CERTIFIED B.S. IN CHEMISTRY

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

Overview

The **certified B.S.** degree requires 47 credit hours of chemistry. This major is certified by the American Chemical Society. 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
Advanced Courses		
BMB 401	Biochemistry for the Biomedical Sciences	4
BMB 402	Principles of Experimental BMB	2
CHM 320	Instrumental Methods in Chemistry and Biochemistry	2
CHM 360	Physical Chemistry I (Lecture)	3
CHM 364	Physical Chemistry (Laboratory I)	1
CHM 365	Physical Chemistry II (Lecture)	3
CHM 441	Inorganic Chemistry (Lecture)	3
CHM 442	Inorganic Chemistry (Laboratory)	1
Chemistry Electives		**9**
CHM 317	The Chemistry of Food and Taste.	
CHM 401	Environmental Chemistry	
Any 500-level CHM course		
Math and Physics Courses		
MTH 161	Calculus I	4
MTH 162	Calculus II	4
PHY 201	University Physics I for the Sciences	4
PHY 202	University Physics II for the Sciences	4
PHY 106	College Physics Laboratory I	1
PHY 108	College Physics Laboratory II	1
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
Minor		15
Electives		13-7
Language		3-9
Total Credit Hours		**120**

1 Variations within the above programs 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.

2 Students should make certain that math and physics prerequisites are fulfilled in a timely manner.

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 201	University Physics I for the Sciences	4
PHY 106	College Physics Laboratory I	1
Language Course		3
	Credit Hours	**14**
Spring		
CHM 214	Quantitative Analytical Chemistry	3
BMB 401	Biochemistry for the Biomedical Sciences	4
PHY 202	University Physics II for the Sciences	4
PHY 108	College Physics Laboratory II	1
Language Course		3
	Credit Hours	**15**
Year Three		
Fall		
CHM 360	Physical Chemistry I (Lecture)	3
CHM 364	Physical Chemistry (Laboratory I)	1
CHM Elective		3
Language Course		3
Arts and Humanities Cognate		3
People and Society Cognate		3
	Credit Hours	**16**
Spring		
CHM 365	Physical Chemistry II (Lecture)	3
CHM 320	Instrumental Methods in Chemistry and Biochemistry	2
People and Society Cognate		3
Minor Course		3
Elective		3
Elective		3
	Credit Hours	**17**

Year Four		
Fall		
CHM 441	Inorganic Chemistry (Lecture)	3
CHM Elective		3
BMB 402	Principles of Experimental BMB	2
Minor Course		3
Minor Course		3
	Credit Hours	**14**
Spring		
CHM 442	Inorganic Chemistry (Laboratory)	1
CHM Elective		3
Elective		3
Elective		4
People and Society Cognate		3
	Credit Hours	**14**
	Total Credit Hours	**120**

Mission

Goals

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.