

CHEMISTRY - BA, ENVIRONMENTAL CHEMISTRY TRACK

This Environmental Chemistry Track contains a very large number of elective courses and provides even greater opportunity for students to select electives which provide for a career focus in environmental chemistry. The large number of electives makes it possible for students to combine interests in environmental issues with other interests such as business, law, and politics. Electives may be chosen from recommended courses in atmospheric sciences, bioenvironmental science, biology, geography, geology, geosciences, microbiology and oceanography.

Program Requirements

First Year

Fall		Semester Credit Hours
CHEM 100	Horizons in Chemistry	1
CHEM 119	Fundamentals of Chemistry I ¹	4
ENGL 104 or ENGL 210	Composition and Rhetoric or Technical and Professional Writing	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		Semester Credit Hours
CHEM 120	Fundamentals of Chemistry II ¹	4
MATH 152 or MATH 172	Engineering Mathematics II or Calculus II	4
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	
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)		3
Semester Credit Hours		15

Second Year

Fall		Semester Credit Hours
CHEM 227	Organic Chemistry I ¹	3
CHEM 231	Techniques of Organic Chemistry	2
PHYS 206	Newtonian Mechanics for Engineering and Science	3
PHYS 226	Physics of Motion Laboratory for the Sciences	1
POLS 207	State and Local 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 16

Spring		Semester Credit Hours
CHEM 228	Organic Chemistry II ¹	3
CHEM 234	Organic Synthesis and Analysis ²	3
PHYS 207	Electricity and Magnetism for Engineering and Science	3
PHYS 227	Electricity and Magnetism Laboratory for the Sciences	1
POLS 206	American National Government	3
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication)		3

Semester Credit Hours 16

Third Year

Fall		Semester Credit Hours
CHEM 315	Fundamentals of Quantitative Analysis	3
CHEM 318	Quantitative Analysis Laboratory	1
CHEM 327	Physical Chemistry I	3
Select three of the following:		9
BESC 403	Sampling and Environmental Monitoring	
BIOL 214	Genes, Ecology and Evolution	
GEOG 330	Resources and the Environment	
GEOG 324	Global Climatic Regions	
GEOG 370/ MARS 370	Coastal Processes	
GEOL 420	Environmental Geology	
GEOL 451	Introduction to Geochemistry	
GEOG 410/ OCNG 412	Global Change	
OCNG 320	Biological Oceanography	

Semester Credit Hours 16

Spring		Semester Credit Hours
CHEM 325	Physical Chemistry Laboratory I	1
CHEM 328	Physical Chemistry II	3
Select two of the following:		6-8

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	

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

Fourth Year**Fall**

CHEM 326	Physical Chemistry Laboratory II	1
CHEM 481	Seminar ²	2
Select one of the following:		3
BICH 410	Comprehensive Biochemistry I	
BICH 411	Comprehensive Biochemistry II	
BICH 440	Biochemistry I	
BICH 441	Biochemistry II	
CHEM 362	Descriptive Inorganic Chemistry	
CHEM 415	Analytical Chemistry	
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	
Social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences)		3
General electives ³		5-7
Semester Credit Hours		14
Spring		
CHEM 483	Green Chemistry	3
General electives ³		9
Semester Credit Hours		12
Total Semester Credit Hours		120

taken on an S/U basis. A maximum of 6 hours of these courses may be included on the degree plan.

Electives should be chosen in consultation with the chemistry advisor and should be selected to meet the residency requirement. (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/#requirementsforabaccalaureatedegree>)

¹ Select a section designated for chemistry majors.

² This is a designated oral communication (C) or writing (W) course.

³ 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.

BA chemistry majors may take CHEM 485 or CHEM 491 as elective courses. The total hours of CHEM 485 and CHEM 491 taken on a graded (A-F) basis may not exceed 9. Additional hours of these courses may be