

Bachelor of Arts in Chemistry

The Bachelor's of Art degree program in chemistry is designed for the student who plans a career in chemistry or the related sciences upon graduation, continuation to graduate school in the chemical sciences, or professional health sciences such as medicine or pharmacy, but is interested in studying other subjects to augment a basic chemistry curriculum, perhaps with a minor or a double major in another field, for example. The program provides foundational course work in the sub-disciplinary areas of organic, inorganic, physical, analytical, and biochemistry with cognate course work in biology, mathematics and physics. A concentration in biochemistry or chemistry is required. The B.A. program is not certified by the American Chemical Society.

The B.A. in Chemistry provides additional chemistry electives and fewer requirements than the B.S. degree program. The Chemistry concentration may be an appropriate degree for those that would like to become high school chemistry teachers, for example. A total of 14 free elective units are available. The biochemistry option requires biology and biochemistry course and laboratory work, and may be more appropriate for students interested in the biotech industry, medical or pharmacy school, or clinical laboratory science. Ten free elective units are available.

Requirements (68-72 units)

Total units required for graduation: 120

Requirements for a B.A. in Chemistry

Lower-division requirements (28)

CHEM 2100	General Chemistry I	4
CHEM 2100L	General Chemistry I Laboratory	1
CHEM 2200	General Chemistry II	4
CHEM 2200L	General Chemistry II Laboratory	1
MATH 2210	Calculus I	4
MATH 2220	Calculus II	4
PHYS 2000	Introduction to Physics I	4
PHYS 2000L	Introduction to Physics I Lab	1
PHYS 2010	Introduction to Physics II	4
PHYS 2010L	Introduction to Physics II Lab	1

Note: Physics requirement may be alternatively met by taking PHYS 2500, 2500L, 2510, and 2510L.

Upper-division requirements (15)

CHEM 3200	Quantitative Analysis	4
CHEM 3400	Principles of Organic Chemistry I	5
CHEM 3500	Principles of Organic Chemistry II	5

Note: The organic chemistry requirement may be alternatively met with the following five courses (13 units):

CHEM 2400	Organic Chemistry I Lecture	
CHEM 2400L	Organic Chemistry I Laboratory	
CHEM 2500	Organic Chemistry II	
CHEM 2500L	Organic Chemistry II Laboratory	
CHEM 3600	Intermediate Organic Chemistry	
CHEM 5800	Chemistry Seminar	1

Concentrations (25-29)

Select one of the following two concentrations to complete the major 25-29

Total Units 68-72

Concentrations (25-29 Units)

Chemistry Concentration (25 Units)

(Program Code: CHEM)

BIOL 1000	Introduction to Biology	3
BIOL 1000L	Introduction to Biology Lab	1
MATH 2310	Applied Linear Algebra	4
CHEM 4300	Inorganic Chemistry	4
CHEM 4400	Physical Chemistry I	3
CHEM 4500	Physical Chemistry II	3
CHEM 4550	Physical Chemistry Laboratory	1

Choose 6 units of upper-division chemistry electives from the following list: 6

CHEM 4100	Biochemistry I (3 units)	
CHEM 4100L	Biochemistry I Laboratory (1 unit)	
CHEM 4200	Biochemistry II (3 units)	
CHEM 5001	Topics in Chemistry (1 unit)	
CHEM 5001L	Topics in Chemistry Laboratory (1 unit)	
CHEM 5002	Topics in Chemistry (2 units)	
CHEM 5100	Polymer Science (2 units)	
CHEM 5150	Materials Chemistry (2 units)	
CHEM 5200	Instrumental Analysis (5 units)	
CHEM 5300	Environmental Chemistry (3 units)	
CHEM 5320	Atmospheric Chemistry (3 units)	
CHEM 5400	Chemistry of the Elements (3 units)	
CHEM 5410	Solid State Chemistry	
CHEM 5420	Pyrotechnics (1 unit)	
CHEM 5500	Medicinal Chemistry (2 units)	
CHEM 5550	Computational Chemistry (2 units)	
CHEM 5751	Internship in Chemistry (1 unit)	
CHEM 5752	Internship in Chemistry (2 units)	
CHEM 5753	Internship in Chemistry (3 units)	
CHEM 5901	Directed Laboratory Research (1 unit)	
CHEM 5902	Directed Laboratory Research (2 units)	
CHEM 5903	Directed Laboratory Research (3 units)	
CHEM 5951	Independent Study (1 unit)	
CHEM 5952	Independent Study (2 units)	
CHEM 5953	Independent Study (3 units)	

Total Units 25

Biochemistry Concentration (29 units)

(Program Code: CBIO)

BIOL 2010	Principles of Biology I	5
BIOL 2020	Principles of Biology II	5
CHEM 4100	Biochemistry I	3
CHEM 4100L	Biochemistry I Laboratory	1
CHEM 4200	Biochemistry II	3
CHEM 4200L	Biochemistry II Laboratory	1

CHEM 4350	Bioinorganic Chemistry	3
CHEM 4600	Physical Chemistry for Biochemists I	3
CHEM 4700	Physical Chemistry for Biochemists II	3
CHEM 4750	Physical Chemistry for Biochemists Laboratory	1
Choose at least 1 units of upper-division elective from the following list:		1
CHEM 5001	Topics in Chemistry (1 unit)	
CHEM 5001L	Topics in Chemistry Laboratory (1 unit)	
CHEM 5002	Topics in Chemistry (2 units)	
CHEM 5100	Polymer Science (2 units)	
CHEM 5150	Materials Chemistry (2 units)	
CHEM 5200	Instrumental Analysis (5 units)	
CHEM 5300	Environmental Chemistry (3 units)	
CHEM 5320	Atmospheric Chemistry (3 units)	
CHEM 5400	Chemistry of the Elements (3 units)	
CHEM 5410	Solid State Chemistry	
CHEM 5420	Pyrotechnics (1 unit)	
CHEM 5500	Medicinal Chemistry (2 units)	
CHEM 5550	Computational Chemistry (2 units)	
CHEM 5751	Internship in Chemistry (1 unit)	
CHEM 5752	Internship in Chemistry (2 units)	
CHEM 5753	Internship in Chemistry (3 units)	
CHEM 5901	Directed Laboratory Research (1 unit)	
CHEM 5902	Directed Laboratory Research (2 units)	
CHEM 5903	Directed Laboratory Research (3 units)	
CHEM 5951	Independent Study (1 unit)	
CHEM 5952	Independent Study (2 units)	
CHEM 5953	Independent Study (3 units)	

Total Units**29**