

# CHEMISTRY - BS, BIOLOGICAL-CHEMISTRY TRACK

## Program Requirements

### First Year

Fall		Semester Credit Hours
CHEM 100	Horizons in Chemistry	1
CHEM 119	Fundamentals of Chemistry I <sup>1</sup>	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 ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> )		3
<b>Semester Credit Hours</b>		<b>15</b>

Spring		Semester Credit Hours
CHEM 120	Fundamentals of Chemistry II <sup>1</sup>	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 ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> )		3
<b>Semester Credit Hours</b>		<b>15</b>

### Second Year

Fall		Semester Credit Hours
CHEM 227	Organic Chemistry I <sup>1</sup>	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	
<b>Semester Credit Hours</b>		<b>13</b>

Spring		Semester Credit Hours
BIOL 111	Introductory Biology I	4
CHEM 228	Organic Chemistry II <sup>1</sup>	3
CHEM 234	Organic Synthesis and Analysis <sup>2</sup>	3
CHEM 362	Descriptive Inorganic Chemistry	3
STAT 211 or STAT 302	Principles of Statistics I or Statistical Methods	3
<b>Semester Credit Hours</b>		<b>16</b>

### Third Year

Fall		Semester Credit Hours
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
CHEM 491	Research	3
<b>Semester Credit Hours</b>		<b>16</b>

Spring		Semester Credit Hours
CHEM 325	Physical Chemistry Laboratory I	1
CHEM 328	Physical Chemistry II	3
CHEM 491	Research	3
POLS 207	State and Local Government	3
GENE 301 or GENE 320/ BIMS 320	Comprehensive Genetics or Biomedical Genetics	3
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> )		3
<b>Semester Credit Hours</b>		<b>16</b>

### Fourth Year

Fall		Semester Credit Hours
BICH 410 or BICH 440	Comprehensive Biochemistry I or Biochemistry I	3
CHEM 326	Physical Chemistry Laboratory II	1
CHEM 415	Analytical Chemistry	3
POLS 206	American National Government	3
Language, philosophy and culture ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture</a> )		3
Social and behavioral sciences ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences</a> )		3
<b>Semester Credit Hours</b>		<b>16</b>

Spring		Semester Credit Hours
BICH 411 or BICH 441	Comprehensive Biochemistry II or Biochemistry II	3
CHEM 434	Analytical Instrumentation Laboratory	2
CHEM 481	Seminar <sup>2</sup>	2
Creative arts ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a> )		3
General elective <sup>4</sup>		3-4
<b>Semester Credit Hours</b>		<b>13</b>
<b>Total Semester Credit Hours</b>		<b>120</b>

<sup>1</sup> Select a section designated for chemistry majors.

<sup>2</sup> This is a designated oral communication (C) or writing (W) course.

<sup>3</sup> Three hours of CHEM 484 may be substituted for 3 hours of CHEM 491 in consultation with an advisor.

<sup>4</sup> 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. (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/#requirementsforabaccalaureatedegree>)