College of Arts and Sciences

Biology Education (BSE)
Biology for Information Systems (BS)
Computer Graphic Design (BS)
English Education (BSE)
English for Information Systems (BS)
General Studies (A.A.)
Mathematics Education (BSE)
Mathematics for Information Systems (BS)
Multimedia/Web Development (BS)
Physical Science (BS)
Physical Science Education (BSE)
Respiratory Care (AS)
Respiratory Care (BS)
Science Forensic Technology (BS)

Minors:

- Art
- Biology
- Chemistry
- Computer Graphic Design
- English
- French
- History
- Mathematics, Applied
- Mathematics, Business
- Mathematics, Elementary Education
- Multimedia/Web Design
- Music
- Physics
- Sociology
- Spanish
- Speech Communication/Theatre

Certificates:

- Information Systems Management
- Digital Photography
- Multimedia
- Multimedia Design and Production
- Website Design and Development

Pre-Professional Studies for:

- actuary science
- agriculture
- chiropractic medicine
- dentistry
- divinity
- engineering
- fine arts administration
- fisheries
- forensic science
- forestry
- law
- library science
- medicine
- medical technology
- ministerial studies
- mortuary science
- nursing
- optometry
- pediatric medicine
- pharmacy
- physical therapy
- physician assistant
- veterinary medicine
- wildlife management

Faculty

Kari Forbes-Boyte, Professor and Dean
Dale Droge, Professor and Academic Coordinator
Professors: Donna Hazelwood, John Laflin, Nancy Moose, Jeffrey Palmer
Associate Professors: Richard Avery, Richard Bleil, Susan Conover, Bruce Feistner, Robert Jackson, Scott Mackenzie, Alan Montgomery, Mary Reinesch, Daniel Weinstein
Assistant Professors: Kristel Bakker, Glenn Berman, Justin Blessinger, Bradley Hesser, Thomas Jones, Hui-Ling Lin, Daniel Mortenson, Maureen Murphy, John Nelson, Jill Olson, Lynn Ryan, Forrest Sanner, Joseph Staudenbaur
Instructors: Lois Campbell, Pam Ellis, Barbara Hegg, Dennis Hegg, Rich Hennies, John Hollingsworth, Deana Hueners, Barbara Myers, D. Scott Richardson, Andrew Shiers, Valorie Stalcup

Mission

The College of Arts and Sciences offers a variety of programs and courses leading to many successful careers. Computer technology is integrated throughout all majors. The College offers the vast majority of the general education courses that serve as background for all degrees. Faculty in the arts, English, and social sciences are principally located in Beadle Hall. Math and science faculty are located in the C. Ruth Habeger Science Center. The clinical faculty in Respiratory Care are located at McKennan and Sioux Valley Hospitals in Sioux Falls and Rapid City Regional Hospital in Rapid City.

The disciplines within the College of Arts and Sciences are Academic Skills, Art, Biology, Chemistry, Computer Graphics, English, Scientific Forensic Technology, Geography, History, Mass Communication, Mathematics, Multimedia, Music, Philosophy, Physical Science, Physics, Respiratory Care, Sociology, Spanish, Speech, and Theatre.

In addition to degree programs, the College of Arts and Sciences offers majors, minors, and courses which qualify students to apply for admission to professional schools and programs such as chiropractic medicine, dentistry, divinity, engineering, forensic science, law, library science, medicine, medical technology, mortuary science, nursing, optometry, pharmacy, physical therapy, and veterinary science. The courses and majors required to apply successfully to enter these and related professional programs are specific and varied, therefore, students wishing to enter such programs should consult with their College advisor at an early date in order to design the most helpful program of study.

Center of Excellence Honors Program

The Dakota State University Center of Excellence Honors Program targets high achieving students, and successful completion of the program requirements by the student will result in the student being designated “Center of Excellence Honors Graduate.” This designation will appear on the student’s transcripts, diplomas, and the commencement program. The full program and be found in the Interdisciplinary Studies section of this catalog.

Bachelor of Science in Education in Biology

Students majoring in this program take a biology core following the guidelines of the National Science Teachers Association and supporting science, computer and mathematics courses. Students majoring in this program will be prepared to teach Biology and a selected minor at the secondary level and will complete a K-12 Educational Technology Endorsement program.

System-wide General Education Requirement* **30**

Institutional Graduation Requirement** **11**

* Majors must take PSYC 101, BIOL 151, BIOL 165, and MATH 102 as part of the system-wide general education requirement.

** Majors must take CIS 130 as part of the institutional graduation requirement.

NOTE: Students should complete professional education coursework (see below) concurrently with general education and content major coursework.

Biology Component **25**

BIOL 145	Intro to Science Inquiry	1
BIOL 201	General Botany	4 *
BIOL 311	Principles of Ecology	4
BIOL 323	Human Anatomy & Physiology	4
BIOL 371	Genetics	4
BIOL 498	Undergraduate Research/Scholarship	2
Select 6 credits from the following:		6
BIOL 301	Plant Systematics	4
BIOL 325	Physiology.	4
BIOL 331	Microbiology	4
BIOL 343	Cell and Molecular Biology	4
BIOL 363	Ornithology	3
BIOL 450	Aquatic Biology	4
BIOL 492	Topics*	1-4

* May be repeated several times provided student does not enroll in the same special topics courses. One credit Biology special topics offerings designed to supplement regular course offerings. Multiple sessions may not be combined to substitute for a required or elective three-or-four credit Biology course.

Chemistry Component **8**

CHEM 112	General Chemistry I	4
CHEM 114	General Chemistry II	4

Physics Component **4**

PHYS 111	Introduction to Physics I	4

Computer Technology Component **6**

CIS 350	Computer Hardware, Data Communications and Networking	3
SCTC 303	Computer Applications in Nat. Science	3

Minor Requirement **12-13**

Students choosing a minor in chemistry or computer education can complete those minors with an additional 12-13 credits because of the core courses required above. Students choosing a minor in another subject area may need to complete an additional 15-18 credits to meet the requirements for the selected minor.

Professional Education Courses **32**

Students must complete 30 hours of system-wide general education courses in their first 64 credit hours.

All Professional Education Courses must be completed with a "C" or better.

(1) No grade less than a "C" and must be completed prior to admission to Teacher Education

(2) Requires field experience.

Pre-Professional Block

EDFN 338	Foundations of American Education [1, 2]	2
EPSY 302	Educational Psychology [1, 2]	3
HIST/INED 411	South Dakota Indian Studies	3
SPED 100	Intro to Persons with Exceptionalities [1, 2]	2 *

Admission to the Teacher Education Program is required for the remaining courses. See Requirements for Admission in the College of Education section.

*Students planning to teach outside South Dakota are encouraged to take SPED 100 for 3 credits.

Early Professional Block

ENGL/SEED 450	7-12 Teaching Reading in the Content Area [2]	3
EDFN/SOC 475	Human Relations	3
EPSY 330	Human Growth and Development [2]	3

Advanced Professional Block

SEED 302	Secondary and Middle Level Content Methods: Science Major [2]	2

Student Teaching Semester

Admission to Student Teaching is required for enrollment in SEED 488. See Approval for Student Teaching in College of Education section. SEED 401 and SEED 471 are taught in a compressed format during the first four weeks of the semester and are usually taken in the same semester as student teaching.

SEED 401	Methods of Education Technology	1
SEED 471	K-12 Secondary Education Classroom Management [(Recommended)]	1
SEED 488	7-12 Student Teaching	10

Students planning to teach outside South Dakota are encouraged to take

HLTH 201	ATOD Prevention Education	2

Minor/Endorsement Programs (Minors leading to South Dakota certification)

See Education Endorsement Programs in College of Education section for a list of all available minor/endorsement programs for K-12 and Secondary Education majors.

Bachelor of Science in Biology for Information Systems

Students majoring in this program will be prepared to become employees for the science-based industries and agencies that use modern technology. This program provides an excellent background in business and computer science/information systems technology as well as a solid foundation in biology, supporting sciences, and mathematics. The graduates of this program will be capable of problem solving and developing marketing strategies for products of research and service in the science-based information industries, such as the emerging biotechnology industry where a background in science and technology, as well as in business, is increasingly necessary. This program also provides an excellent foundation for persons wishing to pursue a specialized professional career such as medicine, dentistry, etc. or to obtain advanced education especially in the health fields.

System-wide General Education Requirement* **30**

Institutional Graduation Requirement** **11**

* Majors must take MATH 123, BIOL 151, BIOL 165 and ART 121 as part of the system-wide general education requirements.

** Majors must take CIS 130 as part of the institutional graduation requirement.

Biology Component **37**

BIOL 145	Intro to Science Inquiry	1
BIOL 201	General Botany	4
BIOL 311	Principles of Ecology	4
BIOL 323	Human Anatomy & Physiology	4
BIOL 331	Microbiology	4
BIOL 343	Cell and Molecular Biology	4
BIOL 371	Genetics	4
BIOL 498	Undergraduate Research/Scholarship	2
Select 10 credits from the following:		10
BIOL 301	Plant Systematics	4
BIOL 325	Physiology	4
BIOL 363	Ornithology	3
BIOL 450	Aquatic Biology	4
BIOL 492	Topics	1-4*

* May be repeated several times provided student does not enroll in the same special topics course. One credit Biology Special Topics offerings are designed to supplement regular course offerings. Multiple sessions may not be combined to substitute for a required or elective three-or-four credit Biology course.

Math and Science Core Support Courses **15**

MATH 281	Introduction to Statistics	3
CHEM 112	General Chemistry I	4
CHEM 114	General Chemistry II	4
PHYS 111	Introduction to Physics I	4

Science Technology Courses **11**

CIS 350	Computer Hardware, Data Communications & Networking	3
CSC 206	Advanced Computer Applications	2
SCTC 303	Computer Applications Natural Sciences	3
ARTD 282	2-Dimensional Design on Computers I	3
or		
CIS 251	Business Application Programming	

Choose one specialization

Business and Science **20**

ACCT 210	Principles of Accounting I	3
ACCT 211	Principles of Accounting II	3
BADM 370	Marketing	3
Select one of the following:		3
BADM 310	Business Finance	3
BADM 350	Legal Environment of Business.	3
BADM 360	Organization & Management	3
BADM 425	Production & Oper Management	3
BADM 435	Mgmt of Technical & Innovation	3
CIS 325	Management Information Systems	3
ENGL 305	Professional Technical & Grant Writing	3
Select 8 credits from the following:		8
CHEM 326	Organic Chemistry	4
CHEM 332	Analytical Chemistry	4
CHEM 460	Biochemistry	3
CHEM 492	Topics	4
MATH 125	Calculus II	4
MATH 201	Intro to Applied Mathematics	3
MATH 418	Mathematical Modeling	3
PHYS 113	Introduction to Physics II	4

Health and Technology **20**

Select 20 credits from the following:*		
ARTD 285	2-Dimensional Design on Computer II	3
ARTD 336	Digital Photography I	3
ARTD 382	3-Dimensional Design on Computers I	3
CHEM 326	Organic Chemistry	4
CHEM 332	Analytical Chemistry	4
CHEM 460	Biochemistry	3
CHEM 492	Topics	4
ENGL 305	Prof. Technical and Grant Writing	3
ENGL 379	Technical Communication	3
EXS 350	Exercise Physiology	3
EXS 353	Kinesiology	3
HIM 130	Basic Medical Terminology	2
HLTH 320	Community Health	3

HLTH 422	Nutrition	3
MATH 125	Calculus II	3
MATH 201	Intro to Applied Mathematics	3
MATH 418	Mathematical Modeling	3
PHYS 113	Introduction to Physics II	4

* Students planning to pursue a career in medicine or other health professions are encouraged to take CHEM 326, CHEM 460, CHEM 492, MATH 125 or MATH 201 and PHYS 113.

Electives** **4**

**Three of these credits will have been met upon completion of MATH 123, BIOL 151 and BIOL 165 as part of the system general education requirements.

Bachelor of Science in Computer Graphic Design

The Bachelor of Science degree in Computer Graphic Design prepares graduates for a variety of positions in which they use computer graphic applications. They are qualified to work as commercial artists (also called graphic artists or graphic designers) and applied artists in design — including web design as well as print design. They use computers to create, edit, and optimize graphic designs in a variety of formats. The major includes traditional courses in art (such as drawing, visual design, and history of art) as well as electronic publishing and web publishing, and it requires a core of courses in two-dimensional computer graphics, three-dimensional computer graphics, digital photography, and computer graphic effects.

System-wide General Education Requirements* **30**
Institutional Graduation Requirements** **11**

*Majors must take MUS 100, SOC 285, and a literature course (ENGL 210, 211, 212, 221, 222, 241, 242 or 268) as part of the system-wide general education requirements.
** Majors must take CIS 130 as part of the institutional graduation requirement.

Required Courses **51**

ARTD 282	2-Dimensional Design on Computers I	3
ARTD 285	2-Dimensional Design on Computers II	3
ARTD 336	Digital Photography I	3
ARTD 382	3-Dimensional Design on Computers I	3
ARTD 385	3-Dimensional Design on Computers II	3
ARTD 431	Computer Graphic Effects I	3
ARTD 432	Computer Graphic Effects II	3
ARTD 436	Digital Photography II	3
ARTD 440	Advanced 3-D Design	3
ARTD 460	Digital Editing	3
MCOM 161	Fundamentals of Desktop Publishing	3
MCOM 351	Web Publishing I	3
MCOM 352	Web Publishing II	3
MCOM 353	Web Publishing III	3
MCOM 362	Digital Typography	3
MCOM 389	Portfolio & Professional Development	2
MCOM 409	Information Architecture	3
MCOM 494	Internship	1

Required Support Courses **24**

ART 111	Drawing I	3
ART 121	Design I - 2D	3
ART 122	Design II - Color	3
ART 123	3-Dimensional Design	3
ART 213	Figure Drawing	3
ART 231	Painting I	3
ARTH 212	History of World Art II	3

Take 3 credits from the following 3

ARTD 306	Adv. Graphic Applications	1-3
ARTD 356	Digital Painting	3
MCOM 360	Technical Publishing	3
MUS 222	Computers & Music	1-3

Electives **12**

Bachelor of Science in Education in English

The English Major for Bachelor of Science in Education is designed to prepare graduates to teach composition, literature, and speech in secondary schools. In addition to gaining skills and knowledge of composition and literary study, students learn computer applications for text processing and language analysis. All DSU teacher education graduates complete a K-12 Educational Technology Endorsement program.

System-wide General Education Requirements* **30**
Institutional Graduation Requirements** **11**

* Majors must take ART 121, PSYC 101, SPCM 101, one of HIST 151, or HIST 152, and a literature course (ENGL 210, 211, 212, 221, 222, 241, 242, or 268) as part of the system-wide general education requirement.

** Majors must take CIS 130 as part of the institutional graduation requirement.

NOTE: Students should complete professional education coursework (see below) concurrently with general education and content major coursework.

Major Requirements **51**

ARTD 282	2-Dimensional Design on Computers I	3
CIS 350	Computer Hardware, Data Communications & Networking	3
ENGL 208	Documentation and Presentation	3
ENGL 307	Principles of Grammar	3
ENGL 384	Literary and Linguistic Research	3
ENGL 480	Contemporary Rhetoric	3
ENGL 484	Literary Criticism	3
LING 443	A History of the English Language	3
MCOM 161	Fundamentals of Desktop Publishing	3
MCOM 351	Web Publishing I	3
SPCM 215	Public Speaking	3
or		
SPCM 340	Oral Interpretation of Literature	
*Take 9 credits from the following courses:		9
ENGL 211	World Literature I	3
ENGL 212	World Literature II	3
ENGL 221	British Literature I	3
ENGL 222	British Literature II	3
ENGL 241	American Literature I	3
ENGL 242	American Literature II	3
*Take 9 credits from the following:		9
ENGL 333	Period Study	3
ENGL 343	Selected Authors	3
ENGL 363	Literary Genres	3

Electives **4**

*Students select among alternative courses in order to provide study of a representative body of world literature to include British, American, young adult, and contemporary, and study analyzing literature from a broad historical prospective, a variety of genres, and a variety of authors by gender and ethnicity.

Professional Education Courses **32**

Students must complete 30 hours of system-wide general education courses in their first 64 credit hours.

All Professional Education Courses must be completed with a "C" or better.

(1) No grade less than a "C" and must be completed prior to admission to Teacher Education.

(2) Requires field experience.

Pre-Professional Block

EDFN 338	Foundations of American Education [1, 2]	2
EPSY 302	Educational Psychology [1, 2]	3
HIST/INED 411	South Dakota Indian Studies	3
SPED 100	Intro to Persons with Exceptionalities [1, 2]	2

Admission to the Teacher Education Program is required for the remaining courses. See Requirements for Admission in the College of Education section.

*Students planning to teach outside South Dakota are encouraged to take SPED 100 for 3 credits.

Early Professional Block

EPSY 330	Human Growth and Development [2]	3
ENGL/SEED 450	7-12 Teaching Reading in the Content Area [2]	3
EDFN/SOC 475	Human Relations	3

Advanced Professional Block

SEED 302	Secondary and Middle Level Content Methods: English Major [2]	2

Student Teaching Semester

Admission to Student Teaching is required for enrollment in SEED 488. See Approval for Student Teaching in College of Education section. SEED 401 and SEED 471 are taught in a compressed format during the first four weeks of the semester and are usually taken in the same semester as student teaching.

SEED 401	Methods of Education Technology	1
SEED 471	K-12 Secondary Education Classroom Management (Recommended)	1
SEED 488	7-12 Student Teaching	10

Students planning to teach outside South Dakota are encouraged to take

HLTH 201	ATOD Prevention Education	2

Minor/Endorsement Programs (Minors leading to South Dakota certification)

See Education Endorsement Programs in College of Education section for a list of all available minor/endorsement programs for K-12 and Secondary Education majors.

Bachelor of Science in English for Information Systems

The Bachelor of Science in English for Information Systems is designed to prepare students to write technical documentation, to edit many kinds of publications, and to use computers for analysis of texts. Graduates with this degree can enter the job market as writers and programmers for software companies, newspapers and publishing firms, and a variety of businesses. Careers in writing, editing, and publishing, particularly those that use computers or deal with the subject of computers, are growing quickly. In addition, an English major is recognized as one of the best preparations for advanced study, especially in law and divinity.

To be admitted to Dakota State University's English for Information Systems program, students must normally have overall grade point averages of 2.5 or above. Students with grade point averages between 2.25 and 2.50 may be considered for admission upon petitioning the English faculty.

Admission to the Program

To be admitted into Dakota State University's English for Information Systems or English Education programs, degree-seeking students must meet the following four criteria (Students who do not meet the following criteria, may be considered for admission under special circumstances):

1. have completed 32 semester hours — at least 12 of which must have been earned from DSU.
2. have an overall grade-point average of 2.5 or above.
3. have completed ENGL 101 (or HON 111) and at least one literature course.
4. show promise of success in meeting the goals and objectives of the program.

Students seeking admission to the program must:

- write a formal letter of application submitted to the Dean of the College of Liberal Arts, 114 Beadle Hall.
- submit the name of at least one DSU English professor who may be contacted for reference.
- complete an admission interview with your advisor and with the English Admission Committee — if requested.

Students may complete the 18 credit hours required for an English minor without being admitted into the program. However, students who have not been admitted into the program may not enroll in additional classes with MCOM, ENGL, or LING prefixes (other than ENGL 101, 201, and 450).

Upon acceptance into the program, the student will discuss with one or more English faculty members the building of a portfolio including at least five representative works from courses required for the English major and numbered 300 and above. These works may include such things as unit plans, final projects, or major research papers or projects. A written evaluation of the portfolio, completed in controlled circumstances, will be required.

All students earning a Bachelor of Science in English for Information Systems degree must complete the following courses:

System-wide General Education Requirements* 30
Institutional Graduation Requirements 11**

*Majors must take ART 121, SOC 285, and one of the following: ENGL 211, 212, 221, 222, 241, 242, and 268 as part of the system-wide general education requirements.

** Majors must take CIS 130 as part of the institutional graduation requirement.

Core of Major 53

ENGL 208	Documentation and Presentation	3
ENGL 307	Principles of Grammar	3
ENGL 309	Computer-Supported Collaborative Writing	2
ENGL 384	Literary and Linguistic Research	3
ENGL 401	Advanced Writing	3
ENGL 466	Text Mark-up and Processing	3
ENGL 467	Computer Text Analysis	3
ENGL 480	Contemporary Rhetoric	3
ENGL 484	Literary Criticism	3
ENGL 494	Internship	
or		
ENGL 498	Undergraduate Research/Scholarship	1
LING 443	History of the English Language	3
MCOM 360	Technical Publishing	3
MCOM 389	Portfolio & Professional Development	2
MCOM 409	Information Architecture	3
Six credits from the following:		6
ENGL 211	World Literature I	3
ENGL 212	World Literature II	3
ENGL 221	British Literature I	3
ENGL 222	British Literature II	3
ENGL 241	American Literature I	3
ENGL 242	American Literature II	3
Nine credits from the following:		9
ENGL 333	Period Study*	3
ENGL 343	Selected Authors*	3
ENGL 363	Literary Genres*	3

*Since content varies, course may be repeated.

Take one of the following specializations 21

Business

ACCT 210	Principles of Accounting I	3
ACCT 211	Principles of Accounting II	3
BADM 310	Business Finance	3
BADM 350	Legal Environment of Business	3
BADM 360	Organization & Management	3
BADM 370	Marketing	3
Select one of the following:		3
BADM 220	Business Statistics	3
BADM 371	Merchandising	3

BADM 425	Production & Operations Management	3
BADM 474	Personal Selling	3
BADM 481	Promotional Management	3

Computer Programming

CIS 251	Business Applications Programming	3
CIS 277	OS Interfaces & Utilities	3
CIS 330	COBOL I	3
CIS 331	COBOL II	3
CIS 332	Structured Systems Analysis and Design	3
CSC 150	Computer Science I	3
ENGL 408	Advanced Computer Documentation	3

Because of the business orientation of courses in this option, ACCT 210 Principles of Accounting I is recommended.

Documentation and Publishing

ARTD 282	2-Dimensional Design on Computers I	3
ARTD 336	Digital Photography I	3
ENGL 379	Technical Communication	3
ENGL 408	Advanced Computer Documentation	3
MCOM 161	Fundamentals of Desktop Publishing	3
MCOM 351	Web Publishing I	3
MCOM 352	Web Publishing II	3

*Students with interests in business and marketing are urged to complete the following as electives: ACCT 210, BADM 370, and BADM 481.

Text Analysis

ENGL 465	Corpora Analysis	3
Select eighteen credits from the following:*		18
ENGL 211	World Literature I	3
ENGL 212	World Literature II	3
ENGL 221	British Literature I	3
ENGL 222	British Literature II	3
ENGL 241	American Literature I	3
ENGL 242	American Literature II	3
ENGL 333	Period Study**	3
ENGL 343	Selected Authors**	3
ENGL 363	Literary Genres**	3
	Foreign Language	3-15

* Courses must not be those selected for the core or for general education.

** Since content varies course may be repeated.

General electives **13**

[a] Electives must be chosen to insure that 40 of the 128 credits in the program are 300 and 400 level courses.

Honors in English

English majors with superior knowledge and skill may graduate with the official designation WITH HONORS IN ENGLISH. This distinction will be conferred by the English faculty upon students who have demonstrated mastery of writing, knowledge of the structure of English, and knowledge of the major works of American and British literature.

To graduate with HONORS IN ENGLISH a student must have demonstrated the following to the satisfaction of the members of the English faculty:

1. mastery in writing standard formal English,
2. knowledge of the structure and history of the English language and the principles of linguistics,
3. knowledge of the major works of American literature,
4. knowledge of the major works of British literature written before 1800,
5. knowledge of the major works of British literature written after 1800.

Demonstration of these five may be accomplished by receiving superior grades in courses in each area or by successful completion of special honors examinations. These examinations may be taken upon completion of one or more independent study designed to prepare students for the honors examinations.

Associate of Arts in General Studies

The Associate of Arts degree in General Studies provides opportunities for students still undecided about their careers to explore possible educational and career options. It also serves as an entry program for students desiring to seek admission to baccalaureate or professional programs, either at Dakota State University or at another institution.

Graduates of this degree program will be expected to demonstrate their achievement of the general education objectives of the Board of Regents, to understand current and emerging computer-based technologies, and to use the basic skills of information processing.

Students earning an Associate of Arts degree in General Studies must complete the following:

System-wide General Education Requirements	**30 credits**
Institutional Graduation Requirements	**11 credits**
Electives	**23 credits**
Total	**64 credits**

For further explanation of these three course requirements and goals, see the general education section in this catalog.

System-wide General Education Requirements (SGE) 30 Credits

GOAL 1: Written Communication 6 credits

ENGL 101	Composition I	3
ENGL 201	Composition II	3

GOAL 2: Oral Communication 3 credits

SPCM 101	Fundamentals of Speech	3
SPCM 215	Public Speaking	3
SPCM 222	Argumentation & Debate	3

GOAL 3: Social Studies 6 credits (in two disciplines)

ECON 201	Principles of Microeconomics	3
ECON 202	Principles of Macroeconomics	3
GEOG 101	Introduction to Geography	3
HIST 151	US History I	3
HIST 152	US History II	3
HIST 256	World History	3
POLS 100	American Government	3
POLS 210	State and Local Government	3
PSYC 101	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 150	Social Problems	3
SOC 285	Information Society	3

GOAL 4: Arts and Humanities **6 credits (in two disciplines or in a sequence of foreign language courses)**

ART 111	Drawing I	3
ART 121	Design I - 2D	3
ART 123	3-Dimensional Design	3
ARTH 100	Art Appreciation	3
ARTH 211	History of World Art I	3
ARTH 212	History of World Art II	3
ARTH 231	Survey of Art, Music, Theatre	3
ENGL 210	Introduction to Literature	3
ENGL 211	World Literature I	3
ENGL 212	World Literature II	3
ENGL 221	British Literature I	3
ENGL 222	British Literature II	3
ENGL 241	American Literature I	3
ENGL 242	American Literature II	3
ENGL 268	Literature	3
FREN 101	Introduction to French I	4
FREN 102	Introduction to French II	4
HIST 121	Western Civilization I	3
HIST 122	Western Civilization II	3
HUM 254	World Civilizations	3
LAKL 101	Introduction to Lakota I	4
LAKL 102	Introduction to Lakota II	4
MUS 100	Music Appreciation	3
PHIL 100	Introduction to Philosophy	3
PHIL 200	Introduction to Logic	3
SPAN 101	Introduction to Spanish I	4
SPAN 102	Introduction to Spanish II	4
THEA 100	Introduction to Theatre	3
THEA 131	Intro to Acting	3
THEA 200	Theatre History	3

GOAL 5: Mathematics **3 credits**

MATH 102	College Algebra	3
MATH 104	Finite Math	4
MATH 120	Trigonmetry	3
MATH 121	Survey of Calculus	4
MATH 123	Calculus I	4
MATH 125	Calculus II	4
MATH 225	Calculus III	4
MATH 281	Intro to Statistics	3

GOAL 6: Natural Sciences **6 credits**

BIOL 101	Biology Survey I/Lab	3
BIOL 103	Biology Survey II/Lab	3
BIOL 151	General Biology I/Lab	4
BIOL 165	General Zoology/Lab	4

BIOL 201	General Botany/Lab	4
CHEM 112	General Chemistry I/Lab	4
CHEM 114	General Chemistry II/Lab	4
PHYS 111	Introduction to Physics I/Lab	4
PHYS 113	Introduction to Physics II/Lab	4
PHYS 211	University Physics I/Lab	4
PHYS 213	University Physics II/Lab	4

GOAL 7: Information Literacy

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

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

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

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

Institutional Graduation Requirements 11 credits

GOAL 1: Information Systems & Computer Technology 6 credits

Students will demonstrate competence in information systems and computer technology through software and programming classes.

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

1. Demonstrate competence in use of computer application software;
2. Demonstrate competence in programming concepts;
3. Demonstrate knowledge of computer technology.

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

CSC 105	Intro to Computers	3
CSC 150	Computer Science I	3
or		
CIS 130	Visual Basic Programming	

GOAL 2: Written Communications 3 credits

Students will refine their understanding and practice if reading and writing as integral parts of researching, learning, discussing, and presenting academic materials.

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

1. Read extensively and respond critically in written discourse, e.g. do significant outside reading with corresponding writing assignments;

2. Use writing to learn course content by practicing writing as an integral, on-going part of the course and applying writing conventions of appropriate style manuals (MLA, APA, Chicago)
3. Demonstrate knowledge of computer technology.

Each course meeting this goal includes the following student learning outcome:
Required: #1, and #2

ENGL 210	Introduction to Literature	3
HIST 151	US History I	3
HIST 152	US History II	3
HIST 256	World History	3
SOC 100	Introduction to Sociology	3
SOC 150	Social Problems	3
SOC 285	The Information Society	3

All courses listed above also meet the System General Education Requirements (SGR). Students may not use the same course to meet both an SGR requirement and a written communications requirement.

GOAL 3: Personal Wellness and Fitness **2 credits**

Students will understand the holistic nature of wellness and the benefits derived from a physically active lifestyle.
Student Learning Outcomes: As a result of taking courses meeting this goal, students will:

1. Identify and explain the principles of wellness and the health-related components;
2. Apply these health related components to fitness/wellness labs.

Each course meeting this goal includes the following learning outcome:
Required: #1 and #2

WEL 100	Wellness for Life	1
WEL 100L	Wellness for Life Lab	1

Electives **23**

Bachelor of Science in Education in Mathematics with Computer Education Minor

Students majoring in this program develop a strong mathematical background in a mathematics core following the guidelines of the National Council of Teachers of Mathematics and the Mathematical Association of America. Graduates of this program are prepared to teach mathematics and computer science at the secondary level. These students will receive a Bachelor of Science in Mathematics Education and a minor in Computer Education. Graduates of this program will also be prepared to use the computer as a tool in both the learning and teaching of mathematics. All DSU teacher education graduates earn a K-12 Educational Technology Endorsement.

System-wide General Education Requirement* 30
Institutional Graduation Requirement 11**

* Majors must take PSYC 101, MATH 123 and one of HIST 151, or HIST 152 as part of the system-wide general education requirement.

** Majors must take CIS 130 as part of the institutional graduation requirement.

NOTE: Students should complete professional education coursework (see below) concurrently with general education and content major coursework.

Mathematics Component 31

MATH 125	Calculus II	4
MATH 201	Intro to Applied Math	3
MATH 281	Introduction to Statistics	3
MATH 315	Linear Algebra	3
MATH 316	Discrete Mathematics	3
MATH 341	Mathematical Concepts for Teachers I	3
MATH 342	Mathematical Concepts for Teachers II	3
or		
MATH 361	Modern Geometry	
Plus 9 credits from the following:		9
MATH 225	Calculus III	4
MATH 318	Advanced Discrete Mathematics	3
MATH 321	Differential Equations	3
MATH 381	Intro to Probability & Statistics	3
MATH 413	Abstract Algebra I	3
MATH 418	Mathematical Modeling	3
MATH 471	Numerical Analysis I	3
MATH 475	Operations Research	3
MATH 492	Topics	1-6*
MATH 498	Undergraduate Research/Scholarship	2

* May be repeated several times provided student does not enroll in the same Special Topics course.

Computer Education Component **18**

CIS 350	Computer Hardware, Data Communications & Networking	3
CSC 150	Computer Science I.	3
CSC 206	Advanced Computer Applications	3
EDFN 365	Computer-based Technology and Learning	3
EDFN 366	Teaching Using Video Conferencing	1
EDFN 465	Multimedia Web Dev. in Education	2
SCTC 303	Comp. Applications in Nat. Sciences	3

Electives* **5**

* One of these credits are met when completing MATH 123 as part of the system general education.

Professional Education Courses **33**

Students must complete 30 hours of system-wide general education courses in their first 64 credit hours.

All Professional Education Courses must be completed with a "C" or better.

(1) No grade less than a "C" and must be completed prior to admission to Teacher Education.

(2) Requires field experience.

Pre-Professional Block

EDFN 338	Foundations of American Education [1, 2]	2
EPSY 302	Educational Psychology [1, 2]	3
HIST/INED 411	South Dakota Indian Studies	3
SPED 100	Intro to Persons with Exceptionalities [1, 2]	2

Admission to the Teacher Education Program is required for the remaining courses. See Requirements for Admission in the College of Education section.

*Students planning to teach outside South Dakota are encouraged to take SPED 100 for 3 credits.

Early Professional Block

EDFN/SOC 475	Human Relations	3
EPSY 330	Human Growth and Development [2]	3
ENGL/SEED 450	7-12 Teaching Reading in the Content Area [2]	3

Advanced Professional Block

SEED 302	Secondary and Middle Level Content Methods: Math Major [2]	2
SEED 303	Secondary and Middle Level Content Methods: Computer Science Minor (Recommended)	1

Student Teaching Semester

Admission to Student Teaching is required for enrollment in SEED 488. See Approval for Student Teaching in College of Education section. SEED 401 and SEED 471 are taught in a compressed format during the first four weeks of the semester and are usually taken in the same semester as student teaching.

SEED 401	Methods of Educational Technology	1
SEED 471	K-12 Secondary Education Classroom Management (Recommended)	1
SEED 488	7-12 Student Teaching	10

Students planning to teach outside South Dakota are encouraged to take

HLTH 201	ATOD Prevention Education	2

Minor/Endorsement Programs (Minors leading to South Dakota certification)

See Education Endorsement Programs in College of Education section for a list of all available minor/endorsement programs for K-12 and Secondary Education majors.

Bachelor of Science in Mathematics for Information Systems

Graduates of the Mathematics for Information Systems program will have backgrounds in mathematics, business and information systems. These students take a variety of mathematical analysis courses including calculus, probability and statistics, and mathematical modeling. In addition, these students take a variety of computer and business related courses including computer programming, operating systems, data base applications, and business.

Students with this degree will enter the job market as business people with quantitative skills. Students will be hired by major businesses that need statistical analysis of both business and mathematical natures.

System-wide General Education Requirement* 30
Institutional Graduation Requirement 11**

* Majors must take MATH 123 as part of the system-wide general education requirement.

** Majors must take CSC 150 as part of the institutional graduation requirement.

Mathematics Component 28

Students obtaining a degree in Biology for Information Systems or Biology Major for Bachelor of Science in Education, Physical Science or Physical Science Major for Bachelor of Science in Education or Computer Science, only need complete the Mathematics Component of the program to obtain a second major in Mathematics for Information Systems.

MATH 125	Calculus II	4
MATH 201	Intro to Applied Mathematics	3
MATH 281	Introduction to Statistics	3
MATH 315	Linear Algebra	3
MATH 316	Discrete Mathematics	3
Plus 12 credits from the following:		12
MATH 225	Calculus III	4
MATH 318	Advanced Discrete Mathematics	3
MATH 321	Differential Equations	3
MATH 361	Modern Geometry	3
MATH 381	Intro to Probability & Statistics	3
MATH 413	Abstract Algebra I	3
MATH 418	Mathematical Modeling	3
MATH 471	Numerical Analysis I	3
MATH 475	Operations Research	3
MATH 492	Topics	1-6*
MATH 498	Undergraduate Research Scholarship	2

* May be repeated several times provided student does not enroll in the same Special Topics course.

Science Technology Component **7**

SCTC 303	Comp. Appl. in Nat. Science	3
Select 4 credits from the following:		4
BIOL 311	Principles of Ecology	4
BIOL 371	Genetics	4
CHEM 332	Analytical Chemistry	4
PHYS 451	Classical Mechanics	4

Supporting Coursework **36**

BADM 360	Organization & Mgmt.	3
CIS 332	Structured Systems Analysis and Design	3
CSC 250	Computer Science II	3
CSC 260	Object Oriented Design	3
Select 24 credits from the following:		24
ACCT 210	Principles of Accounting I	3
BADM 321	Business Statistics II	3
BADM 370	Marketing	3
BADM 425	Prod and Oper Mgmt	3
BADM 426	Inventory Control	3
CHEM 452	Inorganic Chemistry	3
CIS 277	OS Interfaces and Utilities	3
CIS 325	Management Info System	3
CIS 330	COBOL I	3
CIS 350	Computer Hardware, Data Communications & Networking	3
CIS 484	Database Management Systems	3
CSC 300	Data Structures	3
CSC 314	Assembly Language	3
CSC 317	Comp. Org. & Architecture	3
CSC 433	Computer Graphics	3
CSC 456	Operating Systems	3
CSC 461	Programming Languages	3
PHSI 330	Intro Quantum Mech.	2
PHSI 343	Intro Thermodynamics	2
PHSI 345	Kinetics and Equilibrium	2
PHSI 411	Intro Statistical Mech	2
PHSI 421	Adv. Comp. Methods in Phy. Science	2
PHYS 439	Solid State Physics	3

Electives* **16**

*One of these credits will have been met upon completion of MATH 123 as part of the system-wide general education requirements.

Bachelor of Science in Multimedia/Web Development

The Bachelor of Science in Multimedia/Web Development consists of courses in computer graphics, art, writing, web creation, marketing, and computing. It is designed to prepare graduates to assume a variety of positions such as Web Designer, Web Developer, or Website Manager for businesses, educational institutions, and government. In addition, graduates will be prepared for a wide range of positions requiring a background in computer multimedia.

All students earning a Bachelor of Science in Multimedia/Web Development degree must complete the following courses:

System-wide General Education Requirements* **30**
Institutional Graduation Requirements** **11**

*Majors must take ECON 201, MUS 100, SOC 285 and a literature course (ENGL 210, 211, 212, 221, 222, 241, 242, 268) as part of the system-wide general education requirement.

**Majors must take CIS 130 as part of the institutional graduation requirements.

Major Requirements **68**

Arts, Design, and Computer Graphics **35**

ART 111	Drawing I	3
ART 121	Design I - 2D	3
ART 122	Design II - Color	3
ARTD 282	2-Dimensional Design on Computers I	3
ARTD 285	2-Dimensional Design on Computers II	3
ARTD 306	Advanced Graphics Applications	2
ARTD 336	Digital Photography I	3
ARTD 382	3-Dimensional Design on Computers I	3
ARTD 431	Computer Graphic Effects I	3
ARTD 432	Computer Graphic Effects II	3
ARTD 436	Digital Photography II	3
MUS 222	Computers and Music	3

Computer Programming and Processing **9**

CIS 251	Business Applications Programming	3
CIS 328	Operating Environment	3
CIS 350	Computer Hardware, Data Comm. & Networking	3

Web Creation and Marketing **12**

BADM 370	Marketing	3
MCOM 351	Web Publishing I	3
MCOM 352	Web Publishing II	3
MCOM 389	Portfolio and Professional Development	2
MCOM 494	Internship	1

Writing and Information Architecture **12**

ENGL 208	Documentation and Presentation	3
ENGL 401	Advanced Writing	3
ENGL 408	Advanced Computer Documentation	3
MCOM 409	Information Architecture	3

Select at least one of the following specializations: **12**

Multimedia

ART 213	Figure Drawing	3
ARTD 385	3-D Design on Computers II	3
ARTD 440	Advanced 3-D Design	3
ARTD 460	Digital Editing	3

Web

CIS 275	Web Application Programming I	3
CIS 332	Structured Systems Analysis & Design	3
CIS 375	Web Application Programming II	3
CIS 484	Database Management Systems	3

Elective: **7**

Bachelor of Science in Physical Science

Students majoring in this program will be prepared to become employees as chemists or physicists for the science-based industries and agencies that use modern technology. They will also be prepared to pursue an advanced degree in chemistry, physics, engineering or medicine. This program provides an excellent background in business and computer science/information systems technology as well as a solid foundation in biology, supporting sciences and mathematics. The graduates of this program will be capable of entering industry in traditional technical positions available to physicists and chemists, or in marketing, business, computer support or information systems. The combination of traditional science and modern computational methods will be especially valuable in science-based information industries. In particular, in the emerging biotechnology industry, this kind of background in science and technology is increasingly necessary.

System-wide General Education Requirement* **30**
Institutional Graduation Requirement** **11**

*Majors must take MATH 123, CHEM 112, and PHYS 211 as part of the system-wide general education requirement.

** Majors must take CSC 150 as part of the institutional graduation requirement.

Major Core **43-44**

BIOL 151	General Biology I	4
CHEM 114	General Chemistry II	4
CHEM 326	Organic Chemistry I	4
ESCI 208	Introduction to Earth and Space Science	2
MATH 125	Calculus II	4
MATH 321	Differential Equations	3
PHSI 330	Introductory Quantum Mechanics	2
PHSI 343	Introductory Thermodynamics	2
PHSI 411	Introductory Statistical Mechanics	2
PHSI 421	Advanced Computational Methods in Physical Science	2
PHYS 213	University Physics II	4
PHYS 421	Electromagnetism	4
SCTC 303	Computer Applications in the Natural Sciences	3
Plus 3 or 4 hours from the following*		3-4
BIOL 311	Principles of Ecology	4
BIOL 331	Microbiology	4
BIOL 371	Genetics	4
BIOL 343	Cell and Molecular Biology	4
BIOL 492	Topics	3

*Three hours required for the Business Management emphasis and four hours required for the Computer Science emphasis

Take one of the following specializations: 13

Chemistry

CHEM 332	Analytical Chemistry	4
CHEM 452	Inorganic Chemistry	3
CHEM 498	Undergraduate Research/Scholarship	2
Plus 4 hours from the following:*		4
BIOL 311	Principles of Ecology	4
BIOL 331	Microbiology	4
BIOL 343	Cell and Molecular Biology	4
BIOL 371	Genetics	4
BIOL 492	Topics	1
CHEM 328	Organic Chemistry II	4
CHEM 460	Biochemistry	3
CHEM 492	Topics	1
PHSI 345	Kinetics and Equilibrium	2
PHSI 492	Topics	1
PHYS 439	Solid State Physics	3
PHYS 492	Topics	1

* Any of these courses may be counted only once in fulfillment of the major core requirements and the chemistry track requirements.

NOTE: According to the American Chemical Society standards, a traditional chemistry major demands 28 semester hours of chemistry courses with emphasis on inorganic chemistry, chemical analysis and instrumental methods of analysis, organic and bioorganic chemistry, and calculus-based physical chemistry. This requirement can be met with the above courses by carefully selecting electives to fulfill the emphasis delineated by the ACS.

Physics

PHYS 439	Solid State Physics	3
PHYS 451	Classical Mechanics	4
PHYS 498	Undergraduate Research/Scholarship	2
Plus 4 hours from the following:		4
CHEM 492	Topics	1-4
PHSI 345	Kinetics and Equilibrium	2
PHSI 492	Topics	1-4
PHYS 351	Intermediate Quantum Mechanics	2
PHYS 361	Optics	3
PHYS 424	Digital Electronics	4
PHYS 492	Topics	1-4

NOTE: According to the American Institute of Physics standards, a traditional physics major demands coursework in mechanics, electricity and magnetism, thermodynamics and statistical mechanics, optics, quantum physics, and experimental physics. This requirement can be met with the above courses by carefully selecting electives to fulfill the emphasis delineated by the AIP.

Take one of the following emphases: **27**

Computer Science

Students who select the computer science emphasis are strongly urged to select two languages (one primary and one secondary) in which to be proficient. For example, a student may elect to take C++ as their primary programming language and JAVA as their secondary choice.

CIS 277	OS Interfaces and Utilities	3
or		
CSC 456	Operating Systems	
CIS 332	Structured Systems Analysis and Design	3
CSC 250	Computer Science II	3
CSC 260	Object Oriented Design	3
CSC 300	Data Structures	3
CSC/MATH 316	Discrete Mathematics	3
CSC 461	Programming Languages	3
Plus 6 hours chosen from the following list:		6
CIS 377	On-Line Applications	3
CIS 383	Networking I	3
CIS 384	Decision Support Systems	3
CIS 427	Information Systems Planning and Management	3
CIS 447	Artificial Intelligence	3
CIS 457	Document Image Processing Systems	3
CIS 484	Database Management Systems	3
CIS 488	Advanced Database Issues	3
CSC 314	Assembly Language	3
CSC 317	Computer Organization and Architecture	3
CSC 335	Assembler II	3
CSC 403	Programming for Graphical User interfaces	3
CSC 410	Parallel Computing	3
CSC 433	Computer Graphics	3
CSC 455	Computer Vision	3

Business Management

Students who select the business management emphasis must take ECON 201 as part of the system-wide general education requirements.

ACCT 210	Principles of Accounting I	3
ACCT 211	Principles of Accounting II	3
BADM 220	Business Statistics	3
BADM 310	Business Finance	3
BADM 321	Business Statistics II	3
BADM 360	Organization and Management	3
BADM 425	Production and Operations Management	3
ECON 202	Principles of Macroeconomics	3

Plus 3 hours chosen from the following list: 3

BADM 334	Small Business Management	3
BADM 350	Legal Environment of Business	3
BADM 370	Marketing	3
BADM 426	Inventory Control	3
BADM 427	Logistics	3
BADM 428	Material Handling and Facilities Design	3
BADM 435	Management of Technology and Innovation	3
BADM 436	Entrepreneurship	3
BADM 460	Human Resources Management	3
OED 344	Business Communications	3

Electives* **3-4**

*Three of these credits will have been met upon completion of MATH 123, CHEM 112 and PHYS 211 as part of the system-general education requirements.

Bachelor of Science in Education in Physical Science

Students majoring in this program will find themselves able to teach several of the most sought after subject areas in secondary education today. Graduates will be eligible for SD teaching certification in chemistry, physics, physical science, and also educational technology. With little additional work, graduates can receive a certification in mathematics as well. Students graduating from this program will also find themselves particularly well suited to incorporate educational technology in their classes to make the sciences more fun and less abstract. All DSU teacher education graduates earn a K-12 Educational Technology Endorsement.

System-wide General Education Requirement* **30**
Institutional Graduation Requirement** **11**

*Majors must take MATH 123, CHEM 112, PHYS 211 and PSYC 101 as part of the system-wide general education requirements.

** Majors must take CSC 150 as part of the institutional graduation requirement.

NOTE: Students should complete professional education coursework (see below) concurrently with general education and content major coursework.

Major Core **36**

CHEM 114	General Chemistry II	4
CHEM 326	Organic Chemistry I	4
ESCI 208	Introduction to Earth and Space Science	2
MATH 125	Calculus II	4
MATH 321	Differential Equations	3
PHSI 330	Introductory Quantum Mechanics	2
PHSI 343	Introductory Thermodynamics	2
PHSI 411	Introductory Statistical Mechanics	2
PHSI 421	Advanced Computational Methods in Physical Science	2
PHYS 213	University Physics II	4
PHYS 451	Classical Mechanics	4
SCTC 303	Computer Applications in the Natural Sciences	3

Educational Technology Endorsement Program Requirement **3**

CIS 350	Computer Hardware, Data Communications & Network	3

Choose one of the following specializations: **13**

Education majors in either specialization who take 7 additional credit hours of approved courses for the 7-12 mathematics endorsement program, including SEED 303, will have met the requirements for a South Dakota certification in secondary mathematics.

Chemistry*

CHEM 332	Analytical Chemistry	4
CHEM 452	Inorganic Chemistry	3
CHEM 498	Undergraduate Research/Scholarship	2

Plus 4 hours from the following: 4

BIOL 311	Principles of Ecology	4
BIOL 331	Microbiology	4
BIOL 343	Cell and Molecular Biology	4
BIOL 371	Genetics	4
BIOL 492	Topics	1
CHEM 328	Organic Chemistry II	4
CHEM 460	Biochemistry	3
CHEM 492	Topics	1-4
PHSI 345	Kinetics and Equilibrium	2
PHSI 492	Topics	1
PHYS 439	Solid State Physics	3
PHYS 492	Topics	1

*Education majors who select the chemistry specialization will have met the requirement for a 7-12 endorsement program in chemistry education as well as the requirements for a 7-12 endorsement program in physics education.

Physics*

PHYS 421	Electromagnetism	4
PHYS 439	Solid State Physics	3
PHYS 498	Undergraduate Research/Scholarship	2

Plus 4 hours from the following: 4

CHEM 492	Topics	1-4
PHSI 345	Kinetics and Equilibrium	2
PHSI 492	Topics	1-4
PHYS 351	Intermediate Quantum Mechanics	2
PHYS 361	Optics	3
PHYS 492	Topics	1-4

*Education majors who graduate with the physics specialization will have met the requirement for a 7-12 endorsement program in physics. Education majors who take CHEM 332 as an elective (4 additional hours) also meet the requirement for the 7-12 endorsement program in chemistry.

Electives* **3**

*These credits will have been are met upon completion of MATH 123, CHEM 112 and PHYS 211 as part of the system-wide general education requirement.

Professional Education Courses **32**

Students must complete 30 hours of system-wide general education courses in their first 64 credit hours.

All Professional Educational Courses must be completed with a "C" or better.

(1) No grade less than a "C" and must be completed prior to admission to Teacher Education

(2) Requires field experience.

Pre-Professional Block

EDFN 338	Foundations of American Education [1, 2]	2
EPSY 302	Educational Psychology [1, 2]	3
HIST/INED 411	South Dakota Indian Studies	3
SPED 100	Intro to Persons with Exceptionalities [1, 2]	2 *

Admission to the Teacher Education Program is required for the remaining courses. See Requirements for Admission in the College of Education section.

*Students planning to teach outside South Dakota are encouraged to take SPED 100 for 3 credits.

Early Professional Block

EPSY 330	Human Growth and Development [2]	3
ENGL/SEED 450	7-12 Teaching Reading in the Content Area [2]	3
EDFN/SOC 475	Human Relations	3

Advanced Professional Block

SEED 302	Secondary and Middle Level Content Methods: Science Major [2]	2

Student Teaching Semester

Admission to Student Teaching is required for enrollment in SEED 488. See Approval for Student Teaching in College of Education section. SEED 401 and SEED 471 are taught in a compressed format during the first four weeks of the semester and are usually taken in the same semester as student teaching.

SEED 401	Methods of Education Technology [2]	1
SEED 471	K-12 Secondary Education Classroom Management (Recommended)	1
SEED 488	7-12 Student Teaching	10

Students planning to teach outside South Dakota are encouraged to take

HLTH 201	ATOD Preventative Education	2

Minor/Endorsement Programs (Minors leading to South Dakota Certification)

See Education Endorsement Programs in College of Education section for a list of all available minor/endorsement programs for K-12 and Secondary Education majors.

Respiratory Care - Bachelor of Science and Associate of Science

Respiratory Care is the health care discipline that specializes in the promotion of optimum cardiopulmonary function and health. Respiratory Therapists apply scientific principles to prevent, identify, and treat acute or chronic dysfunction of the cardiopulmonary system. Knowledge of the scientific principles underlying cardiopulmonary physiology and pathophysiology, as well as biomedical engineering and technology, enable respiratory therapists to effectively assess, educate, and treat patients.

As a health care profession, Respiratory Care is practiced under medical direction across the health care continuum. Respiratory Care is specifically focused on the assessment, treatment, management, control, diagnostic evaluation, education, and care of patients with deficiencies and abnormalities of the cardiopulmonary system as well as on the prevention of the development of these deficiencies. Critical thinking, patient/environment assessment skills, and evidence-based clinical practice guidelines enable respiratory therapists to develop and implement effective care plans, patient-driven protocols, disease-based clinical pathways, and disease management programs. A variety of venues serve as the practice site for this health care profession including, but not limited to: acute care hospitals, diagnostic laboratories, rehabilitation and skilled nursing facilities, patients' homes, patient transport systems, physician office, convalescent and retirement centers, educational institutions, and wellness centers.

The respiratory care programs at Dakota State University (DSU) are designed as either an associate or bachelor's degree in respiratory care. The first fall and spring semesters of the A.S. program are spent on a university campus completing general education requirements. After the first year's classes are completed, the student has class and clinical experiences at the primary clinical affiliate hospitals (Avera McKennan and Sioux Valley Hospitals in Sioux Falls or Rapid City Regional Hospital in Rapid City). Both semesters of the third year and the fall semester of the fourth year are spent on a university campus, and the fourth spring semester is a clinical semester at the Sioux Falls hospitals.

Immediately upon graduation from either the A.S. or B .S. program, you may begin employment as a graduate therapist. You are immediately eligible to take the entry level examination of the National Board for Respiratory Care to become a Certified Respiratory Therapist. Following certification, you are eligible to take the advanced written and simulation examinations of the NBRC to become a Registered Respiratory Therapist.

The field of respiratory care provides excellent opportunities for those interested in a dynamic and exciting career in cardiopulmonary sciences. Salaries for respiratory therapists are excellent and compare favorably with other allied health fields. Job opportunities for new graduates are also very good. According to newly released data from the Bureau of Labor Statistics (BLS), the respiratory therapy profession is expected to add almost 38,000 new jobs between now and 2012, increasing the size of the profession by 35 percent and making RT one of the fastest growing occupations covered in BLS's 2004-2005 Occupational Outlook Handbook. This increase in demand is expected because of substantial growth of the elderly population, and increases in the numbers of patients with asthma and chronic lung disease.

Associate of Science in Respiratory Care

All students earning an Associate of Science in Respiratory Care degree must complete the following courses:

General Education Courses		**20**
BIOL 151	General Biology I 4	
CHEM 106	Chemistry Survey 4	
or		
CHEM 112	General Chemistry I	
CSC 105	Introduction to Computers 3	
ENGL 101	Composition I 3	
MATH 102	College Algebra 3	
SPCM 101	Fundamentals of Speech	
or		
SPCM 215	Public Speaking	
or		
SPCM 222	Argumentation and Debate 3	
Science Courses		**8**
BIOL 323	Human Anatomy & Physiology 4	
PHYS 111	Introduction to Physics I 4	
Professional Courses		**46**
HIM 130	Basic Medical Terminology. 2	
RESP 110	Introduction to Respiratory Care 6	
RESP 150	Clinical Experience I 6	
RESP 180	Patho. For Respiratory Care 3	
RESP 210	Respiratory Critical Care 5	
RESP 250	Clinical Experience II 6	
RESP 395	Observation Practicum 2	
RESP 310	Advanced Respiratory Care 5	
RESP 350	Clinical Experience III 6	
RESP 355	Respiratory Care in Clinical Med 4	
RESP 381	Respiratory Care Mgmt. 1	

Bachelor of Science in Respiratory Care

The Bachelor of Science degree in respiratory care continues the work begun in understanding the medical and scientific applications of today's health care field while incorporating the technology available to today's respiratory care practitioner.

Prerequisite: Associate of Science in Respiratory Care degree from Dakota State University or equivalent **74**

All students earning a Bachelor of Science degree in Respiratory Care must complete the following additional courses:

System-wide General Education Requirement* **15**
Institutional Graduation Requirement **8**

*Majors must take PSYC 101 as part of the system-wide general education requirements.

Professional Courses **27**

MATH 281	Introduction to Statistics	3
	Advanced-level BIOL or Science course	4
BIOL 331	Microbiology	4
CSC 206	Advanced Computer Applications	2
RESP 341	Pharmacology	2
RESP 440	Ethics for Health Professionals	3
RESP 460	Current Issues in Resp. Care	3
RESP 475	Clinical Experience IV	5
RESP 495	Mgmt. Observation Practicum	1

Electives **4**

Respiratory Technician to A.S. in Respiratory Care Hospital-Based Program Articulation

The Respiratory Technician to A.S. in Respiratory Care articulation prepares hospital-trained respiratory technicians to assume respiratory care positions in hospitals and clinics.

Respiratory Technicians who have completed an entire AMA-approved hospital-based respiratory technician certificate program may apply to enter this program. Evidence of successful completion of the entry level Certified Respiratory Therapist (CRT) examination and date of certification must be submitted at application. An official grade transcript, course descriptions, and documentation of current respiratory care skill from their health care employer must be submitted for evaluation. Each applicant's previous training curriculum will be evaluated by the respiratory care program faculty and other appropriate discipline faculty. A maximum of 32 credit hours will be awarded according to the schedule below for the hospital training. Fewer hours may be awarded depending upon the student's program.

Applicable Program Curriculum		**Prior Learning Credit**
BIOL 323	Human Anatomy & Physiology	4
HIM 130	Basic Medical Terminology	2
RESP 110	Introduction to Respiratory Care	6
RESP 150	Clinical Experience I	6
RESP 180	Pathophysiology for Respiratory Care	3
RESP 210	Respiratory Critical Care	5
RESP 250	Clinical Experience II	6
		Total 32 credits

The curriculum as outlined in the catalog for the first year must be completed prior to beginning clinical training in Sioux Falls.

Bachelor of Science in Scientific Forensic Technology

The Scientific Forensic Technology major is designed to provide the skills and knowledge necessary to use computers and other kinds of modern technology to investigate, document, and visualize (especially with 3D modeling and animation) events that cause injury to humans or cause damage to property. The program is a composite major. It is, by design, a multidisciplinary approach to a focused area of forensic science, combining study in mathematics, chemistry, physics, computer graphics, and technical communication. Professionals working in forensics have indicated that the major is consistent with and frequently goes beyond current national forensic standards and practices. Graduates will be well qualified for many positions with law firms (both civil and criminal), police criminal investigation units, businesses such as large insurance companies, and a variety of government agencies.

System General Education Requirement* **30**

Institutional Graduation Requirement **11**

* Majors must take ART 121, MATH 123, CHEM 112, PHYS 211, SOC 285 and SPCM 215 as part of the system-wide general education requirement.

Major Core: **42**

CHEM 114	General Chemistry II	4
CHEM 326	Organic Chemistry I	4
MATH 125	Calculus II	4
MATH 321	Differential Equations	3
PHSI 343	Introductory Thermodynamics	2
PHYS 213	University Physics II	4
SCTC 332	Instrumental Methods of Forensic Detection	4
SCTC 381	Forensic Probability and Statistics	3
SCTC 390	Seminar in Scientific Forensic Technology	3
SCTC 451	Mechanics for Forensics	4
SCTC 452	Forensic Analysis of Materials and Effects	3
SCTC 460	Medical Biochemistry for Forensics	3
SCTC 494	Internship in Forensics	1

Supporting Coursework **18**

ARTD 282	2-D Design on Computers I	3
ARTD 336	Digital Photography	3
ARTD 382	3-D Design on Computers I	3
ARTD 385	3-D Design on Computers II	3
CIS 388	Computer Forensics	3
ENGL 379	Technical Communication	3

Electives** **27**

** - Three of these credits will have been met upon completion of MATH 123, CHEM 112, PHYS 211 as part of the system-general education requirement.

Minors

Art — 19-20

ART 111	Drawing I	3
ART 121	Design I - 2D	3
ART 231	Painting I	3
ART 340	Sculpture Techniques	2
ARTD 282	2-Dimensional Design on Computers I	3
ARTE 310	K-8 Art Methods*	2
ARTH 211	History of World Art I	3
or		
ARTH 212	History of World Art II	
SEED 303	Secondary & Middle Level Content: Art Minor	1 **

* Non-teaching majors may substitute a corresponding number of credit hours of art electives for ARTE 310.
**Required for education majors only.

Biology — 20-21

BIOL 151	General Biology I	4
BIOL 165	General Zoology	4
BIOL 201	General Botany	4
BIOL 311	Principles of Ecology	4
BIOL 371	Genetics	4
SEED 303	Secondary and Middle Level Content Methods: Science Minor	1 **

**Required for secondary education majors only.

Chemistry — 19-20

CHEM 112	General Chemistry I	4
CHEM 114	General Chemistry II	4
CHEM 326	Organic Chemistry I	4
CHEM 332	Analytical Chemistry	4
SEED 303	Secondary and Middle Level Content Methods: Science Methods	1 **
Plus three credits from the following:		3
CHEM 328	Organic Chemistry II	4
CHEM 452	Inorganic Chemistry	3
CHEM 460	Biochemistry	3
PHSI 343	Intro Thermodynamics	2
PHSI 345	Kinetics & Equilibrium	2

**Required for education majors only.

Computer Graphic Design — 18

ART 121	Design I - 2D	3
ARTD 282	2-Dimensional Design on Computers I	3
ARTD 285	2-Dimensional Design on Computers II	3

ARTD 382	3-Dimensional Design on Computers I	3
ARTD 385	3-Dimensional Design on Computers II	3
Take one of the following:		3
ARTD 336	Digital Photography I	**3**
ARTD 431	Computer Graphic Effects I	3
ARTD 440	Advanced 3-D Design	3
ARTD 460	Digital Editing	3

English 18-19

ENGL 211	World Literature I	3
or		
ENGL 212	World Literature II	
ENGL 222	British Literature II	3
ENGL 241	American Literature I	3
ENGL 307	Principles of Grammar	3
ENGL 401	Advanced Writing	3
LING 443	History of the English Language	3
SEED 303	Secondary & Middle Level Content: English Minor	1 **

**Required for education majors only

French

Please contact the Dean of the College of Arts and Sciences.

History 18-19

HIST 151	US History I	3
HIST 152	US History II	3
HIST 492	Topics	3 *
SEED 303	Secondary and Middle Level Content Methods: Soc. Sci. Minor	1 **
Choose nine credits from the following		9
HIST 121	Western Civilization I	3
HIST 122	Western Civilization II	3
HIST 256	World History	3
HIST 312	History of Modern Asia	3

* Students seeking a history endorsement must complete an offering of **HIST 492** that includes South Dakota history.

** Required of education majors only.

Mathematics, Applied 18-19

MATH 123	Calculus I	4
MATH 125	Calculus II	4
MATH 201	Intro to Applied Mathematics	3
MATH 316	Discrete Mathematics	3
	Math Elective (200 or above)	4 *
SEED 303	Secondary and Middle Level Content Methods: Minor	1 **

* Excluding MATH 341 and MATH 342

** Required of education majors only

Mathematics, Business **19**

MATH 121	Survey of Calculus	4
or		
MATH 123	Calculus I	
MATH 201	Introduction to Applied Mathematics	3
MATH 281	Introduction to Statistics	3
or		
BADM 220	Business Statistics I	
MATH 315	Linear Algebra	3
or		
BADM 321	Business Statistics II	
MATH 316	Discrete Mathematics	3
Three credits from the following:		3
MATH 318	Advanced Discrete Mathematics	3
MATH 418	Mathematical Modeling	3
MATH 475	Operations Research	3

Mathematics, Elementary Education **18**

MATH 120	Trigonometry	3
MATH 201	Introduction to Applied Mathematics	3
MATH 281	Introduction to Statistics	3
MATH 316	Discrete Mathematics	3
MATH 341	Math Concepts for Teachers I	3
MATH 342	Math Concepts for Teachers II	3

Multimedia/Web Design **18**

ART 121	Design I - 2D	3
ARTD 282	2-Dimensional Design on Computers I	3
ENGL 401	Advanced Writing	3
MCOM 351	Web Publishing I	3
MCOM 352	Web Publishing II	3
MCOM 409	Information Architecture	3

Music **19-20**

MUS 110	Basic Music Theory I	4
MUS 233	Survey of Music History & Literature	3
MUS 222	Computers & Music	1
MUS 353	K-8 Music Methods*	1
MUS 360	Conducting	2
SEED 303	Secondary and Middle Level Content Methods: Music Minor	1 **
Choose either vocal or instrumental music		8

Vocal Music

MUAP 152	Applied Music (Vocal)	3
MUEN 100	Concert Choir	5

Instrumental Music

MUAP 152	Applied Music: (Brass)	1
MUAP 152	Applied Music: (Woodwinds)	1
MUAP 152	Applied Music: (Percussion)	1
MUEN 122	Concert Band	5

* Non-education majors may substitute a corresponding number of credit hours in MUEN 100, MUEN 122, or MUAP 152 for MUS 353.

** Required of education majors only.

Physics 20-21

PHYS 111	Introduction to Physics I	4	
PHYS 113	Introduction to Physics II	4	
PHYS 421	Electromagnetism	4	
PHYS 451	Classical Mechanics	4	
PHSI 330	Introductory Quantum Mechanics	2	
PHYS 351	Intermediate Quantum Mechanics	2	
or			
ESCI 208	Intro to Earth & Space Science*		
SEED 303	Secondary & Middle Level Content Methods: Science Minor	1	**

* Required for a teaching endorsement in Physics

** Required of education majors only.

Sociology 18-19

SOC 100	Introduction to Sociology	3	
SOC 150	Social Problems	3	
SOC 285	Information Society	3	
SOC 352	Social Indicators	3	
SOC 360	Social Systems and Technology	3	
SOC 381	Social Institutions	3	
SEED 303	Secondary and Middle Level Content Methods: Soc. Sci. Minor	1	**

**Required for education majors only.

Spanish

Please contact the Dean of the College of Arts and Sciences.

Speech Communication/Theatre 18-19

SPCM 215	Public Speaking	3	
SPCM 481	Speech and Debate Activities	3	
THEA 100	Intro to Theatre	3	
THEA 131	Intro to Acting	3	
THEA 200	Theatre History	3	
THEA 395	Theatre Practicum	3	
SEED 303	Secondary and Middle Level Content Methods: Speech/Theatre Minor	1	**

**Required of education majors only.

Certificates:

Information Systems Management

Digital Photography 12

ART 121	Design I - 2D	3
ARTD 282	2-Dimensional Design on Computers I	3
ARTD 336	Digital Photography I	3
ARTD 436	Digital Photography II	3

Multimedia 12

ARTD 282	2-Dimensional Design on Computers I	3
CSC 320	Multimedia Design	3
CSC 336	Authoring Systems	3
MUS 222	Computers and Music	3

Multimedia Design and Production 12

ARTD 282	2-Dimensional Design on Computers I	3
ARTD 285	2-Dimensional Design on Computers II	3
ARTD 382	3-D Design on Computers I	3
ARTD 385	3-D Design on Computers II	3

Website Design and Development 12

ARTD 282	2-Dimensional Design on Computers I	3
MCOM 351	Web Publishing I	3
MCOM 352	Web Publishing II	3
ENGL 401	Advanced Writing	3

Pre-Professional Programs

Degrees and advisement are available for students who wish to pursue pre-professional programs in the following areas:

Actuary sciences	Medicine
Agriculture	Medical technology
Chiropractic medicine	Ministerial studies
Dentistry	Mortuary science
Divinity	Nursing
Engineering	Optometry
Fine Arts Administration	Pediatric medicine
Fisheries	Pharmacy
Forensic Science	Physical Therapy
Forestry	Physician assistant
Law	Veterinary medicine
Library Science	Wildlife management

Entry into professional schools of law, divinity, medicine, dentistry, optometry, veterinary medicine, chiropractic medicine, osteopathy and other related professions requires a strong undergraduate background.

The Biology for Information Systems major is an excellent pathway to professional programs in medicine and other health fields. That major spans the disciplines of biology and provides a strong foundation in Chemistry, Mathematics, and Physics, plus supporting courses in Business and Information Systems or in Applied Health Technology. A student successful in this program would have an excellent chance to being accepted into a wide range of professional schools.

The Physical Science major, another excellent choice as a pre-medical program, has a strong biology component and provides students all of the courses required for admission to medical school. It emphasizes Chemistry or Physics supported by strength in Computer Science and Mathematics, as well as Biology, plus training in either business management or additional computer science. The unique nature of the program should make graduates stand out as medical school applicants.

Because it provides an outstanding background in writing, reading, and electronic communication, English for Information Systems provides a strong background for a range of advanced study in fields such as law, Library science, literature, and technical communication. Students who major in English can minor in art, computer graphics, music, or speech communication/theatre to prepare for future study in fine arts.

There are opportunities for ministers and pastors in virtually every denomination. Although seminaries customarily require a baccalaureate degree, there is rarely a prescribed major. Successful ministers have earned baccalaureate degrees with majors in English, fine arts, and science. One seminary recommends that students concentrate at least three-fourths of their undergraduate courses in one of the arts or sciences. Some seminaries consider particular kinds of course work to be an advantage.

Students who have questions should contact their advisors or the Dean of the College of Arts and Sciences.