CHEMISTRY - BS, BIOLOGICAL-CHEMISTRY TRACK

The biological chemistry track has been designed for students interested in pursuing graduate study in biological chemistry, biochemistry, pharmacology or related fields or a career in the pharmaceutical industry. Students who wish to enter an MD/PhD program or medical, dental or pharmacy school will, in most cases, need to take an additional advanced biology course beyond those recommended for this track and should check the admission requirements for these programs with the Office of Professional School Advising. Courses in biology, biochemistry, genetics and statistics are recommended as electives.

Program Requirements

First Year

Fall		**Semester Credit Hours**
CHEM 100	Horizons in Chemistry	1
CHEM 119	Fundamentals of Chemistry I [1]	4
ENGL 104	Composition and Rhetoric	3
MATH 151 or MATH 171	Engineering Mathematics I or Calculus I	4
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)		3
	Semester Credit Hours	**15**
Spring		
CHEM 120	Fundamentals of Chemistry II [1]	4
MATH 152 or MATH 172	Engineering Mathematics II or Calculus II	4
PHYS 206	Newtonian Mechanics for Engineering and Science	3
PHYS 226	Physics of Motion Laboratory for the Sciences	1
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)		3
	Semester Credit Hours	**15**

Second Year

Fall		
CHEM 227	Organic Chemistry I [1]	3
CHEM 231	Techniques of Organic Chemistry	2
PHYS 207	Electricity and Magnetism for Engineering and Science	3
PHYS 227	Electricity and Magnetism Laboratory for the Sciences	1
Select one of the following		3-4
MATH 221	Several Variable Calculus	
MATH 251	Engineering Mathematics III	
MATH 253	Engineering Mathematics III	
	Semester Credit Hours	**13**
Spring		
BIOL 111	Introductory Biology I	4
CHEM 228	Organic Chemistry II [1]	3
CHEM 234	Organic Synthesis and Analysis [2]	3
CHEM 362	Descriptive Inorganic Chemistry	3
STAT 211 or STAT 302	Principles of Statistics I or Statistical Methods	3
	Semester Credit Hours	**16**

Third Year

Fall		
BIOL 112	Introductory Biology II	4
CHEM 315	Fundamentals of Quantitative Analysis	3
CHEM 318	Quantitative Analysis Laboratory	1
CHEM 327	Physical Chemistry I	3
CHEM 433	Advanced Inorganic Chemistry Laboratory	2
POLS 206	American National Government	3
	Semester Credit Hours	**16**
Spring		
CHEM 325	Physical Chemistry Laboratory I	1
CHEM 328	Physical Chemistry II	3
POLS 207	State and Local Government	3
GENE 301 or GENE 320/ BIMS 320	Comprehensive Genetics or Biomedical Genetics	3
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication)		3
Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts)		3
	Semester Credit Hours	**16**

Fourth Year

Fall		
BICH 410 or BICH 440	Comprehensive Biochemistry I or Biochemistry I	3
CHEM 326	Physical Chemistry Laboratory II	1
CHEM 415	Analytical Chemistry	3
CHEM 491	Research [3]	3
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture)		3
Social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences)		3
	Semester Credit Hours	**16**
Spring		
BICH 411 or BICH 441	Comprehensive Biochemistry II or Biochemistry II	3
CHEM 434	Analytical Instrumentation Laboratory	2
CHEM 481	Seminar [2]	2
CHEM 491	Research [3]	3

General elective [4]	3-4
Semester Credit Hours	**13**
Total Semester Credit Hours	**120**

1. Select a section designated for chemistry majors.
2. This is a designated C- or W-course.
3. Three hours of CHEM 484 may be substituted for 3 hours of CHEM 491 in consultation with an advisor.
4. Select any course 100-499 not used elsewhere except AERS 100-299 (http://catalog.tamu.edu/undergraduate/course-descriptions/aers/); CHEM 222, CHEM 242; MATH 102, MATH 140, MATH 142, MATH 167, MATH 168; MLSC 100-299 (http://catalog.tamu.edu/undergraduate/course-descriptions/mlsc/); NVSC 100-299 (http://catalog.tamu.edu/undergraduate/course-descriptions/nvsc/); PHYS 201, PHYS 202, PHYS 205.

Graduation requirements include a requirement for 3 hours of International and Cultural Diversity (http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/) courses and 3 hours of Cultural Discourse (http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/) courses. A course satisfying a Core category, a college/department requirement, or a general elective can be used to satisfy this requirement.

The total hours of CHEM 484, CHEM 485, CHEM 491 taken by BS chemistry majors on a graded (A–F) basis may not exceed 15. Additional hours of these courses may be taken on a satisfactory/unsatisfactory basis.

Electives should be chosen in consultation with the chemistry advisor and should be selected to meet the residency requirement (36 hours at 300-400 level must be taken at Texas A&M).