

# Chemistry (Chem)

Chair: Dr. Dan Heglund  
(605) 394-1241  
Dan.Heglund@sdsmt.edu

## Program Overview

An undergraduate degree in chemistry opens an unparalleled number of doors for graduates. In addition to many job opportunities directly after graduation, many graduates in chemistry pursue graduate degrees to further their knowledge and skills in chemistry. Graduates in chemistry are also highly prized by dentistry, veterinary sciences, chiropractic, law, and medical programs, attesting to the centrality of chemistry and the critical role it plays in society.

## Labs and Facilities

The department prides itself in having modern instrumentation available not only for research but as an integral part of undergraduate education. The instrumentation within the department currently includes FT-IR spectrometers, a 300 MHz superconducting heteronuclear nuclear magnetic resonance spectrometer, a spectrofluorometer, diode-array spectrophotometer, gas chromatograph-mass spectrometer, and other instruments.

## Curriculum

An undergraduate education in chemistry provides students the knowledge of chemical and physical phenomena at the molecular level. Students gain the skills of critical thinking and chemical problem-solving in all five major sub-disciplines of chemistry: analytical, inorganic, organic, biochemistry, and physical chemistry. The chemistry curriculum offers a great deal of flexibility in terms of free elective courses to supplement chemical knowledge with a breadth of other courses, including the humanities, social sciences, biological and physical sciences, mathematics, engineering, and others. This allows a student to develop a customizable program that will result in a well-rounded graduate who is able to face and meet the challenges in his or her chosen career.

## Curriculum Listing

<http://catalog.sdsmt.edu>

Bachelor of Science in Chemistry, ACS Certified

The ACS-certified curriculum provides an excellent foundation in science and mathematics for professional preparation in chemistry and meets the nationally-recognized high standards established by the American Chemical Society. This curriculum opens the way for a variety of careers in research and development in private industry or government, and gives the student an excellent foundation for graduate study in chemistry. Students desiring to meet the minimum requirements for certification by the American Chemical Society should follow the curriculum outlined below.

Chemistry Curriculum/Checklist

### Freshman Year

First Semester		
CHEM 112	General Chemistry I	3
CHEM 112L	General Chemistry I Lab	1
ENGL 101	Composition I	3
MATH 123	Calculus I	4
Gen. Ed. Goal 3 or 4	Elective	3
IS 110	Explorations	2
CHEM 290	Seminar	0.5
<b>TOTAL</b>		<b>16.5</b>

Second Semester		
CHEM 114	General Chemistry II	3
CHEM 114L	General Chemistry II Lab	1
MATH 125	Calculus II	4
PHYS 211	University Physics I	3
Gen. Ed. Goal 3	Elective	3
Gen. Ed. Goal 4	Elective	3
CHEM 290	Seminar	0.5
<b>TOTAL</b>		<b>17.5</b>

### Sophomore Year

First Semester		
CHEM 332	Analytical Chemistry	3
CHEM 332L	Analytical Chemistry Lab	1
CHEM 326	Organic Chemistry I	3
CHEM 326L	Organic Chem I Lab	2
MATH 321	Differential Equations	4
CHEM 252	Systematic Inorganic Chemistry	3
PE	Physical Education	1
CHEM 290	Seminar	0.5
<b>TOTAL</b>		<b>17.5</b>

Second Semester		
PHYS 213	University Physics II	3
PHYS 213L	University Physics II Lab	1
CHEM 328	Organic Chemistry II	3
CHEM 328L	Organic Chem II Lab	2
ENGL 279	Technical Comm I	3
Humanities or Social Sciences	Elective(s)	5
CHEM 290	Seminar	0.5
<b>TOTAL</b>		<b>17.5</b>

### Junior Year

First Semester		
ENGL 289	Technical Comm II	3
CHEM 342	Physical Chemistry I	3
CHEM 342L	Physical Chem I Lab	1
Elective(s)		9
PE	Physical Education	1
CHEM 490	Seminar	0.5
<b>TOTAL</b>		<b>17.5</b>

Second Semester		
CHEM 344L	Physical Chem II Lab	1
CHEM 344	Physical Chemistry II	3
CHEM 370	Chemical Literature	1
Advanced Chemistry Requirement		6
CHEM 490	Seminar	0.5
Advanced Chemistry Elective(s)		3
<b>TOTAL</b>		<b>15.5</b>

### Senior Year

First Semester		
Elective(s)		8
CHEM 490	Seminar	0.5
Advanced Chemistry Requirement		3
Advanced Chemistry Elective		3
<b>TOTAL</b>		<b>14.5</b>

Second Semester		
Electives		6
Adv Chemistry Requirement		6
CHEM 490	Seminar	0.5
<b>TOTAL</b>		<b>12.5</b>

**128 credits required for graduation**