

BA/BS MAJOR IN CHEMISTRY

Requirements for a Bachelor of Science or Bachelor of Arts Degree With a Major in Chemistry

Additional Graduation Requirements (<https://catalog.una.edu/undergraduate/academic-procedures-requirements/graduation-requirements/>)

Code	Title	Hours
General Education Component (https://catalog.una.edu/undergraduate/academic-procedures-requirements/general-education-component/) ¹		
Area I (Written Composition)		6
Area II (Humanities and Fine Arts) ²		12
Area III (Natural Science and Mathematics) ³		11
Area IV (History, Social and Behavioral Science)		12
Area V (https://www.una.edu/areav/)		15-19
Select one of the following ⁴		
CIS 125	Business Applications of Microcomputer Software	
CS 135	Computer Skills for Problem-Solving	
Select one of the following		
MA 112 & MA 113	College Algebra and College Trigonometry	
MA 115	Pre-Calculus Algebra and Trigonometry	
Select one of the following		
PH 241 & PH 242	General Physics I and General Physics II	
PH 251 & PH 252	Technical Physics I and Technical Physics II	
Major Options		41-70
Option I: Applied Chemistry (https://catalog.una.edu/undergraduate/colleges-programs/arts-sciences/chemistry-and-physics/chemistry-ba-bs/#appliedchemistry)		
Option II: Professional Health Science (https://catalog.una.edu/undergraduate/colleges-programs/arts-sciences/chemistry-and-physics/chemistry-ba-bs/#professionalhealthscience)		
Option III: Biochemistry (ACS Certified) (https://catalog.una.edu/undergraduate/colleges-programs/arts-sciences/chemistry-and-physics/chemistry-ba-bs/#Biochemistry_ACS)		
Option IV: Chemistry (ACS Certified) (https://catalog.una.edu/undergraduate/colleges-programs/arts-sciences/chemistry-and-physics/chemistry-ba-bs/#Chemistry_ACS)		
Minor		
A minor, second major, or second degree is only required for Option I: Applied Chemistry ⁵		
Electives		
Elective hours, if necessary, to bring total hours to 120		
Total Hours		120

¹ See major options for specific general education requirements.

² For BA degree, select 6 hours of a required foreign language at the introductory level.

³ The eleven (11) hours of Natural Science and Mathematics requirement (Area III) of the General Education component will be completed within the major.

⁴ Fulfills computer literacy requirement.

⁵ **Suggested minors include:** biology, physics, geology, mathematics, crime scene investigation, legal studies, public relations, innovation and entrepreneurship.

Concentration Options

Option I: Applied Chemistry

*The Applied Chemistry Option requires one of the following: a minor, a second major, or a second degree. Elective hour requirements may be necessary to bring the total hours to 120.

Code	Title	Hours
Specific General Education Requirements - These courses are part of the 41 hour Gen Ed Requirement for the BA/BS in Chemistry		
Select one of the following:		
MA 121 & MA 122	Calculus for Business and Life Sciences I and Calculus for Business and Life Sciences II	
MA 125 & MA 126	Calculus I and Calculus II	

Chemistry Major Core Courses

CH 111 & 111L	General Chemistry and General Chemistry Laboratory	4
CH 112 & 112L	General Chemistry and General Chemistry Laboratory	4
CH 311 & 311L	Organic Chemistry and Organic Chemistry Laboratory	5
CH 312 & 312L	Organic Chemistry and Organic Chemistry Laboratory	5
CH 321 & 321LW	Quantitative Analysis and Quantitative Analysis Laboratory	5
CH 322 & 322LW	Instrumental Analysis and Instrumental Analysis Laboratory	5
CH 331	Foundations of Biochemistry	3
CH 381 & 381L	Physical Chemistry and Physical Chemistry Laboratory	5
Total Hours		36

Option II: Professional Health Science

*The Professional Health Science Option requires 10 to 16 elective hours, with 10 of the elective hours coming from upper level courses (numbered 300-400).

Code	Title	Hours
Specific General Education Requirements - These courses are part of the 41 hour Gen Ed Requirement for the BA/BS in Chemistry		
PHL 205	Ethics	
BI 111	Principles of Biology	
BI 112	Principles of Biology	
PY 201	General Psychology	
SO 221	Introductory Sociology	

Chemistry Major Core Courses

CH 111 & 111L	General Chemistry and General Chemistry Laboratory	4
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CH 112 & 112L	General Chemistry and General Chemistry Laboratory	4
CH 311 & 311L	Organic Chemistry and Organic Chemistry Laboratory	5
CH 312 & 312L	Organic Chemistry and Organic Chemistry Laboratory	5
CH 321 & 321LW	Quantitative Analysis and Quantitative Analysis Laboratory	5
CH 331	Foundations of Biochemistry	3

Prescribed Supporting Courses

BI 241	Human Anatomy and Physiology I	4
BI 242	Human Anatomy and Physiology II	4
BI 307	Microbiology	4
Select one of the following:		4
BI 306	Genetics	
BI 375	Cell Biology	
Select one of the following sequences:		6-8
MA 121 & MA 122	Calculus for Business and Life Sciences I and Calculus for Business and Life Sciences II	
MA 125 & MA 126	Calculus I and Calculus II	

Total Hours **48-50**

Option III: Biochemistry (ACS Certified)

*The Biochemistry Option requires 6 to 10 elective hours.

Code	Title	Hours
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Specific General Education Requirements - These courses are part of the 41 hour Gen Ed Requirement for the BA/BS in Chemistry

BI 111	Principles of Biology	
BI 112	Principles of Biology	
MA 125	Calculus I	
MA 126	Calculus II	

Chemistry Major Courses

CH 111 & 111L	General Chemistry and General Chemistry Laboratory	4
CH 112 & 112L	General Chemistry and General Chemistry Laboratory	4
CH 311 & 311L	Organic Chemistry and Organic Chemistry Laboratory	5
CH 312 & 312L	Organic Chemistry and Organic Chemistry Laboratory	5
CH 321 & 321LW	Quantitative Analysis and Quantitative Analysis Laboratory	5
CH 331	Foundations of Biochemistry	3
CH 381 & 381L	Physical Chemistry and Physical Chemistry Laboratory	5
CH 382 & 382L	Physical Chemistry and Physical Chemistry Laboratory	6
CH 431	Advanced Biochemistry	3
CH 434	Advanced Inorganic Chemistry	3
CH 437	Advanced Organic Chemistry	3
CH 442L	Biochemistry Laboratory	2
CH 495	Senior Research/Internship	2

Prescribed Supporting Courses

Select one of the following:		4
BI 306	Genetics	
BI 307	Microbiology	
BI 375	Cell Biology	

Total Hours **54**

Option IV: Chemistry (ACS Certified)

The Chemistry Option requires 10 to 14 elective hours.

Code	Title	Hours
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Specific General Education Requirements - These courses are part of the 41 hour Gen Ed Requirement for the BA/BS in Chemistry

MA 125	Calculus I	
MA 126	Calculus II	

Chemistry Major Core Courses

CH 111 & 111L	General Chemistry and General Chemistry Laboratory	4
CH 112 & 112L	General Chemistry and General Chemistry Laboratory	4
CH 311 & 311L	Organic Chemistry and Organic Chemistry Laboratory	5
CH 312 & 312L	Organic Chemistry and Organic Chemistry Laboratory	5
CH 321 & 321LW	Quantitative Analysis and Quantitative Analysis Laboratory	5
CH 322 & 322LW	Instrumental Analysis and Instrumental Analysis Laboratory	5
CH 331	Foundations of Biochemistry	3
CH 381 & 381L	Physical Chemistry and Physical Chemistry Laboratory	5
CH 382 & 382L	Physical Chemistry and Physical Chemistry Laboratory	6
CH 434	Advanced Inorganic Chemistry	3
CH 437	Advanced Organic Chemistry	3
CH 495	Senior Research/Internship	2

Total Hours **50**