CHEMISTRY - BS, ENVIRONMENTAL CHEMISTRY TRACK

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		
CHEM 228	Organic Chemistry II [1]	3
CHEM 234	Organic Synthesis and Analysis [2]	3
CHEM 362	Descriptive Inorganic Chemistry	3
Select one of the following:		3
MATH 304	Linear Algebra	
MATH 308	Differential Equations	
STAT 211	Principles of Statistics I	
Select one of the following:		3-4
ATMO 363	Introduction to Atmospheric Chemistry and Air Pollution	
BIOL 111	Introductory Biology I	
BIOL 112	Introductory Biology II	
GEOL 104	Physical Geology	
OCNG 310	Physical Oceanography	
	Semester Credit Hours	**15**
Third Year		
Fall		
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
Select one of the following:		3-4
ATMO 363	Introduction to Atmospheric Chemistry and Air Pollution	
BIOL 111	Introductory Biology I	
BIOL 112	Introductory Biology II	
GEOL 104	Physical Geology	
OCNG 310	Physical Oceanography	
	Semester Credit Hours	**15**
Spring		
CHEM 325	Physical Chemistry Laboratory I	1
CHEM 328	Physical Chemistry II	3
POLS 207	State and Local Government	3
Select two of the following:		6
BESC 403	Sampling and Environmental Monitoring	
BIOL 214	Genes, Ecology and Evolution	
GEOG 324	Global Climatic Regions	
GEOG 330	Resources and the Environment	
GEOG 370/ MARS 370	Coastal Processes	
GEOL 420	Environmental Geology	
GEOL 451	Introduction to Geochemistry	
OCNG 320	Biological Oceanography	
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication)		3
	Semester Credit Hours	**16**
Fourth Year		
Fall		
CHEM 326	Physical Chemistry Laboratory II	1
CHEM 415	Analytical Chemistry	3
CHEM 491	Research [3]	3
Select one of the following: [4]		3
BICH 410	Comprehensive Biochemistry I	
BICH 411	Comprehensive Biochemistry II	
BICH 440	Biochemistry I	
BICH 441	Biochemistry II	
CHEM 446	Organic Chemistry III	
CHEM 456	Chemical Biology	

CHEM 462	Inorganic Chemistry	
CHEM 464	Nuclear Chemistry	
CHEM 466	Polymer Chemistry	
CHEM 468	Materials Chemistry of Inorganic Materials	
CHEM 470	Industrial Chemistry	
CHEM 483	Green Chemistry	
CHEM 489	Special Topics in...	
PHYS 309	Modern Physics	
Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts)		3
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture)		3
	Semester Credit Hours	**16**
Spring		
CHEM 434	Analytical Instrumentation Laboratory	2
CHEM 481	Seminar [2]	2
CHEM 491	Research [3]	3
CHEM 483	Green Chemistry	3
Social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences)		3
General elective [5]		0-3
	Semester Credit Hours	**15**
	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 three hours of CHEM 491 in consultation with an advisor.
4. Students wishing to complete an American Chemical Society certified degree program must take at least one semester of biochemistry (i.e., BICH 410 or BICH 440).
5. 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, and 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).