### MEDICINAL CHEMISTRY, BS

**Degree Requirements**

Requirements for Students Matriculating in or before Academic Year 2023-2024. 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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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tr>
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<tr>
<td></td>
<td><strong>English Composition</strong></td>
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<tr>
<td>See Academic Regulation 3.5 (<a href="http://catalog.okstate.edu/university-academic-regulations/english-composition">http://catalog.okstate.edu/university-academic-regulations/english-composition</a>)</td>
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<tr>
<td>ENGL 1113</td>
<td>Composition I</td>
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<tr>
<td>or ENGL 1313</td>
<td>Critical Analysis and Writing I</td>
<td></td>
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<tr>
<td>ENGL 1213</td>
<td>Composition II</td>
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<tr>
<td>or ENGL 1413</td>
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<tr>
<td>or ENGL 3323</td>
<td>Technical Writing</td>
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<tr>
<td></td>
<td><strong>American History &amp; Government</strong></td>
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<tr>
<td>HIST 1103</td>
<td>Survey of American History</td>
<td>3</td>
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<tr>
<td>or HIST 1483</td>
<td>American History to 1865 (H)</td>
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<td>or HIST 1493</td>
<td>American History Since 1865 (DH)</td>
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<td>POLS 1113</td>
<td>American Government</td>
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<tr>
<td></td>
<td><strong>Analytical &amp; Quantitative Thought (A)</strong></td>
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<tr>
<td>MATH 2144</td>
<td>Calculus I (A)</td>
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<tr>
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<td><strong>Humanities (H)</strong></td>
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<tr>
<td>Courses designated (H)</td>
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<td><strong>Natural Sciences (N)</strong></td>
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<td>Must include one Laboratory Science (L) course.</td>
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<tr>
<td>BIOL 1113</td>
<td>Introductory Biology (N)</td>
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<tr>
<td>&amp; BIOL 1111</td>
<td>and Introductory Biology Laboratory (LN)</td>
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</tr>
<tr>
<td>or BIOL 1114</td>
<td>Introductory Biology (LN)</td>
<td></td>
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<tr>
<td>CHEM 1314</td>
<td>Chemistry I (LN)</td>
<td>4</td>
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<tr>
<td></td>
<td><strong>Social &amp; Behavioral Sciences (S)</strong></td>
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<td>Course designated (S)</td>
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<td><strong>Additional General Education</strong></td>
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<td>Courses designated (A), (H), (N), or (S)</td>
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<td><strong>Subtotal Hours</strong></td>
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<tr>
<td><strong>Diversity (D) &amp; International Dimension (I)</strong></td>
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<tr>
<td>May be completed in any part of the degree plan.</td>
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<tr>
<td>At least one Diversity (D) course</td>
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<tr>
<td>At least one International Dimension (I) course</td>
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<tr>
<td><strong>College/Departmental Requirements</strong></td>
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</tr>
<tr>
<td><strong>First Year Seminar</strong></td>
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<td></td>
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<tr>
<td>(Transfer students with 15 hours exempt)</td>
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<tr>
<td><strong>Arts &amp; Humanities</strong></td>
<td>3</td>
<td></td>
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<tr>
<td>(See note 2.a.)</td>
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<td></td>
</tr>
<tr>
<td><strong>Natural &amp; Mathematical Sciences</strong></td>
<td></td>
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</tr>
<tr>
<td>CHEM 1515</td>
<td>Chemistry II (LN)</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 2014</td>
<td>University Physics I (LN)</td>
<td>4</td>
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<tr>
<td><strong>Subtotal Hours</strong></td>
<td>54</td>
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<tr>
<td><strong>Electives</strong></td>
<td>13</td>
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</table>

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.
MATH 1513 and MATH 1813 required for students who do not place directly into MATH 2144.

### Suggested courses:

- MICR 3033 | Cell and Molecular Biology
- MICR 3253 | Immunology
- MICR 4053 | Pathogenic Microbiology
- PSYC 1113 | Introductory Psychology (S)
- or SOC 1113 | Introductory Sociology (S)
Subtotal Hours 13
Total Hours 120

1
College and Departmental Requirements that may be used to meet General Education Requirements.

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. **Hours in One Department**: For B.A. and B.S. degrees, no more than 54 hours in one department may be required to meet degree requirements. 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 required from one department.

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, PHIIL (except PHIIL 1313 Logic and Critical Thinking (A), PHIIL 3003 Symbolic Logic (A) and PHIIL 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), GEOG, MATH, MICRO, PBIO, PHYS, and STAT; or courses from other departments that carry an (A) or (N) general education designation.
   c. Six upper-division hours are required from General Education or any CAS courses outside 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 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**. Courses with ATHL or LEIS prefixes and leisure activity courses may not be used for degree credit.

### 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 2029.

### Example Plan of Study

#### Finish in Four Plan of Study

The plan below is an example of how students can successfully complete degree requirements in four years. This suggested class schedule plan may be used as a guide and can be adjusted based on individual needs. Students are required to meet with an academic advisor prior to enrollment each semester to plan their class schedule, and students are ultimately responsible for completing all degree requirements.

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<thead>
<tr>
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<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Freshman</td>
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<tr>
<td>Fall</td>
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<tr>
<td>MATH 2144</td>
<td>Calculus I (A)</td>
<td>4</td>
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<tr>
<td>CHEM 1314</td>
<td>Chemistry I (LN)</td>
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### General Education and College courses

| Hours | 15 |

#### Spring

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIOL 1111</td>
<td>Introductory Biology (N)</td>
<td>4</td>
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<tr>
<td>&amp; BIOL 1111</td>
<td>and Introductory Biology Laboratory (LN)</td>
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<tr>
<td>CHEM 1515</td>
<td>Chemistry II (LN)</td>
<td>5</td>
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<tr>
<td>MATH 2153</td>
<td>Calculus II (A) (or 3 hours STAT)</td>
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<tr>
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#### Sophomore

| Hours | 15 |

#### Fall

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<td>Organic Chemistry I</td>
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<tr>
<td>MICR 2123</td>
<td>Introduction to Microbiology</td>
<td>3</td>
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<td>MICR 2132</td>
<td>Introduction to Microbiology Laboratory</td>
<td>2</td>
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<tr>
<td>PHYS 1114</td>
<td>College Physics I (LN)</td>
<td>4</td>
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<tr>
<td>or PHYS 2014</td>
<td>or University Physics I (LN)</td>
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#### Spring

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<th>Course Title</th>
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<tr>
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<td>Organic Chemistry II</td>
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<tr>
<td>CHEM 3112</td>
<td>Organic Chemistry Laboratory</td>
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<td>MICR 3033</td>
<td>Cell and Molecular Biology (recommended elective)</td>
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<td>PHYS 1214</td>
<td>College Physics II (LN)</td>
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<tr>
<td>or PHYS 2014</td>
<td>or University Physics I (LN)</td>
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#### Junior

| Hours | 15 |

#### Fall

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<tr>
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<tr>
<td>CHEM 2113</td>
<td>Principles of Analytical Chemistry</td>
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<td>CHEM 2122</td>
<td>Quantitative Analysis Laboratory</td>
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<td>BIOC 3653</td>
<td>Survey of Biochemistry</td>
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<tr>
<td>or MICR 3223</td>
<td>or Advanced Microbiology</td>
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#### Spring

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<tbody>
<tr>
<td>BIOL 3023</td>
<td>General Genetics</td>
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<tr>
<td>CHEM 3363</td>
<td>Bioinorganic Chemistry (every other year)</td>
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<tr>
<td>or CHEM 3353</td>
<td>or Descriptive Inorganic Chemistry</td>
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<tr>
<td>CHEM 3413</td>
<td>Physical Chemistry Applications</td>
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<tr>
<td>STAT 3023</td>
<td>Statistical Reasoning for Medical Applications (A) (if did not take MATH 2153)</td>
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<td>or Elementary Statistics (A)</td>
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<td>or STAT 4013</td>
<td>or Statistical Methods I (A)</td>
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#### Senior

| Hours | 15 |

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<tr>
<td>CHEM 4313</td>
<td>Medicinal Organic Chemistry (Every other Fall)</td>
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<td>or CHEM 4322</td>
<td>or Advanced Organic Chemistry Laboratory</td>
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<td>CHEM 4990</td>
<td>Special Problems in Chemistry</td>
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#### Spring

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<tr>
<td>CHEM 4022</td>
<td>Modern Methods of Chemical Analysis Laboratory</td>
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<tr>
<td>CHEM 4023</td>
<td>Modern Methods of Chemical Analysis</td>
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<tr>
<td>CHEM 4123</td>
<td>Biomolecular Chemistry and Function (every other year)</td>
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</tr>
<tr>
<td>CHEM 4990</td>
<td>Special Problems in Chemistry</td>
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</tr>
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| Hours | 15 |

### Total Hours

| Total Hours | 120 |