BIOCHEMISTRY - BS

The undergraduate biochemistry curriculum is designed to provide a solid background in chemistry and the physical sciences, as well as in the biological sciences. Consequently, biochemistry is an especially versatile major giving undergraduates many options when they complete their BS degree. A biochemistry major provides a strong background for entering graduate school in a variety of fields, and the majority of biochemistry majors go on to graduate school or to professional schools such as medicine, veterinary medicine or dentistry. Biochemistry majors excel in biomedical professional schools because of their strong background in the basic sciences. In addition, a wide variety of job opportunities is open to biochemistry majors with a BS degree. Many find rewarding careers working in laboratories as research scientists, forensic scientists and technicians in clinical, governmental and university laboratories. Biochemists are also employed by diverse companies in the chemical, pharmaceutical, agricultural, food and scientific equipment industries.

Program Requirements

First Year

Fall		**Semester Credit Hours**
BICH 101/ GENE 101	Perspectives in Biochemistry and Genetics	1
CHEM 119	Fundamentals of Chemistry I	4
ENGL 104	Composition and Rhetoric	3
MATH 151 or MATH 171	Engineering Mathematics I or Calculus I	4
General elective [1]		3
	Semester Credit Hours	**15**
Spring		
BIOL 111	Introductory Biology I	4
CHEM 120	Fundamentals of Chemistry II	4
MATH 152 or MATH 172	Engineering Mathematics II or Calculus II	4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
	Semester Credit Hours	**15**

Second Year

Fall		
BIOL 112	Introductory Biology II	4
CHEM 227	Organic Chemistry I	3
CHEM 237	Organic Chemistry Laboratory	1
MATH 251	Engineering Mathematics III [2]	3
Select one of the following:		3
COMM 203	Public Speaking	
COMM 205	Communication for Technical Professions	
ENGL 203	Writing about Literature	
ENGL 210	Technical and Professional Writing	
General elective [1]		1
	Semester Credit Hours	**15**
Spring		
CHEM 228	Organic Chemistry II	3
CHEM 238	Organic Chemistry Laboratory	1
GENE 302	Principles of Genetics	3
GENE 314	Principles of Genetics Laboratory	1
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences	4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
	Semester Credit Hours	**15**

Third Year

Fall		
BICH 404	Biochemical Calculations	2
BICH 440	Biochemistry I [3]	3
BICH 491	Research	1
PHYS 207 & PHYS 227	Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences	4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
General elective [1]		2
	Semester Credit Hours	**15**
Spring		
BICH 441	Biochemistry II	3
BICH 414 or BICH 432/ GENE 432	Biochemical Techniques I or Laboratory in Molecular Genetics	2
BICH 491	Research	1
CHEM 327	Physical Chemistry I	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
General elective [1]		3
	Semester Credit Hours	**15**

Fourth Year

Fall		
BICH 431/ GENE 431	Molecular Genetics	3
BICH 491	Research	1
BIOL 351	Fundamentals of Microbiology	4
CHEM 328	Physical Chemistry II	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
	Semester Credit Hours	**14**
Spring		
BICH 491	Research [4]	1
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		6
Biochemistry elective (http://catalog.tamu.edu/undergraduate/course-descriptions/bich/) [5]		6

General elective [1]	3
Semester Credit Hours	**16**
Total Semester Credit Hours	**120**

1. Select from any course 100-499 not used elsewhere (except BICH 303, BICH 410-412 (http://catalog.tamu.edu/undergraduate/course-descriptions/bich/); MATH 100-104, 131-148 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/)). Often used for a minor. Students intending to pursue an advanced degree in biochemistry are strongly encouraged to use some free electives for additional upper division courses in BICH (http://catalog.tamu.edu/undergraduate/course-descriptions/bich/), GENE (http://catalog.tamu.edu/undergraduate/course-descriptions/gene/), BIOL (http://catalog.tamu.edu/undergraduate/course-descriptions/biol/), CHEM (http://catalog.tamu.edu/undergraduate/course-descriptions/chem/), MATH (http://catalog.tamu.edu/undergraduate/course-descriptions/math/) or STAT (http://catalog.tamu.edu/undergraduate/course-descriptions/stat/).
2. To be selected from the University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/). Of the 21 hours shown as University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) electives, 3 must be from language, philosophy and culture, 3 from creative arts, 3 from social and behavioral sciences, 6 from American history, 6 from POLS 206 and POLS 207. The 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 which may be met by courses satisfying the language, philosophy and culture, creative arts, social and behavioral sciences, government/political science and American history requirements if they are also on the approved list of international and cultural diversity courses.
3. Before registration in BICH 440, students much have attained a grade of C or better in each of these courses: CHEM 227, CHEM 228, CHEM 237, CHEM 238.
4. The fourth registered hour of research must be taken as writing intensive.
5. Hours to be selected from any 400-level course in BICH with approval of student's academic advisor. BICH 404, BICH 414, BICH 431/GENE 431, BICH 432/GENE 432, BICH 440, BICH 441, or BICH 491 may not be used to satisfy this requirement.

Students must make a grade of C or better in all major coursework used to satisfy degree plan.