

Chemistry

Courses required for the first year: CHEM 131 and CHEM 132 or CHEM 235
Courses recommended for the first year: MATH 160, 220, or 230 depending on math placement
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The Major in Chemistry

MAJOR IN CHEMISTRY. 28 credits beyond CHEM-132/235, including CHEM-255, CHEM-322, CHEM-361 or 365, CHEM-441, CHEM-435 and one Senior Inquiry chosen from CHEM-474, CHEM-475 or CHEM-476. Required supporting courses: PHYS-151/152 or 211/212 and MATH-160, 220, and 230.

Recommended supporting courses: BIOL-130, MATH-260, MATH-320, MATH-250, COMP-211, COMP-212.

ACS APPROVED MAJOR IN CHEMISTRY. Students desiring an ACS-certified major must complete 36 credits beyond CHEM-132/235, including CHEM-255, CHEM-322, CHEM-361, CHEM-365, CHEM-455, CHEM-441, CHEM-435 and one Senior Inquiry chosen from CHEM-475 or CHEM-476. Required supporting courses: PHYS-151/152 or 211/212 (recommended) and MATH-160, 220, and 230.

Recommended supporting courses: BIOL- 130, MATH-260, MATH-320, MATH-250, COMP-211, COMP-212.

Required Courses

Course Number	Course Name	Learning Perspective	Prerequisites	Credits
CHEM 131*	General Chemistry I	PN	None	4
CHEM 132*	General Chemistry II	PN	CHEM 131 or CHEM 235	4
CHEM 235*	Introduction to Inorganic Chemistry	PN	Two years high school chemistry or instructor permission	4
CHEM 255	Quantitative Analysis		CHEM 132 or CHEM 235	4
CHEM 321	Organic Chemistry I		CHEM 132 or CHEM 235	4
CHEM 322	Organic Chemistry II		CHEM 321	4
CHEM 361 or CHEM 365**	Physical Chemistry I or II		CHEM 131 or 235, PHYS 152 or 212, MATH 220 or 230	4
CHEM 435	Advanced Inorganic Chemistry		CHEM 332	4
CHEM 441	Biochemistry I		CHEM 322	4
CHEM 471	Inquiry in Chemistry		CHEM 322	2

CHEM 474, 475, or 476	Senior Inquiry		CHEM 471***	2
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*Placement in first-year chemistry courses depends on previous preparation. See below for more details.

**Two semesters of physical chemistry are required to earn the ACS-approved chemistry degree; see above for further requirements.

***May be taken as a co-requisite

Additional Courses (or Required Supporting Courses)

Course Number	Course Name	Learning Perspective	Prerequisites	Credits
MATH 160	Calculus		Math placement or MATH 140	4
MATH 220 and 230	Integration Methods and Infinite Series		MATH 160	2+2
PHYS 151 or 211	Principles of Physics I or Foundational Physics I	PN	PHYS 211 requires MATH 160	4
PHYS 152 or 212	Principles of Physics II or Foundational Physics II	PN	PHYS 212 requires MATH 220 (prerequisite) MATH 260 (co-requisite)	4
CHEM 442	Biochemistry II		CHEM 441 and BIOL 250	4
CHEM 455	Instrumental Analysis		CHEM 225 and 322	4

The Minor in Chemistry

12 Credits in chemistry beyond CHEM-132/235 at the 200-level or above. Required supporting course MATH 160 (Calculus I)

Major Overview

Over the past 25 years, more than 65 percent of Augustana chemistry graduates have chosen to continue studies at major universities. Their graduate school placement is virtually 100 percent. The acceptance rate of students into pharmacy schools has been 95 percent over the past five years.

About a third of chemistry majors take jobs directly after graduation with the B.A. degree. These include those who eventually work in the chemical industry, technical sales, and teaching positions at the secondary level.

The department's success in producing students who eventually earn a Ph.D. in chemistry has been recognized by the Dow Chemical Company Foundation, which has chosen Augustana as one of 42 colleges to receive a four-year scholarship. This scholarship is awarded each year to one or two outstanding first-year students.

The department has established internships for chemistry majors to work part time and/or summers at a local city water treatment plant, an environmental analytical lab or a paint research lab.

A note on selecting first-year chemistry courses:

Students with a strong high school chemistry background (i.e. two years of chemistry, AP chemistry) and who are considering majoring in chemistry or biochemistry should take CHEM 235 since this will put them on track to take Organic Chemistry I (CHEM 321) or Quantitative Analysis (CHEM 255) during spring semester of their first year.

Students seeking to complete a year of general chemistry for professional school have several options:

1. Students with a typical high school science background (one year of chemistry) should plan to complete CHEM 131 and CHEM 132 (General Chemistry I and II).
2. Students who have earned AP scores of 4 or 5 in chemistry can receive credit for CHEM 132. In order to complete a year of general chemistry (required by many professional schools) they should take CHEM 131 or CHEM 235 (Introductory Inorganic Chemistry; preferred).
3. There will be one section of CHEM 131 offered each spring semester and CHEM 132 offered each fall semester (starting fall 2020) to accommodate student scheduling needs and provide flexibility.

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