MEDICINAL AND  
BIOPHYSICAL CHEMISTRY, BS

Requirements for Students Matriculating in or before Academic  
Year 2018-2019. 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1113</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 1313</td>
<td>Critical Analysis and Writing I</td>
<td></td>
</tr>
<tr>
<td>ENGL 1213</td>
<td>Composition II</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 1413</td>
<td>Critical Analysis and Writing II</td>
<td></td>
</tr>
<tr>
<td>or ENGL 3323</td>
<td>Technical Writing</td>
<td></td>
</tr>
<tr>
<td>HIST 1103</td>
<td>Survey of American History</td>
<td>3</td>
</tr>
<tr>
<td>POLS 1113</td>
<td>American Government</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2144</td>
<td>Calculus I (A)</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 2153</td>
<td>Calculus II (A)</td>
<td></td>
</tr>
<tr>
<td>or STAT 2013</td>
<td>Elementary Statistics (A)</td>
<td></td>
</tr>
<tr>
<td>or STAT 4013</td>
<td>Statistical Methods I (A)</td>
<td></td>
</tr>
<tr>
<td>BIOL 1114</td>
<td>Introductory Biology (LN)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1314</td>
<td>Chemistry I (LN)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 3023</td>
<td>General Genetics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2153</td>
<td>Calculus II (A)</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 2013</td>
<td>Elementary Statistics (A)</td>
<td></td>
</tr>
<tr>
<td>or STAT 4013</td>
<td>Statistical Methods I (A)</td>
<td></td>
</tr>
<tr>
<td>MICR 2123</td>
<td>Introduction to Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>MICR 2132</td>
<td>Introduction to Microbiology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MICR 3223</td>
<td>Advanced Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>or BIOC 3653</td>
<td>Survey of Biochemistry</td>
<td></td>
</tr>
<tr>
<td>PHYS 2114</td>
<td>University Physics II (LN)</td>
<td>4</td>
</tr>
</tbody>
</table>

Subtotal Hours 40

Diversity (D) & International Dimension (I)

May be completed in any part of the degree plan.

At least one Diversity (D) course

At least one International Dimension (I) course

College/Departmental Requirements

First Year Seminar

(Transfer students with 15 hours exempt) 1

Arts & Humanities

(See note 2.a.) 3

Natural & Mathematical Sciences

CHEM 1515 | Chemistry II (LN)                  | 5     |

PHYS 2014 | University Physics I (LN)         | 4     |

Foreign Languages

(See note 3.)

0-6 hours

Upper-Division General Education

6 hours outside major department

(See note 2.c.)

Subtotal Hours 13

Major Requirements

Minimum major GPA 2.00. Minimum 2.00 GPA in all CHEM courses.

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     |

or CHEM 3353 | Descriptive Inorganic Chemistry    |       |

CHEM 3413 | Physical Chemistry Applications (or)  | 3     |

CHEM 3433 & CHEM 3553 | Physical Chemistry I and Physical Chemistry II (or) |       |

BIOC 3223 | Physical Chemistry for Biologists     | 2     |

CHEM 4023 | Modern Methods of Chemical Analysis   | 3     |

CHEM 4022 | Modern Methods of Chemical Analysis Laboratory | 2 |

CHEM 4123 | Chemical and Physical Basis of  
Macromolecular Function              | 3     |

CHEM 4313 | Medicinal Organic Chemistry           | 3     |

or CHEM 4320 | Chemical and Spectrometric Identification of Organic Compounds | |

CHEM 4990 | Special Problems in Chemistry         | 2     |

BIOC 3223 | Physical Chemistry for Biologists     | 3     |

PHYS 2014 | 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:

BIOC 3214 | Human Anatomy                          | 3     |

BIOC 3204 | Physiology                             | 3     |

MICR 3033 | Cell and Molecular Biology             | 3     |

MICR 3253 | Immunology                             | 3     |

PSYC 1113 | Introductory Psychology (S)            | 3     |

SOC 1113 | Introductory Sociology (S)             | 3     |

Subtotal Hours 13

Total Hours 120
1. Other Requirements:

   a. College and Departmental Requirements that may be used to meet Gen Ed Requirements.

2. College of Arts and Sciences Requirements

   a. Upper-Division Credit:

      • Total hours must include at least 40 hours in courses numbered 3000 or above.

   b. Hours in One Department:

      • Hours in one department in excess of 54 will be added to the minimum total of 120 required for graduation.

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

   a. 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.

   b. Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.

   c. 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.

   d. Degrees that follow this plan must be completed by the end of Summer 2024.