

CHEMISTRY, B.A.

The Bachelor of Arts degree program in chemistry provides a background in chemistry. This program will prepare one for a career in chemical and related industries, forensic and environmental science, and secondary science education. This program is also appropriate for medical, dental, optometric, osteopathic, law, and pharmacy schools.

There are no requirements for admission to this degree track, but students are encouraged to begin taking science and math courses as early as possible in their academic careers.

Code	Title	Credits
Required		
CHEM 105	General Chemistry I Lecture	3
CHEM 1105	General Chemistry I Recitation/Laboratory	2
CHEM 106	General Chemistry II Lecture	3
CHEM 1106	General Chemistry II Recitation/Laboratory	2
CHEM 207	Organic Chemistry I	3
CHEM 2207	Organic Chemistry I Laboratory	1
CHEM 208	Organic Chemistry II	3
CHEM 2208	Organic Chemistry II Laboratory	1
CHEM 205	Analytical Chemistry Lec ¹	3
CHEM 2205	Analytical Chemistry Laboratory ¹	2
CHEM 316	Instrumental Analysis, Lecture ²	3
CHEM 3316	Instrumental Methods of Analysis, Laboratory ²	2
CHEM 305	Physical Chemistry I ¹	3
CHEM 405	Seminar ¹	1
CHEM 416	Inorganic Chemistry ²	3
Elective		
Select a minimum of three credits from the following courses:		3
CHEM 220	Environmental Chemistry	4
CHEM 306	Physical Chemistry II, Lecture ²	3
CHEM 308		4
CHEM 307	Biochemistry I	4
CHEM 3306	Physical Chemistry II Recitation/Laboratory ²	2
CHEM 430	Spectroscopic Identification of Organic Compounds	3
CHEM 401	Medicinal Chemistry	3
CHEM 412	Inorganic Chemistry Laboratory	2
CHEM 414	Advanced Organic Chemistry	3
CHEM 420	Food Chemistry	4
CHEM 425	Nanomaterial and Microelectronic Fabrication	3
CHEM 435	Materials Chemistry	3
Required Supporting Courses in Math, Physics and Computer Science:		19
MATH 192	Calculus and Analytic Geometry I	4
MATH 193	Calculus and Analytic Geometry II	4
PHYS 140	Principles of Physics I - Lecture	3
or PHYS 130	College Physics I (Lecture)	
MATH 311	Differential Equations for Engineers	4

or MATH 292	Calculus & Analytical Geometry III	
PHYS 1140	Principles of Physics I - Laboratory and recitation	1
or PHYS 1130	Physics I Recitation & Laboratory	
PHYS 141	Principles of Physics II - Lecture	3
or PHYS 131	Physics II (Lecture)	
PHYS 1141	Principles of Physics II - Laboratory and Recitation	1
or PHYS 1131	Physics II Recitation & Laboratory	
INTD 180	Computers Tools for Science and Math	3

¹ Offered in fall only.

² Offered in spring only.

Freshman

Semester 1		Credits
ENGL 101	English Composition I	4 - 6
or ESL 101	or English Composition I for English as a Second Language Students	
MATH 192	Calculus and Analytic Geometry I	4
CHEM 100	Preparation for General Chemistry (*Can test out of CHEM 100)	3 - 5
and CHEM 1105	or General Chemistry I Lecture and General Chemistry I Recitation/Laboratory	
General Education Tier I Course		3
Credits		14-18

Semester 2

ENGL 102	English Composition II	4 - 6
or ESL 102	or	
MATH 193	Calculus and Analytic Geometry II	4
CHEM 106	General Chemistry II Lecture	3
CHEM 1106	General Chemistry II Recitation/Laboratory	2
General Education Tier I Course		3
Credits		16-18

Sophomore

Semester 1		Credits
CHEM 207	Organic Chemistry I	3
CHEM 2207	Organic Chemistry I Laboratory	1
PHYS 130	College Physics I (Lecture)	3
or PHYS 140	or Principles of Physics I - Lecture	
PHYS 1130	Physics I Recitation & Laboratory	1
or PHYS 1140	or Principles of Physics I - Laboratory and recitation	
INTD 180	Computers Tools for Science and Math	3
General Education Tier I Course		3
Credits		14

Semester 2

CHEM 208	Organic Chemistry II	3
CHEM 2208	Organic Chemistry II Laboratory	1
PHYS 131	Physics II (Lecture) ()	3
or PHYS 140	or Principles of Physics I - Lecture	

PHYS 1131 or PHYS 1141	Physics II Recitation & Laboratory or Principles of Physics II - Laboratory and Recitation	1
	General Education Tier II Course	3
	General Education Tier II Course	3
	Elective or Minor Course	3
	Credits	17

Junior**Semester 1**

CHEM 205	Analytical Chemistry Lec	3
CHEM 2205	Analytical Chemistry Laboratory	2
MATH 311	Differential Equations for Engineers	4
	General Education Tier II Course	3
	General Education Tier II Course	3
	Credits	15

Semester 2

CHEM 316	Instrumental Analysis, Lecture	3
CHEM 3316	Instrumental Methods of Analysis, Laboratory	2
CHEM 307	Biochemistry I	4
	General Education Tier II Course	3
	Elective or Minor Course	3
	Credits	15

Senior**Semester 1**

CHEM 305	Physical Chemistry I	3
CHEM 405	Seminar	1
	Chemistry Elective 3XX or 4XX	3-4
	General Education Tier II Course	3
	Minor or Elective Course	3
	Credits	13-14

Semester 2

CHEM 416	Inorganic Chemistry	3
	General Education Tier III Course	3
	Elective or Minor Course	3
	Elective or Minor Course	3
	Elective or Minor Course	3
	Credits	15

Total Credits 119-126

5. Use modern library searching and retrieval methods to obtain information about a topic, chemical, chemical technique.

*To test out of CHEM 100, students must contact the Chemistry Department. Students who take CHEM 100 are recommended CHEM 106/ CHEM 1106 in first summer session.

Student Learning Outcomes:

Upon completion of the Chemistry program, students will be able to:

1. Identify the fundamental concepts in: general, organic, inorganic, analytical, physical and biological chemistry.
2. Quantitatively and qualitatively describe molecular behavior.
3. Design and conduct laboratory experiments, perform calculations, and interpret results to draw reasonable conclusions.
4. Demonstrate discipline-specific writing skills.