

Chemistry, BS

Requirements

The Bachelor of Science with a major in chemistry requires a minimum of 120 s.h., including 66 s.h. of work for the major (20 s.h. in foundation chemistry courses, 24 s.h. in advanced chemistry, and 22 s.h. in supporting coursework). Students must earn at least 20 s.h. in advanced chemistry courses at the University of Iowa. They must maintain a grade-point average of at least 2.00 in all courses for the major and in all UI courses for the major. Students must also complete the College of Liberal Arts and Sciences GE CLAS Core.

The BS degree with a major in chemistry is certified by the American Chemical Society (ACS) when a biochemistry course is included. An ACS-approved program offers a broad-based and rigorous chemistry education that provides students with the intellectual, experimental, and communication skills to become effective scientific professionals in chemical and other related fields. The program also provides all the prerequisites for graduate work in chemistry or biochemistry and in other biomedical areas with a molecular focus.

Courses in the chemistry major have prerequisites, so they must be taken in the correct order. Advanced chemistry courses are built on the chemistry foundation courses. Most advanced courses are taught only once a year. Students should consult their academic advisors and plan their course schedules carefully. They should take CHEM:2021 Fundamentals of Chemical Measurements during the first semester of the second year.

In planning coursework, students should be guided by the College of Liberal Arts and Sciences maximum hours rule: students earning a BS may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the coursework is accepted toward requirements for the major; students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major (if the department accepts them), and the grades they earn become part of their grade-point average, but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

Students may not use a course to fulfill more than one requirement.

The BS with a major in chemistry requires the following coursework.

Requirements	Hours
Chemistry Foundation Courses	20
Advanced Chemistry Courses	24
Mathematics Courses	8
Introductory Physics Courses	8
Science Electives and Research Courses	6

Chemistry Foundation Courses

Students complete the following foundation courses.

Course #	Title	Hours
All of these:		
CHEM:1110 & CHEM:1120	Principles of Chemistry I and Principles of Chemistry II	8

CHEM:2021	Fundamentals of Chemical Measurements	3
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One of these sequences:

CHEM:2210 & CHEM:2220	Organic Chemistry I and Organic Chemistry II	6
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CHEM:2230 & CHEM:2240	Organic Chemistry I for Majors and Organic Chemistry II for Majors (preferred)	6
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One of these:

CHEM:2410	Organic Chemistry Laboratory	3
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CHEM:2420	Organic Chemistry Laboratory for Majors (preferred)	3
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Advanced Chemistry Courses

Course #	Title	Hours
All of these:		

CHEM:3110 & CHEM:3120	Equilibria and Electrochemistry and Spectroscopy and Separations	6
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CHEM:3250	Inorganic Chemistry	3
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CHEM:4270	Advanced Inorganic Chemistry	3
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CHEM:4431 & CHEM:4432	Chemical Thermodynamics and Quantum Mechanics and Chemical Kinetics	6
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Two of these:

CHEM:3430	Analytical Measurements	3
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CHEM:3440	Physical Measurements	3
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CHEM:3530	Inorganic Chemistry Laboratory	3
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Mathematics Courses

Course #	Title	Hours
One of these sequences:		

MATH:1550 & MATH:1560	Engineering Calculus I and Engineering Calculus II	8
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MATH:1850 & MATH:1860	Calculus I and Calculus II (preferred)	8
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Introductory Physics Courses

Course #	Title	Hours
One of these sequences:		

PHYS:1511 & PHYS:1512	College Physics I and College Physics II	8
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PHYS:1611 & PHYS:1612	Introductory Physics I and Introductory Physics II (preferred)	8
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Science Electives and Research Courses

Course #	Title	Hours
A total of 6 s.h. from these:		

CHEM:3994	Undergraduate Research	1-4
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BMB:3110	Biochemistry	3
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BMB:3120	Biochemistry and Molecular Biology I	3
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BMB:3130	Biochemistry and Molecular Biology II	3
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Advanced science elective courses

ACS Certification Requirement

Students who want an ACS-certified degree complete the following courses.

Course #	Title	Hours
One of these:		
BMB:3110	Biochemistry	3
BMB:3120	Biochemistry and Molecular Biology I	3
All of these:		
CHEM:3250	Inorganic Chemistry	3
CHEM:3440	Physical Measurements	3
CHEM:3430	Analytical Measurements	3

Teacher Licensure

Students interested in teaching in elementary and/or secondary schools should seek admission to the Teacher Education Program (TEP) in the College of Education.

To qualify for licensure in secondary teaching, students in the TEP complete a degree in education as well as a related College of Liberal Arts and Sciences degree. See Apply on the College of Education website for details on requirements and deadlines for applying to the College of Education and about TEP choices of majors leading to licensure.