

<b>Student ID:</b> _____	<b>Catalog:</b> Semester Catalog 2016-2017
<b>Student Name:</b> _____	<b>Program:</b> Chemistry, B.S.
<b>Adviser Name:</b> _____	<b>Minimum Credits Required:</b> _____

## Chemistry, B.S.

The Bachelor of Science degree in Chemistry is approved by the American Chemical Society. It is designed to fit the needs of those who either plan to complete their formal education with the bachelor's degree and obtain positions in scientific or industrial laboratories or do graduate study in chemistry.

The total number of units required for the Bachelor of Science degree in Chemistry is 120 units, of which 81 units are in the major. Consult with an advisor for the specific number of units required in all areas of the degree including GE and free electives.

### Requirements for the Major (81 units)

#### Lower Division Required Courses (40 units)

Course Name	Credits:	Term Taken	Grade	Gen Ed
CHEM 1100 - General Chemistry I	(5)			
CHEM 1110 - General Chemistry II	(5)			
CHEM 2200 - Organic Chemistry I	(4)			
CHEM 2201+ - Organic Chemistry Laboratory I	(1)			
CHEM 2211+ - Organic Chemistry Laboratory II	(1)			
MATH 2110 - Calculus I	(4)			
MATH 2120 - Calculus II	(4)			
MATH 2130 - Calculus III	(3)			
MATH 2150 - Differential Equations	(3)			
PHYS 2100 - General Physics I: Mechanics and Thermodynamics	(5)			
PHYS 2200 - General Physics II, Electromagnetism and Optics	(5)			

#### Upper Division Required Courses (37 units)

Course Name	Credits:	Term Taken	Grade	Gen Ed
CHEM 3100 - Writing for Chemists	(3)			
CHEM 3200 - Organic Chemistry II	(4)			
CHEM 3500+ - Quantitative Analysis	(4)			
CHEM 3600 - Inorganic Chemistry	(4)			
CHEM 4300 - Introduction to Biochemistry	(3)			
CHEM 4410 - Physical Chemistry: Quantum Mechanics and Kinetics	(4)			
CHEM 4431 - Physical Chemistry Laboratory	(2)			
CHEM 4810 - Advanced Synthetic Methods	(2)			
CHEM 4420 - Physical Chemistry: Thermodynamics	(3)			
CHEM 4430 - Physical Chemistry: Quantum Chemical Methods	(1)			
Students must select 2 courses from the following Advanced Analytical Chemistry course options. The third course may be used as an elective:				
CHEM 4510 - Advanced Analytical Chemistry: Optical Spectroscopy	(1,1)			
CHEM 4520 - Advanced Analytical Chemistry: Analytical Separations and Mass Spectrometry	(1,1)			
CHEM 4530 - Advanced Analytical Chemistry: Electrochemistry and Surface Techniques	(1,1)			
CHEM 4890 - Molecular Science Capstone	(3)			

**Upper Division Electives in Chemistry (4 units)**

Select 3 upper division units with adviser approval from the following list. May include a maximum of 1 unit of CHEM 4990.

Course Name	Credits:	Term Taken	Grade	Gen Ed
CHEM 3820 - Special Topics in Chemistry	(1-3)			
CHEM 3821 - Special Topics in Chemistry Laboratory	(1)			
CHEM 3810 - Honors Studies in Chemistry	(1-3)			
CHEM 4200 - Advanced Organic Chemistry I	(3)			
CHEM 4210 - Polymer Chemistry	(3)			
CHEM 4310 - Biochemistry I	(3)			
CHEM 4320 - Biochemistry II	(3)			
CHEM 4311+ - Biochemistry Laboratory I	(2)			
CHEM 4321+ - Biochemistry Laboratory II	(2)			
CHEM 4450 - Introduction to Atmospheric Chemistry	(3)			
CHEM 4460 - Drug Delivery	(3)			
CHEM 4800 - Special Topics in Advanced Chemistry Lecture	(1-3)			
CHEM 4801 - Special Topics in Advanced Chemistry Laboratory	(1)			
CHEM 4830 - History of Chemistry	(3)			
CHEM 4840 - Drug Discovery and Development	(4)			
CHEM 4850 - Bioinorganic and Bioorganic Chemistry	(3)			
CHEM 4860 - Bioinformatics and Computational Biology	(3)			
CHEM 4980 - Cooperative Education	(1)			
CHEM 4990 - Undergraduate Directed Study	(1-3)			

**Notes:**