

# Bachelor of Science in Chemistry

## Admission Requirements

- Complete the Admission Requirements for Baccalaureate Degrees (<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.

## Graduation Requirements

- Complete the General University Requirements for Baccalaureate Degrees (<http://catalog.uaa.alaska.edu/undergraduateprograms/baccalaureaterequirements/>).
- Complete the General Education Requirements for Baccalaureate Degrees (<http://catalog.uaa.alaska.edu/undergraduateprograms/baccalaureaterequirements/gers/>).
- Complete the following major requirements with a minimum grade of C:

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 or MATH A251F	Calculus I F.A.T. Calculus I	4-6
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
BIOL A310	Principles of Animal Physiology	
BIOL A412	Behavioral Endocrinology	
BIOL A413	Neurophysiology	
BIOL A452	Human Genome	
BIOL A463	Molecular Biology of Cancer	
BIOL A465	Experiential Learning: Molecular Biology	
BIOL/CHEM A474	Ecotoxicology	
BIOL A498	Individual Research	
CHEM/BIOL A471	Immunology	
CHEM A495	Chemistry Internship	
CHEM A498	Individual Research	
MBIO A340	Microbial Biology	
MBIO A342	Experiential Learning: Microbial Biology	
MBIO A410	Microbial Physiology	
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 39 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:

- Satisfy all requirements for a Bachelor of Science in Chemistry;
- Meet the requirements for Graduation with Honors (<http://catalog.uaa.alaska.edu/academicpoliciesprocesses/academicstandardsregulations/graduation/>);
- Maintain a minimum GPA of 3.50 in chemistry (CHEM) classes;
- Complete, with distinction, a written assignment in the style of a chemical journal based on the research performed in CHEM A498;
- 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.