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
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BIOL A108 | Principles and Methods in Biology | 6
BIOL A202 | Fundamentals of Cell Biology | 3
BIOL A243 | Experiential Learning: Cell Biology and Genetics | 4
BIOL A252 | Principles of Genetics | 3
BIOL A461 | Molecular Biology | 3
or BIOL A465 | Experiential Learning: Molecular Biology | 
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: | 
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 |
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.