps in Pharmacy Care Practice Experience Credits: 4
Students apply knowledge and skills of professional pharmacy practice in community and hospital/institutional health care settings. The fundamentals of patient monitoring and communication with patients and health care practitioners are emphasized.

PHA 716 - Hospital/Institutional Pharmacy Practice Experience Credits: 5
Clerkship experience at an affiliated site. Prerequisites: 6th year standing.

PHA 717 - Community Health and Patient Monitoring Practice Experience Credits: 5
Clerkship experience in pharmaceutical care in a community pharmacy.

PHA 720 - Advanced Medicinal Chemistry Credits: 3
Qualitative and quantitative aspects of the design of therapeutic agents. Prerequisites: PHA 341 or instructor consent.

PHA 723 - Ethics in Healthcare Practice Credits: 2
Overview of ethical principles and theory, with emphasis on the professional-client relationship. Prerequisites: P3 standing.

PHA 727 - Professional Resources Management Credits: 3
Professional, economic, and social considerations influencing the organization and management of the delivery of pharmaceutical services. Prerequisites: 5th year standing.

PHA 729 - Advanced Pharmacy Marketing and Management Credits: 2
Discussion of strategic marketing and advanced management principles for the pharmacy practitioner.

PHA 741 - Public Health and Wellness Credits: 2
This course explores the role of the pharmacist in public health, disease prevention and health promotion, as well as key concepts and theoretical frameworks used in developing health promotion and health behavior interventions. Pharmaceutical care skills for assessment of humans in health and disease are also developed and applied. Corequisites: PHA 741L. Prerequisites: P3 standing.

PHA 741L - Public Health and Wellness Laboratory Credits: 0

PHA 742 - Patient Assessment and Self Care Credits: 2
Discussion of over-the-counter and dietary supplement products, common medical conditions amenable to self treatment, and recognition of situations when self-treatment is appropriate. Pharmaceutical care skills for assessment of humans in health and disease are also developed and applied. Corequisites: PHA 742L. Prerequisites: P3 standing.

PHA 742L - Patient Assessment and Self Care Laboratory Credits: 0

PHA 744 - End of Life Care Credits: 1
Discussion of the dying process and how to improve end-of-life care for patients and families. An emphasis will be placed on legal and ethical principles relative to end-of-life care, resources available for end-of-life care, financial aspects, pain management, non-pain symptom management, and overview of cultural and spiritual diversity related to end-of-life.

PHA 746 - Professional Pharmacy Leadership Skills Credits: 1
This course will provide advanced instruction in professional leadership skills for students with an interest in becoming effective leaders and role models in the profession of pharmacy. Prerequisites: P3 year standing.

PHA 747 - Advanced Clinical Nutrition Credits: 1
Advanced study of clinical nutrition including parenteral and enteral nutrition regimens, compounding of nutrition products, and assessment of nutritional status and need. Prerequisites: P3 year standing.

PHA 748 - Topics in Neonatal and Pediatric Pharmacotherapy Credits: 1
Advanced study of organ development and system maturation that includes drug delivery, drug therapy, patient safety, medication error prevention, and drug related problem identification and problem solving in the pediatric patient population. Prerequisites: P3 year standing.

PHA 749 - Care of the Geriatric Patient Credits: 1
This course will enhance the student's ability to care for geriatric patients by providing the student with an understanding of age related socio-behavioral aspects that influence care, skills in the management of geriatric syndromes, practice in managing drug therapy for complex, frail geriatric patients, and training in the provision of pharmaceutical care in select settings and in a team approach. Prerequisites: P3 year standing.
### PHA 750 - Critical Care Therapeutics  
**Credits:** 2  
Principles of medication use in the critically ill patient. Prerequisites: P3 standing.

### PHA 752 - Drugs of Abuse and Addiction  
**Credits:** 2  
Discussion of psychoactive drugs, both legal and illegal, that have potential for abuse. Prerequisites: P3 standing.

### PHA 753 - Women and Children's Health  
**Credits:** 2  
Diseases and drug-related issues pertaining to women's and children's health. Prerequisites: P3 standing.

### PHA 754 - Complementary and Alternative Medicine  
**Credits:** 1  
Discussion of alternative, natural, and homeopathic medicines, with emphasis on their appropriate evaluation and use.

### PHA 755 - Forensic Pharmacology  
**Credits:** 2  
This course will provide the student with an introduction to forensic pharmacology using interactive teaching technology that will include topics like forensic case evaluation, legal policy, depositions, parliamentary procedure, and document development for forensic evaluations.

### PHA 756 - Pharmacotherapeutics III  
**Credits:** 4  
Discussion of pharmacotherapeutic principles for the development of patient specific drug regimens in patients with acute and chronic disease states and conditions. Prerequisites: P3 standing.

### PHA 757 - Pharmacotherapeutics IV  
**Credits:** 4  
This course is a continuation of PHA 756, 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. Prerequisites: P3 standing.

### PHA 761 - Pharmacotherapeutics V  
**Credits:** 5  
This course is the continuation of PHA 757, Pharmacotherapeutics IV 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. Prerequisites: P3 standing.

### PHA 762 - Pharmacotherapeutics VI  
**Credits:** 5  
This course is a continuation of PHA 761, Pharmacotherapeutics V 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. Prerequisites: P3 standing.

### PHA 767 - Pharmacy Practice V  
**Credits:** 3  
Continuation of the skills taught and developed in Pharmacy Practice I-IV. Advanced skills in patient evaluation, therapeutic medication evaluation, professional communication skills, and verbal and written drug information skills are developed. Application of pharmacotherapeutic concepts and principles to access diseases, evaluate and solve therapeutic problems, create drug therapy regimens, and develop monitoring plans. Introductory practice experiences are also incorporated into this course. Corequisites: PHA 767L. Prerequisites: P3 standing.

### PHA 767L - Pharmacy Practice V Lab  
**Credits:** 0  
Corequisites: PHA 767. Prerequisites: P3 standing.

### PHA 768 - Pharmacy Practice VI  
**Credits:** 3  
Continuation of the skills taught and developed in Pharmacy Practice V. Advanced skills in patient evaluation, therapeutic medication evaluation, professional communication skills, and verbal and written drug information skills are developed. Application of pharmacotherapeutic concepts and principles to assess diseases, evaluate and solve therapeutic problems, create drug therapy regimens, and develop monitoring plans. Activities are designed to prepare students for upcoming Advanced Practice Experiences. Introductory practice experiences are also incorporated into this course. Corequisites: PHA 768L. Prerequisites: P3 standing.

### PHA 768L - Pharmacy Practice VI Lab  
**Credits:** 0  
Corequisites: PHA 768. Prerequisites: P3 standing.

### 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  
Study of healthcare systems and the practice of pharmacy at designated international sites. Prerequisites: P4 standing with consent.

### PHA 791 - Independent Study  
**Credits:** 1-3  
PHA 792 – Topic  
**Credits:** 1-3

### PHA 820 - Advanced Concepts in Medicinal Chemistry  
**Credits:** 3  
A study of the current advances in the area of drug design and discovery. Prerequisites: PHA 340, PHA 341 or equivalent or instructor consent.

### PHA 825 - Topics in Advanced Medicinal Chemistry  
**Credits:** 3  
A detailed study of the selected topics in the area of drug design and discovery. Prerequisites: PHA 820 or equivalent or instructor consent.

### PHA 840 - Advanced Concepts in Pharmacology  
**Credits:** 3  
A study of the current advances in the area of pharmacology especially at molecular level. Prerequisites: PHA 441, PHA 442, PHA 443 or equivalent or instructor consent.

### PHA 845 - Topics in Advanced Pharmacology  
**Credits:** 3  
A detailed study of the selected topics in the area of pharmacology. Prerequisites: PHA 840 or equivalent or instructor consent.

### PHA 846 - Techniques in Pharmaceutical Research  
**Credits:** 3  
A study of the current techniques in pharmaceutical research. Prerequisites: Instructor consent.

### PHA 847 - Grant Writing and Academic Development  
**Credits:** 3  
A study of the current policies, procedures and skills required for successful grants writing. An understanding of ethics and scientific conduct needed for academic development. Prerequisites: Instructor consent.

### PHA 859 – Advanced Concepts in Pharmacuetics  
**Credits:** 3  
A study of the current advances in the area of drug formulations and delivery. Prerequisites: PHA 331, PHA 332 or equivalent or instructor consent.

### PHA 865 - Topics in Advanced Pharmacuetics  
**Credits:** 3  
A detailed study of the selected topics in the area of drug formulations and delivery. Prerequisites: PHA 859 or equivalent or instructor consent.

### PHA 890 – Seminar  
**Credits:** 1  
PHA 898 – Dissertation  
**Credits:** 1-10

### PHIL (Philosophy)

**PHIL 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.

**PHIL 570 - Philosophy of Religion**  
**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.

### PHYS (Physics)

**PHYS 521 – Electromagnetism**  
**Credits:** 4  
Principles of electricity and magnetism, with applications to dielectric and magnetic materials. Development of Maxwell’s equations, and applications.

**PHYS 533 – Nuclear and Elementary Particle Physics**  
**Credits:** 3  
Radioactivity, nuclear spectra and structure, nuclear models, elementary particle theories and high energy physics. Prerequisites: PHYS 471 or instructor consent.
PHYS 539 - Solid State Physics Credits: 3-4
Electronc processes with reference to electrical properties of metals, semiconductors and insulators. Prerequisites: MATH 225; MATH 321 and PHYS 331.

PHYS 551 - Classical Mechanics Credits: 4
Newton's Laws, motion in one and three dimensions, central forces, harmonic oscillations, non-inertial reference frames, rotations of rigid bodies, and Lagrangian Mechanics. Prerequisites: MATH 225 and MATH 321.

PHYS 571 - Quantum Mechanics 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: MATH 225, MATH 321 and PHYS 331.

PHYS 581 - Mathematical Physics I Credits: 3
The first of two-semester sequence covering mathematical methods essential to the study of physics. The topics include differential and integral Vector Calculus, theory and applications of complex variables, ordinary differential equations and applications of series and transform methods in their solutions. Prerequisites: MATH 225 and MATH 321.

PHYS 590 – Seminar Credits: 1-2
Students are advised to check for most current descriptions at: www.catalog.sdstate.edu

PHYS 591 - Independent Study Credits: 1-3
This course is the second course in a two-semester sequence and covers advanced topics in electrodynamics. Prerequisites: PHYS 523.

PHYS 691 - Independent Study Credits: 1-3
A continuation of PHYS 581. The topics of emphasis are partial differential equations, boundary value problems, special functions, Green's Functions, and linear algebra. Additional topics of interest will be chosen; possible topics include differential forms and geometry, tensors in physics, group theory, distributions, statistical methods, integral equations, difference equations, numerical methods, variation techniques, etc. Prerequisites: PHYS 581.

PHYS 683 - Mathematical Physics II Credits: 3
A continuation of PHYS 581. The topics of emphasis are partial differential equations, boundary value problems, special functions, Green's Functions, and linear algebra. Additional topics of interest will be chosen; possible topics include differential forms and geometry, tensors in physics, group theory, distributions, statistical methods, integral equations, difference equations, numerical methods, variation techniques, etc. Prerequisites: PHYS 581.

PHYS 721 - Electrodynamics I Credits: 3
Electrostatics and magnetostatics, including a study of boundary value problems and the multi-pole expansions, leading to the study of Maxwell's equations. The relationship between special relativity and electromagnetism will also be discussed. Prerequisites: PHYS 421.

PHYS 723 - Electrodynamics II Credits: 3
This course is the second course in a two-semester sequence and covers advanced topics in electrodynamics. Prerequisites: PHYS 721.

PHYS 739 - Condensed Matter Physics I Credits: 3
Topics include crystal structure and the reciprocal lattice, quantum theory of electrons and phonons, x-ray diffraction, crystal binding energies, and energy band theory. Additionally topics may be chosen from the properties of metals, semiconductors, and insulators. Prerequisites: PHYS 439 or PHYS 539.

PHYS 743 - Statistical Mechanics Credits: 3
This is a one-semester course in classical and quantum statistical mechanics. Topics include ensembles, partition functions, identical particles, Fermi-Dirac and Bose-Einstein statistics. Other topics will be chosen from mean field theory, phase transformations, renormalization group theory, Monte Carlo techniques, and other topics of interest. Prerequisites: PHYS 541.

PHYS 749 - Condensed Matter Physics II Credits: 3
This course is the second course in a two-semester sequence and covers advanced topics in condensed matter physics. Prerequisites: PHYS 739.

PHYS 751 - Theoretical Mechanics Credits: 3
This is a one-semester course in classical mechanics. Topics include Newtonian Mechanics, Hamilton's Principle, Non-Inertial Frames of Reference, Lagrangian Mechanics. Other topics will be chosen from such areas of study as Rigid Body Motion, Chaos theory, Hamilton-Jacobi theory, Perturbation Theory, Quaternion applications to rotations, Lagrangian/Hamiltonian formulations for Continuous systems and fields, and other topics of interest. Prerequisites: PHYS 451.

PHYS 771 - Quantum Physics I Credits: 3
This is the first course of a two-semester sequence in quantum physics. Topics include the Schrodinger equation and its solutions, matrix mechanics, operator methods, the harmonic oscillator, the hydrogen atom, spin and angular momentum.

PHYS 773 - Quantum Physics II Credits: 3
This is the second course in a two-semester sequence. Additional topics include perturbation methods. Applications will be chosen from such topics as scattering theory, second quantization, theory of identical particles, relativistic quantum mechanics, creation and annihilation operators and other topics of interest. Prerequisites: PHYS 771.

PHYS 775 - General Relativity Credits: 3
This course includes study of Minkowski Space, tensor algebra and calculus, non-Euclidean Geometry, and the Einstein Field Equations. Applications will be chosen from such topics as the Schwarzschild, Kerr, and Reisner-Nordstrom solutions, gravitational waves, Post-Newtonian Formulisms, 3 + 1 formalism, and other topics of interest. Prerequisites: PHYS 451 and PHYS 471.

PHYS 779 - Group Theory of Quantum Mechanics Credits: 3
Topics may include symmetry transformations, continuous groups, finite groups, applications to valence theory, Lorentz group, and fundamental particles. Prerequisites: PHYS 471.

PHYS 781 - Nuclear and Particle Physics Credits: 3
This is a one-semester course in nuclear and elementary particle physics. Nuclear physics topics may include nuclear structure (nuclear form factors, multipole moments, liquid and shell models); nuclear decay; nuclear reactions; and other topics of interest. Elementary particle physics topics may include the role of symmetry in particle physics. Quantum Electrodynamics and Quantum Chromodynamics; the Standard Model of Particle Physics; Strong and Weak interactions; Accelerator and Experimental Particle Physics; and other selected topics beyond the Standard Model. Prerequisites: PHYS 771.

PHYS 783 - Quantum Field Theory Credits: 3
This course is the study of relativistic quantum field theory and its application to the standard model. The course covers quantization of relativistic field; perturbation theory and Feynman diagram; S-matrix; introduction to gauge theories and the standard model; and other topics of interest. Prerequisites: PHYS 771.

PHYS 785 - Astrophysics and Cosmology Credits: 3
This course introduces the broad base of fundamental topics in astrophysics and cosmology. Topics include observational properties of stars; stellar physics; stellar atmospheres; distance scales; galactic structures; interstellar medium, normal and peculiar galaxies and high energy astrophysics, cosmological observations and Friedmann models; the early universe at different epochs; the origin of dark matter and formation of galaxies and large scale structure. Prerequisites: PHYS 771.

PHYS 791 - Independent Study Credits: 1-3

PLAN (Planning)

PLAN 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.

PLAN 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 571.
PS 524 - Wheat Production  Credits: 2
Topics include natural history; 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 543 - Bioenergy Feedstock Production System  Credits: 3
Overview of production and characteristics of cultivated crops, perennial grasses, and woody species as feedstocks for bioenergy. Fundamentals of plant growth factors, culture, harvest and storage, quality and improvement, and introduction to environmental impact, modeling, and resource utilization. Prerequisites: MATH 102, BIOL 101, or PS 103.

PS 546 – Agroecology  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 550 - Field Study of Plant Diseases Diagnosis  Credits: 1
Diagnoses of diseases in field and horticultural crops; observing and studying the relationships among hosts, pathogens, and their environments. Emphasis on field disease recognition and laboratory diagnostic techniques. Corequisites: PS 550L. Prerequisites: Consent.

PS 550L - Field Study of Plant Diseases Diagnosis Laboratory  Credits: 1

PS 553 - Advanced Genetics  Credits: 3
Procedures in genetic studies as they relate to molecular and classical genetic applications. Prerequisites: BIOL 202, BIOL 204, or BIOL 371. Cross-Listed: BIOL 553.

PS 573 - Rural Real Estate Appraisal  Credits: 2
Principles and practices of rural real estate appraisal. Principles of soils valuation and their application for farmland appraisal. Cost, market data, and income approaches to farmland and building appraisal. Tax loan and other specialized rural appraisal procedures. Half-day field trips to area farms are required. Half-day field trips to area farms are required. Corequisites: PS 573L.

PS 573L - Rural Real Estate Appraisal Laboratory  Credits: 1

PS 664 - Molecular Plant Physiology  Credits: 6
This course will serve as the core to the plant biochemistry, physiology, growth and development students in the BIOS and PS graduate programs. The course will emphasize current theories and concepts of plant metabolism. The regulations of development, and the molecular genetic approaches used to elucidate our current understanding of these processes.

PS 704 - Viral and Bacterial Diseases of Plants  Credits: 2
Plant diseases caused by viroids, viruses, bacteria and mycoplasma-like organisms including identification, development, symptoms, and control. Advanced laboratory research methods used in isolation, transmission, culture, purification, microscopy, serology and investigation of the nature and properties of important plant pathogens. Corequisites: PS 704L.

PS 704L - Viral and Bacterial Diseases of Plants Laboratory  Credits: 2

PS 714 - Genetics of Disease Resistance and Host-Plant Pathogen Interactive  Credits: 3
Physiology, genetics, and molecular biology of host-plant pathogen interactions and disease resistance; pathogenic diversity and virulence dynamics of plant pathogens; crop vulnerability and plant disease epidemiology; and breeding plants for disease resistance. Corequisites: PS 714L. Prerequisites: Consent.

PS 714L - Genetics of Disease Resistance and Host-Plant Pathogen Interactive Laboratory  Credits: 1

PS 721 - Advanced Integrated Pest Management  Credits: 3
The biological and ecological basis of integrated pest management for midwestern crop insects and the understanding of economic thresholds are emphasized. Pest scouting techniques for major crop pests and simulated management decisions are discussed. Prerequisites: PS 305.

PS 723 - Simulation Models & Their Uses  Credits: 3
Basics of crop simulation models and use of crop simulation models as research tools, management tools and policy tools. Design of simulations to fill gaps in knowledge. Students will learn how models can aid in decision making for crop production under current conditions and identify the crop sensitivity to future predicted climates. Design of future crop genotypes and cropping systems, simulation of bioenergy feedstock production to estimate soil carbon sequestration and GHG emission reduction. Prerequisites: PS 103 or PS 543.
PS 732 - Field Studies in Pedology Credits: 2
Field techniques used in soil classification will be learned by studying soils during a week-long field exercise. Soil genesis and land use applications will be investigated. The impact of soils upon agronomic management and research will be presented. The class may be repeated for a maximum of 4 credits. Prerequisites: PS 310-310L or GEOG 310-310L.

PS 733 - Advanced Soil Genesis Credits: 3
Detailed study of the processes of soil genesis and an examination of soil and ecosystems with respect to the soil forming factors of time, parent material, topography, climate and organisms.

PS 741 - Crop Breeding Techniques Credits: 1
A techniques course where artificial hybridization of crop plants will be demonstrated and carried out. Background material will be offered with each crop. Both field and horticultural crops are included.

PS 743 - Physical Properties of Soil Credits: 3
The exchange of energy and water at soil surfaces, infiltration and redistribution of water and soil physical properties related to plant growth. Emphasis on applications in development and utilization of soil and water resources in a manner consistent with preservation of environmental quality.

PS 744 - Soil N, P and K Credits: 3
Plant-soil nutrient relationships including nutrient sink development, uptake, transport to roots, labile soil sources, nutrient deficiencies, and their corrections. Emphasis on nitrogen, phosphorus and potassium.

PS 746 - Plant Breeding Credits: 3
Plant Breeding applied to field crops and horticultural varieties with particular emphasis on the relationship of genetics and allied subjects. Prerequisites: PS 310-310L and BIOL 371.

PS 753 - Soil/Water Quality Bioenergy Feedstock Credits: 3
An examination of the fundamentals of soil and water quality applied to proposed and existing bioenergy feedstock production systems. Current research results related to biomass removal and by-product addition to soils will be discussed and evaluated. Prerequisites: PS 213 or PS 543.

PS 756 - Quantitative Genetics Credits: 3
Theory and application of quantitative genetic analysis to applied breeding problems; estimation and partitioning of genetic variances; genetic covariance and regression; heritability and selection response; index selection; linkage and quantitative trait loci (QTL) analysis. Prerequisites: BIOL 371 and STAT 541.

PS 761 - Taxonomy of Insects Credits: 3
Collection, identification and classification of insects. Techniques of identifying the groups of economic insect pests that affect the production of feed, food and fiber. Corequisites: PS 761L.

PS 761L - Taxonomy of Insects Laboratory Credits: 1

PS 763 - Environmental and Physiological Aspects of Crop Production Credits: 3
Systems analysis of factors which limit or increase crop production and the potential for qualitative and quantitative adjustments. Prerequisites: BOT 327-327L.

PS 781 - Plant Science Graduate Seminar Credits: 1

PS 785 - Soil and Plant Analysis Credits: 2
The analysis of soil and plant material for constituent elements. Topics include: Material sampling and preparation, extraction and determination method, theoretical principles of analysis, accuracy and precision. Emphasis on common soil and plant test indices. Co-requisites: PS 785L. Prerequisites: Instructor consent.

PS 785L - Soil and Plant Analysis Laboratory Credits: 1

PS 787 - Advanced Plant Breeding Credits: 3
Consideration of issues relating to germplasm selection, hybridization, evaluation, and perpetuation through a plant breeding program where improved cultivar and/or germplasm release is the objective.

PS 788 - Master's Research Problems/Projects Credits: 1-3

PS 791 - Independent Study Credits: 1-2

PS 792 – Topics Credits: 1-6
PS 798 – Thesis Credits: 1-7
PS 898D – Dissertation Credits: 1-7

PSYC (Psychology)

PSYC 591 - Independent Study Credits: 1-4
PSYC 592 – Topics Credits: 1-4

RANG (Range Science)

RANG 510 - Grassland Monitor & Assessment Credits: 2
A course emphasizing the quantitative measures used in vegetation analysis, root growth, and utilization. Vegetation sampling theory and plot selection will be covered. Use of similarity index, health, and trend for grassland monitoring and assessment will be explained. Basic statistics and the microcomputer will be used to analyze biomass, basal cover, frequency, and density data.

RANG 520 - Watershed Management Credits: 3
Study of the management of physical/biological settings and processes along with the human activities on water and watershed considering preventative and restorative strategies in a natural resource rangeland setting.

RANG 521 - Grassland Fire Ecology Credits: 3
The course is designed to describe the ecological effects of fire on grassland ecosystems. It also provides insight into the history of fires, the people who use them and why, the parts of a fire, how fires behave in relation to fuel and weather, and the conducting and safety of prescribed burns. Cross-Listed: WL 521.

RANG 525-525L - Rangeland Assessment and Monitoring Lab Credits: 3
Principles and practical application of the assessment and monitoring of rangeland plant communities. Course will be offered in a hybrid format. In the online portion of the course, students will learn how to set objectives, determine parameters to measure, select appropriate techniques, and analyze quantitative data. The laboratory portion is a 1-week intensive field session held in late summer, providing substantial field experiences including performing a wide variety of sampling techniques, collection and analysis of assessment and monitoring data, and learning how state and federal agencies assess and monitor rangelands. Students will also work in teams to develop a monitoring plan for a specific property, collect and analyze initial data, and present the plan and results to the land owner. Corequisites: RANG 525L-525. Prerequisites: STAT 281.

RANG 530 - Ecology of Invasive Species Credits: 3
Ecological principles and their application to invasive species. Discussion of population, community, and ecosystems level characteristics affecting a wide variety of invasive plant and animal species. Discussions will include current global consequences and governmental policies/programs designed to limit the spread of invasives.

RANG 540 - Grassland Plant Identification Credits: 2
Study of plants that have ecological and/or agricultural importance in the Great Plains, Plant identification, Grassland ecosystems and plants forage value, palatability, and utilization by both domestic livestock and wildlife. Cultural and historical uses of grassland.

RANG 591 - Independent Study Credits: 1-3
RANG 592 – Topics Credits: 1-4

RANG 710 - Principles of Forage Quality Credits: 3
The course provides an in-depth study of the chemical characteristics of forage components and the interactions with ruminal physiology and digestion that influence forage feeding value and the laboratory procedures used to evaluate forages for grazing livestock. Students should have knowledge of the basic principles of chemistry, ruminal nutrition, and plant physiology so that they
can develop an understanding of the chemical characteristics of forages and how they affect the value of forages to grazing livestock.

**RECR (Recreation)**

**RECR 515 – Recreation and 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.

**REL (Religion)**

**REL 501 - History of Western Religious Thought I**  Credits: 3
This course surveys important issued 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.

**REL 591 - Independent Study**  Credits: 1-3
**REL 592 – Topics**  Credits: 3

**SE (Software Engineering)**

**SE 592 – Topics**  Credits: 1-5

**SEED (Secondary Education)**

**SEED 592 – Topics**  Credits: 1-5
**SEED 593 – Workshop**  Credits: 1-3

**SEED 748 - Secondary Curriculum Practicum**  Credits: 1

**SOC (Sociology)**

**SOC 502 - Social Deviance**  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.

**SOC 533 - Leadership and Organizations**  Credits: 3
Emphasis is on the emergence of leadership patterns, group dynamics, small groups, and leadership in management.

**SOC 555 - Juvenile Delinquency**  Credits: 3
A study of the youthful offender and the causes and consequences of delinquent behavior; preventive and rehabilitative programs are also discussed.

**SOC 556 - Community Corrections**  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.

**SOC 560 - Advanced Criminology**  Credits: 3
An extensive examination of major criminological issues and theories including sociological definitions of crime.

**SOC 562 - Population Studies**  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.

**SOC 701 - The Research Process**  Credits: 3
Topics include conceptions of research, the philosophy of science, formal and grounded theory construction, the use of research literature, and qualitative, quantitative, and mixed approaches to research design.

**SOC 702 - Sociological Inquiry**  Credits: 3
The course focuses on the use of sociological theory in both basic research and sociological practice. It examines the nature and uses of the broad orienting theories that guide sociological work, and also the production and application of unit theories which provide answers to specific research questions. Students participate in class activities through which they learn various aspects of theorizing.

**SOC 709 - Evaluation Research**  Credits: 3
Focus on the conceptualization and design of evaluation studies of various governmental programs. Design includes clarification of objectives, selection of appropriate collection techniques, and specification of target groups.

**SOC 710 - Research Methods**  Credits: 3
Major emphasis will be given to research design, problems of measurement, methods of data collection, and analysis and interpretation of data. An integral part of the course will be the development of a research project dealing with some current sociological problem. Prerequisites: Instructor consent.

**SOC 711 - Qualitative Research Methods**  Credits: 3
Qualitative research methods of data collection, analysis, and presentation are examined; emphasis on fieldwork involving participant observation and intensive interviewing; includes consideration of the rationale, theoretical underpinnings and limitation of qualitative research. Prerequisites: Instructor consent.

**SOC 712 - Sociological Theory I**  Credits: 3
Critical examination of the main schools of sociological theory beginning with the system of Auguste Comte and ending with World War II. Prerequisites: Instructor consent.

**SOC 713 - Sociological Theory II**  Credits: 3
Sociological theories and issues from World War II to present. Prerequisites: Instructor consent.

**SOC 714 - Race, Class, Gender Intersections**  Credits: 3
This class examines past and current research and theory in the discipline of sociology addressing race, class and gender intersections. Students will explore the transformation of these frameworks into concrete research at the micro-, meso- and macro-levels.

**SOC 720 - Scholarship of Teaching & Learning for Sociologists**  Credits: 3
Course designed for those planning a career in teaching Sociology at the college/university level; course is applied with hands-on experiences in preparation for college teaching.

**SOC 721 - Social Stratification**  Credits: 3
Theories of social stratification. Relationship between social class and education, occupational choice, political preference, religious affiliation and social mobility. Prerequisites: Instructor consent.

**SOC 725 - Social Organization**  Credits: 3
Elements of social organization. Analysis of social groups and complex social organizations. Examination of conditions and factors related to the integration and disintegration of social organizations. Prerequisites: Instructor consent.

**SOC 740 - Rural Community Development**  Credits: 3
Changes occurring in rural areas and their effects upon rural communities. Basic concepts, procedures, and processes for planning in a rural environment. Some alternative approaches to rural planning. National and International perspectives. Prerequisites: Instructor consent.

**SOC 762 - Applied Demography**  Credits: 3
Focus on demographic publications and resources including Census data material; areas included are population, housing, agriculture, economics, vital statistics reports, special surveys and international materials. Emphasis on a variety of applications across disciplines.

**SOC 764 - Modern Demographic Theory**  Credits: 3
Overview of the explanatory factors and determinants related to the population process of fertility, mortality, and migration. Emphasis on theoretical models that focus on developed and developing countries.

**SOC 766 - World Population Issues**  Credits: 3
Focus on policy formulation and program evaluation as related to population issues; the political economy of national and international efforts are considered;
planning a micro- and macro-level decision-making is examined; issues covered are population and resources, the value of children, international migration and major health problems.

SPCM 708 - Master's Research Problems/Projects Credits: 1-3
SPCM 790 – Seminar Credits: 1-4
SPCM 791 - Independent Study Credits: 1-3
SPCM 792 – Topics Credits: 1-6
SPCM 794 – Internship Credits: 1-6
SPCM 798 – Thesis Credits: 1-7
SPCM 890D – Dissertation Credits: 1-12

SPCM (Speech Communication)

SPCM 501 - Advanced Interpersonal Communications Credits: 3
Advanced study of contemporary issues that have significant impact on interpersonal relationships (e.g., abusive communications, alternative lifestyles, virtual relationships). Students develop an understanding of the current communication research and social practices related to these issues. Prerequisites: SPCM 201.

SPCM 510 - Organizational Communication 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 516 - Rhetorical Criticism Credits: 3
Critical evaluation of American speakers from Colonial to contemporary. Prerequisites: Instructor consent.

SPCM 540 - Health Communication Credits: 3
This course will examine the contexts and processes of communication about health, focusing on how professionals, patients, and practitioners interact in ways that constitute and influence health and medicine.

SPCM 541 - Health Communication Research Methods Credits: 3
Creation of evidence-based communication interventions to address the health needs of communities. The course requires students to identify contemporary health needs, select appropriate forms of health communication intervention, and develop intervention messages and create a plan for assessing effectiveness of interventions. Students will also learn how to collect, analyze and interpret data using techniques such as surveying, interviewing, and moderating focus groups.

SPCM 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.

SPCM 591 - Independent Study Credits: 1-3
SPCM 592 – Topics Credits: 1-5
SPCM 605 - Current Approaches to Communication Credits: 3

SPCM 700 - Instructional Methods in Communication Credits: 3
Problems and issues in teaching the basic communication course, development of communication courses, and issues relevant to communication education.

SPCM 701 - Introduction: Graduate Studies Credits: 3
This class is an examination of methods of research, writing, & documentation. It also explores communication as a discipline. Required of all Masters students.

SPCM 787 - Research Methods in Speech Communications Credits: 3
This course is an examination of the methods of social science research in the area of Speech Communication. The course includes planning and designing communication research, methodologies for conducting communication research, and analyzing and interpreting quantitative and qualitative data.

SPCM 791 - Independent Study Credits: 1-2
SPCM 792 – Topics Credits: 1-3
SPCM 798 – Thesis Credits: 1-7

STAT (Statistics)

STAT 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 handling errors. Notes: Information and presentation graphics.

STAT 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.

STAT 535 - Applied Bioinformatics Credits: 3
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 541 - Statistical Methods II Credits: 3
Analysis of variance, various types of regression, and other statistical techniques and distributions. Sections offered in the areas of Biological Science and Social Science. Prerequisites: STAT 281, MATH 381, or STAT 381. Credit not given for both STAT 541 and STAT 581.

STAT 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 or STAT 381.

STAT 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 582.

STAT 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, nonstationary processes, model building, forecast errors and confidence intervals. Prerequisites: STAT 582.

STAT 582 - Statistics for Physical Science 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. Credit will not be given for both STAT 482 and STAT 441.

STAT 591 - Independent Study Credits: 1-3
STAT 592 – Topics Credits: 1-3

STAT 700 - Statistical Programming Credits: 3
Fundamentals of statistical programming languages including descriptive and visual analytics in R and SAS, and programming fundamentals of SAS and R including logic, loops, macros, and functions. Prerequisites: STAT 410 or STAT 510 or CSC 150.

STAT 701 - Modern Applied Statistics I Credits: 3
This course will build upon STAT 541 and assume students have knowledge of SLR, MLR, ANOVA, and basics of statistical inference. The class will start by covering statistical graphics and the associated modern statistical computing language(s). The next section of the class will focus on non- and semi-parametric methods with a focus on the application and interpretation of the methods. The last section of the class will focus on longitudinal and repeated
measure models and conclude with an overview of techniques from meta-analysis and large-scale inference. Prerequisites: STAT 541 and STAT 700.

**STAT 702 - Modern Applied Statistics II Credits: 3**
This course will start with an introduction to data mining techniques from multivariate data such as Principal Component Analysis, Multidimensional Scaling, and Cluster Analysis. From there we will move on to an introduction to supervised learning methods and pattern recognition with a focus on algorithmic methods. The course will finish with an overview of statistical prediction analysis relevant to business intelligence and analytics. Prerequisites: STAT 701.

**STAT 715 - Multivariate Analysis I Credits: 3**
Multiple, partial, canonical correlation test of hypothesis on means; multivariate analysis of variance; principal components; factor analysis; and discriminant analysis. Prerequisites: STAT 482 or STAT 582.

**STAT 721 - Statistic Computing/Simulation Credits: 3**
Computationally intensive statistical methods that would not be feasible without modern computational resources and statistical simulation techniques, including random variable generation methods, Monte Carlo simulation and importance sampling, Kernel smoothing and smoothing splines, bootstrap, jackknife and cross validation, regulation and variable selection in regression, EM algorithm, concepts of Bayesian inference, Markov chain Monte Carlo methods such as Gibbs sampling, and the Metropolis-Hasting algorithm. Prerequisites: STAT 582 or STAT 786.

**STAT 731 – Biostatistics Credits: 3**
Statistical methods commonly used in the biological and health sciences, including study designs such as parallel, crossover, adaptive designs, randomization procedure, sample size determination, data collection process and analysis methods including survival data analysis. Prerequisites: STAT 541 or STAT 582.

**STAT 736 – Bioinformatics Credits: 3**
This course is an introduction to bioinformatics for students in mathematics and physical sciences. This course will include a brief introduction to cellular and molecular biology and will cover topics such as sequence alignment, phylogenetic trees and gene recognition. Existing computational tools for nucleotide and protein sequence analysis, protein functional analysis and gene expression studies will be discussed and used.

**STAT 742 - Spatial Statistics Credits: 3**
Geostatistical data analysis with variogram, covariogram and correlogram modeling. Spatial prediction and kriging, spatial models for lattices, spatial patterns. Prerequisites: STAT 786.

**STAT 751 - Predictive Analytics II Credits: 3**
This course will examine advanced methodologies used in financial and predictive modeling. Topics covered include segmented scorecards, population stability, ensemble models, neural networks, MARS regression, and support vector machines. Prerequisites: STAT 551 or STAT 786.

**STAT 756 - Quantitative Genetics Credits: 3**
Theory and application of quantitative genetic analysis to applied breeding problems; estimation and partitioning of genetic variances; genetic covariance and regression; heritability and selection response; index selection; linkage and quantitative trait loci (QTL) analysis. Prerequisites: BIOE 371 and STAT 541.

**STAT 760 - Quality Control Credits: 3**
Application of statistical techniques to the control of quality and the development of economical inspection methods. Collection, analysis, and interpretation of operations data; control charts and sampling procedure. Prerequisites: STAT 281 or STAT 381. Cross-Listed: ME 760.

**STAT 761 - Design of Experiments II Credits: 3**
Continuation of STAT 661. One-way classification models with heterogeneous errors, two-way classification analysis in the unbalanced case, analysis in the unbalanced case, analysis of mixed models, repeated measures. Prerequisites: STAT 541 or STAT 582.

**STAT 784 - Statistical Inference I Credits: 3**
A theoretical study of the foundations of statistics, including probability, random variables, expectations, moment generating functions, sample theory, and limiting distributions. Prerequisites: STAT 381.

**STAT 785 - Statistical Inference II Credits: 3**
A theoretical study of the foundations of statistics, including most powerful tests, maximum likelihood tests, complete and sufficient statistics, etc. Corequisites: STAT 784.

**STAT 786 - Regression Analysis I Credits: 3**
Methodology of regression analysis, including matrix formulation, inferences on parameters, multiple regression, non-linear regression, outlier detection, diagnostics, and multicollinearity. Prerequisites: STAT 441 or STAT 541, STAT 482 or STAT 582.

**STAT 787 - Regression Analysis II Credits: 3**
Advanced regression methodology, including nonlinear regression, logistic regression, poisson regression, and correlation analysis. Prerequisites: STAT 786.

**STAT 788 - Research Paper Credits: 1-2**

**STAT 791 - Independent Study Credits: 1-3**

**STAT 792 – Topics Credits: 1-3**

**STAT 798 – Thesis Credits: 1-7**

**THEA (Theatre)**

**THEA 791 - Independent Study Credits: 1-2**

**VET (Veterinary Science)**

**VET 503 - Animal Disease 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 523 - 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. Notes: Previous courses in anatomy, physiology, and biochemistry are recommended.

**VET 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 or instructor consent. Cross-Listed: MICR 524.

**VET 591 - Independent Study Credits: 1-3**

**VET 592 – Topics Credits: 1-3**

**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**

**WL (Wildlife and Fisheries Sciences)**

**WL 515 - Upland Game Ecology and Management 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. Corequisites: WL 515L.

**WL 515L - Upland Game Ecology and Management Laboratory Credits: 0**

**WL 517 - Large Mammal Ecology & Management Credits: 3**
Large mammal life histories and distributions. Relationships of nutrition, reproduction, interspecific competition, and predation to management of big game habitat and harvest. Techniques for research and management of large mammals. Corequisites: WL 517L.

**WL 517L - Large Mammal Ecology & Management Laboratory Credits: 0**
WL 519 - Waterfowl Ecology & Management  Credits: 3
Analysis of ecological and socio-economic factors affecting waterfowl habitat and waterfowl populations. State and federal programs affecting wetland drainage and preservation. Field inspection of waterfowl habitat in the north-central states. Corequisites: WL 519L.

WL 519L - Waterfowl Ecology & Management Laboratory  Credits: 0

WL 521 - Grassland Fire Ecology  Credits: 3
The course describes the ecological effects of fire on grassland ecosystem components, from soil and vegetation to wildlife and beef cattle. It also provides insight into the history of fires, the people who use them and why, the parts of a fire, how fires behave in relation to fuel and weather, and the conducting and safety of prescribed burns. Cross-Listed: RANG 521.

WL 525 - Wildlife Nutrition and Disease  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. Corequisites: WL 525L.

WL 525L - Wildlife Nutrition and Disease Laboratory  Credits: 0

WL 527 - Limnology of Lakes & Streams  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. Corequisites: WL 527L.

WL 527L - Limnology of Lakes and Streams Laboratory  Credits: 0
Laboratory to accompany WL 527. Corequisites: WL 527.

WL 529 - Fish Ecology  Credits: 2
Study of fish as an organism and the interrelations of fish with other organisms and with the environment. Corequisites: WL 529L.

WL 529L - Fish Ecology Laboratory  Credits: 0
Laboratory to accompany WL 529. Corequisites: WL 529.

WL 592 - Topics  Credits: 1-3
Corequisites: WL 592L.

WL 592L - Special Topic in Wildlife and Fisheries Laboratory  Credits: 0

WL 712 - Wetlands Ecology and Management  Credits: 3
Botanical, zoological, hydrological, pedological, and biogeochemical components of wetland systems are studied. Course includes the management of wetlands for various functional values, government jurisdiction in wetland regulation, and wetland classification. North American wetland systems are discussed with emphasis on northern glaciated prairie wetlands. Corequisites: WL 712L.

WL 712L - Wetlands Ecology & Management Laboratory  Credits: 0

WL 713 - Animal Population Dynamics  Credits: 3
Methods of analysis and interpretation of vital statistics of animal populations. Current theories on natural regulation of animal populations. Particular emphasis on vertebrate species of economic and/or recreational importance. Comparison of environmental controls on of various animal groups. Corequisites: WL 713L.

WL 713L - Animal Population Dynamics Laboratory  Credits: 0

WL 715 - Wildlife Research Design  Credits: 3
Use of the scientific method for designing wildlife research and developing proposals. Familiarization with field and laboratory methods. Practical experience with statistical data analysis. Corequisites: WL 715L.

WL 715L - Wildlife Research Design Laboratory  Credits: 0

WL 717 - Aquatic Trophic Ecology  Credits: 3
Analysis of selected biological processes influencing the organization of aquatic communities. Complex trophic interactions and their effects on the life histories and bioenergetics of aquatic organisms are examined. Corequisites: WL 717L.

WL 717L - Aquatic Trophic Ecology Laboratory  Credits: 0

WL 718 - Ecology of Aquatic Invertebrates  Credits: 3
The identification of and ecological relationships associated with aquatic invertebrates; aquatic ecosystems of the north-central states are emphasized. Corequisites: WL 718L.

WL 718L - Ecology of Aquatic Invertebrates Laboratory  Credits: 0

WL 719 - Stream Ecology and Management  Credits: 3
Interrelationships of biotic and abiotic components of lotic ecosystems. Hydrologic and geologic influences on lotic habitat and biota will be stressed, as well as watershed management aspects. Corequisites: WL 719L.

WL 719L - Stream Ecology and Management Laboratory  Credits: 0

WL 720 - Quantitative Fisheries Science  Credits: 3
An advanced analytical fisheries course that focuses on quantitative techniques. Emphasis is placed on populations (e.g., recruitment, growth, mortality), and quantitative assessment of communities (e.g., predator-prey interactions) and ecosystems (e.g., biostressors). Suggested background courses include population dynamics, experimental design, and graduate statistics and/or biometry. Corequisites: WL 720L.

WL 720L - Quantitative Fisheries Science Laboratory  Credits: 0

WL 722 - Natural Resource Policy and Administration  Credits: 3
Emphasis is placed on codified law and policy and non-codified policy of federal and state agencies, and their effects on the management and administration of fish and wildlife resources. Areas of study include development of agency policy, influence of policies on management, policy and resource conflict, and public involvement in the management process. Corequisites: WL 722L.

WL 722L - Natural Resource Policy & Administration Laboratory Credits:0

WL 723 - Fisheries Ecology & Management  Credits: 3
Principles and techniques of selected practices for reservoir, lake, pond and lotic fisheries management. Corequisites: WL 723L.

WL 723L - Fisheries Ecology & Management Laboratory  Credits: 0
Laboratory to accompany WL 723. Corequisites: WL 723.

WL 791 - Independent Study  Credits: 1-3

WL 798 - Thesis  Credits: 1-7

WL 898D – Dissertation  Credits: 1-12

WMST (Women's Studies)

WMST 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 519.

WMST 592 – Topics  Credits: 1-3
Faculty and Staff

General Administration 220
Academic Deans 220
Regental Distinguished Professors 221
Distinguished Professors 221
Faculty, Staff 221
Emeriti Faculty, Staff 244
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

**Chiose, 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., South Dakota State University, 1978; M.Ed., Colorado State University, 1984; Ph.D., Ohio State University, 1988.

**Adelaine, Michael F.**, Vice President for Technology and Security, 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., South Dakota State University, 1977; M.S., 1982; Ph.D., Purdue University, 1992.

**Doolittle, James J.**, Associate Vice President for Research & Sponsored Programs, Professor of Plant Science, Graduate Faculty, 1991, 2012; B.S., Purdue University, 1982; M.S., Texas A&M University, 1986; Ph.D., 1991.

**Wermedal, Douglas**, Associate Vice President for Student Affairs, 1998, 2007; B.S., South Dakota State University, 1985; M.S.Ed., Eastern Illinois University, 1987; Ph.D., South Dakota State University, 2008.

**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 for Facilities and Services, 2002; B.S., Missouri State University, 1976; M.S., University of Missouri, 1989.

**Siekmann, 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.

**Challis, Donald R.**, Assistant Vice President for Safety and Security, 2012; B.A., University of Iowa, 1993; M.A., St. Ambrose University, 2002.

**Knutson, Ryan**, Assistant Vice President for Technology, 2010, 2014; B.S., South Dakota State University, 2000; M.S., Dakota State University, 2005.

### Academic Deans

**Brown, Lewis F.**, Dean of the College of Engineering, Professor of Electrical Engineering, Graduate Faculty, 1992, 2000; B.S., South Dakota State University, 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., South Dakota State University, 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 C.**, 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., South Dakota State University, 1975; M.S., 1977; Ph.D., 2000.

**Fahrenwald, Nancy**, Dean of Nursing, Associate Professor of Nursing, Graduate Faculty, 1995, 2006; B.S., South Dakota State University, 1983; M.S., University of Portland, 1988; Ph.D., University of Nebraska, 2002.

**Guan, Xianming**, Assistant Dean of Research College of Pharmacy, Professor of Pharmaceutical Sciences, Coordinator of Graduate Studies and Research, Graduate Faculty, 1995, 2014; B.S., Zhejiang Medical University, 1982; M.S., University of Kansas, 1988; Ph.D., 1991.

**Hansen, Daniel J.**, Assistant Dean for Student Services, College of Pharmacy, Associate Professor of Pharmacy Practice, 2007, 2010; B.S., South Dakota State University, 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.

**Helder, Dennis L.**, Associate Dean of Research, College of Engineering, and Distinguished Professor of Electrical Engineering, Graduate Faculty, 1983, 2011; B.S., South Dakota State University, 1979; B.S., 1980; M.S., 1985; Ph.D., North Dakota State University, 1991.

**Herrick, Linda M.**, Associate Dean of Undergraduate Nursing, Professor of Nursing, Graduate Faculty 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., University of Nebraska, 1982; M.Ed., 1987; Ed.D., University of South Dakota, 1991.

**Minton, Mary**, Associate Dean of Graduate Nursing, Associate Professor of Nursing, Graduate Faculty, 2007, 2013; B.A., Augusta, 1987; M.S., University of Michigan, 1984; Ph.D., University of Nebraska, 2007.

**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, Professor of Sociology and Rural Studies, Graduate Faculty, 1994, 2014; B.S., Washington State University, 1986; M.A.Ed., 1993; Ph.D., South Dakota State University, 2001.

**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.


**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.
Thorngren, Jill M., 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, 2011; B.A. University of Minnesota - Morris, 1980; M.L.S., University of Wisconsin, 1982; Ph.D., University of Minnesota, 1992.

Wang, C.Y., Professor and Associate Dean of the College of Education and Human Sciences, Graduate Faculty, 1993, 2002; B.S., Shenyang Agricultural University, 1985; M.S., Iowa State University, 1989; Ph.D., 1993.

---

Regental Distinguished Professors

Bailey, Harold S., Vice President for Academic Affairs Emeritus, Distinguished Professor of Higher Education, 1951, 1985; B.S., Massachusetts College of Pharmacy, 1944; M.S., 1948; Ph.D., Purdue University, 1951.


---

Distinguished Professors

Brown, Michael L., Distinguished Professor of Wildlife and Fisheries Sciences, Graduate Faculty, 1994, 2003; B.S., Arkansas Technical University, 1986; M.S., Texas A&M University, 1989; Ph.D., 1993.


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.


Hegge, Margaret J., Distinguished Professor Emerita of Nursing, Graduate Faculty, 1969, 1999; B.A. Gustavus Adolphus College, 1969; M.Ed., South Dakota State University, 1972; Ed.D., University of South Dakota, 1983; M.S., University of Minnesota, 1984.

Hess, Donna J., Distinguished Professor and Head of Rural Sociology, Graduate Faculty, 1974, 1998; B.A., Marquette University, 1965; M.A., State University of New York, 1971; Ph.D., Michigan State University, 1974.


Johnson, W. Carter, Distinguished Professor of Natural Resource Management, Graduate Faculty, 1989, 2006; B.S., Augastana 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.

Muthukumarappan, K., Distinguished Professor and Graduate Coordinator of Agricultural and Biosystems Engineering, Graduate Faculty, 1997, 2013; B.S., University of Madras (India), 1981; B.E., Tamil Nadu Agricultural University (India), 1986; M.E., Asian Institute of Technology, 1988; Ph.D., University of Wisconsin, 1993.


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.

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.


---

Faculty, Staff

Aamlid, Brian, Assistant Athletic Director-Annual Giving, Intercollegiate Athletics; 2011; B.S., South Dakota State University, 2009; M.S., Belmont University, 2011.

Aaron, David, Assistant Professor of Physics, 1986; B.S., South Dakota State University, 1975; M.S., University of Wisconsin, 1981.

Abeln, Kristin, Instructor of General Studies, 2010; B.A., Southwest Minnesota State University, 2003; M.S., South Dakota State University, 2007.


Adams, Wells E., Jr., Adjunct Assistant Professor of Natural Resource Management, 2011; B.S., Iowa State University, 2002; M.S., South Dakota State University, 2004.


Adolph, Eric, Assistant Strength and Conditioning Coach; Intercollegiate Athletics; 2012; B.A., Dakota Wesleyan University, 2009; M.S. South Dakota State University, 2012.


Agostini, Thomas, Assistant Professor of History, Political Science, Philosophy, and Religion, Graduate Faculty, 2009; B.A., Virginia Military Institute, 1990; M.A., James Madison University, 1993; Ph.D., Lehigh University, 2002.


Ahmed, Patricia, Instructor of Sociology and Rural Studies; Ph.D., University of California - Los Angeles, 2005.


Ali, Shaukat, Associate Professor of Plant Science, Graduate Faculty, 2012; M.Sc., University of Agriculture, Faisalabad (Pakistan), 1978; M.S., South Dakota State University, 1993; Ph.D., North Dakota State University, 2001.


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, Professor of Dairy Science, Graduate Faculty, 2006, 2014; B.S., B.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., South Dakota State University, 1979; M.S., 1986.

Anderson, Barbara, Clinic Recruitment and Outreach Coordinator, EA Martin Program in Human Nutrition, 2010; B.A., South Dakota State University, 1981

Anderson, Carla L., Student Services Coordinator and Academic Advisor, College of Education and Human Sciences, 2004; B.S., South Dakota State University, 2002; M.S., 2007; Ed.D., University of South Dakota, 2013.

Anderson, Gary A., Professor of Agricultural and Biosystems Engineering, Graduate Faculty, 1987, 1999; B.S., South Dakota State University, 1975; M.S., Iowa State University, 1985; Ph.D., 1987.

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 Science, 2012; B.S., University of Delaware, 2003; M.S., South Dakota State University, 2005; Ph.D., 2012.


Anderson, Zach, Student Affairs Fiscal and Facility Officer, 2012; B.S., South Dakota State University, 2004; M.S., University of South Dakota, 2006.

Anteau, Michael J., Adjunct Assistant Professor of Natural Resource Management, 2011; B.S., University of Alaska Fairbanks, 1997; M.S., Louisiana State University, 2002; Ph.D., 2006.

Arends, Robin, Instructor of Nursing/Nurse Practitioner, 2011; B.S. Briar Cliff, 2001; M.S. South Dakota State University, 2008.

Arenson, Angela, Instructor of Modern Languages and Global Studies, 2012; B.A., South Dakota State University, 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.


Arwood, Donald, Professor of Sociology and Rural Studies, Graduate Faculty, 1986, 1999; B.S., South Dakota State University, 1980, M.S., 1982; Ph.D., 1989.


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 Natural Resource Management, 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.

Alyor, 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.

Bachman, Amanda, Pesticide Ed Coordinator, Urban Entomology Coordinator, Plant Science, 2014; B.S., Case Western Reserve University, 2006; Ph.D., Penn State, 2012.

Badura, Matthew, First Year Professional Advisor, University College, 2013; B.A., University of Notre Dame 1996; M.A. Illinois State University, 1998; Ph.D., Temple University 2010.

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., Associate Professor of English, Graduate Faculty, 2002, 2014; B.A., University of California-Irvine, 1987; M.A., California State University-Long Beach, 1993; Ph.D., University of Miami, 1998.


Bai, Wei, Post-Doctoral Research Associate in the Ethel Austin Martin Program in Human Nutrition, 2013; M.D., Jinjiang Medical University, 1997; M.S., Southern Medical University, Guangzhou 2000; Ph.D., South Dakota State University, 2013.

Bakker, Kristel K., Adjunct Assistant Professor of Natural Resource Management, 2003; B.S., South Dakota State University, 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.

Banik, Deborah K., Assistant Professor of Nursing, 1998, 2012; Diploma in Nursing, Trinity School of Nursing, 1973; B.S., South Dakota State University, 1985; MPH, University of Minnesota, 1988; Ph.D., University of Nebraska-Omaha, 2002.

Bartel, Billie, Assistant Professor of Pharmacy Practice, 2011; B.S., South Dakota State University, 2007; Pharm.D., 2009.

Bassett, Janine D., Associate Professor of Nursing, 2000, 2013; B.S., South Dakota State University, 1992; M.S., 2004.

Bassett, Kurt D., Professor and Head of Mechanical Engineering, Graduate Faculty, 2005, 2007; B.S., South Dakota State University, 1981; M.S., 1983; Ph.D., North Dakota State University, 1996.


Barber, Christopher P., Postdoctoral Fellow, 2012; B.S., Richard Stockton College of NJ, 1997; Ph.D., South Dakota State University, 2012.


Bayer, Michelle A., Lecturer, University College, 2007; B.A., South Dakota State University, 1995; M.Ed., University of Nevada, 2005; Ed.D., University of South Dakota, 2012.

Beaudoin, Daniel, Adjunct Assistant Professor of Aerospace Studies, 2012; B.S., United States Air Force Academy, 2007.


Beck, Dwayne L., Research Manager of Dakota Lakes Field Station, Professor, Graduate Faculty, 1979, 1995; B.S., Northern State University, 1975; Ph.D., South Dakota State University, 1983.


Beckman, Eric, Associate Professor of Consumer Sciences 2013; B.S., University of North Carolina, 1995; B.S., Appalachian State University, 2010; M.B.A., Western Carolina University, 2005; M.S., Western Carolina University, 2006; Ph.D., University of Tennessee, 2010.

Beckman, Steven, Filtration Technologist, 2014; B.S., University of Nebraska, 2007; M.S., Cornell University, 2013.


Begley, Rick L., Assistant Professor of Military Science, 2008; B.S. California Polytechnic State University, 1977.


Bell, Julie A., Assistant Professor and Academic Advisor, College of Education and Human Sciences, 1975, 1980; B.S., South Dakota State University, 1970; M.S., 1976.

Berg, Sara, Research Assistant, Plant Science, 2012; B.S., South Dakota State University, 2012.


Berzonsky, William A., Associate Professor of Plant Science, Graduate Faculty, 2008; B.S., University of Maryland, 1982; M.S., University of Delaware, 1984; Ph.D., University of Missouri, 1988.

Bertolini, Katherine, Assistant Professor of Teaching, Learning, and Leadership, 2011; B.A., Michigan State University, 1990; M.A., 1999; Ph.D., North Dakota State University, 2010.


Bertrand, Katie N., Associate Professor of Natural Resource Management, Graduate Faculty, 2008, 2014; B.A., Gustavus Adolphus College, 2002; Ph.D., Kansas State University, 2007.

Beutler, Martin K., Extension Specialist and Professor of Economics, Graduate Faculty, 1986, 1998; B.S., Utah State University, 1980; M.S., 1982; Ph.D., Purdue University, 1986.


Bieseker, Matthew J., Associate Professor of Mathematics and Statistics, Graduate Faculty, 2008; B.S., California State University at Chico, 1994; M.S., Utah State University, 1996; Ph.D., 2004.


Binkley, Teresa L., Assistant Professor of Health and Nutritional Sciences, Graduate Faculty, 1998, 2007; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 1988; M.S., 1997; Ph.D., 2007.

Birch, Carol, Assistant Professor of Nursing, 1990; B.S.N., Loyola University, 1979; M.S., Northern Illinois University, 1981.

Biswas, Ananya, Research Associate I, 2011; B.S., West Bengal University of Animal and Fishery Science, 1998; M.S., 2002; M.S., South Dakota State University, 2005.


Blackwell, Brian G., Adjunct Associate Professor of Natural Resource Management, 2001; B.S., South Dakota State University, 1990; M.S., Texas A&M University, 1993; Ph.D., South Dakota State University, 2001.

Blaha, Bradley, Coordinator of Recruiting and Academic Services for the College of Agriculture and Biological Sciences, 2009; B.S., South Dakota State University, 2008.


Bleckley, Bruce H., Professor of Biology and Microbiology, Graduate Faculty, 1991, 2003; B.S., Michigan State University, 1978; M.S., 1981; Ph.D., University of Florida, 1986.


Boe, Arvid A., Professor of Plant Science, Graduate Faculty, 1976, 1991; B.A., Pacific Lutheran University, 1972; M.A., University of South Dakota, 1976; Ph.D., South Dakota State University, 1979.

Boersma, Angela, Lecturer of Consumer Sciences, 2009; B.S., South Dakota State University, 2006; M.Arch, University of Minnesota, 2009.


Bommisetti, Venkateswara R., Associate Professor of Electrical Engineering, Graduate Faculty, 2004; B.S., Acharya Nagarjuna University (India), 1990; M.S., Govind Ballabh Pant University (India), 1993; D. Eng., University of Toyama (Japan), 2001.

Bondalapati, Krishna D., Research Associate II, Plant Science, 2009; B.A., Nagarjuna University, 2002; M.S., Pondicherry University, 2004; M.S., South Dakota State University, 2008.

Bonnemann, Howard, Lecturer of Dairy Science and Research Manager, 1997; B.S., South Dakota State University, 1982; B.S., 1987; M.S., 1984.

Bono, Chris, Head Wrestling Coach, Intercollegiate Athletics; 2012; B.S., Iowa State University, 1997.

Bonvallet, Geoffrey A., Lecturer in Physics, 2005; B.A., College of Wooster, 2000; M.S., University of Wisconsin, 2002; Ph.D., 2005.

Boone, Rachel, Equestrian Barn Manager, Intercollegiate Athletics; 2012; B.S., South Dakota State University, 2012.

Bott, Rebecca, Assistant Professor in Equine Production and Management, Graduate Faculty, 2009; B.S., University of Missouri, 2003; M.S., University of Nebraska, 2005; Ph.D., Colorado State University, 2009.

Boulware, Jeffrey S., Professor of Consumer Sciences, 2002; B.S., Montana State University, 1974; M.S., Embry-Riddle Aeronautical University, 1987.

Bowne, Mary, Associate Professor of Teaching, Learning and Leadership, Graduate Faculty, 1999, 2012; B.S., South Dakota State University, 1999; M.S., 2001; Ed.D., University of South Dakota, 2006.

Boyens, Roxann K., Instructor of Nursing, 1989; P.N., Worthington Community College, 1974; A.A., University of South Dakota, 1979; B.S., South Dakota State University, 1989; M.S., 1995.

Braaten, Patrick J., Adjunct Associate Professor of Natural Resource Management, 2013; B.S., University of North Dakota, 1988; M.S., South Dakota State University, 2003; Ph.D., Kansas State University, 2000.

Brake, Derek, Assistant Professor of Animal Science, 2013; B.S. The Ohio State University, 2006; M.S. Kansas State University, 2009; Ph.D. Kansas State University, 2012.

Brandenburger, Michele (Shelly), Instructor of Health and Nutritional Sciences, 2009; B.S., Northwestern Health Sciences University, 1997; M.S., South Dakota State University, 2007., D.C., Northwestern Health Sciences University, 1997.

Brandenburger, Thomas, Assistant Professor of Mathematics and Statistics, Graduate Faculty, 2009; B.A. South Dakota State University, 1992; M.S., 1995; PhD, 2009.

Brant, Bruce E., Professor of English, Graduate Faculty, 1979, 1989; B.A., University of Denver, 1969; M.A., 1971; Ph.D., Harvard University, 1977.

Brant, Kevin L., Manager of University Networking Systems and Services, 1999, 2005; B.S., South Dakota State University, 2001; M.S., 2009.

Bridicked, Hande, Associate Professor of Counseling and Human Development, Graduate Faculty, 2002, 2009; B.S., Middle East Technical University (Turkey), 1991; M.S., Kent State University, 1995; Ph.D., Kent State University, 2004.

Briddick, William C., Associate Professor of Counseling and Human Development, Graduate Faculty, 2002, 2010; B.A., Southern Illinois University, 1987; M.Ed., Vanderbilt University, 1989; Ph.D., Kent State University, 2005.

Briese, Pamela, Adjunct Assistant Professor of Chemistry and Biochemistry, 2004; B.S., University of South Dakota, 1979; M.S., 1996.

Britzman, Darwin G., Adjunct Professor of Animal Science, 1999; B.S., South Dakota State University, 1953; M.S., University of Minnesota, 1962; Ph.D., South Dakota State University, 1964.

Britzman, Mark J., Professor of Counseling and Human Development, Graduate Faculty, 1987, 2004; B.S., South Dakota State University, 1982; M.Ed., 1984; Ed.D., University of South Dakota, 1987.

Broekmeier, Susanne, Instructor of Teaching, Learning and Leadership, 2005; B.S., Martin Luther College, 1987; M.Ed., South Dakota State University, 2003.

Brooks, April, Professor and Head, Department of History, Political Science, Philosophy, and Religion, Graduate Faculty, 1993, 2002; B.A., Hunter College, 1966; M.A., Tulane University, 1968; Ph.D., 1974.


Brown, Clint, Assistant Football Coach, Intercollegiate Athletics, 1996; B.S., University of Nebraska-Lincoln, 1999; M.A., New Mexico State University, 2009.

Brown, Kamerra, Assistant Equestrian Coach, Intercollegiate Athletics; 2011; B.S., Delaware State University, 2010; M.S., South Dakota State University, 2012.


Brown, Stephanie R., Academic Advisor, College of Education and Human Sciences, 2012; B.S., University of Nebraska-Lincoln, 1996; M.S., South Dakota State University, 2012.

Brownning, Larry M., Professor of Physics, Graduate Faculty, 1990, 2000; B.S., Syracuse University, 1975; M.S., Purdue University, 1980; Ph.D., 1984.

Brözel, Volker, Professor of Biology and Microbiology, Graduate Faculty, 2003, 2009; B.S., University of Stellenbosch (South Africa), 1986; M.S., University of Pretoria (South Africa), 1990; Ph.D., 1993.


Bücking, Heike, Associate Professor of Biology and Microbiology, Graduate Faculty, 2009; M.S., University of Bremen (Germany), 1991; Ph.D., 1995.


Burckhard, Suzette R., Professor of Civil and Environmental Engineering, Graduate Faculty, 1997, 2008; B.S., South Dakota State University, 1986; M.S., Kansas State University, 1992; M.S., 1993; Ph.D., 1997.

Burdette, Linda K., Assistant Professor of Nursing, Aberdeen Accelerated Nursing Program Coordinator, Graduate Faculty, 2010; A.D.N., Presentation College, 1973; B.S., South Dakota State University, 1985; M.S., 1988; FNP option, 1994; Ph.D., 2010.

Burger, Donald, Assistant Professor of Landscape Architecture, Plant Science, 2011; B.S., Utah State University, 2006; M.S., University of British Columbia, 2008.

Burggraaf, Cody, Residence Hall Director, 2013; B.S. South Dakota State University, 2012.

Burke, Shawn, District Extension Director-West; B.S., University of South Dakota, 1987; M.S., Colorado State University, 1994.

Burns, James, Assistant Professor of Teaching Learning & Leadership, 2011; B.A., University of Maryland, 1995; M.A., University of Hawaii, 1997; Ed.D., George Washington University, 2011.

Burrows, Rhoda L., Associate Professor of Plant Science, Graduate Faculty, 2001, 2006; A.A., Commercial College, 1979; B.A., Montana State University, 1983; M.S., University of Minnesota, 1987; Ph.D., 2001.

Butler, III, Eugene, Associate Professor of Biology and Microbiology, 2001; B.S., University of California, 1973; Ph.D., 1978.

Butler, Jack, Adjunct Associate Professor of Biology and Microbiology, Graduate Faculty, 2001; B.S., Southeastern Oklahoma State University, 1997; M.S., North Dakota State University, 1983; Ph.D., Texas A&M University, 1986.

Buttolph, Anne M., Instructor of Nursing, 2012; B.S., University of Illinois, 1989; B.S., Saint Francis College of Nursing, 1992; M.S., University of South Alabama, 2007.


Byamukama, Emmanuel, Assistant Professor of Plant Science, Graduate Faculty, 2013; B.S., Makerere University, 1999; M.S., 2001; Ph.D., Iowa State University, 2008.

Cadwell, Elizabeth, Residence Hall Director, 2013; B.A. DePaul University, 2011; M.E. University of St. Thomas, 2013.

Caff-Treml, Melanie, Postdoctorate Research Associate, Plant Science, 2011; B.S., University of Sciences and Technology (France), 2002; M.S., National Institute of Agronomy of Toulouse (France), 2004; Ph.D., South Dakota State University, 2010.

Campanella, Danielle, Residence Hall Director, 2012; B.S. Syracuse University, 2012.

Carlile, Andrea, Instructor of Communication Studies and Theatre, Director of Speech and Debate; B.A., Gustavus Adolphus College, 2007; M.S., South Dakota State University, 2009.

Carlisle, Kristen M., Asst. Director, FYAC and Academic Advisor, 2004; B.S., Bemidji State University, 2004; M.S., South Dakota State University, 2007.

Carlson, C. Gregg, Professor of Plant Science, Graduate Faculty, 1974, 1994; B.S., Western Illinois University, 1969; M.S., South Dakota State University, 1972; Ph.D., 1978.

Carson, Paula P., Associate Professor of Nursing, Graduate Faculty, 1983, 1995; B.S., South Dakota State University, 1975; M.S.N., University of Minnesota, 1985; Ph.D., University of Arizona, 1992.


Cartrette, David P., Associate Professor of Chemistry and Biochemistry, Graduate Faculty, 2003; B.A., North Carolina State University, 1992; B.S., 1992; M.S., Western Carolina University, 1997; Ph.D., Purdue University, 2003.

Casper, David P., Assistant Professor of Dairy Science, Graduate Faculty, 2012; B.S., University of Wisconsin, 1983; M.S., South Dakota State University, 1985; Ph.D., 1989.

Caspers-Graper, Mary, Head of Technical Services/Professor, 1985, 2008; B.A., Luther College, 1979; M.A., University of Iowa, 1980; M.L.S., University of Arizona, 1985.

Cassaday, Joseph, Professor and Head of Animal Science, 2013; B.S., Iowa State University, 1993; M.S., University of Nebraska-Lincoln, 1995; Ph.D., 1999.

Cassel, E. Kim, Extension Specialist and Professor of Health and Nutritional Sciences, 1989, 2000; B.S., Delaware Valley College, 1975; M.S., Cornell University, 1978; Ph.D., 1983.

Cech, Holly, Adjunct Lecturer of Nursing, 2004; A.A., Dakota Wesleyan University, 1996; B.S., South Dakota State University, 2001.

Cempellin, Leda, Associate Professor of Visual Arts, Graduate Faculty, 2006; Dottore in Lettere Moderne (Laurea), University of Padua, Italy, 1999; Dottore di Ricerca in Storia dell’Arte (Ph.D.), University of Parma (Italy), 2004.

Chakravarty, Suvobrata, Assistant Professor of Chemistry and Biochemistry, 2009, 2013; M.S., Indian Institute of Science (India), 1998; Ph.D., 2003.

Chalmers, David, Extension Associate in Plant Science, 2012; B.S., Michigan State University, 1974; M.S., Virginia Tech, 1978; Ph.D., University of Illinois, 1983.

Chandrasekher, Gudiseva, Associate Professor of Pharmaceutical Sciences, Graduate Faculty, 2008; B.S., Andhra University (India), 1977; M.S., 1979; Ph.D., University of Mysore (India), 1983.

Chang, Ji-yul, Post-Doctoral Research Associate, Plant Science, 2003; B.S., Yonsei University (Korea), 1988; M.S., South Dakota State University, 1997; Ph.D., 2002.

Chang, Kuo-Liang, Assistant Professor of Economics, Graduate Faculty, 2009; B.A., Tamkang University (Taiwan), 1992; M.A., University of Utah, 1999; Ph.D., 2007.

Chase, Christopher, Professor of Veterinary and Biomedical Sciences and Animal Disease Research and Diagnostic Laboratory, Graduate Faculty, 1992, 2001; D.V.M., Iowa State University, 1980; M.S., University of Wisconsin, 1987; Ph.D., 1990.

Chevalier, Timothy J., Adjunct Instructor of Modern Languages, 2001; B.A., Augustana College, 1982; M.S., Western Maryland College, 1993.

Chintala, Rajesh, Research Associate, Plant Science, 2008; M.S., Andhra Pradesh Agricultural University (India), 2000; Ph.D., West Virginia University, 2008.

Chipp, Steven R., Adjunct Professor of Natural Resource Management, Graduate Faculty, 1999; B.S., Davis and Elkins College, 1990; M.S., West Virginia University, 1992; Ph.D., University of Idaho, 1997.

Chirumamilla, Anitha, Entomology Field Specialist, Plant Science, 2013; B.S., Acharaya N.G. Ranga Agriculture University, 1999; M.S., Gujarat Agriculture University, 2002; Ph.D., North Dakota State University, 2009.

Cho, Soo Hyun, Assistant Professor of Consumer Sciences, Graduate Faculty, 2009; B.A., Korea University, 2003; M.S., 2005; Ph.D., Ohio State University, 2009.

Choi, Jongwoo, Post Doctoral Research Associate, 2009; B.S., Chungnam National University (South Korea), 1989; M.S., McGill University (Canada), 1996; Ph.D., University of Wisconsin - Madison, 2008.

Choudhary, Ruplal, Post Doctoral Research Associate, 2008; B.Sc., J. N. Agricultural University (India), 1991; M.S., Indian Institute of Technology (India), 1994; Ph.D., Oklahoma State University, 2004.

Christensen, Cody, Assistant Professor of Consumer Sciences, 2013; B.S.Ed., South Dakota State University, 2005; M.Ed, 2006; Ed.D., University of South Dakota, 2013.

Christensen, Jay, Assistant Football Coach, Intercollegiate Athletics; 2011; B.S., University of Nebraska-Kearney, 1999; M.S., University of Nebraska-Kearney, 2011.


Christensen, Mary, Coordinator of Advising and Student Retention, 2009, B.S., South Dakota State University, 2005; M.S., 2007.


Christianson, Steven, Instructor of Construction and Operations Management, 2007; B.A. University of Minnesota, B.S., South Dakota State University, 1978.

Christie, Jill, Instructor of Nursing, 1990; B.S., South Dakota State University, 1976.

Christopher-Hennings, Jane, Professor and Head of Veterinary and Biomedical Sciences and Animal Disease Research and Diagnostic Laboratory, Graduate Faculty, 1990, 2007; B.S., University of Wisconsin, 1975; M.S., 1990; D.V.M., University of Minnesota, 1983.

Cissell, Marie A., Instructor of Nursing, 2002; B.S.N., South Dakota State University, 1984; M.N., University of Mary, 1995.

Clapper, Jeffrey A., Professor of Animal Science, Graduate Faculty, 1997, 2007; B.S., Ohio State University, 1982; M.S., 1987; Ph.D., Purdue University, 1992.


Clark, Randy, Associate Professor of Visual Arts, Graduate Faculty, 2000; B.F.A., University of Utah, 1978; M.F.A., Utah State University, 2002.

Clark, Sarah, Instructor of Mathematics and Statistics, 2008; B.S., St. Cloud State University, 2000; M.S., South Dakota State University, 2008.

Clay, David E., Professor of Plant Science, Graduate Faculty, 1989, 2001; B.S., University of Wisconsin, 1976; M.S., University of Idaho, 1984; Ph.D., University of Minnesota, 1988.

Clay, Sharon A., Professor of Plant Science, Graduate Faculty, 1989, 1998; B.S., University of Wisconsin, 1977; M.S., University of Idaho, 1982; Ph.D., University of Minnesota, 1986.

Clem, James, Professor and Head of Pharmacy Practice, Graduate Faculty, 1992, 2008; B.S., University of Iowa, 1989; Pharm.D., 1991.

Cochrane, Mark, Senior Research Scientist of Geospatial Sciences Center of Excellence/Professor, Graduate Faculty, 2005; S.B.O., Massachusetts Institute of Technology, 1993; Ph.D., Pennsylvania State University, 1998.

Cogswell, Kurt D., Professor and Head of Mathematics and Statistics, Graduate Faculty, 1997, 2006; B.S., Massachusetts Institute of Technology, 1978; M.S., North Dakota State University, 1991; Ph.D., Northwestern University, 1996.

Colby, Julie, Research Assistant, 2009; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 2001.

Cole-Dai, Jihong, Associate Professor of Chemistry and Biochemistry, Graduate Faculty, 2000; B.S., University of Science and Technology of China, 1982; M.S., University of Maryland, 1984; Ph.D., 1987.

Contarino, Samantha, Upward Bound Director, 2011; B.S.W, Temple University, 2003; M.S.W., Fordham University, 2004.

Cooley, Brian, Assistant Men's Basketball Coach, Intercollegiate Athletics, 2006; B.A., Nebraska Wesleyan University, 2009; M.S. South Dakota State University, 2009.


Cooper, Stephanie, Research Coordinator, 2010; EA Martin Program in Human Nutrition; B.A. & B.S. South Dakota State University, 2010.

Cortus, Erin, Assistant Professor of Agricultural and Biosystems Engineering, Graduate Faculty, 2009; B.S., University of Saskatchewan (Canada), 2002; Ph.D., 2007.

Costello, Leon, Senior Associate Athletic Director, Intercollegiate Athletics, 2010; B.A., Loras College, 1998; M.S., Western Illinois University, 2002.

Coughlin-O’Connell, Kate, Professional Academic Advisor 2012; B.A., Northern State University 2003; M.S.Ed., Northern State University, 2007.


Cowan, Jenna, Research Assistant, 2010; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 2009.


Creal, Tim, Adjunct Assistant Professor of Education and Human Sciences, Rapid City Site, Graduate Faculty, 2001; B.S., Black Hills State University, 1978; M.S., South Dakota State University, 1990; Ed.S., University of South Dakota, 1994; Ed.D., 1996.

Crego, Stephen, Manager, Dairy Research and Training Facility, 2009; B.S., Cornell University, 1985.


Cumber, Carol J., Professor of Economics, Graduate Faculty, 1990, 2003; B.A., North Dakota State University, 1979; M.B.A., 1984; Ph.D., South Dakota State University, 1994.

Currier, Jesse, Assistant Football Coach, Intercollegiate Athletics; 2012; B.A., South Dakota State University, 2008; M.S.

Cutler, Kay, Professor of Teaching, Learning and Leadership, Graduate Faculty, 1997, 2002; B.A., University of Minnesota, 1989; Ph.D., University of Texas, 1995.

Daeley, Rocky, Assistant Professor of Journalism and Mass Communication, Graduate Faculty, 2012; B.S., South Dakota State University, 1994; M.A., University of Memphis, 1998; Ed.D., Montana State University, 2012.
Dalsted, Kevin J., Assistant Director of Water Resource Institute, 1977, 1998; B.S., North Dakota State University, 1974; M.S., 1977.

Davis, Joshua, Assistant Football Coach, Intercollegiate Athletics; 2010; B.S., South Dakota State University, 2006; M.S., South Dakota State University, 2008.

Davis, Marc, Football Operations Coordinator, Intercollegiate Athletics, 2012; B.S. University of Wisconsin-Eau Claire, 2009; M.A. University of St. Thomas, 2011.

Daly, Russell, Professor of Veterinary and Biomedical Sciences and Extension Veterinarian, 2005, 2014; B.S., South Dakota State University, 1988; M.S., 2013; D.V.M., Iowa State University, 1990.


Daniels, Ann Michelle, Extension Family Life, Parenting & Child Care Specialist/Associate Professor of Counseling and Human Development, Graduate Faculty, 1999, 2004; B.S., University of Arkansas, 1988; M.Ed., 1990; Ph.D., Kansas State University, 1999.

Daniels, Doug, Adjunct Instructor of Electrical Engineering, 2008; B.S., South Dakota State University, 1993; M.S., Colorado Technical University, 1996.

Danker, Kathleen A., Professor of English, Graduate Faculty, 1990, 2001; B.A., University of Nebraska, 1971; M.A., 1974; Ph.D., 1985.

Darnall, Samantha, Research Assistant, 2009; EA Martin Program in Human Nutrition; B.A. Luther College, 2009.

Davidson, Charlotte E., Acting Director, American Indian Education & Cultural Center, 2012; Adjunct Faculty, Teaching, Learning, & Leadership Department; B.S., Haskell Indian Nations University, 2003; M.Ed., University of Illinois at Urbana-Champaign, 2007; Ph.D., University of Illinois at Urbana-Champaign.

Davis, Alan, Professor of Counseling and Human Development, Graduate Faculty, 2005; B.A., Western Washington University, 1978; M.R.C., University of Kentucky, 1980; Ph.D., Oregon State University, 1984.

Davis, David E., Associate Professor of Economics, Graduate Faculty, 2005, 2009; B.S.B.A., University of South Dakota, 1993; M.A., University of Oregon, 1998; Ph.D., 1998.

Davis, Jack B., Economics Field Specialist, Agricultural and Biological Sciences, 1994, 1999; B.S., South Dakota State University, 1982; A.A., Dakota Wesleyan University, 1988; M.B.A., University of South Dakota, 1989.

DeBates, Debra A., Professor of Teaching, Learning and Leadership, Graduate Faculty, 1998; B.S., South Dakota State University, 1974; M.S., 1993; Ph.D., Iowa State University, 1999.

De Haven, Rodney, Coordinator and Head Coach, Cross-Country/Track, 2004; B.S., South Dakota State University, 1989.


Delfanian, Fereidoon, Professor of Mechanical Engineering, Graduate Faculty, 1979, 2001; B.S., South Dakota State University, 1977; M.S., 1980; Ph.D., North Dakota State University, 1995.

Delfinis, Teresa M., Coordinator of Student Services, College of Pharmacy, 1986, 2007; B.S., South Dakota State University, 1997; M.S., 2004.

Demuth, Heidi, Research Assistant, 2010; EA Martin Program in Human Nutrition; B.S. Southwest Minnesota State, 2008; M.S. South Dakota State University, 2010.


Deutz, Betze, Instructor of Chemistry and Biochemistry, 2010; B.S., South Dakota State University, 2003.

DeWald, Jerry M., Instructor of Construction and Operations Management, 2005; B.S., South Dakota State University, 1965; M.B.A., University of Saint Thomas, 1980.

Dey, Moul, Associate Professor of Health and Nutritional Sciences, Graduate Faculty, 2009; B.S., University of Calcutta, 1994; M.S., 1996; Ph.D., 2002.

Dianovsky, Michael, Assistant Professor of Chemistry and Biochemistry, 2013; B.S., University of Illinois, 2003; M.S., 2007; Ph.D., 2007.


Diersen, Matthew A., Extension Specialist and Professor of Economics, Graduate Faculty, 1999, 2009; B.A., University of Minnesota, 1993; M.S., North Dakota State University, 1995; Ph.D., University of Illinois, 1999.

Dieter, Charles, Professor of Natural Resource Management, Graduate Faculty, 1987, 2009; B.S., Concordia Teachers College, 1977; M.S., South Dakota State University, 1987; Ph.D., 1993.


Diischer, Rebecca, Instructor of Mathematics and Statistics, 2010; B.S., South Dakota State University, 2004; M.S., University of Iowa, 2007.

Dill, Anastasia, Admissions Counselor, 2012; B.S, B.A, South Dakota State University, 2009.

Dlouhy, James J., Professor of Plant Science, Graduate Faculty, 1991, 2001; B.S., Purdue University, 1982; M.S., Texas A&M University, 1986; Ph.D., 1991.


Droke, Elizabeth, Associate Professor of Health and Nutritional Sciences, Graduate Faculty, 2005; B.S., University of Illinois, 1985; M.S., Ohio State University, 1988; Ph.D., North Carolina State University, 1991.

Du, Jikai, Assistant Professor of Mechanical Engineering, Graduate Faculty, 2009; B.E., Tsinghua University, 1991; M.E., China Aerospace Materials Research Institute, 1994; Ph.D., Pennsylvania State University, 2008.

Duan, Shanzhong, Professor of Mechanical Engineering, Graduate Faculty, 2004, 2013; B.S., Kunning Institute of Technology, 1982; M.S., Tianjin University, 1988; Ph.D., Rensselaer Polytechnic Institute, 1999.

Dyer, Harriet, Residence Hall Director, 2012; B.S. Central Michigan University, 2010.

Eastman, April, Native American Student Advisor, 2012; A.A., Sisseton Wahpeton College; 2002; B.A., University of Minnesota, 2005; M.S., South Dakota State University, 2010.

Egorov, Alexey, Geospatial Analyst, 2009; M.S., Yaroslavl State University, 1995.

Edenshwick, Jeffery, Adjunct Assistant Professor of Geography, 2002; B.S., South Dakota State University, 1973; M.S., 1979; Ph.D., 2001.

Edsness, C. Eric, Assistant Football Coach, Intercollegiate Athletics, 2010; B.A., University of Sioux Falls, 1992; M.S., South Dakota State University, 2002.

Eilers, Maggie, Research Coordinator, 2009; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 2008; M.S. Indiana State University, 2009.


Ellisson, Susan, Adjunct Professor of Chemistry and Biochemistry, 2003; B.A., Concordia College, 1979; M.D., University of South Dakota, 1993.

Elliott Lisa, Commodity Marketing Specialist and Assistant Professor of Economics, 2012; B.S., University of Missouri, 2006; M.S., 2009; Ph.D., 2011.

Ellis, Andrew R., Instructor of Biology and Microbiology, 2001; B.S., South Dakota State University, 2001; M.S., 2006.
Elsey, Rachel, Assistant Professor of Pharmacy Practice, 2013; Pharm.D., University of Iowa, 2011.

Elverson, Cynthia D., Associate Professor of Nursing, NACC Coordinator, Graduate Faculty, 1992, 2014; 2008, B.S., University of Missouri, 1979; M.S., University of California, 1986, Ph.D., University of Nebraska, 2007.

Emery, Mary, Professor and Head of Sociology and Rural Studies; 2011, Ph.D., Rutgers University.

Engdahl, Michael, Head Tennis Coach, Intercollegiate Athletics; 2011; B.A., South Dakota State University, 2010.

Enz, Molly K., Associate Professor of Modern Languages, 2007; B.A., Concordia College, 1996; M.A. 2009; Ph.D., University of Wisconsin Madison, 2005.

Erdman Becker, Katherine, Coordinator and Association Professor Interdisciplinary Studies, 1994, 2009; B.S., Mankato State University, 1989; M.S., 1994; Ed.D., University of South Dakota, 2004.

Ercksson, Alan K., Professor of Veterinary and Biomedical Sciences, Graduate Faculty, 1990, 2004; B.A., Minot State College, 1983; B.A., 1984; Ph.D., North Dakota State University, 1989.

Ercksson, Bradley L., Head Men's and Women's Swimming and Diving Coach, and Assistant Professor, Intercollegiate Athletics, 1974, 1994; B.S., South Dakota State University, 1974; M.S., 1975.

Ercksson, Tracey E., Dairy Science Field Specialist, Agricultural and Biological Sciences, 2012; B.S., South Dakota State University, 1989.

Erion, Ralph L., Professor of Teaching, Learning and Leadership, Graduate Faculty, 1985, 1996; B.A., Inter American University, 1972; M.A. Ed., 1975; Ph.D., Texas A&M University, 1985.

Escondrillas, Macarena, Instructor of Modern Language and Global Studies, B.A., University of Murcia, (Spain), 2010; M.A., West Virginia University, 2012.

Evenson, Pamela M., Adjunct Instructor of Nutrition, Food Science and Hospitality, 2002; B.A., Moorhead State University, 1979; B.S., 1987; M.S., South Dakota State University, 2001.


Fahmy, Hesham, Associate Professor of Pharmaceutical Sciences, Graduate Faculty, 2004, 2007; B.S., University of Alexandria (Egypt), 1987; M.S., 1990; Ph.D., 1993.

Fan, Qi Hua, Associate Professor of Electrical Engineering, Graduate Faculty, 2010; B.S., University of Electronic Science and Technology (China), 1984; M.S., 1989; Ph.D., University of Aveiro (Portugal), 1999.

Fang, Ying, Research Assistant Professor of Veterinary and Biomedical Sciences, and Biology and Microbiology, Graduate Faculty, 2005; B.S., Southwestern University, P. R. China, 1990; M.S., Iowa State University, 1997; M.S., South Dakota State University, 2000; Ph.D., South Dakota State University, 2004.


Farrokh-Baroughi, Mahdi, Assistant Professor of Electrical Engineering, Graduate Faculty, 2007; BS, Iran University of Science and Technology, 1997; MS, Sharif University of Technology, 2000; Ph.D., University of Waterloo, 2006.

Farver, Debra K., Professor of Pharmacy Practice, Graduate Faculty, 1983, 2000; Pharm.D., University of Nebraska, 1983.


Feng, Jiuhuan, Research Associate II, Plant Science, 2009; B.S., Henan Normal University, 1986; M.S., Wuhan University, 1991; Ph.D., South China Agricultural University, 1998.

Fennell, Anne, Professor of Plant Science, Graduate Faculty, 1992, 2002; B.S., Iowa State University, 1979; M.S., University of Minnesota, 1982; Ph.D., 1985.


Finkel, Mark J., Adjunct Assistant Professor of Natural Resource Management, 2012; B.S. Ball State University, 2004; M.S., Eastern Illinois University, 2006; Ph.D., South Dakota State University, 2011.

Fink, Patrick H., West River Nursing Student Services Coordinator, 2010; B.S., Black Hills State University, 2006; M.S., South Dakota State University, 2008.

Finn, Lynne A., Assistant Director of Facilities and Services, 1987, 1997; B.S., South Dakota State University, 1993.

Fischer, Janet, Professor of Pharmacy Practice, 1986, 1996; Pharm.D., Creighton University, 1986.


Fisen, Paul E., Adjunct Associate Professor of Plant Science, 2000; B.S., South Dakota State University, 1975; M.S., 1977; Ph.D., Colorado State University, 1979.


Flynn, Nicole, Assistant Professor of English, Graduate Faculty, 2012; B.A., Wellesley College, 1999; M.A., University of Chicago, 2004; Ph.D., Tufts University, 2012.


Fokken, Paul, Associate Professor of Health and Nutritional Sciences, Graduate Faculty, 2004; B.S., University of Iowa, 1989; M.A., 1995; Ph.D., Indiana University, 2003.

Foland, Kay L., Professor of Nursing, Graduate Faculty, 1982, 1999; B.S., South Dakota State University, 1980; M.S.N., University of Nebraska, 1982; Ph.D., University of Texas, 1989.

Forbes, Amy K., Instructor of Nursing, 2006; B.S.N., Augustana College, 2000, M.S., South Dakota State University, 2006.

Forcella, Frank, Adjunct Professor of Plant Science, 2003; M.S., Montana State University, 1977; Ph.D., Oklahoma State University, 1979.

Fosnight, Eugene, Adjunct Associate Professor of Geography, 2004; B.S., Purdue University, 1972; M.S., University of Michigan, 1992; Ph.D., 2000.

Foster, Neal R., Manager of Seed Certification Division, 2005; B.S., South Dakota State University, 1998; M.S., Kansas State University, 1994; Ph.D., Montana State University, 2003.

Fourney, Robert S., Associate Professor of Electrical Engineering, Graduate Faculty, 2003, 2009; B.S., Virginia Polytechnic Institute and State University, 1985; M.S., University of Maryland, 1989; Ph.D., 2001.


Fredrickson, Leigh H., Adjunct Professor of Natural Resource Management, Graduate Faculty, 2002; B.S., Iowa State University, 1961; M.S., 1963; Ph.D., 1967.


French, Bryan W., Adjunct Assistant Professor of Plant Science, 2000; B.S., Oklahoma State University, 1981; M.S., Brock University, 1986; Ph.D., Oklahoma State University, 1998.


Friedrich, Christa, Call Center Supervisor, 2009, 2010; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 2009.

Froelich, Peter K., Assistant Professor of Sociology and Rural Studies, Graduate Faculty, 2008; B.S., South Dakota State University, 1980, M.S., 1984; Ph.D., 1997.
Fuller, Billy W., Professor of Plant Science, Graduate Faculty, 1988, 2000; B.S., Auburn University, 1976; M.Ed., Auburn University, 1978; M.S., Clemson University, 1982; Ph.D., Louisiana State University, 1987.

Furois, Michael E., Adjunct Assistant Professor of Education and Human Sciences, Rapid City Site, 2001; B.S., Montana State University, 1990; M.S., Arizona State University, 1995; Ph.D., University of Northern Colorado, 2000.


Gab, Orville, Assistant Professor of Geography, 1985; B.S., South Dakota State University, 1975; M.S., 1979.

Gallant, Alisa, Adjunct Professor at the Geospatial Sciences Center of Excellence and Geography, Graduate Faculty, 2011; B.A., Sonoma State University, 1997; M.S., Oregon State University, 1985; Ph.D., Colorado State University, 1997.

Gallo, Kevin, Adjunct Professor at the Geospatial Sciences Center of Excellence, 2009; Graduate Faculty, 2006; B.S., Northern Illinois University, 1978; M.S., Purdue University, 1981; Ph.D. Purdue University, 1984.

Galipeau, David W., Harold C. Holzbauch Endowed Professor of Electrical Engineering, Graduate Faculty, 1992, 2001; B.E., University of Rhode Island, 1971; M.S., University of Maine, 1989; Ph.D., 1992.


Garcia, Alvaro D., Extension Program Leader for Agriculture and Natural Resources and Professor of Dairy Science, Graduate Faculty, 2001, 2010; D.V.M., University of Uruguay, 1983; M.S., University of Minnesota, 1987; Ph.D., 1997.


Garst-Santos, Christine, Assistant Professor of Modern Languages, 1997; B.A., Colorado State University, 1994; M.A., 1997., Ph.D., University of Iowa, 2012.

Gates, Roger N., Professor of Natural Resource Management/Extension Range Specialist, Graduate Faculty, 2002, 2005; B.S., Muhlenberg College, 1974; M.S., South Dakota State University, 1978; Ph.D., University of Nebraska, 1985.

Gay, David, Superintendent of Cottonwood Research Station, Animal Science, 2008; B.S., Oklahoma State University, 1985; M.S., 1995.

Ge, Xijin, Associate Professor of Mathematics and Statistics, Graduate Faculty, 2007; B.S., Beijing University of Science and Technology, 1994; M.S., 1997; Ph.D., The University of Tokyo, 2000.

Gengler, Mary, Instructor and Senior Microbiologist, Health and Nutritional Sciences, 2007; B.S., South Dakota State University, 1980; M.S., South Dakota State University, 2007.

Gent, Stephen, Assistant Professor of Mechanical Engineering, Graduate Faculty, 2009; B.S., Iowa State University, 2003; M.S., 2006; Ph.D., 2009.

Gertken, Nicole A., First Year Professional Advisor, University College, 2012; B.A. Concordia College, 2008; M.S., South Dakota State University, 2011.


Gewerth, Angie, Financial Aid Counselor, 2011; B.S., South Dakota State University, 2011.


Gibbons, William R., Professor of Biology and Microbiology, Graduate Faculty, 1980, 1997; B.S., South Dakota State University, 1980; B.S., 1980; M.S., 1982; Ph.D., 1987.

Gibson, Nicole, Assistant Professor of Nursing, 2009, 2013; B.S., South Dakota State University, 2000; M.S., South Dakota State University, 2005.

Gibson, Susan A., Professor of Biology and Microbiology, Graduate Faculty, 1993, 2008; B.S., University of Oklahoma, 1974; M.S., 1981; Ph.D., 1989.

Gigliotti, Larry M., Adjunct Assistant Professor of Natural Resource Management, Graduate Faculty, 2011, 2012; B.S., Pennsylvania State University, 1975; M.S., Michigan State University, 1983; Ph.D., 1989.

Gilbertson, Bonnie, Research Coordinator, 2008; EA Martin Program in Human Nutrition; B.S. University of South Dakota, 1995.

Gilbertson, Peter, Recruitment Coordinator 2009, 2010; EA Martin Program in Human Nutrition; B.A. University of Minnesota at Morris, 2005; M.S. North Dakota State University, 2009.


Gilkerson, Deanna S., Professor of Teaching, Learning and Leadership, Graduate Faculty, 1980; B.S., South Dakota State University, 1975; M.S., University of Nebraska, 1978; Ph.D., Iowa State University, 1993.


Gloege, Laura, Instructor of Teaching, Learning and Leadership, 2005; B.S., Dakota State University, 2002; M.S., South Dakota State University, 2007.


Goheen, Robert, Instructor of Teaching, Learning, and Leadership, 2010; B.S., Minnesota State University Mankato, 1972; M.M., 1977.

Gonda, Michael, Associate Professor of Animal Science, Graduate Faculty, 2008, 2014; B.S., North Carolina State University-Raleigh, 1999; M.S., University of Wisconsin-Madison, 2003; Ph.D., University of Wisconsin-Madison, 2006.

Gonzalez, Jose L., Associate Professor of Plant Science, Graduate Faculty, 2006; B.S., University of Navarra (Spain), 1991; Post Graduate, Mediterranean Agricultural Institute of Zaragoza, 1995; Ph.D., University of North Dakota, 2000.


Grady, Kathleen A., Assistant Professor of Plant Science, 1980, 1991; B.S., University of Illinois, 1978; M.S., Iowa State University, 1980.

Graeb, Brian D., Associate Professor of Natural Resource Management, Graduate Faculty, 2007; B.S., Colorado State University, 1998; M.S., University of Illinois, 2003; Ph.D., South Dakota State University, 2006.


Graham, Christopher, Assistant Professor of Plant Science, 2013; B.S., Arizona State University, 2005; M.S., Columbia University, 2008; Ph.D., Cornell University, 2012.


Grames, Michael, Assistant Professor of Physics, 2008; B.S., Dakota State University, 1999; M.S., Arizona State University, 2001; Ph.D., 2005.


Grape, David F., Director of McCrory Gardens and Professor of Plant Science, 1990, 2000; B.S., University of Wisconsin, 1983; M.S., Colorado State University, 1985; Ph.D., University of Maryland, 1990.

Graves, Nicole A., Instructor of Counseling and Human Development, 2000; B.S., South Dakota State University, 1997; M.S., 2002; Ph.D., North Dakota State University, 2011.

Greene, Tracy A., University Counsel, 2012; B.S., University of Idaho, 2000; J.D., University of Idaho College of Law, 2003.


Grings, Elaine, Assistant Professor of Animal Science, Graduate Faculty, 2012; B.S., University of California, 1977; M.S., Colorado State University, 1979; Ph.D., Washington State University, 1986.

Grave, Nicole, Lecturer of Chemistry and Biochemistry, 2013; B.S., South Dakota State University, 1978; M.Ed., Colorado State University, 1984; Ph.D., Ohio State University, 1988.
Grovenburg, Troy W., Assistant Professor of Natural Resource Management, 2012; B.A., Colorado State University, 1993; M.B.A., University of South Dakota, 1996; M.S., South Dakota State University, 2007; Ph.D., South Dakota State University, 2010.

Grunke, Brian, Assistant Baseball Coach, Intercollegiate Athletics; 2011; B.S., University of Arkansas at Little Rock, 2007.

Gu, Xingyou, Professor of Plant Science, Graduate Faculty, 2006, 2014; B.S., Yangzhou University (China), 1985; Ph.D., South China Agricultural University (China), 1997.

Gu, Zhengrong, Assistant Professor of Agricultural and Biosystems Engineering, Graduate Faculty, 2008; B.S., East China University of Science and Technology, 1997; M.S., 2000; Ph.D., Iowa State University, 2006.

Gums, Kathleen, Research Assistant, 2010; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 2008; M.S., 2010.

Gunaje, Jayarama, Associate Professor of Pharmaceutical Sciences, Graduate Faculty, 2011: B.S., Mysore University (India), 1980; M.S., Mangalore University (India), 1982; Ph.D., Indian Institute of Science, Bangalore (India), 1989.


Gutzman, Karen, Research Assistant, 2009; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 2004; M.A. Luther Seminary, 2007.

Gutzmer, Zachary, Instructor of Civil and Environmental Engineering, 2008; B.S., South Dakota State University, 2006; M.S., 2008.


Haberkorn, John, Manager, Dairy Plant, 2013; B.S., South Dakota State University, 1985.


Haggerty, Kayte M., Retention Advisor, TRIO, 2006; B.A., South Dakota State University, 2003; M.S., 2005.

Haight-Kennedy, Mary, Instructor of Nursing, 2009; B.S., South Dakota State University, 1986; M.S., 1993.

Hair, Margie, Assistant Professor of Nursing, 2011; B.A., College of St. Scholastica, 1981; M.S., University of Phoenix, 2005; Ph.D., New Mexico State University, 2011.

Halawish, Fathi T., Professor of Chemistry and Biochemistry, Graduate Faculty, 1995, 2007; B.S., University of Mansoura (Egypt), 1976; M.S., 1981; Ph.D., Institute of Science & Technology (United Kingdom), 1987.

Hale, Jeffrey, Director of Residential Life, 2012; B.S., Summit Christian College, 1980; M.S. University of Saint Francis, 1984; Ed.D., West Virginia University, 1997.


Haleta, Laurie L., Professor and Head of Communication Studies and Theatre, Graduate Faculty, 1977, 2001; B.S., South Dakota State University, 1977; M.A., 1983; Ph.D., University of Nebraska, 1994.

Halgerson, Carolyn, Director of Financial Aid, Students Affairs, 2013; B.S., Dakota State University, 1978; MBA, University of South Dakota, 1989.

Hall, Jesse, Research Assistant, Plant Science, 2012; B.S., South Dakota State University, 2005.

Hall, Mary B., Adjunct Professor of Dairy Science, 2004; B.S., Cornell University, 1982; M.S., Virginia Polytechnic Institute, 1983; Ph.D., Cornell University, 1996.

Hall, Teresa J. K., Professor and Head of Construction and Operations Management, Director of SDSU EDA Center, Graduate Faculty, 2003; B.A., University of Northern Iowa, 1989; M.S., 1991; Ph.D., Iowa State University of Science and Technology, 1997.


Hamer, George H., Assistant Head of Electrical Engineering and Computer Science and Associate Professor of Computer Science, Graduate Faculty, 1989, 1997; B.S., North Dakota State University, 1980; M.S., Moorhead State University, 1992; Ph.D., North Dakota State University, 2006.


Hamlin, Lindsey, Director of Continuing and Distance Education, Office of International Affairs and Outreach, 2014; B.S., Bay Path College, 2001; M.B.A., Florida Atlantic University, 2003.

Hanah, Niall, Senior Research Scientist at the Geospatial Sciences Center of Excellence, Professor of Natural Resource Management, Graduate Faculty, 2011; B.S., Liverpool Polytechnic-John Moore's University (England), 1985; Ph.D., Queen Mary College, University of London (England), 1990.

Hansen, Emily, Research Coordinator, 2009; EA Martin Program in Human Nutrition; B.A. Luther College, 2007; M.S. South Dakota State University, 2009.

Hansen, Julie A., Instructor of Nursing, 2008, Diploma, Sioux Valley School of Nursing, 1984; B.S., South Dakota State University, 1989; M.A., University of South Dakota, 1996; M.S., Walden University, 2007.

Hansen, Nathan, Research Assistant, 2009; EA Martin Program in Human Nutrition; B.A. Luther College, 2007; M.S. South Dakota State University, 2009.


Hansen, Stephanie A., Research Associate II, Plant Science, 1994; B.S., South Dakota State University, 1994; M.S., 1996.

Hanson, Dennis W., Research Assistant II, Wildlife and Fisheries, 1993; B.S., South Dakota State University, 1973.

Hanson, Karla, Instructor of Nursing, 2001; B.S.N., Mankato State University, 1983; M.S., South Dakota State University, 2005.

Hardin, Richard Cable, Associate Professor of Visual Arts, Graduate Faculty, 2009; B.S., James Madison University, 1995; M.F.A. Ohio University, 1999.


Harris, Terry, Adjunct Instructor of Journalism and Mass Communication, 2008; B.S., South Dakota State University, 1977; M.S., 2003.


Hassan, Ashraf Nasr Eldin, Associate Professor of Dairy Science, Graduate Faculty, 2003, 2007; B.S., Alexandria University (Egypt), 1983; M.S. Minia University (Egypt), 1990; Ph.D., University of Georgia/Minia University (Egypt), 1997.

Hatfield, Gary, Assistant Professor of Statistics, 2012, B.S., Oklahoma State University, 1976; M.S., 1978; Ph.D., 2011.

Haug, Michael F., Lecturer in English, 2002; 2013; B.S.E., Black Hills State University, 1971; M.S., South Dakota State University, 1973.

Hauschildt-Mork, Melissa, Assistant Professor of Communication Studies and Theatre, 1988, 2012; B.S., South Dakota State University, 1987; M.S., Indiana University, 1988; Ed.D., University of South Dakota, 2012.

Haverkamp, Dan, Ticket Sales Coordinator, Intercollegiate Athletics; 2013; B.S., St. Ambrose University, 2010; M.S., Western Illinois University, 2012.

Hay, Christopher, Assistant Professor, Graduate Faculty, 2009; B.S., Colorado State University, 1992; M.S., Colorado State University Ft. Collins, 2003; Ph.D., University of Nebraska, 2006.
Hayes, William, Assistant Professor of Pharmacy Practice, 2010; B.S., South Dakota State University, 2007; Pharm.D., 2009.

He, Hongshan, Assistant Professor of Electrical Engineering, Graduate Faculty, 2007; BS, Lanzhou University, 1990; MS, Lanzhou University, 1993; Ph.D. Zhongshan University 1996.


Heemeyer, Adam, Assistant Athletic Director-Ticket Sales; 2013; B.S., South Dakota State University, 2001.


Heiberger, Amy, Assistant Professor of Pharmacy Practice, 2013; B.S., South Dakota State University, 2004; Pharm.D., 2008.

Heiberger, Gregory A., Instructor and Pre-Health Professional Advisor/Coordinator of Biology and Microbiology, 2005, 2007; B.S., South Dakota State University, 2004; M.S., 2006.


Heins, Jodi R., Assistant Department Head, Professor of Pharmacy Practice, Graduate Faculty, 1994, 2004; Pharm.D., University of Nebraska, 1993.

Heinze, Benjamin K., Assistant Athletic Trainer, Intercollegiate Athletics, 2003; B.S., Winona State University, 1998; M.S., South Dakota State University, 2000.


Helgeland, David, Professor of Pharmacy Practice, Graduate Faculty, 1989, 2006; B.S., South Dakota State University, 1974; M.B.A., University of South Dakota, 1982; Ed.D., 2000.


Helling, Thaddaus, Assistant Professor of Pharmacy Practice, 2008; B.S., Chadron State, 2002; Pharm.D., Texas Tech University, 2006.

Helmholdt, Shawn M., Assistant Director of Admissions, 2002; B.A., South Dakota State University, 2002; M.S., 2007.


Henebry, Geoffrey M., Co-Director and Senior Research Scientist at the Geospatial Sciences Center of Excellence/Professor of Natural Resource Management, Graduate Faculty, 2005; B.A., St. John's College, 1982; M.S., University of Texas-Dallas, 1986; Ph.D., 1989.

Heuer, Allen, Farm Manager, Plant Science, 2013.


Hesson, Margie, Instructor of Nursing, 1991; B.S.N., Delta State University, 1986; M.S.N., University of Mississippi, 1990.

Heylens, Kathy, Associate Athletic Director of Compliance/Senior Woman Administrator, 1978, 2008; South Dakota State University.

Hietpas, Steven M., Professor of Electrical Engineering and Head of Electrical Engineering and Computer Science, Graduate Faculty, 1994, 2004; B.S., Montana State University, 1984; M.S., 1991; Ph.D., 1994.

Hildreth, Michael, Professor of Biology and Microbiology, and Veterinary and Biomedical Sciences, Graduate Faculty, 1987, 1997; B.A., Westmar College, 1977; Ph.D., Tulane University, 1983.

Hill, Kendra H., Assistant Professor of Biology and Microbiology, 2004, 2008; B.A., University of Delaware, M.S., Johns Hopkins University, 1994.

Hintze Jepperson, Shelby, Research Coordinator, 2009; EA Martin Program in Human Nutrition; B.S. University of Sioux Falls, 2007.

Hirko, Ronald J., Assistant Professor of Chemistry and Biochemistry, 2003; B.S., Kent State University, 1965; Ph.D., Utah State University, 1967.

Hobbs, Barbara B., Associate Professor and Assistant Dean, West River Nursing, Graduate Faculty, 1994, 2004; B.S.N., San Diego State University, 1970; M.S.N., California State University, 1991; Ph.D., University of Nebraska, 2004.

Hoffelt, Janell, Curriculum and Catalog Coordinator, 2013; B.S., Oklahoma State University, 1999.

Hoffman, Sarah, Residence Hall Director, 2013; B.S., University of Wisconsin-Stout, 2013.

Hoffman, Song, International Student Coordinator, 2011; B.A., Beijing Normal University, 1997; M.A., Flinders University of South Australia, 1999; Ph.D., Flinders University, Australia, 2008.

Holland, Richard S., Adjunct Assistant Professor of Natural Resources Management, 1998; B.S., University of Nebraska, 1977; M.S., 1980; Ph.D., 1987.

Holler, Larry, Professor of Veterinary and Biomedical Sciences and Animal Disease Research and Diagnostic Laboratory and University Veterinarian, 1994, 2004; B.S., Kansas State University, 1980; D.V.M., 1984; Ph.D., Washington State University, 1993.

Holm, Thomas, Adjunct Assistant Professor of Geography, 2004; B.S., South Dakota State University, 1979; M.S., 1982.

Holmes, Robert A., Adjunct Instructor of Education and Human Sciences, Rapid City Site, Graduate Faculty, 2001; B.A., University of New York, 1970; M.S.W., 1977.

Holt, Carrie, Instructor of Nursing, 2012; B.S.N., University of Nebraska, 2000; M.S., Chadron State College, 2009; M.S.N., Nebraska Methodist College, 2012.

Holtz, Jason, Assistant Athletic Director-Facilities and Operations, Intercollegiate Athletics; 2012; B.S., Wayne State College, 2006; M.A., Gonzaga University, 2008.

Hong, Chang Oh, Postdoctorate Research Associate, Plant Science, 2012; B.S., Gyeongsang National University (South Korea), 2003; M.S., 2005; Ph.D., 2008.

Hoppe, Adam, Associate Professor of Chemistry and Biochemistry, Graduate Faculty, 2008, 2014; B.A., Minnesota State University Moorhead, 1997; M.S., University of Wisconsin Colleges, 1999; Ph.D., University Michigan Ann Arbor, 2003.


Howard, Gregory B., Adjunct Assistant Professor of Education and Human Sciences, Rapid City Site, 1998; B.A., University of Nebraska at Lincoln, 1979; M.S.W., University of Nebraska at Omaha, 1982; Ph.D., Texas Tech University, 1991.


Hrubes, Eric, Assistant Athletic Director-Marketing, Intercollegiate Athletics; 2012; B.A., University of Northern Iowa, 2008; M.S., University of Northern Iowa, 2010.

Hua, Guanghui, Assistant Professor of Civil and Environmental Engineering, 2012; B.S., 1997, M. Eng. 2000, Qingdao Technological University, China; Ph.D., University of Massachusetts at Amherst, 2006.

Hu, Zhong, Professor of Mechanical Engineering, Graduate Faculty, 2002, 2014; M.S., Tsinghua University (China), 1983; Ph.D., 1988.

Hubbard, Daniel E., Professor of Natural Resource Management, Graduate Faculty, 1980, 2000; B.S., Michigan State University, 1975; M.S., South Dakota State University, 1979; Ph.D., 1988.
Huber, Erika A., Instructor of Nursing, 2008, B.S., South Dakota State University, 1997; M.S., University of New Mexico, 2007.

Hubert, Mindy Beth, Range Livestock Research and Extension Associate, 2005; B.S., South Dakota State University, 1999; M.S., 2001.


Huh, Young Moo, Associate Professor of Physics, Graduate Faculty, 2002, 2008; B.S., Myongji University (Korea), 1997; Ph.D., Iowa State University, 2001; M.S., 2002.

Humbug, Daniel S., Professor of Agricultural and BioSystems Engineering, Graduate Faculty, 1985; 2005; B.S., University of Wisconsin, 1982; M.S., South Dakota State University, 1987; Ph.D., University of Illinois, 1991.


Hungerford, Hilary, Assistant Professor of Geography, Graduate Faculty, 2012; B.A., University of Northern Colorado, 2001; M.A., University of Kansas, 2007; Ph.D., University of Kansas, 2012.

Hunter, Karla, Assistant Professor of Communication Studies and Theatre, Graduate Faculty, 2009; B.A., Augustana College, 1992; M.A., University of Oklahoma, 1995; Ph.D., 2000.

Hupp, Alexandria, Assistant Softball Coach; 2012; B.A., University of Nebraska-Lincoln, 2010; M.S., Emporia State University, 2012.


Huskey, Jeffrey, Wellness Center Director, 2012; B.S., Keene State College, 1993; M.S., University of Tennessee, 1995.

Ibrahim, Amir Mohamed Hussein, Adjunct Associate Professor of Plant Science, Graduate Faculty, 2000, 2004; B.S., 1991; M.S., 1994; Ph.D., Colorado State University, 1998.

Ichinomiya, Akimoto, Assistant Dairy Plant Manager, 2008; B.S., South Dakota State University, 1996.


Jaacks, Marie L., Executive Secretary: FFA/PAS/SD Ag Ed, College of Education and Human Sciences, 2008; AAS, Mitchell Technical Institute, 2001; B.E., South Dakota State University, 2004.

Jackson, Sherry, Adjunct Assistant Professor of Education and Human Sciences, Rapid City Site, 2006; B.S., Madonna College, 1974; M.S., South Dakota State University, 1997.

Jackson, Trisha, Assistant Professor of Geography, Graduate Faculty, 2011; B.S., Texas State University, 2004; M.A., University of Kansas, 2007; Ph.D., University of Kansas, 2011.

Jacobs, Cheryl A., SDSU Extension, Community Development Field Specialist; 2011; B.S., South Dakota State University, 1995; M.A., University of South Dakota, 2002.

Jacquet, Jeffrey B., Assistant Professor of Sociology and Rural Studies, Graduate Faculty, 2012; B.A., University of Wisconsin, 2001; M.A., University of Wyoming, 2005; Ph.D., Cornell University, 2012.

James, Daniel A., Adjunct Assistant Professor of Natural Resource Management, 2012; B.S., M.S., University of South Dakota, 1999, 2003; Ph.D., South Dakota State University, 2011.

James, Kimberly R., Instructor of Plant Science, 2006; B.S., Iowa State University, 2003; M.S., 2005.

James, Matthew R., Assistant Professor of Landscape Architecture, Plant Science, 2003, 2009; B.S., South Dakota State University, 2001; M.S., 2002; Ed.D., University of South Dakota, 2009.

Jansen, Tarryn, Assistant Professor of Pharmacy Practice, Graduate Faculty, 2012; B.S., South Dakota State University, 2009; Pharm.D., 2011.

Janssen, Larry L., Professor of Economics, Graduate Faculty, 1978, 1989; B.S., University of Nebraska, 1971; M.S., Oklahoma State University, 1974; Ph.D., University of Nebraska, 1978.


Janterz, Jacob, Assistant Professor of Sociology and Rural Studies, Graduate Faculty, 2009; Southern Illinois University of Carbondale.

Jensen Bender, Wendy S., Professor of Pharmacy Practice, 1996, 2006; B.S., South Dakota State University, 1993; Pharm.D., 1995.


Jensen, Kent C., Associate Professor of Natural Resource Management, Graduate Faculty, 2003, 2006; A.A., Fullerton College, 1979; B.S., South Dakota State University, 1985; M.S., Montana State University, 1988; Ph.D., Texas A&M University, 1990.


Jenson, Mary, Assistant Professor of Psychology, 2009; B.A., University of Minnesota-Minneapolis, 1996; Ph.D., University of Iowa, 2006.

Jewel, Melody E., Assistant Professor of Chemistry and Biochemistry, 2004; B.A., University of Minnesota, 1997; B.S., 1997; M.S., 1999; Ph.D., 2002.


Jiang, Guo-Liang, Assistant Professor of Plant Science, Graduate Faculty, 2009; B.S., Southwest Agricultural University (China), 1982; M.S., Nanjing Agricultural University, 1986; Ph.D., 1994.

Jin, Zhu-Qia, Assistant Professor of Pharmaceutical Sciences, Graduate Faculty, 2009; M.S., Shenyang Pharmaceutical University (China), 1990; Ph.D., Human Medical University (China), 1998.

Jing, Linhong, Director of Mass-Spec Facility, Graduate Faculty, 2008; B.S., Peking University (China), 1991; M.S., University of Nevada-Las Vegas, 1999; Ph.D., Purdue University-West Lafayette, 2004.

Joachim, Ashley, First Year Professional Academic Advisor, University College, 2012; B.S., Black Hills State University, 2010; M.Ed., South Dakota State University, 2012.

Joffer, Patricia A., Associate Professor of Rural Sociology, Graduate Faculty, 1992; 2008; B.S., University of South Dakota, 1985; M.A., 1987; Ph.D., South Dakota State University, 1995.


Johnson, Annette M., Associate Professor of Pharmacy Practice, 2001, 2006; B.S., South Dakota State University, 1997; Pharm.D., 1999.


Johnson, Carrie L., SDSU Extension Family Resource Management Specialist and Assistant Professor of Consumer Sciences, 2012; B.S., South Dakota State University, 2003; M.S., South Dakota State University, 2007; Ph.D., Iowa State University, 2012.

Johnson, Debra K., Staff Counselor, Counseling Center, 2002; B.S., University of Minnesota, 1979; M.S., South Dakota State University, 1988.

Johnson, Laurie, TRIO Retention Advisor, 2007; B.S., South Dakota State University, 1989; M.S., 1994.

Johnson, Patricia S., Professor of Natural Resource Management, Graduate Faculty, 1986, 1997; B.A., Fort Lewis College, 1974; B.S., 1975; M.S., Utah State University, 1978; Ph.D., 1987.

Johnson, Paul J., Professor of Plant Science, Graduate Faculty, 1993, 2002; B.S., Oregon State University, 1982; M.S., University of Idaho, 1987; Ph.D., University of Wisconsin, 1992.

Johnson, Paul O., Weed Science Extension Associate, Plant Science, 2000, 2014; B.S., South Dakota State University, 1979; M.S., 1983.


Kemp, Daniel C. 

Jones, Amy J. 
Engineer/Project Manager, Facilities and Services, 2003, 2006; B.S., Purdue University, 1995; M.S., Georgia Institute of Technology, 1997.

Jones, Eluned 
Assistant Professor of Department of Counseling and Human Development, Graduate Faculty, 2012; B.A., Ewha Women's University (South Korea), 2002; M.A., 2005; Ph.D., University of Wisconsin, 2012.

Kappes, John 
Assistant Professor of Pharmacy Practice, 2009; B.S., South Dakota State University, 2005; Pharm.D., 2007.

Kapteue Tchuente, Armel 
Postdoctoral Fellow, 2010; B.S., University of Dschang, 2002; M.S., University of Yaounde I, 2005; M.S., Institute for Water and Environmental Engineering of Ouagadougou, 2007; Ph.D., Paul Sabatier University, 2010.

Karnopp, Adam R. 
Assistant Director of Student Union and Activities, 2001, 2005; B.S., Northern State University, 1998; M.S., 2001.

Kattelman, Kendra K. 
Professor of Health and Nutritional Sciences; Director, Didactic Program in Dietetics, 1997; Graduate Faculty, 1997, 2006; B.S., South Dakota State University, 1977; M.S., University of Arkansas, 1984; Ph.D., University of Missouri, 1993.

Kaul, Radhey S. 
Professor of Biology and Microbiology, and Veterinary and Biomedical Sciences, Graduate Faculty, 2003, 2008; B.S., Haryana Agricultural University (India), 1985; M.S., 1988; Ph.D., University of Saskatchewan (Canada), 1998.

Kayongo-Male, Diane E. 
Professor of Sociology and Rural Studies, Graduate Faculty, 1985; B.A., State University of New York, 1970; M.A., Michigan State University, 1972; Ph.D., 1974.

Keller, Michael A. 
Coordinator of Composition and Professor of English, Graduate Faculty, 1993, 2002; B.A., Colorado State University, 1975; M.A., University of Illinois at Chicago, 1981; Ph.D., 1993.

Kelley, Van C. 
Associate Professor and Head of Agricultural and Biosystems Engineering, Director of Water Resources Institute, Graduate Faculty, 1978, 2000; B.S., Texas A&M University, 1976; M.S., New Mexico State University, 1978; Ph.D., University of Illinois, 1990.

Kemp, Daniel C. 
Professor of Mathematics and Statistics, Graduate Faculty, 1976, 1986; B.A., Knox College, 1963; M.S., University of Arizona, 1967; Ph.D., Oklahoma State University, 1975.

Kennecke, Angela 
Adjunct Instructor of Journalism and Mass Communication, 2010; B.A., University of Iowa, 1988; M.C.M., Webster University, 2010.

Kepford, Joyce 

Kharel, Parasu 
Assistant Professor of Physics, Graduate Faculty, 2013. B.S. Tribhuvan University (Nepal), 1989; M.S., 1994; M.A. Wayne State University, 2006; Ph.D., 2008.

Kiechter, Andrea 
Publications Editor, 2006; B.S., South Dakota State University, 1999.

Kieffer, Pam L. 
Adjunct Instructor of Chemistry and Biochemistry, 2002; B.S., South Dakota State University, 1970; M.S., 1973.
Koromyslova, Ekaterina A., Assistant Professor of Construction and Operations Management, 2013; B.S., M.S., Saratov State Technical University (Russia), 2004; Ph.D., Saratov State Technical University, 2007.


Kovalsky, Valeri, Postdoctoral Fellow, 2011; B.A., Liviv National University, 2001; M.S., Ohio University, 2004; Ph.D., South Dakota State University, 2011.


Kragness, David, Assistant Athletic Trainer in Intercollegiate Athletics, 2009; B.S., Minnesota State University, 2005; M.S., University of Nevada, 2008/2009.

Kraljic, Mary B., Access Services Librarian/Professor, 1991, 2003; B.S., Saint Cloud State University, 1980; M.A., University of Texas, 1984; M.L.S., Texas Woman's University, 1989.

Kandell, Andrew, Residence Hall Director, 2011; B.S., Northern Michigan University, 2011.


Krishnan, Padmanaban G., Professor of Health and Nutritional Sciences, Graduate Faculty, 1988, 2000; B.S., University of Madras (India), 1977; M.S., North Dakota State University, 1983; Ph.D., 1989.

Kruit, Jane E., Associate Controller, Finance and Budget, 1982, 1993; B.S., South Dakota State University, 1977.

Kuebler, Michelle, Assistant Director of Admissions, 1994; B.S., South Dakota State University, 1994.

Kuehl, Rebecca, Assistant Professor of Communication Studies and Theatre, Graduate Faculty, 2011; B.A., Gustavus Adolphus College, 2005; M.A., University of Georgia, 2007; Ph.D., University of Minnesota, 2011.


Kumar, Sandeep, Assistant Professor of Plant Science, Graduate Faculty, 2012; B.S., Himachal Pradesh Agriculture University, 2006; M.S., 2006; Ph.D., University of Missouri-Columbia, 2009.


Kurtz, Rachel M., Adjunct Assistant Professor of Geography, 2004; B.S., South Dakota State University, 1996; M.S., University of Tennessee, 1999; Ph.D., Pennsylvania State University, 2003.


Laible, Brad R., Professor of Pharmacy Practice, Graduate Faculty, 2004, 2008; B.S., South Dakota State University, 1999; Pharm.D., 2001.


Lammers, Cristina R., Associate Professor of Nursing, Graduate Faculty, 2001; M.D., University of Uruguay, 1984; M.P.H., University of Minnesota, 1997.

L’Amour, Beth, Research Assistant, 2008; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 1980; A.D.N. University of South Dakota, 2005.

Lamsal, Aashis, Geospatial Analyst, 2011; B.E., Tribhuvan University, 2006; M.S., South Dakota State University, 2011.

Landmark, Shari, Wellness Center Coordinator, 2000; B.S., South Dakota State University, 1999; M.S., 2004.
Lyons, Nancy N., Adjunct Associate Professor of Plant Science, 1982; B.S., University of Idaho, 1965; M.S., 1967; Ph.D., Washington State University, 1973.


Liu, Shuang (Leo), Adjunct Professor at the Geospatial Sciences Center of Excellence, Graduate Faculty, 2005; Adjunct Professor of Chinese Academy of Sciences, 2004; B.S., Central-South Forestry University (China), 1984; M.S., Beijing Forestry University (China), 1987; Ph.D., University of Florida, 1996.

Liu, Yi, Associate Professor of Computer Science, Graduate Faculty, 2005, 2010; M.S., 1998; Ph.D., University of Mississippi, 2005.


Madsen, Sara K., Coordinator for Veteran Affairs, 2012; B.S., South Dakota State University, 2000.

Mahgoub, Hesham, Associate Professor of Civil and Environmental Engineering, Graduate Faculty, 2006, 2008; B.S., Cairo University (Egypt), 1988; M.S., 1990; Ph.D., 1994.


Malo, Mary, Instructor of Teaching, Learning and Leadership, 2008; B.S., Concordia University St. Paul, 1969.

Malone, Katherine, Assistant Professor of English, Graduate Faculty, 2013; B.A., Cabrini College, 1997; Ph.D., Temple University, 2009.


Mann, Josh, Imaging Engineer, 2008; B.S., School of Mines & Technology, 2004.


Manzer, Jeanne Jones, News Editor, University Relations, 2006; B.A., Iowa State University, 1974; M.A., South Dakota State University, 1990.


Martin, Ann, Hospital Negotiator/Community Liaison, 2008; EA Martin Program in Human Nutrition; B.S. Southwest Minnesota State University, 1997; M.S., 2007.


Matzner, Steven L., Adjunct Assistant Professor of Biology and Microbiology, 2002; B.A., Augustana College, 1990; M.S., University of California, 1994; Ph.D., 1999.


McCormack, Lacey, Program Manager, 2009, 2010; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 2006; M.P.H. University of Minnesota, 2009.


McCurry, Michael W., Assistant Professor, Graduate Faculty, 2000, 2006; B.S., Montana State University, 1976; M.Ed., Northern Montana College, 1992, Ph.D., South Dakota State University, 2008.

McCutcheon, Terry, Instructor, Biology and Microbiology, 1999; B.S., Murray State University, 1981; M.S., 1985.


McDonald, Tia M., Research Associate I of Economics, 2008; B.A., Colorado State University, 2005; M.S., Colorado State University, 2007.

McDowell, Lyndon, Assistant Track Coach, Intercollegiate Athletics, 2002; B.A., University of Minnesota, 2008; M.S., Minnesota State University-Mankato, 2008.

McEntee, Jason T., Professor and Head of English, Graduate Faculty, 2014; B.A., South Dakota State University, 1994; M.A., 1998; Ph.D., University of Kentucky, 2004.

McKee, Angela, Assistant Professor of Interior Design, 2012; B.S., South Dakota State University, 2005; M.Arch, University of Minnesota, 2008.


McManus, Bradley, Research Associate I in Plant Science, 2000; B.S., South Dakota State University, 1991.

McTaggart, Robert, Associate Professor of Physics, Graduate Faculty, 2004, 2009; B.A., West Virginia University, 1991; B.S., 1991; Ph.D., Pennsylvania State University, 1999.

Meendering, Jessica, Associate Professor of Health and Nutritional Sciences, Graduate Faculty, 2009; B.S., South Dakota State University, 2002; M.S., University of Oregon, 2004; Ph.D., 2007.

Melkumyan, Mariam, Assistant Professor of Visual Arts, 2011, 2013; B.S., European Regional Educational Academy, 2008; M.F.A., Iowa State University, 2011.

Merchen, Aaron, Admissions Counselor, 2012; B.A., South Dakota State University, 2009.


Merriam, Tyler, Coordinator of Broadcast Services, Intercollegiate Athletics; 2012; B.S., South Dakota State University, 2011.

Messerschmidt, Kimberly, Professor of Pharmacy Practice, Graduate Faculty; 1995, 2005; B.S., South Dakota State University, 1985; Pharm.D., 1995.

Mettler, Cory J., Adjunct Instructor of Electrical Engineering, 2002; B.S., South Dakota State University, 2002; M.S., 2005.

Meyers, Richard, Instructor of Economics, 2011; B.A. Buena Vista University, 2003; M.S., Iowa State University, 2006.

Meyer, David, Adjunct Instructor of Electrical Engineering, 2008; B.S., Indiana State University, 1979; M.S., 1984; Ph.D., University of Michigan, 1994.


Michna, Gregory, Assistant Professor of Mechanical Engineering, Graduate Faculty, 2009; B.S., University of Wisconsin, 2001; Ph.D., University of Illinois, 2006.


Miller, Matthew L., Associate Professor of Chemistry and Biochemistry, Graduate Faculty; 2001, 2007; B.S., University of South Dakota, 1985; M.S., Purdue University, 1998; Ph.D., 2001.

Miller, Michael, Assistant Professor of Economics, Graduate Faculty; 2009; B.A., Colorado State University, 1980; M.S., 1998; Ph.D., 2009.

Miller, Robert A., Instructor of Construction and Operations Management, 2013; B.S., Purdue University, 1979; M.S., Purdue University, 1985, Ph.D., Colorado State University, 1992.

Miller, Tyler, Assistant Professor of Psychology, 2012; B.A., Buena Vista University, 2004; M.S., Emporia State University, 2008; Ph.D., Texas A&M University, 2012.

Min, Kyungnan, Instructor of Civil and Environmental Engineering, 2013; B.S., Ajou University (South Korea), 1995; M.S., 1997; Ph.D., University of Massachusetts, 2006.

Min, Manki, Associate Professor of Computer Science, Graduate Faculty, 2006, 2012; B.S. Seoul National University, 1997; M.S., 1999; Ph.D., University of Minnesota, 2004.

Miskimins, Dale W., Professor of Veterinary and Biomedical Sciences and Animal Disease Research and Diagnostic Laboratory, 1991, 2002; D.V.M., Iowa State University, 1978; M.S., 1984.

Mistry, Abha V., Adjunct Instructor of Construction and Operations Management, 2012; B.S., University of Minnesota, 2009; M.Arch., 2012.

Mistry, Vikram V., Professor and Head of Dairy Science, Graduate Faculty, 1986, 2002; B.S., Gujarat Agricultural University, 1979; M.S., Cornell University, 1982; Ph.D., 1986.


Moeller, Mary R., Assistant Professor of Teaching, Learning and Leadership, 2007; B.A., South Dakota State University, 1988; M.Ed., 1994; Ed.D., University of South Dakota, 2004.

Molengaaf, Callie, Research Assistant, 2010; EA Martin Program in Human Nutrition, B.S., South Dakota State University, 1997.


Moore, Shannon B., Assistant Football Coach, Intercollegiate Athletics, 2006; B.S., Black Hills State University, 2000; M.S., South Dakota State University, 2005.

Moore, William, Assistant Director of MIS, 1981, 2000; B.S. (Electrical Engineering), South Dakota State University, 1982.

Mordhorst, Sandra, Instructor of Nursing, 2006; B.S.N., South Dakota State University, 2005.

Moret, Cody J., Farm Operations and Beef Breeding Unit Manager, 1992; B.S., South Dakota State University, 1992.

Moriles-Miller, Janet, Research Associate I, Plant Science, 2013; B.S., Leyte State Univ, 1994; M.S., South Dakota State University, 2011.

Morrison, Kathryn, Lecturer of Consumer Sciences, Graduate Faculty, 2008; B.S., South Dakota State University, 2002; M.S., 2004; Ph.D., Iowa State University, 2009.

Motlas, Teresa, FNP Program Coordinator, Nutrition, Food Science and Hospitality, 2006; B.S., University of Nebraska, 1995; M.S., South Dakota State University, 2006.

Moudry, Thomas, English Instructor, 2012; B.S., Berea College, 1987; B.S., Middle Tennessee State University, 1990; M.A., Western Kentucky University, 1996.

Mueller, Nathan, Assistant Professor of Plant Science, 2012.

Murphy, Arthur James, Assistant Professor of History Political Science, Philosophy, and Religion, 2012; B. A. Evangel University, 1998; M. A. Missouri State University, 2001; Ph.D. University of Denver, 2011.

Murphy, Brietta, Instructor of Biology and Microbiology, 2005; B.S., South Dakota State University, 2005; M.S., 2008.

Murray, Linde, Tutoring/SI Coordinator, University College, 2009; B.A., University of Northern Colorado, 2002; M.S., South Dakota State University, 2009; Ed.D., University of South Dakota, 2013.

Muss, Jordan D., Postdoctoral Fellow, 2011; B.S., Northwestern University, 1987; M.S., Florida Atlantic University, 2001; Ph.D., University of Wisconsin, Madison, 2011.

Mylant, Marylou, Professor of Nursing, Graduate Faculty, 1992; B.S.N., Cleveland State University, 1974; M.S.N., Case Western Reserve University, 1978; Ph.D., University of Texas, 1988.


Nagy, Dianne L., Grants Coordinator for the College of Engineering, 2006; B.A., Kent State University, 1988; M.S., South Dakota State University, 2006; Ed.D., University of South Dakota, 2013.

Nagy, Michael S., Associate Professor of English, Graduate Faculty, 2001, 2006; B.A., Kent State University, 1987; M.A., 1992; Ph.D., Saint Louis University, 2001.


Nauth, K. Rajinder, Adjunct Professor of Dairy Science, 2003; B.S., Indian Agricultural Institute (India), 1959; M.S., Agra University (India), 1961; Ph.D., Cornell University, 1969.

Neiger, Regg D., Professor of Veterinary and Biomedical Sciences and Animal Disease Research and Diagnostic Laboratory, Graduate Faculty, 1982, 1998; B.S., University of Minnesota, 1973; D.V.M., 1974; M.S., Iowa State University, 1983; Ph.D., 1987.


Nelson, Eric A., Professor of Veterinary and Biomedical Sciences and Animal Disease Research and Diagnostic Laboratory, Graduate Faculty, 1982, 2003; B.A., Mt. Marty College, 1979; M.A., University of South Dakota, 1981; Ph.D., South Dakota State University, 1993.


Nelson, Tracy L., Instructor of Health and Nutritional Sciences, 2008; B.S., South Dakota State University, 1998; M.S. South Dakota State University, 2007; Ed.D. University of South Dakota, 2012.

Nepal, Madhav, Assistant Professor of Biology and Microbiology, Graduate Faculty, 2009; M.S., Tribhuvan University (Nepal), 1997; M.S., University of Northern Iowa, 2003; Ph.D., University of Kansas State-Manhattan, 2008.

Neumann, Cedric, Assistant Professor of Statistics, 2013; B.S., University of Lausanne, 1998; M.S., 2002; Ph.D., 2008.

Ness, Jody, Instructor of Nursing, 2003; BS., South Dakota State University, 1997; M.S., 2005.

Ness, Troy, Assistant Professor of Military Science, 2005; B.S., South Dakota State University, 1996.


Niles, Michael A., Professional Academic Advisor, 2009; B.S., South Dakota State University, 1997; M.S., 2003.

Nizampatnam, Narasimha Rao, Visiting Research Scholar, Plant Science, 2012; B.S., Nagarjuna University (India), 2000; M.S., Guru Ghasidas University (India), 2002; Ph.D. Jawaharlal Nehru Technological University (India), 2010.


Nleya, Thandive M., Associate Professor of Plant Science, Graduate Faculty, 2003; B.S., University of Zimbabwe (Zimbabwe), 1984; M.S., Southampton University (England), 1989; Ph.D., University of Saskatchewan (Canada), 1997.

Nold, Rosemarie, Extension Program Leader for Agriculture and Natural Resources/Associate Professor of Natural Resources Management, 2007, 2012; B.S., South Dakota State University, 1988; M.S., Kansas State University, 1990; Ph.D., South Dakota State University, 1997.

Nord, Carissa, Assistant Women's Basketball Coach, Intercollegiate Athletics; 2013; B.S., University of Wisconsin-Superior, 2009; M.S., South Dakota State University, 2013.


Novotny, Jennifer L., Executive Director of Student Union and Activities, 1995, 2005; B.A., Moorhead State University, 1995; M.S., South Dakota State University, 1997.

Nowell, Brian L., Associate Professor of Psychology, 2008; B.S., University of South Florida, 1972; M.A., University of Georgia, 1984; Ph.D., 1986.

Numata, Izaya, Postdoctoral Fellow, 2006; B.S., University of Sao Paulo, 1996; M.S., Instituto Nacional de Pesquisas Espaciais, 1999; Ph.D., University of California, Santa Barbara, 2006.

Nyamusamba, Rutendo, Agronomy Crops Field Specialist, Plant Science, 2013; B.S., Africa University, 2004; M.S., South Dakota State University, 2010; Ph.D., 2013.


Oedekoven, Daniel, Coordinator for the Community Leadership Program, Field Staff Support, 1994, 1999; B.S., University of Wyoming, 1974; M.Ed., South Dakota State University, 1996.

Ogutu-Otimbo, Olalekan, Associate Professor of Journalism and Mass Communications, Graduate Faculty, 2010; B.A., Southeast Missouri State University, 1985; M.A., University of Alabama Tuscaloosa, 1988.

Ohrtman, Michelle, Postdoctorate Research Associate, Plant Science, 2012; B.S., California State University, 2001; M.S., 2004; Ph.D., University of Denver, 2009.

Olesen, Carol J., Lecturer of Chemistry and Biochemistry, 1992; B.S., South Dakota State University, 1992.


Olson, Bernadette, Associate Professor of Health and Nutritional Sciences, Graduate Faculty, 1993; B.S., 1982; M.S., 1986.

Olson, Daniel T., Assistant Manager in Seed Certification Service, 1995; B.S., South Dakota State University, 1995, M.S., 1998.

Olson, Kenneth C., Extension Beef Specialist, Professor of Animal Science, 2006, 2014; B.S., Montana State University, 1979; M.S., 1982; Ph.D., Utah State University, 1986.


Opoku, Emmanuel, Research Associate I, Economics, B.A., University of Cape-Coast, Ghana, 2004; M.S., South Dakota State University, 2009.

Orellana Campos, Alberto, Instructor of Modern Languages, 2005; B.A., Universidad Iberoamericana Torreon (Mexico), 2003; M.S., South Dakota State University, 2008.

Ohrtnan, Michelle, Postdoctorate Research Associate, Plant Science, 2012; B.S., California State University Chico, 2001; M.S., California State, 2004; Ph.D., University of Denver, 2009.


Osborne, L. J., Youth Development/4-H Specialist/Associate Professor, Graduate Faculty, 2000, 2006; B.S., Ohio State University, 1981; M.S., University of Kentucky, 1983; Ph.D., Ohio State University, 1991.

Osborne, Shannon L., Adjunct Assistant Professor of Plant Science, Graduate Faculty, 2000; B.S., Oklahoma State University, 1994; M.S., 1996; Ph.D., University of Nebraska, 1999.

Oscarson, Renee A., Associate Professor of Counseling and Human Development, Consumer and Family Sciences, Graduate Faculty, 1994, 2001; B.S., North Dakota State University, 1981; M.S., 1985; Ph.D., Purdue University, 1994.


Owen, Jody L., Coordinator, Academic Advising and Director of FYAC, University College, 2002; B.S., South Dakota State University, 1996; M.S., 2002; Ed.D. University of South Dakota, 2012.

Owens, Jason P., Associate Professor of Modern Languages, 2003; B.S., Georgetown University, 1990; M.A., 1995; Ph.D., 2001.
Owens, Vance N., Professor of Plant Science, Director of North Central Sun Grant Center, Graduate Faculty, 1996, 2006; B.S., Utah State University, 1990; M.S., 1992; Ph.D., University of Wisconsin, 1996.


Pan, Yunpeng, Assistant Professor of Mathematics and Statistics, Graduate Faculty, 2012; B.S., Nanjing University (China), 1995; M.S., University of Delaware, 1998; Ph.D., University of Wisconsin-Madison, 2003.

Pannell, Patrick T., Associate Professor of Construction and Operations Management and Coordinator of Construction Management, 2003; B.S., University of Arkansas, 1970; M.S., University of Florida, 1976.

Park, Kunsoon, Assistant Professor of Consumer Sciences 2013; B.S., University of Nebraska, Omaha, 1995; M.B.A., 1995; M.S., Virginia Polytechnic Institute and State University, 2001; Ph.D., 2006.

Parmely, Ronny, Assistant Manager of the Seed Testing Lab/Research Assistant, 2004; B.S., South Dakota State University, 1974.

Parsons, Adam, Assistant Strength and Conditioning Coach, Intercollegiate Athletics, 2013; B.S., The University of British Columbia, 2010; M.S., Belmont University, 2013.


Patel, Hasmukh, Associate Professor of Dairy Science, Graduate Faculty, 2012; B.Sc., Dairy Gujarat Agricultural University (India), 1993; M.Sc., 1996; Ph.D., Massey University (New Zealand), 2002.


Patel, Tina, Instructor of Consumer Sciences, 2010; B.Arch., M.NIT (India), 2001; M.A., Iowa State University, 2005.


Paulson, Sara Jean, Adjunct Professor of Electrical Engineering, 2005; B.A., Augustana College; M.S., Purdue University; Ph.D, South Dakota State University, 2003.


Pedersen, Amy, Instructor, University College, 2006; B.S., South Dakota State University, 1990; M.Ed., 2006.

Pedersen, Scott, Professor of Biology and Microbiology, Graduate Faculty, 1999, 2014; B.A., University of Colorado, 1984; M.A., 1988; Ph.D., University of Nebraska, 1993.

Pegg, Mark A., Adjunct Assistant Professor of Natural Resource Management, 2007; B.S., Iowa State University, May 1992; M.S., Tennessee Technological University, 1994; Ph.D, Iowa State University, 2000.

Penrod, Kathryn M., Professor of Teaching, Learning and Leadership, Graduate Faculty, 1991, 2000; B.S., Purdue University, 1975; M.S., Cornell University, 1981; Ph.D., 1984.

Perkins, Christopher, Residence Hall Director, 2010; B.S., North Dakota State University, 2009.

Perkins, Lora, Assistant Professor of Natural Resource Management, Graduate Faculty, 2012; B.S., New Mexico State University, 2004; M.S., Oregon State University, 2006; Ph.D., University of Nevada, 2010.

Perry, George, Professor of Animal Science, Extension Beef Specialist, Graduate Faculty, 2003; B.S., Texas A&M University, 1998; M.S., University of Missouri, 2000; Ph.D., 2003.

Perumal, Omaththan P., Professor and Head of Pharmaceutical Sciences, Graduate Faculty, 2005, 2014; B.S., Tamildulu Dr MGR Medical University (India), 1995; M.S., Birla Institute of Technology (India), 1998; Ph.D., National Institute of Pharm. Education (India), 2003.

Peters, Stacy, Associate Professor of Pharmacy Practice, 2007; B.S., South Dakota State University, 2002; Pharm.D., 2004.

Petersek, Jami L., Research Coordinator, 2006; B.S., South Dakota State University, 2004.

Peterson, Cynthia, Special Events Coordinator, Plant Science, 2011; B.S., South Dakota State University, 1975.

Peterson, Derek D., Director of Bookstore, 1989; B.S., South Dakota State University, 1989.

Peterson, Eric, Assistant Professor of Music and Director of Bands, 2008; B.S., University of Illinois, 1992; M.M.E., University of Kansas, 1994; D.M.A., Texas Tech University, 2006.

Peterson, Gregory R., Professor of History, Political Science, Philosophy, and Religion, Graduate Faculty, 2002, 2004; B.A., University of Minnesota, 1988; M.A., Luther Seminary, 1990; Ph.D., University of Denver, 1996.


Peterson, Meghan, Nursing Student Services Coordinator, 2007; B.S., M.S., South Dakota State University, 2005.

Peterson, Robert P., Senior Associate Athletic Director, Intercollegiate Athletics, 2000; B.S., Northern Michigan University, 1992; M.A., Central Michigan University, 1995.


Phelps, Brady, Professor of Psychology, Graduate Faculty, 1992, 2002; B.S., Utah State University, 1983; M.S., 1986; Ph.D., 1992.

Phillips, Jennifer, Residence Hall Director, 2011; B.S., University of Wisconsin, 2010.


Pleasant, William C., Professor and Head of Aerospace Studies, 2013; B.S., United States Air Force Academy, 1992; M.A.S., Embry-Riddle Aeronautical University, 2001; M.M.O.A.S., Air University, 2006.

Posaski, Edward, Assistant Athletic Director-Budget, Intercollegiate Athletics, 2012; B.S., Bowling Green University, 1996; M.A., Morehead State University, 1998.

Potts, Dale, Assistant Professor of History, Political Science, Philosophy, and Religion, 2010; B.A., Kutztown University of PA, 1992; M.A., Penn State Harrisburg, 1997; Ph.D., University of Maine, Orono, 2007.

Prigge, William D., Associate Professor and Head of History, Political Science, Philosophy and Religion, 2014; B.A., University of Minnesota-Duluth, 1994; M.A., University of Wisconsin-Eau Claire, 1997; Ph.D., Marquette University, 2005.

Prihodko, Lara, Assistant Research Professor, Graduate Faculty, 2011; B.A., Boston University, 1990; M.A., University of Maryland, 1992; Ph.D., Colorado State University, 2004.


Qasmi, Bashir A., Associate Professor of Economics, Graduate Faculty, 2004; B.S., University of Agriculture (Pakistan), 1967; M.S., University of Manitoba, 1971; M.S., University of Agriculture (Pakistan), 1979; Ph.D., Iowa State University, 1986.

Qiao, Qiquan, Assistant Professor of Electrical Engineering, Graduate Faculty, 2007; BS, Hefei University of Technology, 1999; MS, Shanghai Institute of Optics & Fine Mechanics, 2003; Ph.D., Virginia Commonwealth University, 2006.

Qin, Xia, Associate Professor of Civil and Environmental Engineering, Graduate Faculty, 2009, 2013; B.A., Southeast University (China), 1996; M.S., 1999; Ph.D., University of Connecticut, 2002.


Quam, Dori L., Instructor of Music, 2000; B.M.E., South Dakota State University, 1985.

Qin, Yuchu, Postdoctoral Fellow, 2011; B.S., Shenyang Jianzhu University 2004; Ph.D., Chinese Academy of Science, 2010.
Quinn, Terrence, Adjunct Assistant Professor of Education and Human Sciences, Rapid City Site, 2007; B.S., Montana State University, 1979; M.A., University of Wyoming, 2001.

Rae, Katherine, Academic Coordinator for Upward Bound, TRIO, 2012; B.S., University of Columbia, 2005; M.S., South Dakota State University, 2009.


Rahman, Shafiquir, Professor of Pharmaceutical Sciences, Graduate Faculty, 2007, 2014; B.S., Dhaka University, 1985; M.S., 1987; Ph.D., Memorial University of Newfoundland, 1995.


Randall, Rebecca, Assistant Professor of Nursing, Assistant Dean of Nursing Student Services, 1998, 2010; B.A., Augustana College, 1977; M.S., South Dakota State University, 1997; E.D.D., University of South Dakota, 2009.

Rasmussen, Kenneth, Associate Professor of Teaching, Learning and Leadership, Graduate Faculty, 2001; B.S., Dana College, 1968; M.S., University of Nebraska, Omaha, 1972; Ph.D., University of Nebraska, Lincoln, 1979.

Rauber, Joel D., Professor and Head of Physics, Graduate Faculty, 1985, 1994; B.S., Emory University, 1978; Ph.D., University of North Carolina, 1985.

Raynie, Douglas, Associate Professor of Chemistry and Biochemistry, Graduate Faculty, 2004; B.A., Augustana College, 1981; M.S., South Dakota State University, 1983; Ph.D., Brigham Young University, 1990.

Redlin, Meredith, Professor of Sociology and Rural Studies, Graduate Faculty, 2000; 2004; B.A., Macalester College, 1979; M.A.S., Hamline University, 1993; Ph.D., University of Kentucky, 2000.

Reed, Bradley, Adjunct Professor of Geography, 2001; B.S., Southwest Missouri State University, 1991; M.A., University of Kansas, 1986; Ph.D., 1990.


Reese, R. Neil, Professor of Biology and Microbiology, Graduate Faculty, 1988, 1998; B.S., Utah State University, 1977; M.S., University of Idaho, 1980; Ph.D., 1984.


Reicks, Craig W., Research Associate I, Plant Science, 2006; B.S., South Dakota State University, 2003; M.S., 2007.

Reitsma, Kurt D., Extension Associate, Plant Science, 2009; 2012; B.S., South Dakota State University, 1993; M.S., 2008.

Remund, Charles P., Coordinator of Laboratory and Research and Professor of Mechanical Engineering, Graduate Faculty, 1982, 1997; B.S., South Dakota State University, 1982; M.S., 1983; Ph.D., University of Nebraska, 1988.

Rex, Brian, Associate Professor of Architecture, 2010; B.S., University of Texas, 1990; B.Arch., Carleton University (Canada), 1993; M.S., Columbia University, 1994.

Reynolds, Paul D., Professor and Head of Music, Graduate Faculty, 2005; B.M.E., University of Kansas, 1985; M.M., Florida State University, 1986; D.M.A., University of Maryland, 1994.

Rice, James A., Professor and Head of Chemistry and Biochemistry, Graduate Faculty, 1988, 1999; B.A., Saint John's University, 1978; M.S., Colorado School of Mines, 1982; Ph.D., 1987.

Rickertsen, John R., Agronomy Crops Specialist, 1994; B.S., University of Nebraska, 1985; M.S., 1989.

Rickwa, Delaina P., Physicist's Assistant, Student Health Service, 2003; B.A., Augustana College, 1994; B.S., University of South Dakota, 1999.

Riedell, Walter E., Adjunct Assistant Professor of Plant Science, Graduate Faculty, 1987; B.S., Northern Illinois University, 1978; M.S., 1980; Ph.D., Southern Illinois University, 1984.

Ries, Andrew, Instructor of Mechanical Engineering, 2007; B.S., South Dakota State University, 2006; M.S., 2008.

Rieth, Melissa, Residence Hall Director, 2013; B.A., University of North Dakota, 2010; M.S., University of North Dakota, 2013.

Robinet, Andrew, Assistant Professor of Music, 2013; B.M., University of North Carolina at Greensboro, 1997; M.M., Temple University, 2005; D.M.A., University of South Carolina, 2013.

Robinson, John, Assistant Professor of Chemistry and Biochemistry, Graduate Faculty, 2010; B.A., John Hopkins, 1992; Ph.D., University of Alabama at Birmingham, 2003; M.D., University of Alabama at Birmingham, 2004.


Roe, Thomas N., Assistant Professor of Mathematics and Statistics, 1983; B.S., South Dakota State University, 1972; M.S., University of Wyoming, 1975.

Rogers, James, Assistant Football Coach, Intercollegiate Athletics, 2013; B.S., South Dakota State University, 2010; M.S., South Dakota State University, 2012.

Rogness, James D., Accounting Analyst, Finance and Budget, 1983; B.S., Northern State University, 1979.

Rohila, Jai, Assistant Professor of Biology and Microbiology, Graduate Faculty, 2009; B.S., GB Pant University of Agricultural and Technology (India), 1989; M.S., 1991; Ph.D., CCS Haryana Agricultural University (India), 1997.

Roig, Trevor C., Assistant Professor of Health and Nutritional Sciences, Graduate Faculty, 1999; B.S., South Dakota State University, 1997; M.A., University of Minnesota, 1999; Ed.D., USD, 2009.

Rolz, Eckhard, Professor of Modern Languages, Graduate Faculty, 2005; B.A., Utah State University, 1994; M.A., University of North Carolina, 1996; Ph.D., 2000.

Rops, Bradley D., Research Assistant, Beresford Field Station - AES, Plant Science, 1993; B.S., South Dakota State University, 1986.


Rosenrater, Kurt, Adjunct Associate Professor of Natural Resource Management, Graduate Faculty, 2004; B.S., Iowa State University, 1994; M.S., 1996; Ph.D., 2001.

Rossiter, Megan, Head Equestrian Coach, Intercollegiate Athletics, 2011; B.S., Murray State University, 2000; M.S., Oklahoma State University, 2008.

Roth, Dale, Instructor of Construction and Operations Management, 2006; B.S., South Dakota State University, 1958; M.S., 1959 Rowland, Lester M., Assistant Professor of Apparel Merchandising and Interior Design, 2001; B.S., University of Minnesota, 1992; M.Arch., 1995.

Roth, Susan, Adjunct Assistant Professor of Education and Human Sciences, Rapid City Site, 1999; B.S., Black Hills State University, 1975; M.Ed., South Dakota State University, 1989; Ed.D., University of South Dakota, 2005.

Rowland, Raymond, Adjunct Professor, Animal Disease Research and Diagnostic Laboratory, 2004; B.A., Fresno City College, 1977; M.A., San Francisco State University, 1983; Ph.D., University of New Mexico, 1989.

Roy, David P., Senior Research Scientist of Geospatial Sciences Center of Excellence/Professor of Geography, Graduate Faculty, 2005; B.S., University of Lancaster (United Kingdom), 1987; M.S., University of Edinburgh (United Kingdom), 1988; Ph.D., University of Cambridge (United Kingdom), 1993.


Rule, David, Assistant Athletic Trainer, Intercollegiate Athletics, 2011; B.S., Purdue University, 2007; M.S., West Virginia University, 2010.

Rumble, Mark A., Adjunct Assistant Professor of Natural Resource Management, 1991; B.S., Washington State University, 1976; M.S., South Dakota State University, 1979; Ph.D., University of Wyoming, 1990.

Rushton, Paul, Associate Professor of Biology and Microbiology, Graduate Faculty, 2009; B.A., University of Cambridge (United Kingdom), 1984; M.A., 1988; Ph.D., University of Manchester (United Kingdom), 1988.

Russell, Dennis, Adjunct Instructor of Psychology, 2004; B.S., University of Nebraska, 1997; M.S., Saint Cloud State University, 2000.

Saboe-Wounded Head, Lorna, Assistant Professor of Consumer Sciences, Graduate Faculty, 2004, 2009; B.S., South Dakota State University, 1992; M.Ed., University of Minnesota, St. Paul, 2002; Ph.D., Iowa State University, 2010.

Sackreiter, Kevin, Director of Teaching Learning Center, 2010; B.A., South Dakota State University, 2000; M.S., 2002; Ed.D., University of South Dakota, 2007.

Salehnia, Alireza, Professor of Computer Science, Graduate Faculty, 1989, 1997; B.A., Iranian Institute of Advanced Accounting (Iran), 1975; M.B.A., Central State University, 1977; Ph.D., University of Missouri, 1989.

Samra, Haifa, Associate Professor of Nursing, Graduate Faculty, 2007, 2013; B.S. American University, 1982; M.S., South Dakota State University, 2003; M.S., 2007; Ph.D., 2007.

Santos, Joseph M., Professor of Economics, Graduate Faculty, 1997, 2006; B.S., The College of New Jersey, 1990; M.A., Rutgers University, 1992; Ph.D., 1996.

Sargent, Clint, Coordinator of Men's Basketball Operations, Intercollegiate Athletics, 2013; B.S., South Dakota State University, 2011.

Saunders, Christopher, Assistant Professor of Mathematics and Statistics, Graduate Faculty, 2012, B.S., California State University at Chico, 2000; M.S., University of Kentucky, 2002; Ph.D., University of Kentucky, 2006.

Schaal, Daniel J., Professor of Mathematics and Statistics, Graduate Faculty, 1983, 2005; B.S., South Dakota State University, 1982; M.S., 1988; Ph.D., University of Idaho, 1994.

Schaefer, Peter R., Professor of Plant Science, Graduate Faculty, 1983, 1995; B.S., Michigan State University, 1978; M.S., 1980; Ph.D., 1983.

Schafer, Christine L., Head of Public Services/Librarian, 2013; B.A., Luther College, 1982; M.L.S., University of Hawaii at Manoa, 1987; Ed.D., University of St. Thomas, 2012.

Schafer, Zachary, Admissions Counselor, 2011; B.A., Mercyhurst University, 2007; M.S., South Dakota State University, 2010.


Schindler, Frank V., Research Associate III, Chemistry/Biochemistry, 1996, 2001; B.S., University of Vermont, 1992; M.S., North Dakota State University, 1996; Ph.D., South Dakota State University, 2000.

Schlechter, Peggy S., SDSU Extension Community Development Field Specialist, 2012; B.S., South Dakota State University, 1984; M.S. 2006.

Schlenker, Christopher, Head Gardener, Plant Science, 2011; B.S., South Dakota State University, 2009.

Schlobohm, Paul J., Livestock Unit Manager, 1999; B.S., South Dakota State University, 1983.


Schmidt, Matt, Senior News Editor/Media Relations Coordinator, 2013; B.A., Saint Mary's University of Minnesota, 1989.


Schmidt, Robert C., Professor of Mathematics and Statistics, Graduate Faculty, 1981, 1996; B.S., South Dakota State University, 1979; M.S., Iowa State University, 1981; Ph.D., 1987.

Schmit, Christopher G., Professor of Civil and Environmental Engineering, Director of Water and Environmental Engineering Research Center, Graduate Faculty, 1998, 2008; B.S., University of Wisconsin, 1991; M.S., Iowa State University, 1992; Ph.D., 1997.

Schmitt, Melissa L., Assistant Manager, Dairy Research and Training Facility, 2011; B.S., Iowa State University, 2011.

Schneider, Sara, Coordinator of Development and Special Events, 2012; B.S., South Dakota State University, 2010.

Scholten, Lisa, Collections Coordinator, 1999; B.A., Ashland University, 1985; M.S., The Ohio State University, 1986.


Schrumm, Lisa, Admissions Counselor, 1999; B.S., South Dakota State University, 1999.

Schuelke, Nicholle, Adjunct Instructor of English, 2012; B.A., Concordia University, 1994; M.S., St. Cloud State University, 2000; Ed.D., Hamline University, 2009.

Schuelke, Peggy, Nurse Practitioner, Student Health Services, 2001; B.A., Augustana College, 1980; M.S., South Dakota State University, 1992.

Schultz, Aaron C., Professor and Head of Military Science, 2012; B.S., Southwest Minnesota State University, 1992; M.B.A., University of Sioux Falls, 2009.

Schulz, Marlene, Instructor of Sociology and Rural Studies, 2010; B.S., South Dakota State University, 1984; M.S.W., University of Nebraska Omaha, 1995.

Schumacher, Joseph, Research Engineer, Plant Science, 1987; B.S. South Dakota State University, 1987; M.S., 1990.


Schurrer, Kelsey, Research Assistant, 2010; E.A Martin Program in Human Nutrition; B.A. South Dakota State University, 2008.

Schwecke, Zach, Swine Unit Manager, Animal Science, 2010; B.S., South Dakota State University, 2009.

Schwesinger, Peter W., Adjunct Professor of Education and Human Sciences, Rapid City Site, 2001; B.S., Mankato State University, 1991; M.S., South Dakota State University, 1993; Ph.D., University of South Dakota, 2000.

Scovel, Kari A., Adjunct Professor of Animal Science, 2011; B.S., Michigan State University, 2003; M.S., University of Kentucky, 2005; Ph.D., University of Illinois, 2009.

Seefeldt, Teresa M., Associate Professor of Pharmaceutical Sciences, Graduate Faculty, 2005; B.S., South Dakota State University, 2002; Pharm.D., 2004; Ph.D., 2007.

Sell, Jennie, Assistant Athletic Director-Academics, Intercollegiate Athletics, 2013; B.S., Bowling Green State University, 1993.

Sell, Justin, Director of Athletics, Intercollegiate Athletics, 1991; B.S., Bowling Green State University, 1992; M.A., The Ohio State University, 2009.

Senay, Gabriel, Adjunct Professor, Geospatial Sciences Center of Excellence, and Agricultural and Biosystems Engineering, Graduate Faculty, 2005; B.S., Alemaya University of Agriculture (Ethiopia), 1986; M.S., Wageningen Agricultural University (Netherlands), 1991; Ph.D., Ohio State University-Columbus, 1996.

Seo, Junwon, Assistant Professor of Civil and Environmental Engineering, 2013; B.S., Konyang University (South Korea), 2001; M.S. Yonsei University (South Korea), 2003 and M.S. The Georgia Institute of Technology, 2006; Ph.D. The Pennsylvania State University, 2009.


Sergeev, Igor, Professor of Health and Nutritional Sciences, Graduate Faculty, 1999; B.S./M.S., Moscow State University (Russia), 1977; Ph.D., Institute of Biomedical Problems- Moscow (Russia), 1984; D.Sc., Institute of Nutrition, Academy of Medical Science-Moscow (Russia), 1991.

Sexton, Peter, Associate Professor of Plant Science, Graduate Faculty, 2009; B.S., South Dakota State University, 1985; M.S., University of Florida, 1990; Ph.D., 1993.

Seyed Ardakani, Seyed Mohammad, Lecturer of Civil and Environmental Engineering, 2013; B.S., K. N. Toosi University of Technology (Iran), 2005; M.S., University of Tehran (Iran), 2008; Ph.D. University of Nevada, 2013.

Shelsta, Corey, Professor of Communication Studies and Theatre, Graduate Faculty, 2000, 2004; B.S., South Dakota State University, 1993, M.F.A., Wayne State University, 1996.

Sherin, Kenneth M., SDSU Extension Community Development Field Specialist; 2012; B.S., North Carolina State University, 1994; M.S., North Carolina State University, 1997; M.Div., Campbell University, 2002; Ph.D., University of Missouri, 2012.

Sherwin, Joseph A., Assistant Professor of Physics, 2008; B.S., Pennsylvania State University, 1991; M.S., 1996; Ph.D., 2003.

Shin, Sung Yun, Professor of Computer Science, Graduate Faculty, 1991, 2001; B.S., Kentucky State University, 1984; M.S., University of Wyoming, 1986, Ph.D., 1991.
Shinn, Bonnie, Instructor, University College, 2011; B.S., South Dakota State University, 1998; M.S., Shippensburg, 2003.

Shivik, John A., Adjunct Assistant Professor of Natural Resource Management, 2003; B.S., Frostburg State College, 1990; M.S., University of California, 1995; Ph.D., Colorado State University, 1999.

Shmagin, Boris A., Research Associate II, Water Resources Institute, 2004; M.S., Moscow State University (Russia), 1970; Ph.D., 1979; Postdoctoral, Komensky University and Charles University (Czech Republic), 1981-82.

Shore, Jay, Associate Professor of Chemistry and Biochemistry, Graduate Faculty, 1997; B.S., Oregon State University, 1986; Ph.D., University of Illinois, 1992.


Simons-Olson, LaQuita J., Staff Counselor, Student Services, 1998; B.S., University of Hawaii, 1986; M.S., South Dakota State University, 1991.

Skogstad, Keith L., Assistant Director of Student Union, 2005; B.S., South Dakota State University, 1986.

Slunecka, Karen L., SDSU Extension Family Resource Management Field Specialist, 2011; B.S. South Dakota State University, 1981.

Smart, Alexander, Professor of Natural Resource Management, Graduate Faculty, 2001, 2006; B.S., University of Wisconsin, 1989; M.S., 1992; Ph.D., University of Nebraska, 2001.

Smith, Mary K., Adjunct Instructor of Chemistry and Biochemistry, 1981; B.S., Mount Marty College, 1976; M.S., University of South Dakota, 1996.

Smith, Sharon, Assistant Professor of English, Graduate Faculty, 2009; B.A., Augsburg College, 1991; M.A., University of Georgia, 1996; Ph.D., University of Illinois-Chicago, 2007.

Sojka, Nadine, Adjunct Assistant Professor of Chemistry and Biochemistry, 2004; B.A., University of Northern Iowa, 1969; M.H.A., 1996.


Sorenson, Andrew, Assistant Wrestling Coach, Intercollegiate Athletics, 2012; B.S., Iowa State University, 2011.

Spear, Debra J., Professor of Psychology, Graduate Faculty, 1995, 2006; B.S., University of Maryland, 1977; M.A., University of North Carolina, 1980; Ph.D., 1987.

Specker, Bonny, Director and Professor of Ethel Austin Martin-Edward MossMartin Endowed Program in Human Nutrition, Graduate Faculty, 1997; B.S., University of Cincinnati, 1977; M.S., 1980; Ph.D., 1983.


Spitz, Maria C., Associate Professor of Modern Languages, 2005; B.A., Monmouth College, 1987; M.A., Washington University, 1992; Ph.D., 2001.

Spors, Lisa, Assistant Athletic Trainer, Intercollegiate Athletics, 2007; B.A., Dakota Wesleyan University, 2009; M.S., North Dakota State University, 2009.

St. John, David, Assistant Track Coach, Intercollegiate Athletics, 2000; B.S., Oral Roberts University, 2001; M.S., Middle Tennessee State University, 2009.

Stafford, Joshua D., Adjunct Associate Professor of Natural Resource Management, Graduate Faculty, 2011; B.S., Oregon State University, 1997; M.S., South Dakota State University, 2000; Ph.D., Mississippi State University, 2004.

Stafford, Olga A., Instructor in Physics, 2013; M.S. Saratov State Technical University, 1994; Ph.D., Saratov State University, 2002.

Stanley, Owen, Head Athletic Trainer, Intercollegiate Athletics, 2002; B.S., West Chester University, 2005; M.S., University of Kentucky, 2009.

Steece, Richard, Adjunct Professor of Biology and Microbiology; B.S., South Dakota State University, 1973; M.S., 1975; Ph.D., University of New Mexico, 1989.


Steen, Betty, Research Coordinator, 2008; EA Martin Program in Human Nutrition; B.S. North Dakota State University, 2005.

Stein, Marianne F., Associate/Publications Editor-Writer, 2001; B.A., University of Copenhagen (Denmark), 1983; M.A., 1990; M.S., University of Illinois, 1995; Ph.D., University of Southern Denmark, 2004.

Steinlicht, Carrie, Senior Lecturer of Construction and Operations Management, Graduate Faculty, 1997, 2005; B.S., Michigan Technological University, 1990; M.A., Central Michigan University, 1993; Ph.D., Cappella University, 2010.


Stemwedel, Mark, Instructor of Visual Arts, 2006; B.S., South Dakota State University, 1997; M.F.A., University of South Dakota, 2008.

Stenvig, Thomas E., Associate Professor of Nursing, Graduate Faculty, 2001; B.S.N., Wayne State University, 1971; M.P.H., University of Hawaii, 1976; M.S., South Dakota State University, 1991; Ph.D., University of Wisconsin, 2001.

Stevens, Darla, Assistant Admissions Officer, 2013; B.A., University of Minnesota - Morris, 2010.

Stewart, Christine, Associate Professor of English, Graduate Faculty, 2007; B.A., University of Northern Iowa, 1995; M.A., Arizona State University, 2000; Ph.D., University of Nebraska, 2007.


Sftuka, Suzanne R., Extension EFNEP/FNP Coordinator, Health and Nutritional Sciences, 2006; B.S., South Dakota State University, 2004; M.S., Eastern Illinois University, 2006.

Stock, Kate, Orientation Program Coordinator, 2013; B.A., College of St. Thomas, 2005; M.S., South Dakota State University, 2011.

Storey, James, Adjunct Professor of Electrical Engineering, 2004; B.S., Cornell University, 1979; M.S., University of Wisconsin, 1981; M.S., John Hopkins University, 1989.

Strain, Joey D., Associate Professor of Pharmacy Practice, 2003, 2008; B.S., South Dakota State University, 2000; Pharm.D., 2002.

Stremmel, Andrew J., Professor and Head, Teaching and Leadership, Graduate Faculty, 2004; B.A., Pennsylvania State University, 1978; M.S., Purdue University, 1981; Ph.D., 1989.

Stricker, Todd, Director of Nursing Student Services, 2014; B.S., South Dakota State University, 1989; M.S., South Dakota State University, 1991.

Strickler, Susan C., Associate Professor of Consumer Sciences, Graduate Faculty, 1991, 2004; B.S., South Dakota State University, 1982; M.S., Texas Tech University, 1985; Ed.D., University of South Dakota, 1996.

Struck, Donald J., Assistant Professor of Mathematics and Statistics, 1964, 1972; B.S., Saint Cloud State University, 1960; M.S., North Dakota State University, 1963.


Sturdevant, James, Adjunct Assistant Professor of Geography, 2004; B.S., South Dakota State University, 1978; M.S., Oklahoma State University, 1979.

Subramanian, Senthil, Assistant Professor of Plant Science, Graduate Faculty, 2009; B.S., Annamalai University (India), 1992; M.S., Tamil Nadu Agricultural University (India), 1995; Ph.D., 1994.

Sudhagoni, Ramu, Postdoctoral Fellow, 2012; B.S., Kakatiya University, 2001; M.S., Pondicherry University, 2004; M.S., South Dakota State University, 2008; Ph.D., South Dakota State University, 2011.

Swain, Larry B., Extension Specialist and Instructor of Economics, 2005, 2009; B.S., South Dakota State University, 1964; M.S., 1964; Ph.D., University of Nebraska, 1960.

Swanson, Christopher C., Adjunct Assistant Professor of Natural Resource Management, 2012; B.S., South Dakota State University, 2002; M.S., 2005; Ph.D., 2009.

Sweeter, Ryan, Associate Sports Information Director, Intercollegiate Athletics, 2006; B.S., South Dakota State University, 2001.

Switzer, Chad T., Adjunct Assistant Professor of Natural Resource Management, 2011; B.S., University of Nebraska-Lincoln, 1996.

240 Faculty and Staff
Sydow, Brooke, Instructor, University College, 2008; B.A., South Dakota State University, 2005; M.S., 2008; Ed.D., University of South Dakota, 2012.

Szczepaniec, Adrianna, Assistant Professor of Entomology, Graduate Faculty, 2012; B.S., University of Maryland, 2003; Ph.D., University of Maryland, 2009.

Tan, Songlin, Associate Professor of Electrical Engineering, Graduate Faculty, 2004, 2009; B.S., Sichuan University, 1994; M.S., 1997; Ph.D., University of Nebraska, 2003.

Tande, Connie, Clinic Manager, Plant Diagnostic Lab, Plant Science, 2012; B.S., South Dakota State University, 1986.

Taylor, Gary L., Associate Professor of Economics, Graduate Faculty, 2000, 2004; B.S., Purdue University, 1990; M.S., Michigan State University, 1994; Ph.D., Oklahoma State University, 1995.


Tedesche, Luis O., Adjunct Associate Professor of Natural Resource Management, 2012; B.S., University of Sao Paulo (Brazil), 1991; M.S., 1996; Ph.D., Cornell University, 2001.

Thaler, Robert, Extension Swine Specialist, and Professor of Animal Science, Graduate Faculty, 1982, 1999; B.S., South Dakota State University, 1982; M.S., 1984; Ph.D., Kansas State University, 1988.

Thanapura, Pravara, Research Associate I, Water Resource Institute, 1998; B.A., Kasetart University (Thailand), 1993; M.S., South Dakota State University, 1998.

Thiex, Natalie, Postdoctoral Research Fellow, 2008; EA Martin Program in Human Nutrition; B.A. Concordia College, 1999; M.P.H. University of Michigan, 2002; Ph.D., 2008.

Thill, Kari L., Clinical Assistant of Nursing, 2008; B.S., South Dakota State University, 1999.


Thompson, Brock, Assistant Women's Soccer Coach, Intercollegiate Athletics, 2000; B.S., University of Mary; 2006; M.S., Indiana State University, 2008.

Thompson, Daniel J., Adjunct Assistant Professor of Natural Resource Management, 2012; B.S., South Dakota State University, 2002; M.S., 2005; Ph.D., 2009.

Thompson, Erica, Assistant Director for Staff and Community Development, 2012; B.A., The University of Iowa, 2002; M.A., The University of Iowa, 2006.


Thum, Mary, Research Coordinator, 2008; EA Martin Program in Human Nutrition; B.S. University of Sioux Falls, 2005; M.S. South Dakota State University, 2008.

Tille, Patricia, Assistant Professor/CLS Program Director, Graduate Faculty, 2009; B.S., University of Sioux Falls, 1993; Ph.D., USD-Sanford School of Medicine, 2002.

Tilmon, Kelley J., Associate Professor of Plant Science, Graduate Faculty, 2005; B.A., University of Delaware, 1992; M.S., 1996; Ph.D., Cornell University, 2001.

Ting, Francis, Professor of Civil and Environmental Engineering, Graduate Faculty, 1995, 2005; B.S., University of Manchester (Great Britain), 1982; M.S., California Institute of Technology, 1983; Ph.D., 1989.

Tirumalaraju, Sivananda, V., Research Associate I, Plant Science, 2012; B.Sc., Acharya N. G. Ranga Agricultural University (India), 1999; M.S., University of Agricultural Sciences (India), 2002; Ph.D., University of Florida, 2008.

Todd, Robert L., Adjunct Professor of Biology and Microbiology, 1982, 1988; B.S., South Dakota State University, 1965; M.S., 1967; Ph.D., University of Guelph (Ontario), 1974.

Todey, Dennis P., Assistant Professor of Agricultural and Biosystems Engineering, State Climatologist, 2003; B.S., Iowa State University of Science and Technology, 1988; Ph.D., 1995; M.S., South Dakota School of Mines and Technology, 1990.

Tolman, Elizabeth, Professor of Communication Studies and Theatre, Graduate Faculty, 2004; B.A., Concordia College, 1993; M.A., South Dakota State University, 1995; Ph.D., Southern Illinois University, 1999.

Tonkoski, Reinaldo, Assistant Professor of Electrical Engineering, Graduate Faculty, 2011; B.S., Pontificia Universidad Católica do Rio Grande do Sul (Brazil), 2003; M.S., 2006; Ph.D., Concordia University (Canada), 2011.

Toronto, Emily, Professor of Music, 2004, 2014; B.M., Brigham Young University, 1997; M.M., University of Michigan, 1999; D.M.A., University of Michigan, 2003.

Tonsager, Bonnie, Research Coordinator, 2009; EA Martin Program in Human Nutrition; B.S. South Dakota State University, 2000.

Traelman, Ellie L., Health Educator, Student Health Services, 2002; B.S., Moorhead State University, 1984.

Traelman, Karla H., SDSU Extension Associate Director, 1988, 2011; B.S., South Dakota State University, 1987; M.S., 2003.

Trenhaile, Jay, Professor and Head of Counseling and Human Development, Graduate Faculty, 1999, 2009; B.S., Dakota State University, 1986; M.S., Kansas State University, 1989; M.S., South Dakota State University, 1993; Ed.D., University of South Dakota, 1996.


Trelstrup, Jr., Nels H., Professor of Natural Resource Management, Graduate Faculty, 1993, 2004; B.A., University of Colorado, 1981; M.S., University of Nebraska, 1985; Ph.D., University of Minnesota, 1992.

Trooen, Todd P., Professor of Agricultural and Biosystems Engineering, 1983, 2006; B.S., South Dakota State University, 1983; M.S., 1985; Ph.D., Colorado State University, 1988.

Trygstad, Jayme P., Assistant Director and Assistant Radiation Safety Officer, Environmental Health and Safety, 2003; B.S., South Dakota State University, 2003.

Tschetter, Emery J., Assistant Director of Planning and Special Projects, College of Agriculture and Biological Sciences, 1984, 1997; B.S., South Dakota State University, 1984; M.S., 1989.

Tschetter, Lois J., Associate Professor and Assistant to Associate Dean, Undergraduate Nursing, Graduate Faculty, 1983, 2006, 2008; B.S., South Dakota State University, 1974; M.S., 1985; Ed.D., University of South Dakota, 2001.

Tummala, Hemachand, Associate Professor of Pharmaceutical Sciences, Graduate Faculty, 2008, 2014; B.Pharm., Kakatiya University (India), 1994; M.S., Punjab University (India), 1997; Ph.D., National Institute of Immunology (India), 2002.

Tunland, Mary, Instructor of Teaching, Learning and Leadership, 2008; B.S., Northern State University, 1970; M.A., University of South Dakota, 1983.

Turnipseed, E. Brent, Manager of Seed Lab and Professor of Plant Science, Graduate Faculty, 1991, 2002; B.S., Mississippi State University, 1984; M.S., 1987; Ph.D., 1993.


Uecker, Toby, Assistant Director for Living Learning Initiatives, 2013; B.A., South Dakota State University, 2004; M.S., Miami University, 2010.

Uilk, Nicholas, Lecturer of Agricultural and Biosystems Engineering, 2008; B.S., South Dakota State University, 2008.

Underwood, Keith, Assistant Professor of Meat Science, Graduate Faculty, 2009; B.S., Texas Tech University, 2002; M.S., University of Wyoming, 2007; Ph.D., 2008.

Ulvestad, Erin L., Instructor of Mathematics and Statistics, 2006; B.S., South Dakota State University, 2002; M.S., Miami University, 2010.

Valencia, Flora M., Instructor of Modern Languages and Global Studies, 2011; B.A., Pontificia Universidad Católica del Perú; M.A., University of Kentucky; Ph.D., University of Kentucky, 2010.

Vandekieft, Ryan, Admissions Counselor, 2004; B.S., South Dakota State University, 2002; M.A., Minnesota State University, 2004.

Vandermark, Jessica, Research Assistant, 2009; EA Martin Program in Human Nutrition; B.S. University of Arizona, 2004.

Van der Sluis, Evert, Professor of Economics, Graduate Faculty, 1997, 2006; B.S., Hogere Landbouwschool (Leeuwarden, The Netherlands), 1982; M.S., Iowa State University, 1988; Ph.D., University of Minnesota, 1993.

Van Gilder, Deidra J., Assistant Professor of Pharmacy Practice, 2006, 2012; B.S., South Dakota State University, 2000; Pharm.D., 2002.


Vandermark, Lynn, Instructor of Teaching, Learning and Leadership, 2000; B.S., University of South Dakota, 1991; M.S., South Dakota State University, 1998.

Verschoor, Lynn, Director, South Dakota Art Museum, 1999; B.S., South Dakota State University, 1979; M.S., Saint Cloud State University, 1985.

Versteeg, John, Instructor of Mechanical Engineering, 2013; B.S., South Dakota State University, 2011; M.S., 2013.

Vestal, Donald, Associate Professor of Mathematics and Statistics, Graduate Faculty, 2006; B.S., Colorado State University, 1990; M.S., 1992; Ph.D., University of Colorado-Boulder, 1998.

Vestal, Sharon, Associate Professor of Mathematics and Statistics, Graduate Faculty, 2006; B.A., University of South Dakota, 1992; M.A., 1994; Ph.D., University of Colorado-Boulder, 2000.


Visser, Jerry J., Adjunct Instructor of Construction and Operations Management, 2001; 2012; B.S., Kansas State University, 1992; M.S., Kansas State University, 2005.

Vockrodt, Mary L., Instructor of Nursing, 2001; B.S., South Dakota State University, 1986, M.S., 2008.

Voelzke, Catherine D., Adjunct Assistant Professor of Nutrition, Food Science and Hospitality, 1993; B.S., South Dakota State University, 1980; M.S., 1988.

Vogelmann, James, Adjunct Professor, Geospatial Sciences Center of Excellence, Graduate Faculty, 2005; B.A., University of Vermont, 1978; Ph.D., Indiana University, 1983.

Vollan, Beth, Financial Aid Counselor, 2010; B.A. University of Nebraska, 1991.


Vondruska, Judy, Instructor in Physics, 2001; B.S., University of Nebraska, 1986; M.S., University of Arizona, 1992.

Voss, Jo, Associate Professor of Nursing, 1995, 2002; B.S.N., Winona State University, 1980; M.S.N., University of Minnesota, 1993; Ph.D., University of Nebraska, 2003.


Vukovich, Matthew D., Professor and Head of Health and Nutritional Sciences, Graduate Faculty, 1999, 2003; B.S., Iowa State University, 1988; M.A., 1990; Ph.D., Ball State University, 1993.

Wake, Carol Marie Fodness, Professor of Biology and Microbiology, Graduate Faculty, 1991, 2004; B.S., South Dakota State University, 1990; M.S., 1993; Ph.D., 1997.


Walker, Julie A., Extension Beef Specialist and Associate Professor of Animal Science, 1997, 2002; B.S., North Dakota State University, 1983; M.S., Purdue University, 1990; Ph.D., University of Kentucky, 1995.


Walsh, Michael, Assistant Professor of Music, 2009; B.M., University of Miami, 1998; M.M., 2000; D.M.A., University of Kansas, 2008.

Walter, Chanda, Professional Academic Advisor, B.S., South Dakota State University, 2007; M.S., 2010.

Walters, Craig, Research Assistant, 2009; EA Martin Program in Human Nutrition; B.S., University of South Dakota, 1980.


Wang, Zhiqiang, Assistant Professor of Economics, 2009; B.S., Jilin University (China), 2000; M.A., Shanghai University of Finance and Economics (China), 2004; M.A., Florida International University, 2008; Ph.D., 2009.

Warren, Randall F., Instructor of Biology and Microbiology, 2007; B.S., University of Minnesota, 1993; Ph.D., Indiana University, 1999.

Watrel, Robert H., Associate Professor of Geography, Graduate Faculty, 2006, 2001; B.S., University of North Dakota, 1989; M.A., University of Nebraska, 1993; Ph.D., 2001.


Wedemeyer, Lang, Head Women's Soccer Coach, Intercollegiate Athletics, 1994; B.A., Old Dominion University; 1996; M.S., Old Dominion University, 2000.

Wehbe, Nadim I., Professor and Interim Department Head of Civil and Environmental Engineering, Graduate Faculty, 1998, 2008; B.E., American University of Beirut (Lebanon), 1980; M.S., University of Nevada, 1992; Ph.D., 1997.

Weidauer, Lee, Post-Doctoral Research Associate in the Ethel Austin Martin Program in Human Nutrition, 2012; B.S., South Dakota State University, 2007; M.S., 2009; Ph.D., 2012.


Welsh, Tracy, Director of High School Relations and Admissions, 1984, 1997; B.A., Fontbonne College, 1980.

Wendell, Kelly, Coordinator of Communications, Admissions, 2007; B.A., South Dakota State University, 2003.

Wendell, Nicholas W., Director of Student Engagement, 2012; B.A., South Dakota State University, 2003.


West, Thomas P., Professor of Biology and Microbiology, Graduate Faculty, 1988, 1993; B.A., Purdue University, 1974; M.S., Texas A&M University, 1976; Ph.D., 1980.


Westwick, Joshua, Assistant Professor Communication Studies and Theatre, Graduate Faculty, 2012; B.S., South Dakota State University, 2001; M.S., 2003; Ed.D., University of South Dakota, 2012.

Wey, Howard E., Associate Professor of Nursing, Graduate Faculty, 1997; B.S., Wright State University, 1975; Ph.D., University of Cincinnati, 1980.
White, Charles F., Adjunct Senior Military Instructor, AROTC, 2011.
White, George, Professor and Head of Geography, 2009; B.A., California State University, 1987; M.A., University of Oregon, 1990; Ph.D., 1994.
Wiederrich, Lisa, Adjunct Lecturer of Nursing, 2006; B.S., South Dakota State University, 1995.
Wiersma, Janice M., Payroll Supervisor, 2006; B.S., South Dakota State University, 1982; M.B.A., University of South Dakota, 1993.
Wilburn, Lonnie, Associate Professor of Communication Studies & Theatre, Graduate Faculty, 2007; B.A. Morehead State University, KY, 2002; M.F.A. Michigan State University, 2007.
Williams, Christi L., Assistant Athletic Director-Tickets, Intercollegiate Athletics, 2003; A.A., Kirkwood Community College, 2002; B.S., Wayne State College, 2003; M.S., South Dakota State University, 2005.
Williams, Marla, Assistant Professor of Chemistry and Biochemistry, 2000; B.S., South Dakota State University, 2000; M.S., 2003; Ph.D., 2008.
Willse, David, Assistant Professor of History, Political Science, Philosophy, and Religion, 2013; B.A., Montana State University, 1993; M.A., California State University, 1996; Ph.D., University of Massachusetts, 2006.
Willse, Evren Çelik, Assistant Professor of History, Political Science, Philosophy, and Religion, 2012; B.A., Bogazici University (Turkey), 1997; M.S., 2000; Ph.D. University of Massachusetts, 2010.
Wimberly, Michael C., Senior Research Scientist of Geospatial Sciences Center of Excellence/Professor of Natural Resource Management, Graduate Faculty, 2005; B.S., University of Virginia, 1990; M.S., University of Washington, 1995; Ph.D., Oregon State University, 1999.
Wingate, Steven, Assistant Professor of English, 2011; B.A., University of Massachusetts (Boston), 1987; MFA, Florida State University, 1991.
Wolcott, Addie, Greek Life Advisor, Student Union & Activities, 2006; B.A., South Dakota State University, 2006; M.S., 2008.
Woldt, Bradley, Professor and Head of Psychology, Graduate Faculty, 1995, 2005; B.S., South Dakota State University, 1988; M.A., University of Montana, 1991; Ph.D., 1993.
Wood, Eric, Adjunct Associate Professor of Geography, 2004; B.S., University of Michigan, 1973; M.S., University of Oregon, 1984; Ph.D., University of Wisconsin, 2002.
Woodard, Howard J., Professor of Plant Science, Graduate Faculty, 1990, 2000; B.S., University of Rochester, 1973; Ph.D., Rutgers University, 1985.
Woodburn, Ronald, Director, Capital University Center, 2004; B.S., Oklahoma State University, 1974; M.S., University of Alberta, 1977.
Wright, Christopher K., Postdoctoral Fellow, 2008; B.A., Williams College, 1990; M.S., Montana State University, 1993; Ph.D., Montana State University, 2004.
Wright, Cody L., Professor of Animal Science, Graduate Faculty, 2001, 2006; B.S., South Dakota State University, 1994; M.S., Kansas State University, 1996; Ph.D., North Carolina State University, 2000.
Wright, David, Professor and Head of Plant Science, 2013; A.S., Ellsworth Community College, 1980; B.S., Iowa State University, 1982; M.S., 1986; Ph.D., Kansas State University, 1991.
Wrightson, Graham, Assistant Professor of History, Political Science, Philosophy, and Religion, 2013; M.A., Cambridge University - Fitzwilliam College, 2004; M.A., University of Calgary, 2006; Ph.D., 2012.
Wu, Jixiang, Assistant Professor of Plant Science, Graduate Faculty, 2009; B.S., Zhejiang Agricultural University (China), 1991; M.S., 1994; Ph.D., Zhejiang University (China), 2001; M.S., Mississippi State University, 2003; Ph.D., 2003.
Wu, Kanghai, Post Doctoral Research Associate, 2005; B.S., Beijing Forestry University, 1985; M.S., 1988; Ph.D., Louisiana State University, 2005.
Wu, Yajun, Associate Professor of Biology and Microbiology, Graduate Faculty, 2009; B.S., Nanjing Normal University (China), 1983; M.S., Southern Illinois University-Edwardsville, 1991; Ph.D. University of Missouri- Columbia, 1996.
Wueller, Melissa R., Assistant Professor of Natural Resource Management, Graduate Faculty, 2010; B.S., Ball State University, 2002; M.S., Montana State University, 2007; Ph.D., South Dakota State University, 2009.
Wylie, Bruce K., Adjunct Professor of Natural Resource Management, 2012; B.S., University of Montana, 1979; M.S., New Mexico State University, 1989; Ph.D., 1991.
Wymer, Greg, Manager of International Students and Scholars, 2012; B.A., Southwest Minnesota State University, 1993; M.S., Minnesota State University, 2003; MBA., Southwest Minnesota State University, 2005.
Xu, Fei, Integrated Systems Librarian/Assistant Professor, 2008, 2008; B.S., Zhengzhou University, 1995; M.S., Chinese Academy of Sciences, 1998; M.L.I.S., McGill University, 2005.
Xu, Lan, Associate Professor of Natural Resource Management, Graduate Faculty, 1998; B.S., Shanxi University, 1985; M.S., Institute of Applied Ecology of Chinese Academy of Sciences, 1988; Ph.D., North Dakota State University, 1998.
Yan, Xinghong, Assistant Professor of Electrical Engineering, 2006; BS, Hunan Normal University, 1988; MS, Lanzhou Institute of Chemical Physics, 1991; Ph.D., Sun Yat-sen (Zhongshan) University, 1996.
Yarrow, Gary, Director of Environmental Health and Safety, Professor of Chemistry; General Radiation, Biological and Chemical Safety Officer; Graduate Faculty, 1993, 1998; B.S., South Dakota State University, 1977; M.S., Ohio State University, 1979; Ph.D., University of Minnesota, 1985.
Yan, Lin, Postdoctoral Fellow, 2011; B.S., Tongji University, 2002; M.S., Tongji University, 2005; Ph.D., Ohio State University, 2011.
Yen, Yang, Professor of Biology and Microbiology, Graduate Faculty, 2005; B.S., Sichuan Teachers University, 1978; M.S., Nanjing Agricultural University, 1986; Ph.D., University of Missouri, 1989.
YeongHee, Assistant Professor of Consumer Sciences, Graduate Faculty, 2011; B.S., Sungkyunkwan University (Korea), 1999; M.S., 2001; M.S., Ohio State University, 2003; Ph.D., 2009.
Young, Tammy Evans, Assistant Professor of Music, 2012; B.M., Kennesaw State University, 2003; M.M., Indiana University, 2005; D.M.A., University of Georgia, 2010.
Yordanova, Albena, Assistant Professor of Construction and Operations Management, 2011; B.S. Institute of Architecture and Civil Engineering (Bulgaria), 1984; M.Arch, 1991; M.A. University of Missouri-Columbia, 1998.
York, Jonathan David, Assistant Professor of History, 2007; B.A., Appalachiun State, 1986; M.A., 1988; Ph.D., University of Illinois (Champaign-Urbana) 1997.
Young, Alan, Professor of Veterinary and Biomedical Sciences, Graduate Faculty, 2001, 2004; B.S., University of Toronto (Canada), 1989; Ph.D, 1994.
Zaruba Fountaine, Julie, Research Coordinator, 2009, 2010; EA Martin Program in Human Nutrition; B.S. North Dakota State University, 2007; M.S. University of Mary, 2009.
Zadorovtsov, Christina, SDSU Extension Community Development Field Specialist; 2008, 2011; B.S., Iowa State University, 2002; M.S., South Dakota State University, 2007.


Zhou, Ruanbao, Associate Professor of Biology and Microbiology, Graduate Faculty, 2008; B.S., Anhui Normal University (China), 1985; M.S., 1988; Ph.D., Peking University (China), 1997.

Zhang, Hongwei, Assistant Professor of Pharmaceutical Sciences, Graduate Faculty, 2010; B.S., Sichuan University (China), 2003; Ph.D., 2006.


Zhao, Mojun, Molecular Biology Research Associate, 2005; M.S., Kansas State University, 2005.

Zhong, Li, Research Assistant, 2009; EA Martin Program in Human Nutrition; M.D. Medical College of Lanzhou University, 1992; M.S., North Dakota State University, 2007.

Zhou, Ruanbao, Associate Professor of Biology and Microbiology, Graduate Faculty, 2008; B.S., Anhui Normal University (China), 1985; M.S., 1988; Ph.D., Peking University (China), 1997.

Ziebarth, Ann, Adjunct Instructor of Community Development, 2012; B.S., University of Minnesota, 1975; Ph.D., Louisiana State University, 1989.


Zimmerman, Jason R., Professor and Assistant Department Head of Economics, Graduate Faculty, 1999, 2008; B.A., Wabash College, 1994; M.S., Purdue University, 1996; Ph.D., 1998.


Zwart, Mary Beth, Assistant Professor of Health and Nutritional Sciences, 1999, 2001; B.S., University of Wisconsin-La Crosse, 1999; M.S., South Dakota State University, 2001; Ed.D., University of South Dakota, 2009.

Emeriti Faculty, Staff


Andrawis, Alfred S., Professor Emeritus of Electrical Engineering, Graduate Faculty, 1981, 2013; B.S., Alexandria University (Egypt), 1974; M.S., South Dakota State University, 1982; Ph.D., Virginia Polytechnic Institute and State University, 1991.

Andrawis, Madeleine Y., Professor Emerita of Electrical Engineering, Graduate Faculty, 1980, 2013; B.S., Cairo University (Egypt), 1977; M.S., South Dakota State University, 1983; Ph.D., Virginia Polytechnic Institute and State University, 1991.


Baer, Robert J., Professor Emeritus of Dairy Science, Graduate Faculty, 1982, 2011; B.S., University of Georgia, 1977; M.S., 1979; Ph.D., 1983.


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.


Beattie, Patricia K., Professor Emerita of Modern Languages, 1968, 1986; B.S., South Dakota State University, 1963; M.A., Middlebury College, 1964; Ph.D., University of Minnesota, 1983.


Bergum, Gerald E., Professor Emeritus of Computer Science, Graduate Faculty, 1970, 2000; B.S., University of Minnesota, 1958; M.S., University of Notre Dame, 1962; Ph.D. Washington State University, 1969.

Berry, Jr., Charles R., Professor Emeritus of Wildlife and Fisheries Sciences, Graduate Faculty, 1985, 2010; B.S., Randolph-Macon College, 1967; M.S., 1970; Ph.D., Virginia Polytechnic Institute and State University, 1976.


Bonnemann, Joseph J., Assistant Professor Emeritus of Plant Science, 1955, 1992; B.S., South Dakota State University, 1951; M.S., 1964.

Bouzer, Boyd J., Associate Professor Emeritus of Animal and Range Sciences, 1948, 1985; B.S., South Dakota State University, 1942; M.S., 1959.

Booher, James M., Professor Emeritus of Health, Physical Education and Recreation, Graduate Faculty, 1967, 1983; B.A., Nebraska Wesleyan University, 1965; M.S., South Dakota State University, 1969; Ph.D., University of Utah, 1976.


Buchanau, George W., Professor Emeritus of Plant Science, 1959, 1980; B.S., New Mexico State University, 1954; M.S., 1955; Ph.D., Iowa State University, 1960.


Burns, Robert V., Distinguished Professor Emeritus of Political Science and Dean Emeritus of the Honors College, Graduate Faculty, 1970, 1994; B.S., South Dakota State University, 1964; M.A., University of Missouri, 1966; Ph.D., 1973.


Carson, Paul L., Professor Emeritus of Plant Science, 1948, 1985; B.S., Northwestern Missouri State University, 1941; M.S., Iowa State University, 1947.


Chappell, Gary S., Professor and Head of Pharmaceutical Sciences Emeritus, 1973, 2000; B.S., Ohio State University, 1963; Ph.D., University of Kansas, 1968.
Cheever, Jr., Herbert E., Professor Emeritus of Political Science and Dean of the College of Arts and Sciences Emeritus, 1968, 2000; B.S., South Dakota State University, 1960; M.A., University of Iowa, 1962; Ph.D., 1967.

Chen, Chen H., Professor Emeritus of Biology, 1960, 1975; B.S., National Taiwan University, 1954; M.S., Louisiana State University, 1960; Ph.D., South Dakota State University, 1964.

Chu, Shu-Tung, P.E., Professor Emeritus of Agricultural and Bioystems Engineering, 1955; 1999; B.S., National Taiwan University, 1956; M.S., University of Minnesota, 1960; Ph.D., 1966.


Crews, Georgia W., Associate Professor Emerita of Nutrition, Food Science and Hospitality, Graduate Faculty, 1984, 2003; B.S., Middle Tennessee State University, 1968; M.S., University of Tennessee, 1970; Ph.D., Kansas State University, 2000.

Crews, Michael G., Professor Emeritus of Nutrition, Food Science and Hospitality, Graduate Faculty, 1984, 1990; B.S., Virginia Polytechnic Institute and State University, 1972; Ph.D., 1978.

Dearborn, Delwyn D., Professor Emeritus of Animal and Range Sciences, 1956, 1990; B.S., South Dakota State University, 1954; M.S., 1959; Ph.D., University of Nebraska, 1970.

DeBoer, Darrell W., Professor Emeritus of Agriculture and Bioystems Engineering, Graduate Faculty, 1969, 2000; B.S., Iowa State University, 1963; M.S., 1964; Ph.D., 1969.

DeBoer, Delvin E., Professor Emeritus of Civil and Environmental Engineering, Graduate Faculty, 1978, 2012; B.S., South Dakota State University, 1978; M.S., 1980; Ph.D., Iowa State University, 1990.

Dobbs, Thomas L., Professor Emeritus of Economics, Graduate Faculty, 1978, 1982; B.S., South Dakota State University, 1965; Ph.D., University of Maryland, 1969.

Duffey, George H., Professor Emeritus of Physics, 1945, 1959; B.S., Cornell College, 1942; M.A., Princeton University, 1944; Ph.D., 1945.

Duggan, Margaret M., Professor Emerita of English, Graduate Faculty, 1978, 2001; B.A., St. John's University, 1958; M.A., Columbia University, 1965; Ph.D., 1972.

Dwivedi, Chandradhar, Distinguished Professor Emeritus, Graduate Faculty, 1987, 2000; B.S., Gorakhput University, 1964; M.S., 1966; Ph.D., Lucknow University, 1972.

Dybing, C. Dean, Professor Emeritus of Plant Science, 1960, 1993; B.S., Colorado State University, 1953; M.S., 1955; Ph.D., University of California, 1959.


Emerick, Royce J., Professor Emeritus of Chemistry and Biochemistry, Graduate Faculty, 1957, 1965; B.S., Oklahoma State University, 1952; M.S., University of Wisconsin, 1955; Ph.D., 1957.

Enevoldsen, Bernadine L., Professor of Consumer Affairs Emerita, Graduate Faculty, 1964, 2001; B.S., South Dakota State University, 1964; M.S., 1986; Ph.D., University of Minnesota, 1993.


Evenson, Paul D., Professor Emeritus of Plant Science and Statistics, 1959, 2001; B.S., University of Nebraska, 1957; M.S., 1959.


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.

Fleming, Mary J., Emerita Extension EFNEP Coordinator/Assistant Professor of Nutrition, Food Science & Hospitality, 1958, 2000; B.S., South Dakota State University, 1958; M.S., 1974.

Flynn, M. L., Professor Emerita of English, Graduate Faculty, 1990, 2000; Ph.D., DePaul University, 1969; M.A. University of Missouri, 1977; Ph.D., 1885.


Froehlich, Don P., Professor Emeritus of Mechanical Engineering, Graduate Faculty, 1982, 1992; B.S., South Dakota State University, 1972; M.S., 1973; Ph.D., Cornell University, 1976.


Gambill, Norman, Professor Emeritus of Visual Arts, Graduate Faculty, 1992; B.A., Emory University, 1962; M.A., University of Iowa, 1966; Ph.D., Syracuse University, 1976.

Gardner, Wayne S., Professor Emeritus of Plant Science, 1967, 1985; B.S., Utah State University, 1950; M.S., 1951; Ph.D., University of California, 1969.


Gehrke, Jr., Henry, Professor Emeritus of Chemistry and Biochemistry, 1964, 1973; B.S., Oklahoma State University, 1958; M.S., University of Iowa, 1963; Ph.D., 1964.


Ghazzi, Hassan S., Professor Emeritus of Mechanical Engineering, Graduate Faculty, 1984, 2004; B.S., Purdue University, 1954; M.S., Ohio State University, 1956; Ph.D., 1962.


Graeter, Hans G., Professor Emeritus of Physics, 1956, 1992; B.A., Oberlin College, 1952; M.S., Yale University, 1953; Ph.D., 1956.


Gorham, Elizabeth E., Associate Professor Emerita of Extension Family Resource Management, 1999, 2011; B.S., Iowa State University, 1968; M.S., Utah State University, 1971; Ph.D., Oregon State University, 1993.
Hilderbrand, David, Professor Emeritus of Chemistry, Dean Emeritus of Graduate School, Research and Sponsored Programs, Graduate Faculty, 1974, 2004; B.A., Southwest Baptist College, 1967; M.A., University of Missouri, 1969; Ph.D., 1971.


Holland, Sharon A., Professor Emerita of Nursing, Graduate Faculty, 1964, 1983; B.S., South Dakota State University, 1972; M.S., 1972; Ph.D., 1976; M.N., University of Washington, 1979.

Hogan, Edward P., Professor Emeritus of Geography, Associate Vice President for Academic Affairs and Chief Information Technology Officer Emeritus, Graduate Faculty, 1967, 1999; B.S., Saint Louis University, 1961; M.A., 1962; Ph.D., 1969.


Houghum, Joel E., Professor Emeritus of Pharmaceutical Sciences/Assistant Dean of Pharmacy Emeritus, Graduate Faculty, 1979, 2004; A.A., Lake Region Junior College, 1969; B.S., University of Minnesota, 1972; Ph.D., University of Wisconsin, 1979.


Iken, Martha B., Assistant Professor Emerita of Nursing, 1979, 2003; B.S., South Dakota State University, 1972; M.S., 1983; Ph.D., University of South Dakota, 2000.

Iken, Martha B., Assistant Professor Emerita of Nursing, 1980, 1984; B.S., South Dakota State University, 1967; M.A., University of South Dakota, 1968; B.S., South Dakota State University, 1977; M.S., 1984; Ed.D., University of South Dakota, 2000.


Jensen, William, Professor Emeritus of Chemistry and Biochemistry, Graduate Faculty, 1967, 1976; B.S., University of Minnesota, 1959; M.S., University of Iowa, 1962; Ph.D., 1964.

Joffer, Coral Lee, Assistant Professor Emeritus of Nursing, 1985; B.S., South Dakota State University, 1964; M.S., University of Minnesota, 1969.


Johnson, LeRoy C., Associate Professor Emeritus of Horticulture, Forestry, Landscape and Parks, 1965, 1988; B.S., Michigan State University, 1951; M.S., Kansas State University, 1964.

Jorgensen, Jerry D., Dean Emeritus of the College of Arts and Sciences, Professor Emeritus of Communication Studies and Theatre, Graduate Faculty, 1979, 2011; B.S., South Dakota State University, 1978; M.S., 1984; Ph.D., University of Nebraska, 1990.

Kantack, Benjamin H., Professor Emeritus of Entomology and Plant Science, 1962, 1977; B.S., Kansas State University, 1951; M.S., Oklahoma State University, 1954; Ph.D., University of Nebraska, 1963.

Kennedy, Donald G., Professor Emeritus of Plant Science and Biochemistry, Graduate Faculty, 1959, 1971; B.S., University of Wisconsin, 1951; Ph.D., Michigan State University, 1959.


Peterson, Gary, Professor Emeritus of Biology and Microbiology, Graduate Faculty, 1973, 1983; B.S., University of Utah, 1965; M.S., Emporia State University, 1969; D.A., University of Northern Colorado, 1971.


Peterson, Ronald M., Professor Emeritus of Horticulture-Forestry, 1953, 1987; B.S., Colorado State University, 1947; M.S., University of California, 1949; Ph.D., University of Minnesota, 1953.


Pohl, Stephen H., Professor Emeritus of Agricultural and Biosystems Engineering, 1986, 2014; B.S., South Dakota State University, 1973; M.S., 1975; Ph.D., University of Nebraska, 2000.

Pollmann, Robert J., Associate Professor of Plant Science/Manager of Seed Certification Emeritus, 1978, 2004; B.S., South Dakota State University, 1961; M.Ed., 1967.

Powers, James E., Professor Emeritus of Clinical Pharmacy, Graduate Faculty, 1983, 2000; B.S., University of Wisconsin, 1957; Pharm.D., University of Minnesota, 1983.


Raney, A. Leon, Professor/Dean of Libraries Emeritus, B.S., University of Central Arkansas, 1960; M.S., Louisiana State University, 1962; Ph.D., Indiana University, 1972.

Reeves, Dale L., Professor Emeritus of Plant Science, 1970, 1980; B.S., Kansas State University, 1958; M.S., 1963; Ph.D., Colorado State University, 1969.

Rogers, Lawrence, Professor Emeritus of Education and Human Sciences, Professor of Teaching, Learning and Leadership, Graduate Faculty, 1995, 2011; B.A., University of Nebraska, 1964; Ph.D., 1975.

Rollag, Dwayne A., P.E., Professor and Head of Civil and Environmental Engineering, Graduate Faculty, 1965, 1979; B.S., University of Minnesota, 1959; M.S., South Dakota State University, 1966; Ph.D., Purdue University, 1975.

Rue, Rolland R., Professor Emeritus of Chemistry and Biochemistry, 1962, 1983; B.A., Macalester College, 1957; Ph.D., Iowa State University, 1962.

Ruffolo, John J., Professor Emeritus of Biology and Microbiology, Graduate Faculty, 1983, 1999; B.S., Loyola University, 1965; M.S., University of Iowa, 1969; Ph.D., 1972.


Sandness, Roger K., Professor and Head Emeritus of Geography, Graduate Faculty, 1971, 1992; B.S., University of North Dakota, 1967; M.S., 1968; Ph.D., University of Iowa, 1986.

Satterlee, James L., Professor Emeritus and Head of Rural Sociology, Graduate Faculty, 1962, 1976; B.S., South Dakota State University, 1962, 1963; Ph.D., 1970.


Schipull, Martin A., Professor Emeritus of Agricultural and Biosystems Engineering, 1981; B.S., University of Wisconsin, 1974; M.Ed., University of Minnesota, 1981.

Schliessmann, Michael R., Assistant Dean and Professor Emeritus of Communication Studies and Theatre, Institutional Management Officer, Graduate Faculty, 1973, 2001; B.S., South Dakota State University, 1973, 1974; Ph.D., University of Kansas, 1981.

Schumacher, Thomas E., Professor Emeritus of Plant Science, Graduate Faculty, 1983, 2012; B.A., Bluffton College, 1972; M.S., Michigan State University, 1979; Ph.D., 1982.


Selim, Ali A., Professor Emeritus of Civil and Environmental Engineering and Director of Local Transportation Assistance Program, Graduate Faculty, 1977, 2008; B.S., Ain-Shams University (Egypt), 1967; M.S., University of Missouri, 1974; Ph.D., 1976.

Shane, Robert C., Professor Emeritus of Economics, Graduate Faculty, 1977, 2008; B.S., South Dakota State University, 1969; M.S., University of Arizona, 1971; Ph.D., Washington State University, 1978.

Shank, D. Boyd, Professor Emeritus of Plant Science, 1946; 1980; B.S., University of Nebraska, 1935; Ph.D., Iowa State University, 1941.

Shubeck, Fred E., Professor Emeritus of Plant Science, 1951, 1985; B.S., South Dakota State University, 1940; Ph.D., University of Minnesota, 1951.

Sieg, Arden B., Professor Emeritus of Civil and Environmental Engineering, Graduate Faculty, 1967, 1984; B.S., South Dakota State University, 1967; M.S., 1969; Ph.D., Northwestern University, 1977.

Singh, Yadhu N., Professor Emeritus of Pharmaceutical Sciences, Graduate Faculty, 1988, 1997; B.S., University of Otago (New Zealand), 1967; M.S., University of Strathclyde (Scotland), 1974; Ph.D., 1979.

Slyter, Lowell, Professor Emeritus of Animal and Range Sciences, Graduate Faculty, 1970, 2001; B.S., Kansas State University, 1964; M.S., University of Nebraska, 1966; Ph.D., Kansas State University, 1969.


Spinar, Leo H., Professor Emeritus of Chemistry and Biochemistry, 1966, 1970; B.A., University of South Dakota, 1951; M.S., University of Wisconsin, 1953; Ph.D., 1958.

Steinley, Gary L., Professor Emeritus of Education and Counseling, Graduate Faculty, 1979, 1992; B.S., Black Hills State University, 1963; M.A., Fresno State University, 1967; Ph.D., University of Utah, 1970.


Stymiest, Clair, Associate Professor of Plant Science Emeritus, 1967, 2004; B.S., South Dakota State University, 1966; M.S., 1970.


Swedlund, Harriet, P., Director of International Programs Emerita and Assistant Professor Emerita of Apparel Merchandising, 1994, 1999; B.S., Iowa State University, 1954; M.S., 1957.

Sweeney, Jerry K., Professor Emeritus and Head of History, Graduate Faculty, 1970, 2000; B.A., Fort Hays Kansas State University, 1962; M.A., Kansas State University, 1967; Ph.D., Kent State, 1970.

Taylor, Donald C., Professor Emeritus of Economics, 1980, 1996; B.S. Cornell University, 1959; M.S., University of Minnesota, 1964; Ph.D., 1965.

Thiex, Nancy, Professor Emerita of the SDSU Veterinary and Biomedical Sciences Department and the SD Agricultural Experiment Station, 1970, 2012; B.A., Northern State University, 1970; M.Ed., South Dakota State University, 1972; M.S., 1974.

Thompson, John E., Professor Emeritus of Economics, 1952, 1985; B.S., University of South Dakota, 1950, M.S., South Dakota State University, 1953; Ph.D., University of Wisconsin, 1960.


VanRiper, Gary, Assistant Professor Emeritus of Pharmaceutical Sciences, 1972, 2007; B.S., South Dakota State University, 1969; M.S., 1972.


Wahlstrom, Richard C., Distinguished Professor Emeritus of Animal Science, 1952, 1988; B.S., University of Nebraska, 1948; M.S., University of Illinois, 1950; Ph.D., 1952.


West, George A., Professor Emeritus of English, Graduate Faculty, 1969, 2000; B.S., South Dakota State University, 1965; M.A., University of Nebraska, 1967; Ph.D., 1972.

Whalen, Richard H., Professor Emeritus of Biology and Microbiology, Graduate Faculty, 1967, 1990; B.S., College of Saint Thomas, 1954; M.S., University of Illinois, 1956; Ph.D., Purdue University, 1965.

White, Everett M., Professor Emeritus of Plant Science, 1954, 1990; B.S., Iowa State University, 1948; M.S., 1950; Ph.D., 1953.


Wragge, Leon J., Distinguished Professor of Plant Science Emeritus, Extension Specialist, 1961, 2004; B.S., South Dakota State University, 1961; M.S., 1964.


Zeman, David H., Professor Emeritus of Veterinary and Biomedical Sciences, 1986, 2013; B.S., North Dakota State University, 1976; D.V.M., Oklahoma State University, 1980; Ph.D., Louisiana State University, 1986.
# Academic Calendar

## 2014 Fall Term

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 26, Monday</td>
<td>Start Date/Instruction Begins</td>
</tr>
<tr>
<td>September 1, Monday</td>
<td>Labor Day Holiday</td>
</tr>
<tr>
<td>September 4, Thursday</td>
<td>Last day to drop or add and adjust final fees</td>
</tr>
<tr>
<td>September 5, Friday</td>
<td>&quot;W&quot; grade begins</td>
</tr>
<tr>
<td>September 12, Friday</td>
<td>Last day to submit graduation applications for Fall 2014</td>
</tr>
<tr>
<td>October 13, Monday</td>
<td>Native American Day Holiday</td>
</tr>
<tr>
<td>October 17, Friday</td>
<td>First half Fall Term ends</td>
</tr>
<tr>
<td>October 22, Wednesday</td>
<td>Deficiency reports due on WebAdvisor by midnight</td>
</tr>
<tr>
<td>November 7, Friday</td>
<td>Last day to drop a course</td>
</tr>
<tr>
<td>November 11, Monday</td>
<td>Veterans' Day holiday</td>
</tr>
<tr>
<td>November 26-30, Wednesday-Sunday</td>
<td>Thanksgiving Recess</td>
</tr>
<tr>
<td>December 10, Wednesday</td>
<td>No classes; Final exam preparation</td>
</tr>
<tr>
<td>December 11-17,* Thursday-Wednesday</td>
<td>Final exams</td>
</tr>
<tr>
<td>December 22, Monday</td>
<td>Grades due on WebAdvisor by midnight</td>
</tr>
</tbody>
</table>

* December 17 - official graduation date noted on transcript

Note: There is no Fall 2014 Commencement Ceremony

## 2015 Spring Term

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 12, Monday</td>
<td>Start Date/Instruction Begins</td>
</tr>
<tr>
<td>January 19, Monday</td>
<td>Martin Luther King Day Holiday</td>
</tr>
<tr>
<td>January 21, Wednesday</td>
<td>Last day to drop or add and adjust final fees</td>
</tr>
<tr>
<td>January 22 Thursday</td>
<td>&quot;W&quot; grade begins</td>
</tr>
<tr>
<td>January 30, Friday</td>
<td>Last day to submit graduation application for Spring 2015</td>
</tr>
<tr>
<td>February 16, Monday</td>
<td>Presidents' Day Holiday</td>
</tr>
<tr>
<td>March 9-13, Monday-Friday</td>
<td>Spring Break</td>
</tr>
<tr>
<td>March 16, Monday</td>
<td>First half Spring Term ends</td>
</tr>
<tr>
<td>March 19, Thursday</td>
<td>Deficiency reports due on WebAdvisor by midnight</td>
</tr>
<tr>
<td>April 7, Monday</td>
<td>Last day to drop a course</td>
</tr>
<tr>
<td>April 3-5, Friday-Sunday</td>
<td>Easter Recess</td>
</tr>
<tr>
<td>May 4-8*, Monday-Friday</td>
<td>Final exams</td>
</tr>
<tr>
<td>May 9, Saturday</td>
<td>129th Annual Commencement</td>
</tr>
<tr>
<td>May 13, Wednesday</td>
<td>Grades due on WebAdvisor by midnight</td>
</tr>
</tbody>
</table>

*May 8 - official graduation date noted on transcript

## 2015 Summer Term

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 11, Monday - May 22, Friday</td>
<td>May Interim</td>
</tr>
<tr>
<td>May 25, Monday</td>
<td>Memorial Day Holiday</td>
</tr>
<tr>
<td>May 26, Tuesday - July 31, Friday</td>
<td>10-week Academic Summer Session</td>
</tr>
<tr>
<td>July 3, Friday</td>
<td>Independence Day Holiday</td>
</tr>
<tr>
<td>August 3, Monday - August 21, Friday</td>
<td>August Interim</td>
</tr>
<tr>
<td>May 11, Monday - August 21, Friday</td>
<td>Summer Administrative Term</td>
</tr>
</tbody>
</table>

Note: May Interim is a period for students to complete final exams or make up work before the start of the next term.
Index

A
A&S (Arts & Sciences), 177
Abbreviations, 174, 175
ABE (Agricultural and Biosystems Engineering), 177
ABME (Agricultural, Biosystems and Mechanical Engineering), 178
Academic appeals, 19
calendar, 250
cancellation, 15
continual registration, 18
coursework only programs, 171
credit load, 15
dissertation, 18
final examination, 15
grades, 16
grading, 17
performance, 19
programs (by college), 66
registration, 15
students, 18
standards, 14
thesis, 18
university staff, 18
Academic policies, 14
Academic Programs, 70
Accreditation, 6
ACCT (Accounting), 178
Administration, 220
Administration of Student Affairs, 83–84
Admission, 10, 11, 72, 74, 161, 163, 164, 192, 197, 199, 206
Doctor of Philosophy, 34
Master's Degree, 28
Residency requirements, 11
Admission Status, 11
Adult and Higher Education, 92
Adult Development in the Workplace, 103
ADV (Advertising), 178
Advisory Committee, 11, 14, 28, 29, 34, 35, 36, 71, 133
AGEC (Agricultural Economics), 178
AGED (Agricultural Education), 179
Agricultural and Biosystems Engineering, 61
Agricultural, Biosystems and Mechanical Engineering Ph.D., 125
Agricultural and Biosystems Engineering Specialization
Biological Sciences Ph.D., 129
Agricultural, Biosystems and Mechanical Engineering, 125
Agriculture and Biological Sciences

B
Bachelor's to D.N.P.
Specializations
Family Mental Health Nurse Practitioner, 149–51
Family Nurse Practitioner, 147–49
Neonatal Nurse Practitioner, 151–52
Pediatric Clinical Nurse Specialist, 153–54
Pediatric Nurse Practitioner, 155–56
BADM (Business Administration), 181
Biochemistry, 67, 126–27, 187
Bioenergy and Sustainable Technology Certificate, 163
BIOL (Biology)
Biological Sciences, 46
M.S., 75–76
Specializations
Biology, 76
Dairy Science, 77
Microbiology, 77–78
Ph.D., 128
Specializations

C
CA (Consumer Affairs), 182
Calendar, 250
Campus map, 251
CD (Community Development), 183
CEE (Civil and Environmental Engineering), 184
Certificates programs (by college), 68
checklist
Doctor of Philosophy, 36
Master's Degree, 31
CHEM (Chemistry)
Chemistry, 186
Chemistry
Biochemistry Ph.D., 126–27
M.S., 78–79
Ph.D., 135–36
Chemistry and Biochemistry, 51
CHRD (Counseling & Human Resource Development), 188
Civil Engineering, 61
M.S., 79–80
Ph.D., 136–37
CJUS (Criminal Justice), 189
Clinical Mental Health Counseling, 84–86
Clinical Nursing Leadership, 111
College Counseling, 86–88
College of
Agriculture and Biological Sciences, 46–50
Arts and Sciences, 51–54
Education and Human Sciences, 55–57
Engineering, 61–63
Nursing, 58
Pharmacy, 59
Communication Studies and Journalism Specializations
Communication Studies, 80
Journalism, 81
Communication Studies and Theatre, 51
Community Development, 121–22
INDEX 253

Computational Science and Statistics, 137
Computer Science, 30, 61, 82, 189
Conduct, 19
Construction and Operations Management, 62
Counseling, 55
Clinical Mental Health, 84–86
College Counseling, 86–88
Rehabilitation and Mental Health, 88–90
School Counseling, 90–92
Counseling and Human Resource Development
Specializations
Administration of Student Affairs, 83–84
Clinical Mental Health Counseling, 84–86
College Counseling, 86–88
Rehabilitation and Mental Health Counseling M.S., 88–90
Course auditing, 23
Restrictions, 14
courses
common, 176
Descriptions, 177
schedules, 177
Courses
cancellation, 15
common, 176
crosslisted, 176
Descriptions, 174
dual-listed, 176
Grades, 16
Internet, 15
numbering, 174
types, 175
Credit
international students, 23
load, 15
seniors, 18
Credit load, 15
Credits
converted, 14
problem courses, 14
transfer credits, 14
CSS (Computational Science and Statistics), 190
CTE (Career and Technical Education), 190
Curriculum and Instruction
Specializations
Adult and Higher Education, 92
Early Childhood Education, 93
Elementary Education, 94
Secondary Education, 94
D
Dairy Science, 47, 130–31
Data Science, 95–96
Deans, 220
Degrees, 66
Dietetics, 30, 55, 96–97
Dissertation, 18, 23, 35
Dissertation/Thesis/Research or Design Paper. See credits
Distance, 15
Distance Education, 42
Distinguished Professors, 221
Doctor of Nursing Practice, 145–46
Specializations
Family Mental Health Nurse Practitioner, 149–51
Family Nurse Practitioner, 146–47, 147–49
Neonatal Nurse Practitioner, 151–52
Pediatric Clinical Nurse Specialist, 153–54
Pediatric Nurse Practitioner, 155–56
Doctor of Pharmacy
Application, 38
curriculum/plan of study, 38
regulations, 38
Doctor of Philosophy
advisory committee, 34
checklist, 36
dissertation, 35
examinations, 35
plan of study, 34
programs (by college), 67
registration, 35
time limitation, 36
DS (Dairy Science), 190

E
Early Childhood Education, 93
ECE (Early Childhood Education), 190
ECON (Economics), 191
Economics, 47, 97–98
EDAD (Educational Administration), 192
EDER (Education Evaluation and Research), 192
EDFN (Education Foundations), 192
Education and Human Sciences
college of, 55–57
Educational Administration, 30, 191, 192
Specializations
Elementary Education, 98–99
Secondary Education, 99–100
EE (Electrical Engineering), 193
EES (Ecology and Environmental Science), 194
Electrical Engineering, 62, 100
Ph.D., 138
ELED (Elementary Education), 194
Elementary Education, 94, 98–99
EM (Engineering Mechanics), 194
E-mail, 23
Emeriti Faculty, 244
Eminent, 18
Engineering
Agricultural, Biosystems and Mechanical Engineering, 125
Agricultural and Biosystems Engineering M.S., 70–71
Civil Engineering M.S., 79–80
Civil Engineering Ph.D., 136–37
college of, 61–63
Electrical, 100
Electrical Engineering Ph.D., 138
Geospatial Science and Engineering, 138–39
Mechanical, 110–11
Operations Management, 118–19
ENGL (English), 194
English, 10, 23, 29, 30, 52, 74, 101–2, 161, 192, 193, 195, 200, 221
ENTR (Entrepreneurship), 195
EPSY (Educational Psychology), 195
Examination
Final, 15
Examinations, 29
Doctor of Philosophy, 35
Exercise Science, 115–16
EXPL (Exploratory Studies), 195
F
Faculty, 221
Family and Community Services, 104
Family and Consumer Sciences Education, 105
Family Financial Planning, 106–7, 164, 165, 182
Family Financial Planning Certificate, 164
Family Nurse Practitioner, 168–69
M.S.N., 113–14
FCSE (Family and Consumer Sciences Education), 195
fees
residency requirement, 22
Fees, 22
activity, 22
auditing a course, 23
indentedness, 22
late charge, 22
payment process, 22
Thesis and Dissertation, 23
university support, 22
Fellowships, 23
Final examination, 15
Financial aid, 24
Financial and Housing Counseling Certificate, 165
Fisheries Sciences, 124, 144
Food Science, 116–17
FREN (French), 196
Frequently Called Numbers, 2
G
GEOG (Geography), 196
Geographic Information Sciences
Minor, 162
Geography, 30, 52, 67, 102
Geospatial Science and Engineering, 62, 138–39, 198
GER (German), 197
GISc, 138–39
Grades, 16
Grading, 17
Graduate Assistant, 15
Graduate Council, 6, 7, 19, 28, 34
Graduate School, 60
Graduation, 18
Grassland Management Certificate, 166
GRE Test
HDFS (Human Development and Family Studies), 198
Health Journalism Certificate, 166
HIST (History), 199
History, 52, 171
HMGT (Hospitality Management), 199
HNS (Health and Nutritional Science), 199
HO (Horticulture), 199
HSC (Health Science), 199
Human Development, 55
Human Sciences, 2, 30, 56, 67
Specialization
Family and Consumer Sciences
Education, 105
Merchandising, 107–8
Specializations
Adult Development in the Workplace, 103
Family and Community Services, 104
Family Financial Planning, 106–7
IELTS
tests, 10
Indebtedness, 22
Instructional methods, 175
International Student services, 24
International students, 23
Internet courses, 15
J
Journalism, 53
LING (Linguistics), 200
M
M.Arch., 72
M.M.C., 108
M.P.H., 120–21
Management Foundations Certificate, 167
Map, 251
Mass Communication, 30, 53, 81, 108
Master of Public Health, 120–21
Master's Degree
admission, 28
advisory committee, 28
checklist, 31
examinations, 29
plan of study, 28
registration and status, 29
research, 29
thesis, 29
time limitation, 29
Master's Degrees, 66, 70
Options, 30
programs (by college), 66
MATH (Mathematics), 200
Mathematics, 30, 63
M.S., 109
Specialization
Statistics, 109–10
MCOM (Mass Communication), 200
ME (Mechanical Engineering), 201
Mechanical Engineering, 30, 63, 67, 110–11
Agricultural, Biosystems and Mechanical Engineering Ph.D., 125
Merchandising, 107–8, 203
Certificate, 167
Human Sciences M.S., 107–8
MFL (Modern Foreign Languages), 202
MICR (Microbiology), 202
Microbiology, 131
Minors, 162
Modern Languages, 53, 171
Molecular Biology, 132
MRCH (Merchandising), 203
MSOM, 118–19
Multiple Master's Degrees or Majors. See Master's Degree
MUS (Music), 203
Music, 53, 171
N
Natural Resource Management, 48
Natural Resource Management
Wildlife and Fisheries Sciences M.S., 124
NFS (Nutrition and Food Science), 203
non-degree, 11
Non-Discrimination Policy, 2
NRM (Natural Resource Management), 205
NURS (Nursing), 205
Nurse Educator, 115–16
Nursing, 2, 30, 58, 67, 111, 154
Certificate
Post Master Clinical Nurse Leadership, 167–68
Post Master Family Nurse Practitioner, 168–69
Post Master Nursing Educator Certificate, 169
college of, 58
D.N.P.
Pediatric Nurse Practitioner
Specialization, 155–56
Post Master to D.N.P.- NPs, CRNAs, CNSs, and CNMs, 145–46
Specializations
Family Mental Health Nurse Practitioner, 149–51
Family Nurse Practitioner, 146–47
Neonatal Nurse Practitioner, 149–51
Specializations
Family Nurse Practitioner, 147–49
Specializations
Pediatric Clinical Nurse Specialist, 153–54
M.S.N.
Clinical Nursing Leadership, 111–13
Family Nurse Practitioner, 113–14
Nurse Educator, 115–16
Ph.D., 139–40
Nursing Educator, 169
Nutrition, Exercise, and Food Science
Ph.D., 140–41
Nutrition, Exercise, and Food Sciences, 56, 67
Specializations
Exercise Science, 115–16
Food Science, 116–17
Nutritional Science, 117–18
Tropical Science, 117–18
O
Obsolete Coursework, 29, 36
Obsolete Program, 29, 36
OM (Operations Management), 208
Online, 42
Operations Management, 62, 118–19
Outreach programs, 43
P

Payment Process, 22
PE (Physical Education), 208
Performance, 19
PHA (Pharmacy), 209
Pharm.D., 157–61
Pharmaceutical Sciences, 141–42
Pharmacy, 2, 67, 157–61, 157
  Admission, 157
  college of, 59
  Outcomes, 158
  Pharmaceutical Sciences Ph.D., 141–42
  Program Format, 157
  regulations, 38
  Regulations, 157
Philosophy, 52, 171
PHYS (Physics), 210
Physics, 53, 171
PLAN (Planning), 211
  plan of study
    Doctor of Philosophy, 34
  Plan of study, 16, 18, 19, 23, 28, 34, 35, 71, 133, 147
  Pharmacy, 38
Plant Molecular Biology, 132–33
Plant Science, 30, 49, 67, 220
  Biological Sciences Ph.D Specialization, 133–34
  M.S., 119–20
  Ph.D., 142–43
  Plant Molecular Biology, 132–33
Policies
  Academic, 14
  Policy
e-mail, 23
Political Science, 52, 171
POLS (Political Science), 212
Post Master Clinical Nurse Leadership, 167–68
Post Master Family Nurse Practitioner, 168–69
Post Master Nursing Educator, 169
Post Master to D.N.P.
  NPs, CRNAs, CNSs, and CNMs, 145–46
  Specializations
    Family Nurse Practitioner, 146–47
Post-Doctoral, 18
Professional
  programs (by college), 67
  Program integrity, 43
Program requirements
  certificates, 163
  Doctoral Degrees, 125
  Master's Degrees, 70
  minors, 162
  professional degrees, 145
Programs
  degrees, 66
  PS (Plant Science), 212
  PSYC (Psychology), 213
  Psychology, 54, 171
  PUBH (Public Health), 212
  Public Health, 120–21
R
RANG (Range Science), 213
readmission, 11
RECR (Recreation), 214
Recreation, 123
Regental Distinguished Professors, 221
Registration, 15
  Doctor of Philosophy, 35
  registration and status, 29
  Rehabilitation and Mental Health Counseling, 88–90
  REL (Religion), 214
  Religion, 52, 171
  Repeated Courses. See courses
Requirements
  Master's, 28
  Ph.D., 34
  Pharm.D., 38–39
  residency, 22
  Residency requirements, 11
S
School Counseling, 90–92
SE (Software Engineering), 214
Secondary Education, 94, 99–100
SEED (Secondary Education), 214
Services
  academic evaluation and assessment, 24
  bookstore, 24
  disability, 24
  health and counseling services, 24
  housing and food services, 24
  International Student Affairs, 24
  library, 24
SOC (Sociology), 214
Sociology, 30, 54, 67, 214
  M.S., 121
  Ph.D., 143–44
  Specialization
    Community Development, 121–22
  SPAN (Spanish), 215
SPCM (Speech Communication), 215
Special Student, 11
Sport and Recreation Studies, 30, 57, 123
Staff
  Academic Deans, 220
Administration, 220
  Distinguished Professors, 221
  Emeriti Faculty, 244
  Faculty, 221
  Regental Distinguished Professors, 221
STAT (Statistics), 215
State authorization, 43
Statistics, 30, 63, 67, 100, 123–24, 190
  Computational Science, 137
Student services, 24
  study
    Post-Doctoral, 18
  Systems Management Certificate, 169
T
Table of Contents, 3
Teaching, Learning, and Leadership, 57, 92
Term, 250
THEA (Theatre), 216
Thesis, 18, 23, 29
Time limitation, 29
  doctor of philosophy, 36
TOEFL
tests, 10
Transcripts
  Admission, 10
  Transdisciplinary Childhood Obesity Prevention Certificate, 170
Transfer credits, 14
Tuition, 22
  payment process, 22
U
University Center, 42
University staff, 18
V
VET (Veterinary Science), 216
Veterinary & Biomedical Sciences, 49
Veterinary Microbiology, 134
Veterinary Pathobiology, 135
Visual Arts, 54, 171
W
Wildlife & Fisheries Sciences, 50
Wildlife and Fisheries, 30, 67
Wildlife and Fisheries Sciences
  M.S., 124
  Ph.D., 144
WL (Wildlife and Fisheries Sciences), 216
WMST (Women's Studies), 217
Workshops, 14