

B.A. IN CHEMISTRY

<http://www.as.miami.edu/chemistry/>

Overview

The B.A. degree requires a minimum of 27 credit hours of chemistry. This major is designed for premedical students, high school science teachers, and others who choose a non-science minor. It may be combined with business courses in an interdisciplinary program. Variations within the program may be recommended by the Department. Transfer students must complete a minimum of half of the required major credit hours in residence in the Department. Students should make certain that math and physics prerequisites are fulfilled in a timely manner.

Curriculum Requirements

Code	Title	Credit Hours
Core Courses		
CHM 121	Principles of Chemistry	4
CHM 113	Chemistry Laboratory I	1
CHM 221	Introduction to Structure and Dynamics	4
CHM 205	Chemical Dynamics Laboratory	1
CHM 222	Organic Reactions and Synthesis	4
CHM 206	Organic Reactions and Synthesis Laboratory	2
CHM 214	Quantitative Analytical Chemistry	3
CHM 331	Physical Chemistry for Premedical Students	3
Choose one of the following:		8
MTH 161 & MTH 162	Calculus I and Calculus II	
MTH 171 & MTH 172	Calculus I and Calculus II	
Choose one of the following:		10-11
PHY 101 & PHY 102 & PHY 106 & PHY 108	College Physics I and College Physics II and College Physics Laboratory I and College Physics Laboratory II	
PHY 201 & PHY 202 & PHY 106 & PHY 108	University Physics I for the Sciences and University Physics II for the Sciences and College Physics Laboratory I and College Physics Laboratory II	
PHY 211 & PHY 212 & PHY 106 & PHY 108	University Physics I for PRISM and University Physics II for PRISM and College Physics Laboratory I and College Physics Laboratory II	
PHY 221 & PHY 222 & PHY 223 & PHY 224 & PHY 225	University Physics I and University Physics II and University Physics III and University Physics II Lab and University Physics III Lab	
PHY 221 & PHY 230 & PHY 224 & PHY 225	University Physics I and Honors University Physics II-III and University Physics II Lab and University Physics III Lab	
Chemistry Related Electives		5-6
CHM 316	Instrumental Analytical Chemistry	
CHM 320	Instrumental Methods in Chemistry and Biochemistry	
CHM 401	Environmental Chemistry	
Any 500-level course		
General Education Requirements		
Written Communication Skills:		

WRS 105	First-Year Writing I	3
WRS 106 or ENG 106	First-Year Writing II Writing About Literature and Culture	3
Quantitative Skills:		
MTH 161 or MTH 171	Calculus I (fulfilled through the major) Calculus I	
Areas of Knowledge:		
Arts and Humanities Cognate		9
People and Society Cognate		9
STEM Cognate (9 credits) (fulfilled through the major)		
Additional Required Courses		
Language Courses		3-9
Minor		15
Electives		33-25
Total Credit Hours		120

Suggested Plan of Study

This is a guide and is not meant to take the place of the advice of your major advisor; you should consult with them before making any changes.

Year One		Credit Hours
Fall		
CHM 121	Principles of Chemistry	4
CHM 113	Chemistry Laboratory I	1
MTH 161	Calculus I	4
WRS 105	First-Year Writing I	3
Arts and Humanities Cognate		3
Credit Hours		15
Spring		
CHM 221	Introduction to Structure and Dynamics	4
CHM 205	Chemical Dynamics Laboratory	1
MTH 162	Calculus II	4
WRS 106 or ENG 106	First-Year Writing II or Writing About Literature and Culture	3
Arts and Humanities Cognate		3
Credit Hours		15
Year Two		
Fall		
CHM 222	Organic Reactions and Synthesis	4
CHM 206	Organic Reactions and Synthesis Laboratory	2
PHY 101	College Physics I	4
PHY 106	College Physics Laboratory I	1
Language Course		3
Arts and Humanities Cognate		3
Credit Hours		17
Spring		
PHY 102	College Physics II	4
PHY 108	College Physics Laboratory II	1
Language Course		3
People and Society Cognate		3
Elective		3
Credit Hours		14

Year Three		
Fall		
CHM 214	Quantitative Analytical Chemistry	3
Language Course		3
People and Society Cognate		3
Minor Course		3
Elective		3
Credit Hours		15
Spring		
CHM 331	Physical Chemistry for Premedical Students	3
CHM Elective ¹		3
People and Society Cognate		3
Minor Course		3
Minor Course		3
Credit Hours		15
Year Four		
Fall		
CHM Elective ¹		3
Minor Course		3
Minor Course		3
Elective		3
Elective		3
Credit Hours		15
Spring		
Elective		3
Elective		3
Elective		3
Elective		3
Elective		3
Credit Hours		15
Total Credit Hours		121

Student Learning Outcomes

- Graduates will be able to demonstrate a broad understanding of fundamental chemical principles in all areas of the field.
- Graduates will be adept in a broad variety of chemical instrumentation and analytical techniques.
- Graduates will display effective and strong written communication skills pertaining to chemical research.