

## **Bachelor of Science Graduation Requirements**

An Application for Graduation and Commencement must be completed by the date indicated on the academic calendar which is located in the academic calendar section of the catalog. If you are completing degree requirements during the summer term you must complete the form for the preceding May graduation. Students must be actively enrolled in the semester that they graduate and meet the requirements of the degree, or they must meet the requirements that are in place at the time they request the degree be granted. This form is online.

### **Baccalaureate Degree**

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

#### **Summa Cum Laude:**

equal to or greater than 3.90

#### **Magna Cum Laude:**

equal to or greater than 3.70 and less than 3.90

#### **Cum Laude:**

equal to or greater than 3.50 and less than 3.70

The student must have completed a minimum of 64 credit hours at the institution granting the degree. Courses that are part of a formal collaborative agreement among Regental universities are considered to be earned from the institution granting the degree.

### **Associate Degree**

The institution granting the degree determines the honors designation for its associate-level graduates. To earn an honor designation at graduation, an associate-level graduate must meet both the following cumulative and institutional

grade point averages:

#### **With highest honor:**

equal to or greater than 3.90

#### **With high honor:**

equal to or greater than 3.70 and less than 3.90

#### **With honor:**

equal to or greater than 3.50 and less than 3.7

An associate-level graduate must have completed a minimum of 32 credit hours at the institution granting the degree. Courses that are part of a formal collaborative agreement among Regental universities are considered to be earned from the institution granting the degree.

### **Two Bachelor of Science Degrees From South Dakota School of Mines and Technology**

An undergraduate student who wishes to qualify for a second bachelor of science degree conferred by School of Mines must complete a minimum of thirty (32) semester hours of credit in residence beyond the credit hours used for the first B.S. degree.

Students should report their intent to pursue two (2) bachelor of science degrees to the Office of the Registrar and Academic Services. This action will initiate the assignment of an advisor in each discipline.

### **General Requirements**

The following rules on graduation requirements apply for the bachelor of science degree in any curriculum offered by the university. Requirements that apply to many or all programs are described below. Please refer to the curriculum for an individual degree program for specific course requirements. Each candidate for a degree is personally responsible for meeting all requirements for graduation. No university official can relieve a candidate of this responsibility.

The South Dakota School of Mines and Technology reserves the right to change any

course of study or any part of a curriculum in keeping with accreditation, educational, and scientific developments.

### General Education Core Requirements

General education core requirements must be completed within the first sixty-four (64) credits. Requests for exceptions to these general education requirements must be approved by the student's advisor and by the Vice President for Academic Affairs/Provost. The required core is listed below.

#### Goal #1

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

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

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

Each course meeting this goal includes the following student outcomes:

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

**Credit Hours:** 6 hours

#### Courses:

ENGL 101    Composition I  
ENGL 201    Composition II  
ENGL 279/289    Technical Communications I and II<sup>1</sup>

<sup>1</sup> Engineering and sciences students at School of Mines take this six credit sequence in the sophomore and junior years. Both courses develop written and speech communications in an integrated fashion in the context of the major. Students must finish the entire sequence, as well

as ENGL 101, to satisfy the requirements of Goal #1 and Goal #2.

#### Goal #2

Students will communicate effectively and responsibly through speaking and listening.

**Student Learning Outcomes:** Courses satisfying this goal will require students to

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

**Credit Hours:** 3 hours

Courses:

ENGL 279/289    Technical Communications I and II<sup>1</sup>  
SPCM 101        Fundamentals of Speech

<sup>1</sup>Technical Communications I and II develop written and speech communications in an integrated fashion in the context of the major. Students must finish the entire sequence, as well as ENGL 101, to satisfy the requirements of Goal #1 and Goal #2.

#### Goal #3

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

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

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

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

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

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

Required: #1, #2, and #3

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

**Credit Hours:** 6 hours in two disciplines

**Courses:**

ANTH 210	Cultural Anthropology
GEOG 101	Introduction to Geography
GEOG 210	World Regional Geography
GEOG 212	Geography of North America
HIST 151/152	United States History I/II
POLS 100	American Government
POLS 210	State and Local Government
POLS 250	World Politics
PSYC 101	General Psychology
SOC 100	Introduction to Sociology
SOC 150	Social Problems
SOC 250	Courtship and Marriage

**Goal #4**

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

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

1. Demonstrate knowledge of the diversity of values, beliefs, and ideas embodied in the human experience;
2. Identify and explain basic concepts of the selected disciplines within the arts and humanities. In addition, as a result of taking courses meeting this goal, students will be able to do at least one of the following:
  - Identify and explain the contributions of other cultures from the perspective of the

selected disciplines within the arts and humanities;

- Demonstrate creative and aesthetic understanding;
- Explain and interpret formal and stylistic elements of the literary or fine arts;
- Demonstrate foundational competency in reading, writing, and speaking a non-English language.

Each course meeting this goal includes the following student learning outcomes: Required: #1, #2 At least one of the following: #3, #4, #5, or #6

**Credit Hours:** 6 hours in two disciplines or in a sequence of foreign language courses)

**Courses:**

ART 111/112	Drawing I and II
ARTH 211	History of World Art I
ENGL 221/222	British Literature I and II
ENGL 241/242	American Lit I and II
ENGL 250	Science Fiction
GER 101/102	Introductory German I and II
HIST 121/122	Western Civilization I and II
HUM 100	Introduction to Humanities
HUM 200	Connections: Humanities and Technology
MUS 100	Music Appreciation
PHIL 100	Introduction to Philosophy
PHIL 200	Introduction to Logic
PHIL 220	Introduction to Ethics
PHIL 233	Philosophy and Literature
SPAN 101/102	Introductory Spanish I and II

**Goal #5**

Students will understand and apply fundamental mathematical processes and reasoning.

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

1. Use mathematical symbols and mathematical structure to model and solve real world problems;
2. Demonstrate appropriate communication skills related to mathematical terms and concepts;

- Demonstrate the correct use of quantifiable measurements of real world situations.

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

**Credit Hours:** 3 hours

Courses:

MATH 102	College Algebra
MATH 115	Precalculus
MATH 120	Trigonometry
MATH 123	Calculus I
MATH 125	Calculus II
MATH 225	Calculus III
MATH 281	Statistics

### Goal #6

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

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

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

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

**Credit Hours:** 6 hours

Courses:

BIOL 151/151L	General Biology I and Laboratory
BIOL 153/153L	General Biology II and Laboratory
CHEM 106/106L	Chemistry Survey/Laboratory
CHEM 108/108L	Organic Chemistry/Laboratory
CHEM 112/112L	General Chemistry I and

	Laboratory
CHEM 114/114L	General Chemistry II and Laboratory
GEOL 201/201L	Physical Geology/Laboratory
PHYS 111/111L	Introduction to Physics I and Laboratory
PHYS 113/113L	Introduction to Physics II and Laboratory
PHYS 211	University Physics I
PHYS 213/213L	University Physics II and Laboratory

### Goal #7

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

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

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

**Credit Hours:** 9 hours

Courses:

ENGL 101	Composition I
SPCM 101	Fundamentals of Speech
ENGL 201	Composition II
ENGL 279/289	Technical Communications I and II <sup>1</sup>

### General Education Globalization/Global Issues and Writing Intensive Requirements

In addition to the seven system-wide general education requirements described above, all students will achieve learning outcomes focused on advancing their writing skills and their

knowledge of global issues. Each academic program has designated one or more classes (the equivalent of one credit hour of study) as meeting each of these requirements. The syllabi of the courses designated state the requirement(s) met and explain how student achievement of the outcomes are assessed and factored into the course grade.

### **Globalization/Global Issues Goal Statement**

Students will understand the implications of global issues for the human community and for the practice of their disciplines.

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

1. Identify and analyze global issues, including how multiple perspectives impact such issues; and
2. Demonstrate a basic understanding of the impact of global issues on the practice of their discipline.

### **Writing Intensive Goal Statement**

Students will write effectively and responsibly in accordance with the needs of their own disciplines.

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

1. Produce documents written for technical, professional, and general audiences within the context of their disciplines;
2. Identify, evaluate, and use potential sources of information from within their disciplines for writing assignments that require research and study; and,
3. Use instructor feedback throughout the semester to improve the quality of their writing.

### **Pre General Education Courses in English and Mathematics**

Pre-general education courses include ENGL 031, ENGL 032, ENGL 033, MATH 021, and MATH 101.

### **Completion of Pre General Education Courses**

1. Students placed in pre general education courses must enroll in and complete the courses within the first 30 credits hours attempted.
2. If a student does not complete the pre general education course(s) within the first 30 credit hours attempted, a registration hold is placed on the student's record. During the next 12 credit hours attempted, the student must enroll in and complete the pre general education course(s).
3. If the pre general education course(s) is not completed within the first 42 credit hours attempted, the only course(s) in which a student may enroll is the pre general education course(s); and the student's status is changed from degree seeking to non degree seeking.
4. Students transferring from non-Regental institutions must enroll in pre-general education courses during the first 30 attempted Regental credit hours. These students may enroll in other courses concurrently with the pre-general education courses. If the student does not complete the pre-general education courses during the first 30 Regental credit hours attempted during the next 12 credit hours attempted, the student must enroll in and complete the pre-general education course(s). If the student does not successfully complete the pre-general education course(s) within 42 attempted Regental credit hours, the only course(s) in which a student may enroll in the pre-general education course(s); and the student's status is changed from degree seeking to non-degree seeking. The Vice President for Academic Affairs/Provost may grant an exception. Credit hours for the pre general education courses are included in the total number of credit hours attempted.

The grades assigned for courses numbered less than 100 will be RI, RS and RU.

### **Curricular Requirements**

All bachelor of science programs require the general education core requirements as described earlier. Other requirements for each degree are

determined by the faculty in each program, with approval through the university curriculum approval process. Some of these other program requirements are common to most or all programs offered at School of Mines. These include

- A. **Mathematical Sciences:** all programs, with the exception of interdisciplinary science, geology and mining engineering, require a minimum of 16 credit hours of mathematics at the level of calculus and above. To qualify for MATH 123, Calculus I, a student must have completed at least three units of mathematics in high school and must have obtained an acceptable score on the School of Mines mathematics placement examination. A student with less preparation in mathematics may register as a freshman in engineering but will be required to start the mathematics sequence at a level indicated by his or her formal preparation and all School of Mines mathematics placement examination scores or ACT placement score. Mathematics courses taken below the level of MATH 123 are not totaled in the semester hours required for each curriculum with the exception of the B.S. in Interdisciplinary Science and the A.A. in General Studies. MATH 021 and MATH 101 do not count toward any degree.
- B. **Basic Sciences:** minimum of 16 credit hours - CHEM 112, 112L, PHYS 211, and PHYS 213 are required for all engineering curricula.
- C. **Humanities and social sciences:** minimum of 15 or sixteen 16 credit hours - This subject area must include six credits in humanities and 6 credits in social sciences. The number required for each major is listed in the department section of the catalog. Students majoring in engineering must complete at least three of these credits at an advanced level.

### **Humanities**

Art: ART 111, 112, ARTH 211, 321, 491, 492  
English: ENGL 221, 222, 241, 242, 250, 300, 330, 343, 350, 360, 374, 383, 391, 392

Foreign Language: GER 101, 102, SPAN 101, 102  
History: HIST 121, 122  
Humanities: HUM 100, 200, 291, 292, 350, 375, 491, 492  
Music: MUAP 200, 201, MUS 100, 110, 217, 317  
Philosophy: PHIL 100, 200, 220, 233

### **Social Sciences**

Anthropology: ANTH 210  
Geography: GEOG 101, 210, 212, 400, 492  
History: HIST 151, 152, 492  
Political Science: POLS 100, 250, 350, 407, 492  
Psychology: PSYC 101, 319, 323, 331, 391, 392, 451, 461  
Sociology: SOC 100, 150, 250, 351, 391, 392, 411, 420, 511, 520

All courses numbered 300 and above are upper level courses.

- D. All degree candidates must complete ENGL 101, ENGL 279, and ENGL 289, which cannot be used to meet the humanities and social sciences requirements.
- E. **Physical Education:** minimum of 2 credit hours. MUEN 101, 121, 122, and MSL 101L and MSL 102L can be counted for the physical education requirement.
- F. **Electives:** Free Electives vary with the individual department. Any course may be selected which is at freshman level or higher (i.e. 100 level or higher). ROTC credits may be accepted, depending on the number of degree electives available in each department.
- G. **Science Electives:** Courses may be selected — from biology, chemistry, geology, physics, or atmospheric science.

For information regarding the Associate of Arts degree requirements, see page 94.

### **Semester Credit and Grade-Point Average**

Additional requirements are listed with each

departmental curriculum found in a later section of this catalog. All curricula require passing grades in the prescribed courses and a minimum cumulative grade point average of 2.00. Each engineering curriculum requires 136 hours of credit for graduation and each science curriculum requires one 128 hours of credit.

### **Military Science Credits**

Military Science credits may apply to all degrees as free electives. This option varies with the number of free electives available in an individual curriculum. A veteran may petition the Registrar and Director of Academic Services to receive credit for basic military science and physical education.

### **Transfer Credit**

Articulation of credit may be allowed for previous college education if the courses are equivalent to required or elective courses at this university and if each course presented is of passing quality.

The acceptability of transfer credit is determined by the student's major department.

### **Credit Definitions**

#### **Credits in Residence**

Credit in residence within the Board of Regents system is a course offered by any of the degree-granting Regental institutions at any approved sites using any approved method of delivery.

#### **Institutional Credits**

An institutional credit is a credit offered by the degree granting institution and includes credits that are part of a formal collaborative agreement between that institution and another Regental institution.

### **Validated Credits**

Credit earned for college level courses by validation methods such as Credit by Exam, CLEP, AP, portfolio, and others within the Regental system will not be considered "credits in residence."

### **Institutional Credit Requirements for Degree-Seeking Students**

1. Minimum number of credit hours that must be earned from the institution granting the degree:

Baccalaureate	32 hours
Associate	16 hours

2. Number of the last credit hours earned preceding completion of the degree that must be earned from the institution granting the degree:

Baccalaureate	16 of the last 32 hours
Associate	8 of the last 16 hours

3. Minimum number of credit hours specified in the major or minor requirements that must be completed at the degree granting institution: 50 percent. However, this requirement may be waived for students enrolled in the set of majors offered by the system's Centers which include in the established programs of study common courses offered by one of the other Regental universities. In addition, the Vice President for Academic Affairs/Provost may make exceptions to this requirement for individuals based on the student's prior learning experiences.

### **Required Check-out Procedure**

All graduating seniors and students terminating enrollment at School of Mines are responsible for ensuring that they have returned all keys, library books, laboratory equipment, and other university property to the appropriate departments prior to graduation or their last day of enrollment. All financial obligations to the university or any of its departments must also be paid prior to graduation or termination of enrollment at School of Mines.

Perkins Student Loan recipients must complete an exit interview with a Business Office representative prior to graduation or termination of enrollment at School of Mines. The university reserves the right to withhold a student's diploma and/or transcript of grades for failure to meet any of the above specified requirements.

### **Collegiate Assessment of Academic Proficiency**

#### **CAAP Exams Required for Graduation**

The South Dakota Board of Regents has mandated that all students attending a state university in South Dakota and seeking their first undergraduate degree take and pass the Board of Regents Proficiency Examination. Baccalaureate degree-seeking students will sit for the exam on completion of 48 passed credit hours at or above the 100 level and associate degree-seeking students will sit for the exam on completion of 32 passed credit hours at or above the 100 level. Enrolled students who have already earned a baccalaureate degree are exempt from the requirement.

Testing will be offered during a two-week period during the fall and spring semesters. Students who fail to sit for the exam, when required to do so, will not be allowed to register for courses at any of the state universities for two academic terms unless the student seeks and is granted a deferment for a valid cause (i.e. co-op, internship, etc).

Students failing to achieve the minimum proficiency level on one or more components of the exam will be allowed to retest. Retesting must occur within one year of after initial testing. During that year, students may continue to enroll in courses. As preparation for retesting, students are required to complete a development plan for remediation, within one month of notice of failure and in collaboration with the director of Retention and Testing. Students will be able to retest twice during that year and a fee of \$12.00 will be charged to cover the cost of testing.

Students will be informed by the testing office when they are eligible to test. Approximately four to six weeks after a student has tested, he or she will receive the results and an explanation of how

to interpret his or her achievement. Students who failed to achieve an acceptable score within one year from initial testing will not be permitted to continue their enrollment. An appeal process for certification of proficiency using alternate methods is available to those students.

