

CHEMISTRY (APPROVED BY THE AMERICAN CHEMICAL SOCIETY), BS

Degree Programs

Requirements for Students Matriculating in or before Academic Year 2024-2025. 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

Code	Title	Hours
General Education Requirements		
<i>English Composition</i>		
See Academic Regulation 3.5 (http://catalog.okstate.edu/university-academic-regulations/#english-composition)		
ENGL 1113 or ENGL 1313	Composition I Critical Analysis and Writing I	3
ENGL 1213 or ENGL 1413 or ENGL 3323	Composition II Critical Analysis and Writing II Technical Writing	3
<i>American History & Government</i>		
HIST 1103 or HIST 1483 or HIST 1493	Survey of American History American History to 1865 (H) American History Since 1865 (DH)	3
POLS 1113	American Government	3
<i>Analytical & Quantitative Thought (A)</i>		
MATH 2144	Calculus I (A) ¹	4
<i>Humanities (H)</i>		
Courses designated (H)		6
<i>Natural Sciences (N)</i>		
Must include one Laboratory Science (L) course		
CHEM 1314	Chemistry I (LN) ¹	4
Select four hours from the following:		4
BIOL 1113 & BIOL 1111	Introductory Biology (N) and Introductory Biology Laboratory (LN) ¹	
BIOL 1114	Introductory Biology (LN) ¹	
<i>Social & Behavioral Sciences (S)</i>		
Course designated (S)		3
<i>Additional General Education</i>		
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		
<i>First Year Seminar</i>		
(Transfer students with 15 hours exempt)		1
<i>Arts & Humanities</i>		

See note 2.a.		3
<i>Natural & Mathematical Sciences</i>		
CHEM 1515	Chemistry II (LN)	5
PHYS 2014	University Physics I (LN)	4
<i>Foreign Language</i>		
See note 3		
0-6 hours		
<i>Upper-Division General Education</i>		
Select 6 hours outside major department		
See note 2.c.		
Hours Subtotal		13
Major Requirements		
Minimum major GPA 2.50. Minimum grade of "C" in each course in Chemistry numbered 2000 or above. Minimum 2.0 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 3353 or CHEM 3363	Descriptive Inorganic Chemistry Bioinorganic Chemistry	3
CHEM 3433	Physical Chemistry I	3
CHEM 3532	Physical Chemistry Laboratory	2
CHEM 3553 or CHEM 4433	Physical Chemistry II Computational Chemistry and Molecular Modeling	3
CHEM 4022	Modern Methods of Chemical Analysis Laboratory	2
CHEM 4023	Modern Methods of Chemical Analysis	3
CHEM 4322 or CHEM 4313	Advanced Organic Chemistry Laboratory Medicinal Organic Chemistry	2
CHEM 4333	Inorganic Chemistry I	3
CHEM 4990	Special Problems in Chemistry (2 hours)	2
BIOC 3653	Survey of Biochemistry	3
MATH 2153	Calculus II (A)	3
MATH 2163	Calculus III	3
MATH 2233	Differential Equations	3
MATH 3013	Linear Algebra (A)	3
PHYS 2114	University Physics II (LN)	4
Hours Subtotal		55
Electives		
Select 12 hours		12
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.)		
MATH 1513 and MATH 1813 required for students who do not place directly into MATH 2144.		
Advanced CHEM and MATH courses recommended.		
Hours Subtotal		12
Total Hours		120

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

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.

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

- 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.
- 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.
- Six upper-division hours are required from General Education or any CAS courses outside the student's major department (<http://catalog.okstate.edu/college-arts-sciences-major-departments/>). 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).
- 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).
- 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

- 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.
- 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.

- 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.
- 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 2030.

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.

Course	Title	Hours
Freshman		
Fall		
MATH 2144	Calculus I (A)	4
CHEM 1314	Chemistry I (LN)	4
General Education courses		6
		Hours
		14
Spring		
CHEM 1515	Chemistry II (LN)	5
MATH 2153	Calculus II (A)	3
BIOL 1113 & BIOL 1111 or BIOL 1114	Introductory Biology (N) or Introductory Biology (LN)	4

General Education courses		3
Hours		15
Sophomore		
Fall		
CHEM 3053	Organic Chemistry I	3
MATH 2163	Calculus III	3
PHYS 2014	University Physics I (LN)	4
General Education and College courses		6
Hours		16
Spring		
CHEM 3153	Organic Chemistry II	3
CHEM 3112	Organic Chemistry Laboratory	2
MATH 2233	Differential Equations	3
PHYS 2114	University Physics II (LN)	4
General Education and College courses		3
Hours		15
Junior		
Fall		
CHEM 2113	Principles of Analytical Chemistry	3
CHEM 2122	Quantitative Analysis Laboratory	2
CHEM 3433	Physical Chemistry I	3
MATH 3013	Linear Algebra (A)	3
College and Elective courses		3
Hours		14
Spring		
CHEM 3353	Descriptive Inorganic Chemistry	3
or CHEM 3363	or Bioinorganic Chemistry	
CHEM 3353 and CHEM 3363 offered every other spring semester		
CHEM 3553	Physical Chemistry II	3
or CHEM 4433	or Computational Chemistry and Molecular	
or CHEM 4023	Modeling	
	or Modern Methods of Chemical Analysis	
CHEM 3553 and CHEM 4023 offered every other spring semester		
CHEM 4433 offered in same semesters and CHEM 4023		
CHEM 3532	Physical Chemistry Laboratory	2
or CHEM 4022	or Modern Methods of Chemical Analysis	
	Laboratory	
CHEM 3532 and CHEM 4022 offered every other spring semester		
BIOC 3653	Survey of Biochemistry	3
College and Elective courses		5
Hours		16
Senior		
Fall		
CHEM 4322	Advanced Organic Chemistry Laboratory	2
or CHEM 4313	or Medicinal Organic Chemistry	
CHEM 4322 and CHEM 4313 offered every other fall semester		
CHEM 4333	Inorganic Chemistry I	3
CHEM 4990	Special Problems in Chemistry	1
Elective courses		9
Hours		15
Spring		
CHEM 4023	Modern Methods of Chemical Analysis	3
or CHEM 3553	or Physical Chemistry II	
CHEM 4022	Modern Methods of Chemical Analysis Laboratory	2
or CHEM 3532	or Physical Chemistry Laboratory	
CHEM 4990	Special Problems in Chemistry	1
Elective courses		9
Hours		15
Total Hours		120

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Speak with your academic advisor about pairing General Education Humanities (H) or Social Sciences (S) courses with General Education International (I) and Diversity (D) dimensions.