

Bachelor of Science in Chemistry

Admission Requirements

Satisfy the Application and Admission Requirements for Baccalaureate Programs (<http://catalog.uaa.alaska.edu/academicpoliciesprocesses/admissions/undergraduate/>).

Advising

Students are strongly encouraged to talk to a faculty advisor in the Chemistry Department to ensure that the necessary math and science courses are taken in the first two years of study.

Academic Requirements

In order to graduate with a Bachelor of Science (BS) in Chemistry, all courses covered under major requirements must be completed with a grade C or better.

Graduation Requirements

1. Satisfy the General University Requirements for Baccalaureate Degrees (<http://catalog.uaa.alaska.edu/undergraduateprograms/baccalaureaterequirements/>).
2. Complete the General Education Requirements for Baccalaureate Degrees (<http://catalog.uaa.alaska.edu/undergraduateprograms/baccalaureaterequirements/gers/>).
3. Complete the major requirements below.

Major Requirements

Students complete a BS in Chemistry with a biochemistry emphasis.

Code	Title	Credits
BIOL A108	Principles and Methods in Biology	6
BIOL A242	Fundamentals of Cell Biology	3
BIOL A243	Experiential Learning: Cell Biology and Genetics	4
BIOL A252	Principles of Genetics	3
BIOL A461 or BIOL A465	Molecular Biology Experiential Learning: Molecular Biology	3
CHEM A105 & A105L	General Chemistry I and General Chemistry I Laboratory	4
CHEM A106 & A106L	General Chemistry II and General Chemistry II Laboratory	4
CHEM A208	Principles of Bioinorganic Chemistry	3
CHEM A218	Experiential Learning: Quantitative Chemical Analysis	5
CHEM A321	Organic Chemistry I	3
CHEM A322	Organic Chemistry II	3

CHEM A323L	Organic Chemistry Laboratory	2
CHEM A411	Biophysical Chemistry	3
CHEM A418	Experiential Learning: Chemical Instrumentation and Methods	5
CHEM A441	Principles of Biochemistry I	3
CHEM A442	Principles of Biochemistry II	3
CHEM A443	Biochemistry Laboratory	2
CHEM A481	Experiential Learning: Undergraduate Seminar I	1
CHEM A482	Experiential Learning: Undergraduate Seminar II	2
MATH A155	Precalculus	5
MATH A251	Calculus I	4
STAT A253	Applied Statistics for the Sciences	4
Complete a PHYS sequence:		8
PHYS A123 & A123L	College Physics I and College Physics I Laboratory	
PHYS A124 & A124L	College Physics II and College Physics II Laboratory	
or		
PHYS A211 & A211L	General Physics I and General Physics I Laboratory	
PHYS A212 & A212L	General Physics II and General Physics II Laboratory	
Complete 13 credits from the following upper-division electives:		13
CHEM/BIOL A471	Immunology	
CHEM A495	Chemistry Internship	
CHEM A498	Individual Research	
BIOL A310	Principles of Animal Physiology	
BIOL A412	Behavioral Endocrinology	
BIOL A413	Neurophysiology	
BIOL A452	Human Genome	
BIOL A463	Molecular Biology of Cancer	
BIOL A464	Metals in Biology	
BIOL A465	Experiential Learning: Molecular Biology	
BIOL/CHEM A474	Ecotoxicology	
BIOL A498	Individual Research	
MBIO A340	Microbial Biology	
MBIO A342	Experiential Learning: Microbial Biology	
MBIO A410	Microbial Physiology	
MBIO A451	Microbial Biotechnology	
MBIO A452	Microbial Genetics	
MBIO A462	Virology	
PHYS A303	Modern Physics	
PHYS A320	Simulation of Physical Systems	

PHYS A403	Quantum Mechanics
PSY A370	Behavioral Neuroscience

A minimum of 120 credits is required for the degree, of which 42 credits must be upper division.

Honors in Chemistry

The Department of Chemistry awards departmental honors in chemistry to undergraduate students who show exceptional performance in all their coursework. To graduate with honors students must:

1. Satisfy all requirements for a Bachelor of Science in Chemistry.
2. Meet the requirements for Graduation with Honors (<http://catalog.uaa.alaska.edu/academicpoliciesprocesses/academicstandardsregulations/graduation/>).
3. Maintain a minimum GPA of 3.50 in CHEM classes.
4. Complete, with distinction, a written assignment in the style of a chemical journal based on the research performed in CHEM A498.
5. Notify the Departmental Honors Committee in writing at the time they file their Application for Graduation with the Office of the Registrar that they intend to graduate with departmental honors.

Program Student Learning Outcomes

Students graduating with a Bachelor of Science in Chemistry will be able to:

- Evaluate and critically solve problems related to the chemical sciences and communicate those solutions.
- Develop proficiency in scientific inquiry including laboratory technique, data analysis, literature review, and experimental design.