

CHEMISTRY - BA, 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 |
| 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

| | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------|
| 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 | |
| GEOS 410 | Global Change | |
| OCNG 320 | Biological Oceanography | |
| Semester Credit Hours | | 16 |

Spring

| | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------|
| 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 | | Semester Credit Hours |
|------------------------------|----------------------------------|-----------------------------|
| 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 |

¹ Select a section designated for chemistry majors.

² This is a designated C- or 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 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 (36 hours at 300-400-level must be taken at Texas A&M).