Chemistry Major, B.S.

Department of Chemistry and Biochemistry

Chemistry is a body of knowledge that helps explain the physical world and its processes. Chemists study substances: their composition, structures, properties, and reactions. The Department of Chemistry and Biochemistry provides classroom and laboratory learning opportunities and research experience across the discipline to meet the needs of students in engineering, liberal arts, and preprofessional programs as well as of students who wish to pursue careers or graduate studies in chemistry or related disciplines.

Typical Program of Study:

Fall Semester		*Spring Semester*	
First Year			
Chem 1151 General Chemistry I [a]		Chem 1152 General Chemistry II	
or Chem 1161 Honors Chemistry I[a]	5 cr	or Chem 1162 Honors Chemistry II	5 cr
Math 1296 Calculus I [b]	5 cr	Math 1297 Calculus II	5 cr
Comp 1120 College Writing	3 cr	Liberal education courses	6 cr
Liberal education course	3 cr		16 cr
	16 cr		
Second Year			
Chem 2521 Organic Chemistry I	4 cr	Chem 2532 Organic Chem II for BS Chem majors	5 cr
Phys 2011 General Physics I	4 cr	Phys 2012 General Physics II	4 cr
Math 3280 Diff Equations/Linear Algebra [c]	4 cr	Chem 2222 Quantitative Analysis	3 cr
Liberal education or minor field course	3 cr	Chem 2223 Quantitative Analysis Lab	1 cr
	15 cr	Liberal education or minor field course	3 cr
			16 cr
Third Year			
Chem 4641 Physical Chemistry I	3 cr	Chem 3322 Biochemistry	3 cr
Chem 4643 Physical Chemistry Lab I	1 cr	Chem 3324 Biochemistry Lab	1 cr
Comp 31xx Advanced Composition	3 cr	Chem 4642 Physical Chemistry II	3 cr
Liberal education or minor field courses	7 cr	Chem 4644 Physical Chemistry Lab II	1 cr
	14 cr	Liberal education or minor field courses	6 cr
			14 cr
Fourth Year			
Chem 4184 Undergraduate Seminar I	1 cr	Chem 4185 Undergraduate Seminar II	1 cr
Chem 4434 Inorganic Chemistry	4 cr	Chem 4242 Instrumental Analysis	3 cr
Chem 4435 Inorganic Chemistry Lab	1 cr	Chem 4243 Instrumental Chemistry Lab	2 cr
Liberal education or minor field courses	9 cr	Liberal education or minor field courses	8 cr
	15 cr		14 cr

[a]High school algebra and high school chemistry are required for Chem 1151 and Chem 1161.
[b]First math course is determined by math placement exam. This schedule presupposes placement into Math 1296.
[c]Math 3280, a prerequisite for Chem 4641, can be taken any time after Math 1297 and should be completed by fall semester of the third year.

For further information:

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Chemistry Major, B.S.

MAJOR REQUIREMENTS	CREDITS	PREREQUISITES	SEMESTER TO BE COMPLETED	GRADE
YEAR 1				
Chem 1151 General Chemistry I	5	1 year HS chemistry; HS algebra		
and Chem 1152 General Chemistry II	5	Chem 1151		
OR				
Chem 1161 Honors Chemistry I	5	1 year HS chemistry; placement		
and Chem 1162 Honors Chemistry II	5	Chem 1161		
Comp 1120 College Writing	3			
Math 1296 Calculus I	5	Math placement or Math 1250 with a grade of 'C-' or better		
Math 1297 Calculus II	5	Math 1296 with a grade of 'C-'or better		
YEAR 2				
Chem 2222 Quantitative Analysis	3	Chem 1152 or 1162		
Chem 2223 Quantitative Analysis lab	1	Concurrent registration in Chem 2222		
Chem 2521 Organic Chemistry I	4	Chem 1152 or 1162		
Chem 2532 Organic Chem II for BS Chem majors	5	Chem 2521		
Math 3280 Diff Equations with Linear Algebra	4			
Phys 2011 General Physics I	4	Math 1290 or Math 1296		
Phys 2012 General Physics II	4	Phys 2011; Math 1297		
YEAR 3				
Chem 3322 Biochemistry	3	Chem 2522 or 2532		
Chem 3324 Biochemistry laboratory	1	concurrent registration in Chem 3322		
Chem 4641 Physical Chemistry I	3	2 yrs chemistry, Math 3280, Phys 2012		
Chem 4643 Physical Chemistry laboratory I	1	Concurrent registration in Chem 4641		
Chem 4642 Physical Chemistry II	3	Chem 4641		
Chem 4644 Physical Chemistry laboratory II	1	Concurrent registration in Chem 4642		
Comp 31xx Advanced Writing	3	Comp 1120; 60 credits		
YEAR 4				
Chem 4184 Undergraduate Seminar I	1	Senior standing		
Chem 4185 Undergraduate Seminar II	1	Chem 4184		
Chem 4242 Instrumental Analysis	3	Chem 2222, 4632 or 4642		
Chem 4243 Instrumental Chemistry laboratory	2	Chem 2223, concurrent registration in Chem 4242		
Chem 4434 Inorganic Chemistry	4	Chem 4632 or Chem 4642		
Chem 4435 Inorganic Chemistry laboratory	1	Concurrent registration in Chem 4434		

NOTE: In addition to the above requirements, students must complete a minor and the liberal education program to earn a B.S. degree.