B.A. IN CHEMISTRY

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

The **B.A.** degree requires 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
or CHM 360	Physical Chemistry I (Lecture)	
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**
BMB 401	Biochemistry for the Biomedical Sciences	
CHM 316	Instrumental Analytical Chemistry	
CHM 320	Instrumental Methods in Chemistry and Biochemistry	
CHM 365	Physical Chemistry II (Lecture)	
CHM 401	Environmental Chemistry	
CHM 441	Inorganic Chemistry (Lecture)	
CHM 520	Physical Organic Chemistry	

Additional Required Courses		
ENG 105	English Composition I	3
ENG 106	English Composition II	3
Arts and Humanities Cognate		9
People and Society Cognate		9
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		
Fall		**Credit Hours**
CHM 121	Principles of Chemistry	4
CHM 113	Chemistry Laboratory I	1
MTH 161	Calculus I	4
ENG 105	English Composition 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
ENG 106	English Composition II	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.