

# BIOCHEMISTRY - BS

## Program Requirements

### First Year

Fall		Semester Credit Hours
BICH 101/ GENE 101	Perspectives in Biochemistry and Genetics <sup>1</sup>	1
CHEM 119	Fundamentals of Chemistry I	4
ENGL 104 or ENGL 103	Composition and Rhetoric or Introduction to Rhetoric and Composition	3
MATH 151 or MATH 171	Engineering Mathematics I or Calculus I	4
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>

### 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
General elective <sup>3</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>

### Second Year

Fall		Semester Credit Hours
BIOL 112	Introductory Biology II	4
MATH 251	Engineering Mathematics III <sup>2</sup>	3
Select one of the following: <sup>1</sup>		4
CHEM 227 & CHEM 237	Organic Chemistry I and Organic Chemistry Laboratory	
CHEM 257	Organic Chemistry I - Structure and Function	
Select one of the following:		3
COMM 203	Public Speaking	
COMM 205	Communication for Technical Professions	
COMM 243	Argumentation and Debate	
ENGL 203	Writing about Literature	
ENGL 210	Technical and Professional Writing	
General elective <sup>3</sup>		1
<b>Semester Credit Hours</b>		<b>15</b>

### Spring

GENE 302 or GENE 303	Principles of Genetics <sup>1</sup> or Fundamentals of Genetics	3
GENE 314	Principles of Genetics Laboratory <sup>1</sup>	1
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences	4
Select one of the following: <sup>1</sup>		4

CHEM 228 & CHEM 238	Organic Chemistry II and Organic Chemistry Laboratory	
CHEM 258	Organic Chemistry II - Reactivity and Applications	
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3

**Semester Credit Hours 15**

### Third Year

Fall		Semester Credit Hours
BICH 404	Biochemical Calculations <sup>1</sup>	2
BICH 440	Biochemistry I <sup>1</sup>	3
BICH 491	Research <sup>1</sup>	1
PHYS 207 & PHYS 227	Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences	4
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
General elective <sup>3</sup>		2
<b>Semester Credit Hours</b>		<b>15</b>

### Spring

BICH 441	Biochemistry II <sup>1</sup>	3
BICH 414 or BICH 432/ GENE 432	Biochemical Techniques I <sup>1</sup> or Laboratory in Molecular Genetics	2
BICH 491	Research <sup>1</sup>	1
CHEM 327	Physical Chemistry I	3
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
General elective <sup>3</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>

### Fourth Year

Fall		Semester Credit Hours
BICH 431/ GENE 431	Molecular Genetics <sup>1</sup>	3
BICH 491	Research <sup>1</sup>	1
BIOL 351	Fundamentals of Microbiology	4
CHEM 328	Physical Chemistry II	3
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>14</b>
Spring		Semester Credit Hours
BICH 491	Research <sup>1,4</sup>	1
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		6
Biochemistry elective <sup>5</sup>		6
General elective <sup>3</sup>		3
<b>Semester Credit Hours</b>		<b>16</b>
<b>Total Semester Credit Hours</b>		<b>120</b>

<sup>1</sup> Must make a grade of C or better.

<sup>2</sup> 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 Core Curriculum requirements if they are also on the approved list of international and cultural diversity courses.

<sup>3</sup> 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/>).

<sup>4</sup> The fourth registered hour of research must be taken as writing intensive.

<sup>5</sup> Hours to be selected from any 400-level course in Biochemistry 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.