# CHEMISTRY: SECONDARY TEACHER CERTIFICATION, BS

## Degree Requirements

Requirements for Students Matriculating in or before Academic Year 2021-2022. Learn more about University Academic Regulation 3.1 (http://catalog.okstate.edu/university-academic-regulations/#matriculation).

Minimum Overall Grade Point Average: 2.50
Total Hours: 120

### Code | Title | Hours
--- | --- | ---
| **General Education Requirements** | | 

#### English Composition
See Academic Regulation 3.5 (http://catalog.okstate.edu/university-academic-regulations/#english-composition)

- ENGL 1113 Composition I 3
- or ENGL 1313 Critical Analysis and Writing I

Select one of the following: 3

- 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
- or HIST 1483 American History to 1865 (H)
- or HIST 1493 American History Since 1865 (DH)

- POLS 1113 American Government 3

#### Analytical & Quantitative Thought (A)

- MATH 2144 Calculus I (A) 1,2 4
- MATH 2153 Calculus II (A) 3

#### Humanities (H)

- PHIL 3933 Creation and Evolution (H) 1 3

- Course designated (H) 3

#### Natural Sciences (N)

Must include one Laboratory Science (L) course

- BIOL 1114 Introductory Biology (LN) 1,2 4
- CHEM 1314 Chemistry I (LN) 1,2 4
- PHYS 2014 University Physics I (LN) 1,2 4
- or PHYS 1114 College Physics I (LN)

#### Social & Behavioral Sciences (S)

- Course designated (S) 3

### 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 (SPED 3202)

Select 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.

### Natural & Mathematical Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1515</td>
<td>Chemistry II (LN) 2</td>
<td>5</td>
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<tr>
<td>PHYS 2114</td>
<td>University Physics II (LN) 2</td>
<td>4</td>
</tr>
<tr>
<td>or PHYS 1214</td>
<td>College Physics II (LN)</td>
<td></td>
</tr>
</tbody>
</table>

#### Foreign Language

See note 3

0-6 hours

### Upper-Division General Education

Select 6 hours outside major department

See note 2.c.

### Hours Subtotal

13

### Major Requirements

#### Chemistry Core

Minimum GPA 2.50 and minimum grade of “C” or “P” in Chemistry Core

- 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 3353 Descriptive Inorganic Chemistry 3
- CHEM 3413 Physical Chemistry Applications 3
- CHEM 4990 Special Problems in Chemistry 2
- BIOC 3653 Survey of Biochemistry 3
- STAT 2013 Elementary Statistics (A) 3
- or STAT 4013 Statistical Methods I (A)

#### Secondary Education Professional Core

Minimum GPA 2.50 and minimum grade of “C” or “P” in each course

- SMED 1012 Inquiry Approaches to Teaching 2
- SMED 3013 Knowing and Learning in Mathematics and Science 3
- SMED 4013 Classroom Interactions 3
- SMED 4023 Problem-Based Learning in Mathematics and Science 3
- SMED 4611 Authentic Research in the Science Classroom 1
- SMED 4613 Teaching the Nature of Science Through an Inquiry Approach 3
- SMED 4713 Teaching and Learning Science in the Secondary School 3
- SMED 4723 Senior Seminar in Secondary Mathematics and Science Education 3
- SPED 3202 Educating Exceptional Learners (D) 2
- CIED 4720 Internship in the Secondary Classroom (6 hours) 3

### Hours Subtotal

56

### Electives

Select 11 hours

May need to include 6 hours of a foreign language. See note 3

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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>Total Hours</td>
<td>120</td>
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</table>

1. College and Departmental Requirements that may be used to meet General Education Requirements.
2. Minimum GPA 2.50 and minimum grade of "C" or "P".
3. Full admission to Professional Education required.

### 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**: 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 (http://catalog.okstate.edu/college-arts-sciences-major-departments/) 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**: 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**: defined as any course from the following prefixes: ASTR, BIOC, BIOL, CHEM, CS (except CS 4883 Social Issues in Computing), GEOG, 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 2027.**

### 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>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tr>
<td><strong>Freshman</strong></td>
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<tr>
<td><strong>Fall</strong></td>
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<tr>
<td>MATH 2144</td>
<td>Calculus I (A)</td>
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<td>CHEM 1314</td>
<td>Chemistry I (LN)</td>
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<td>SMED 1012</td>
<td>Inquiry Approaches to Teaching</td>
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<td><strong>General Education courses</strong></td>
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<td><strong>Spring</strong></td>
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<td>CHEM 1515</td>
<td>Chemistry II (LN)</td>
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<td>Introductory Biology (LN)</td>
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<td><strong>General Education courses</strong></td>
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<td><strong>Sophomore</strong></td>
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<td>CHEM 2122</td>
<td>Principles of Analytical Chemistry</td>
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<td>CHEM 3053</td>
<td>Organic Chemistry I</td>
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<td>CHEM 3153</td>
<td>Organic Chemistry II</td>
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<td>CHEM 3112</td>
<td>Organic Chemistry Laboratory</td>
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<td><strong>Senior</strong></td>
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<td>BIOC 3653</td>
<td>Survey of Biochemistry</td>
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<td>Special Problems in Chemistry</td>
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<td>PHIL 3933</td>
<td>Creation and Evolution (H)</td>
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Total Hours: 9

Total Hours: 120