Chemistry, BA

Requirements

The Bachelor of Arts with a major in chemistry requires a minimum of 120 s.h., including 53–54 s.h. of work for the major (20 s.h. in foundation chemistry courses, 12 s.h. in advanced chemistry, and 21–22 s.h. in supporting coursework). Students must earn at least 11 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 BA degree is a good choice for students interested in medical or other professional schools, or those interested in a teaching career (see the following section titled "Teacher Licensure"). The program provides students with the flexibility to earn a degree in chemistry while they also complete related courses required for medical school, such as biology and biochemistry. Compared to the BS degree, the BA has modified mathematics requirements that include a one-semester physical chemistry course, an analytical chemistry course, and a single, integrated capstone laboratory that incorporates analytical, inorganic, and physical chemistry experiments.

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 BA 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 BA with a major in chemistry requires the following coursework.

Requirements	Hours
Chemistry Foundation Courses	20
Advanced Chemistry Courses	12
Mathematics Courses	7-8
Introductory Physics Courses	8
Science Electives	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
One of these sequences:		
CHEM:2210 & CHEM:2220	Organic Chemistry I and Organic Chemistry II	6
CHEM:2230 & CHEM:2240	Organic Chemistry I for Majors and Organic Chemistry II for Majors (preferred)	6
One of these:		
CHEM:2410	Organic Chemistry Laboratory	3
CHEM:2420	Organic Chemistry Laboratory for Majors (preferred)	3

Advanced Chemistry Courses

Course #	Title	Hours
One of these:		
CHEM:3110	Equilibria and Electrochemistry	3
CHEM:3120	Spectroscopy and Separations (preferred)	3
All of these:		
CHEM:3250	Inorganic Chemistry	3
CHEM:4430	Principles of Physical Chemistry	3
CHEM:4450	Synthesis and Measurement	3

Mathematics Courses

Course #	Title	Hours
One of these:		
MATH:1460	Calculus for the Biological Sciences (preferred)	4
MATH:1550	Engineering Calculus I	4
MATH:1850	Calculus I	4
One of these:		
MATH:1560	Engineering Calculus II	4
MATH:1860	Calculus II	4
STAT:2010	Statistical Methods and Computing	3
STAT:3510/ IGPI:3510	Biostatistics (preferred)	3

Introductory Physics Courses

Course #	Title	Hours
One of these sequences:		
PHYS:1511 & PHYS:1512	College Physics I and College Physics II (preferred)	8
PHYS:1611 & PHYS:1612	Introductory Physics I and Introductory Physics II	8

Science Electives

Some of these courses may be used to fulfill other requirements for the major; students who have used a course from this list to fulfill another requirement for the major may not use that course as an elective. Students should consult their advisor to gain approval for a course that is not on the list. Undergraduate Research (CHEM:3994) may not be used to satisfy the science electives requirement.

Course #	Title	Hours
A total of 6 s.h. from these:		
CHEM:3110	Equilibria and Electrochemistry	3
CHEM:3120	Spectroscopy and Separations	3
CHEM:3430	Analytical Measurements	3
CHEM:3440	Physical Measurements	3
CHEM:3530	Inorganic Chemistry Laboratory	3
CHEM:4270	Advanced Inorganic Chemistry	3
CHEM:4372	Advanced Organic Chemistry	3
CHEM:4431	Chemical Thermodynamics	3
CHEM:4432	Quantum Mechanics and Chemical Kinetics	3
CHEM:4480	Introduction to Molecular Modeling	3
CHEM:4760	Radiochemistry: Energy, Medicine, and the Environment	3
CHEM:4873	Atmospheric and Environmental Chemistry	3
BMB:3110	Biochemistry	3
BMB:3120	Biochemistry and Molecular Biology I	3
BMB:3130	Biochemistry and Molecular Biology II	3
CEE:4150/CBE:4420	Environmental Chemistry	3
SEES:4490	Elements of Geochemistry	3
SEES:4540	Isotope Geochemistry	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.