

CHEMISTRY CURRICULUM –Traditional Track

Providing training in a broad range of Chemistry to provide maximum flexibility for graduate research or industrial careers

First Year					
Fall		Spring		Summer	
Course	credit hrs	Course	credit hrs	Course	credit hrs
CHEM-1110 Chemistry I	4	CHEM-1200 Chemistry II	4		
PHYS-1100 Physics I	4	PHYS-1200 Physics II	4		
MATH-1010 Calculus I	4	MATH-1020 Calculus II	4		
CHEM 1900 Chemistry for Life	1	HASS	4		
HASS	4				
Second Year					
Fall		Spring		Summer	
CHEM-2110 Equilib Chem & Quantitative Analysis	3	CHEM-2030 Inorganic Chemistry I	3	CHEM-4760 Molecular. Biochemistry	4
CHEM-2120 Experimental Chemistry I	2	CHEM-2260 Organic Chemistry II	3	HASS	4
CHEM-2250 Organic Chemistry I	3	CHEM-2290 Experimental Chemistry II	3	CHEM-4410 Macroscopic Physical Chemistry	3
MATH-2400 Intro to Diff Eq or Biology*	4	MATH-2400 Intro to Diff Eq or Biology*	4	CHEM-4010 Inorganic Chemistry II	3
HASS	4	Elective	4		
Third Year					
Fall		Spring		Summer	
CHEM-4420 Microscopic Physical Chemistry	3				
CHEM-4020 Experimental Chemistry III	3				
Electives	6				
HASS	4				
Fourth Year					
Fall		Spring		Summer	
CHEM-4950 Senior Experience	2	CHEM-4620 Intro to Polymer Chemistry	3		
CHEM-4900 Professional Development Seminar	1	CHEM-4120 Experimental Chemistry IV	3		
CHEM-4110 Instrumental Analysis	2	Electives	9		
HASS	4				
Electives	8				

A total of 128 credit hours are required for graduation. Twenty-seven of these are completely free electives. Students should select electives in consultation with the advisor to give a balanced program totaling 128 credit hours. Some H&SS courses can be deferred until the senior year to allow for earlier electives. Courses can be taken out of sequence as long as prerequisites are followed.

Students planning to pursue graduate studies in Chemistry are recommended to take at least 12 credits in Chemistry courses beyond those required. Research experience such as through CHEM-2950 or URP activities is particularly valuable and can be taken for credit.

Students considering medical school should include one semester of General Psychology and one semester of Sociology among their H&SS or elective courses.

*Biology = BIOL-1010/1015 Intro to Biology or BIOL-2120 Intro to Cell and Molecular Biology (recommended).

Students may elect when Math-2400 and the Biology course are taken.

CHEMISTRY CURRICULUM - Chemical Biology track

For students interested in the application of Chemistry to Biological problems or for careers in the medical field

First Year					
Fall		Spring		Summer	
Course	credit hrs	Course	credit hrs	Course	credit hrs
CHEM-1110 Chemistry I	4	CHEM-1200 Chemistry II	4		
PHYS-1100 Physics I	4	PHYS-1200 Physics II	4		
MATH-1010 Calculus I	4	MATH-1020 Calculus II	4		
CHEM 1900 Chemistry for Life	1	HASS	4		
HASS	4				
Second Year					
Fall		Spring		Summer	
CHEM-2110 Equilib Chem & Quantitative Analysis	3	CHEM-2030 Inorganic Chemistry I	3	CHEM-4760 Molecular Biochem I	4
CHEM-2120 Experimental Chemistry I	2	CHEM-2260 Organic Chemistry II	3	HASS	4
CHEM-2250 Organic Chemistry I	3	CHEM-2290 Experimental Chemistry II	3	Electives	4
MATH-2400 Intro to Diff Eq	4	BIOL-2120 Intro to Cell & Molecular Bio	4	CHEM-4410 Macroscopic Physical Chemistry	3
HUM or SOC. SCI.	4	Elective	4		
Third Year					
Fall		Spring		Summer	
CHEM-4420 Microscopic Physical Chem	3				
BIOL 2500 - Genetics and Evolution	4				
HASS	4				
Elective	4				
Fourth Year					
Fall		Spring		Summer	
CHEM-4110 Instrumental Analysis	2	CHEM-4770 Molecular Biochemistry II	4		
CHEM-4900 Professional Development Seminar	1	BIOL 4710 - Biochemistry Laboratory ¹	6		
CHEM-4950 Senior Experience	2	CHEM-4120 Experimental Chemistry IV	3		
HASS	4	Electives	4		
Electives	6				

A total of 128 credit hours are required for graduation. Twenty-two of these are completely free electives. Students should select electives in consultation with the advisor to give a balanced program totaling 128 credit hours. Research experience such as through CHEM-2950 or URP activities is strongly encouraged and can be taken for credit.

Courses can be taken out of sequence as long as prerequisites are followed.

Students with weak backgrounds in Biology should take BIOL-1010/1015 in their first year, deferring an HASS course.

Students considering medical school should include one semester of General Psychology and one semester of Sociology among their HASS or elective courses.

CHEM-4010 Inorganic Chemistry II is a recommended elective.

¹ BIOL-4720 may be substituted for this course.

CHEMISTRY CURRICULUM –Industrial Track

For students planning to go into industry and who wish to incorporate some Chemical Engineering courses into their program or to take an MS in Chemical Engineering

First Year			Second Year			Third Year			Fourth Year							
Fall			Spring			Summer			Fall			Spring			Summer	
Course	credit hrs		Course	credit hrs		Course	credit hrs		Course	credit hrs		Course	credit hrs		Course	credit hrs
CHEM-1110 Chemistry I	4		CHEM-1200 Chemistry II	4												
PHYS-1100 Physics I	4		PHYS-1200 Physics II	4												
MATH-1010 Calculus I	4		MATH-1020 Calculus II	4												
HASS	4		HASS	4												
CHEM 1960 – Chemistry for Life	1															
Second Year			Second Year			Second Year			Second Year							
Fall			Spring			Summer			Fall			Spring			Summer	
CHEM-2110 Equilib Chem & Quantitative Analysis	3		CHEM-2030 Inorganic Chemistry I	3		BIOL-1010/1015 Introduction to Biology	4									
CHEM-2120 Experimental Chemistry I	2		CHEM-2260 Organic Chemistry II	3		Elective*	4									
CHEM-2250 Organic Chemistry I	3		CHEM-2290 Experimental Chemistry II	3		CHEM-4410 Macroscopic Physical Chemistry	3									
MATH-2400 Intro to Diff Eq or HASS	4		CHME-4010 Transport Phenomena I or MATH-2400 Intro to Diff Eq or HASS	4		CHME-4010 Transport Phenomena I or HASS	4									
CHME-2010 Material, Energy, and Entropy Balances	4		CHEM-4200 Industrial Chemistry	3												
Third Year			Third Year			Third Year			Third Year							
Fall			Spring			Summer			Fall			Spring			Summer	
CHEM-4420 Microscopic Physical Chemistry	3															
CHEM-4760 Molec. Biochem	4															
CHEM-4030 Experimental Chemistry III Abridged	2															
HASS	4															
Elective*	4															
Fourth Year			Fourth Year			Fourth Year			Fourth Year							
Fall			Spring			Summer			Fall			Spring			Summer	
CHEM-4950 Senior Experience	2		CHEM-4620 Intro to Polymer Chemistry	3												
CHEM-4900 Professional Development Seminar	1		CHEM-4120 Experimental Chemistry IV	3												
CHEM-4110 Instrumental Analysis	2		Electives*	6												
HASS	4		HASS	4												
Electives*	6															

*Two electives must be chosen from the following and may be taken in any elective slot. All other electives are totally free.

1. CHME- 2050 - Intro to Chemical Engineering Calculations *Credit Hours: 3*
2. CHME- 4030 - Chemical Process Dynamics and Control *Credit Hours: 4*
3. CHME - 4040 - Chemical Engineering Separations *Credit Hours: 3*
4. CHME- 4500 - Chemical Reactor Design *Credit Hours: 3*

This program qualifies students for admission to a co-terminal MS degree program in Chemical Engineering. Students considering this option should consult with Chemical Engineering regarding choice of electives and MS course requirements.