MEDICINAL AND BIOPHYSICAL CHEMISTRY, BS

Requirements for Students Matriculating in or before Academic Year 2019-2020. Learn more about University Academic Regulation 3.1 ([http://catalog.okstate.edu/university-academic-regulations/#matriculation](http://catalog.okstate.edu/university-academic-regulations/#matriculation)).

Minimum Overall Grade Point Average: 2.00
Total Hours: 120

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1113 or ENGL 1313</td>
<td>Composition I or Critical Analysis and Writing I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1213 or ENGL 1413</td>
<td>Composition II or Critical Analysis and Writing II</td>
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<tr>
<td>ENGL 3323</td>
<td>Technical Writing</td>
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<tr>
<td>HIST 1103 or HIST 1483 or HIST 1493</td>
<td>Survey of American History or American History to 1865 (H) or American History Since 1865 (DH)</td>
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<tr>
<td>POLS 1113</td>
<td>American Government</td>
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<tr>
<td>MATH 2144</td>
<td>Calculus I (A)</td>
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<tr>
<td>CHEM 2113</td>
<td>Principles of Analytical Chemistry</td>
<td>3</td>
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<tr>
<td>CHEM 2122</td>
<td>Quantitative Analysis Laboratory</td>
<td>2</td>
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<tr>
<td>CHEM 3053</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3112</td>
<td>Organic Chemistry Laboratory</td>
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</tr>
<tr>
<td>CHEM 3153</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3363</td>
<td>Bioinorganic Chemistry</td>
<td>3</td>
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<tr>
<td>CHEM 3413</td>
<td>Physical Chemistry Applications (or)</td>
<td>3</td>
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<tr>
<td>CHEM 3433 or CHEM 3553</td>
<td>Physical Chemistry I and Physical Chemistry II (or)</td>
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<tr>
<td>BIOL 1604 or PBIO 1404</td>
<td>Animal Biology or Plant Biology (LN)</td>
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<tr>
<td>BIOL 3023</td>
<td>General Genetics</td>
<td>3</td>
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<tr>
<td>MATH 2153 or STAT 2013 or STAT 4013</td>
<td>Calculus II (A) or Elementary Statistics (A) or Statistical Methods I (A)</td>
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<tr>
<td>MICR 2123</td>
<td>Introduction to Microbiology</td>
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<td>MICR 2132</td>
<td>Introduction to Microbiology Laboratory</td>
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<tr>
<td>MICR 3223 or BIOL 3653</td>
<td>Advanced Microbiology or Survey of Biochemistry</td>
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</tr>
<tr>
<td>PHYS 2114</td>
<td>University Physics II (LN)</td>
<td>4</td>
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</table>

**Subtotal Hours**: 13

- **Major Requirements**
  - Minimum major GPA 2.00.
  - CHEM 2113 Principles of Analytical Chemistry 3
  - CHEM 2122 Quantitative Analysis Laboratory 2
  - CHEM 3053 Organic Chemistry I 3
  - CHEM 3112 Organic Chemistry Laboratory 2
  - CHEM 3153 Organic Chemistry II 3
  - CHEM 3363 Bioinorganic Chemistry 3
  - CHEM 3413 Physical Chemistry Applications (or) 3
  - CHEM 3433 Physical Chemistry I and Physical Chemistry II (or)
  - BIOL 3223 Physical Chemistry for Biologists
  - CHEM 4023 Modern Methods of Chemical Analysis 3
  - CHEM 4022 Modern Methods of Chemical Analysis Laboratory 2
  - CHEM 4123 Biomolecular Chemistry and Function 3
  - CHEM 4313 Medicinal Organic Chemistry 3
  - CHEM 4320 Chemical and Spectrometric Identification of Organic Compounds
  - CHEM 4990 Special Problems in Chemistry 2
  - BIOL 1604 Animal Biology 4
  - or PBIO 1404 Plant Biology (LN)
  - BIOL 3023 General Genetics 3
  - MATH 2153 Calculus II (A) 3
  - or STAT 2013 Elementary Statistics (A)
  - or STAT 4013 Statistical Methods I (A)
  - MICR 2123 Introduction to Microbiology 3
  - MICR 2132 Introduction to Microbiology Laboratory 2
  - MICR 3223 Advanced Microbiology 3
  - or BIOL 3653 Survey of Biochemistry
  - PHYS 2114 University Physics II (LN) 4

**Subtotal Hours**: 13

- **Electives**
  - May need to include 6 hours of a foreign language (see note 3.).
  - May need to include 6 hours upper-division general education major department (see note 2.c.) and 12 additional upper-division hours.

**Suggested courses**:
- BIOL 3214 Human Anatomy
- BIOL 3204 Physiology
- MICR 3033 Cell and Molecular Biology
- MICR 3253 Immunology
- PSYC 1113 Introductory Psychology (S)
- SOC 1113 Introductory Sociology (S)

**Subtotal Hours**: 13

**Total Hours**: 120
Other Requirements:

- See the College of Arts and Sciences Requirements.
- Minimum 2.00 GPA in all CHEM courses.
- Upper-Division Credit: Total hours must include at least 40 hours in courses numbered 3000 or above.
- Hours in One Department: For B.A. and B.S. degrees, no more than 54 hours in one department may be applied to degree requirements.

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 Departmental Requirements. The General Education required English Composition, U.S. History, American Government, and foreign language requirement for the B.S., B.M. and B.F.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, CHEM, CS (except CS 4883 Social Issues in Computing), GEOL, MATH, MICR, PBIO, 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 (N.W.). 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).
   e. The College of Arts & Sciences requires a minimum 2.0 GPA in all major requirements and a minimum 2.0 GPA in all major-prefix courses applied to the degree.

3. Foreign Language Proficiency
   a. The foreign language requirement for the B.A. may be satisfied by 9 hours college credit in the same language, which must include 3 hours at the 2000-level, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement. Currently Arabic and Mvskoke are not offered at the 2000-level at OSU.
   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 6 hours college credit in the same language, which must include language courses 1713 and 1813, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement.
   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 3 hours college credit in a single language with no grade below C (or pass an advanced standing examination, College Level Examination Program (CLEP) exam, or Oral Proficiency Interview developed by the American Council on the Teaching of Foreign Languages, equivalent to 3 hours of college credit.) Or, students may meet the requirement by transfer of documentation of meeting the foreign language competency from one of the teacher education programs in the State of Oklahoma approved by the Oklahoma State Regents for Higher Education.

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 advisor 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 2025.