**BIOCHEMISTRY, BS**

Requirements for Students Matriculating in or before Academic Year 2017-2018. Learn more about University Academic Regulation 3.1 (http://catalog.okstate.edu/university-academic-regulations/#matriculation).

Minimum Overall Grade Point Average: 2.00
Total Hours: 120

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ENGL 1113 or ENGL 1313</td>
<td>Composition I or Critical Analysis and Writing I</td>
<td>3</td>
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</table>

Select one of the following:

- ENGL 1213 Composition II
- ENGL 1413 Critical Analysis and Writing II
- ENGL 3323 Technical Writing

American History & Government

- HIST 1103 Survey of American History 3
- POLS 1113 American Government 3

Analytical & Quantitative Thought (A)

- MATH 2144 Calculus I (A) 4

Humanities (H)

Courses designated (H) 6

Natural Sciences (N)

Must include one Laboratory Science (L) course

- CHEM 1314 General Chemistry (LN) 4
- PHYS 1114 General Physics (LN) 4
  or PHYS 2014 General Physics (LN) 4

Social & Behavioral Sciences (S)

Course designated (S) 3

Additional General Education

Courses designated (A), (H), (N), or (S) 7

**Hours Subtotal**

- 40

Diversity (D) & International Dimension (I)

May be completed in any part of the degree plan

Select at least one Diversity (D) course

Select at least one International Dimension (I) course

College/Departmental Requirements

**First Year Seminar**

- A&S 1111 A&S First Year Seminar (transfer students with 15 hours exempt) 1

Arts & Humanities

See note 2.a.

Natural & Mathematical Sciences

- BIOL 1114 Introductory Biology (LN) 4
- CHEM 1515 General Chemistry (LN) 5

Foreign Language

See note 3

**Upper-Division General Education**

Select 6 hours outside major department
See note 2.c.

**Hours Subtotal**

- 13

Major Requirements

Minimum Overall Grade Point Average: 2.00. Minimum GPA in all BIOC courses 2.00.

- BIOC 3713 Biochemistry I 3
- BIOC 3723 Biochemistry and Molecular Biology Laboratory 3
- BIOC 3813 Biochemistry II 3
- BIOC 3224 Physical Chemistry for Biologists 3
  or CHEM 3433 Physical Chemistry I 3
- BIOC 4883 Senior Seminar in Biochemistry 3
- BIOC 4990 Undergraduate Research 2 2
- BIOL 1604 Animal Biology 4
  or BOT 1404 Plant Biology (LN) 3

Select one of the following:

- BIOL 3023 General Genetics 3
- ANSI 3423 Animal Genetics 3
- PLNT 3554 Plant Genetics and Biotechnology 3
- CHEM 2113 Principles of Analytical Chemistry 3
- CHEM 3053 Organic Chemistry 3
- CHEM 3112 Organic Chemistry Lab 2
- CHEM 3153 Organic Chemistry 3

Select one of the following:

- MATH 2153 Calculus II (A) 3
- STAT 2013 Elementary Statistics (A) 3
- STAT 4013 Statistical Methods I (A) 3
- MICR 2123 Introduction to Microbiology 3
- MICR 2132 Introduction to Microbiology Laboratory 2
- PHYS 1214 General Physics (LN) 4
  or PHYS 2114 General Physics (LN) 4

Select at least one of the following:

- BOT 3463 Plant Physiology 3
- ENTO 3044 Insect Physiology 3
- BIOL 3204 Physiology 3
- BIOL 4215 Mammalian Physiology 3

**Additional Requirements**

Select 6 hours of the following: 3

- BIOL (excluding BIOL 3653) 6
- CHEM 3503 Physical Chemistry (LN) 3
- CHEM (excluding CHEM 3503) 3

**Electives**

Select 11 hours

May need to include 6 hours of a foreign language (see note 3)

May need to include 6 hours upper-division general education outside major department (see note 2.c.) and 6 additional upper-division hours

**Hours Subtotal**

- 56

**Total Hours**

- 120
With approval from the adviser and department head, maximum of 30 hours of science courses from an accredited doctoral health program may be substituted for major requirements other than BIOC 3713 Biochemistry I, BIOC 3723 Biochemistry and Molecular Biology Laboratory, BIOC 3813 Biochemistry II.

Total from BIOC 1990 Freshman Research in Biochemistry & BIOC 4990 Undergraduate Research may not exceed 10 hours.

Excluding general education, minimum 3 hours upper-division.

**Other Requirements**

- See the College of Arts and Sciences Requirements.
- **Upper-Division Credit:** Total hours must include at least 40 hours in courses numbered 3000 or above.
- **Hours in One Department:** Hours in one department in excess of 54 will be added to the minimum total of 120 required for graduation.

**College of Arts and Sciences Requirements**

1. **General Education Requirements**
   
   No more than two courses (or eight hours) from the major department may be used to meet General Education and College and Departmental Requirements. The General Education required English Composition, required U.S. History, required American Government, one required MATH or STAT course, and required foreign language for B.A. degrees do not count against the two-course maximum.

2. **A&S College/Departmental Requirements**
   
   a. Arts and Humanities are defined as any course carrying an (H) designation or courses from AMST, ART, DANC, ENGL (except ENGL 3323 Technical Writing) HIST, MUSI, PHIL (except PHIL 1313 Logic and Critical Thinking (A), PHIL 3003 Symbolic Logic (A) and PHIL 4003 Mathematical Logic and Computability), REL, TH, and foreign languages.
   
   b. Natural and Mathematical Sciences are defined as any course from the following prefixes: ASTR, BIOC, BIOL, BOT, CHEM, CS (except CS 4833 Social Issues in Computing), GEOL, MATH, MICR, PHYS, and STAT; or courses from other departments that carry an (A) or (N) general education designation.
   
   c. The required six hours of upper-division General Education may not include courses from the student's major department. This requirement may be satisfied by courses also used to satisfy any part of a student's degree program (i.e., in General Education, College Departmental Requirements, Major Requirements or Electives).
   
   d. Non-Western Studies Requirement for B.A. and B.F.A.; One 3-hour course in Non-Western Studies from:

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<td>ART 4683</td>
<td>Modern and Contemporary Art in Asia</td>
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<td>ART 4703</td>
<td>Art East and West: Biases and Borrowings</td>
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<td>ART 4713</td>
<td>The Visual Culture of the Islamic World (HI)</td>
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<td>ART 4763</td>
<td>Native American Art and Material Culture</td>
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<td>CHIN 1813</td>
<td>Elementary Chinese II</td>
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<td>ENGL 2963</td>
<td>Survey of Nonwestern Traditions (HI)</td>
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<td>ENGL 3183</td>
<td>Native American Literature (DH)</td>
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<td>ENGL 3190</td>
<td>Readings in Postcolonial and Multiethnic Literature (African Novel)</td>
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<td>Studies in Native American Literature (IS)</td>
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<td>Special Studies in Foreign Languages and Literatures (Arabic 2 &amp; Mvskoke2)</td>
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<td>GEOG 3053</td>
<td>Introduction to Central Asian Studies (IS)</td>
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<td>GEOG 3733</td>
<td>Russia and Its Neighbors (IS)</td>
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<td>GEOG 3753</td>
<td>Asia (IS)</td>
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<td>HIST 1713</td>
<td>Survey of Eastern Civilization (H)</td>
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<td>HIST 3013</td>
<td>Ancient Egypt and Israel (H)</td>
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<td>Ancient Mesopotamia: Iraq, Iran &amp; Syria from 4000-333 B.C. (H)</td>
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<td>Russia to 1861 (H)</td>
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<td>The Medieval World, 500-1500 (H)</td>
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<td>Gender Relations in Chinese History (H)</td>
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<td>History of South Asia 1700 - Present (HI)</td>
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<td>Israel &amp; Palestine in Modern Times (HI)</td>
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<td>Media and Popular Culture in the Arab Middle East (HI)</td>
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<td>Minorities and Diversity in the Middle East (H)</td>
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<td>Contemporary Cultures of the Non-Western World: Honors (IS)</td>
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<td>POLS 3003</td>
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<td>POLS 3123</td>
<td>Politics of Russia and Eurasia (I)</td>
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<td>POLS 3163</td>
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<td>Politics Of East Asia</td>
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<td>Introduction to World Religions (HI)</td>
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<td>The Religions of Native Americans (DH)</td>
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<td>REL 4113</td>
<td>The World of Islam: Cultural Perspectives (HI)</td>
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<td>REL 4213</td>
<td>Understanding Global Islam (HI)</td>
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<td>Religions and Sects in the Middle East (HI)</td>
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<td>Gender and the Middle East (IS)</td>
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</table>

This requirement may be satisfied by courses also used to satisfy any part of a student's degree program (i.e., in General Education, College Departmental Requirements, Major Requirements or Electives).

3. Foreign Language Proficiency
   a. The foreign language requirement for the B.A. may be satisfied by 10 hours college credit in the same language, or equivalent proficiency (e.g., passing an advanced standing examination; completing a second-year or higher college-level course in the language, etc.).
   b. The foreign language requirement for the B.S., B.M. and B.F.A. may be satisfied by presenting a high school transcript which demonstrates two years of study of a single foreign language (passing grades at second year level of study). It may also be satisfied by any of the options listed above for the B.A. utilizing elective hours.
   c. In addition to a. and b., students pursuing teacher certification must meet novice-high foreign language proficiency by presenting a high school transcript which demonstrates two years of study of a single foreign language with no grade below B. Or, students may complete 5 hours college credit in the same language with no grade below C (or pass an advanced standing examination equivalent to 5 hours of college credit).

4. Exclusions
   a. Courses used to satisfy the General Education English Composition, U.S. History, American Government, and Mathematics or Statistics requirements will not count toward the 54 hour maximum allowed from one department.
   b. Courses with ATHL or LEIS prefixes and leisure activity courses may not be used for degree credit.

5. Teacher Certification
   Students can satisfy the requirements for secondary schools teaching certification while earning a B.A. or B.S. in the College of Arts & Sciences. Those interested should see their Arts and Sciences adviser and the OSU Professional Education Unit in room 325 Willard.

Additional State/OSU Requirements
   • At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
   • Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
   • Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
   • Degrees that follow this plan must be completed by the end of Summer 2023.