CHEMISTRY (APPROVED BY THE AMERICAN CHEMICAL SOCIETY), BS

Degree Programs

Requirements for Students Matriculating in or before Academic Year 2025-2026. 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		
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	
ENGL 1213	Composition II	3
or ENGL 1413	Critical Analysis and Writing II	
or 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
Quantitative Thought & Logical Reasoning (Q)		
MATH 2144	Calculus I (Q) [1]	4
Understanding Humanities-Human Heritage & Cultures (H)		
Courses designated (H)		6
Reasoning in the Natural Sciences (N)		
Must include one Laboratory-Based Inquiry (L) course		
CHEM 1314	Chemistry I (LN) [1]	4
CHEM 1515	Chemistry II (LN)	5
Exploring Society & Human Behavior (S)		
Course designated (S)		3
Diversity (D)		
Courses designated (D)		3
Global Cultural Competency (G)		
Courses designated (G)		3
Additional General Education		
Additional general education credit hours may be required to meet the total 40-hour minimum of general education credit if courses carry more than one general education designation and can be used to meet multiple general education designation hour requirements above.		
Courses designated (Q), (H), (N), (S), (D), (G), of (F).		0
Hours Subtotal		**40**
College/Departmental Requirements		
UNIV 1111	First Year Seminar (or other approved first year seminar course)	1
Arts & Humanities		
See note 2.a.		3
Natural & Mathematical Sciences		
BIOL 1113 & BIOL 1111	Introductory Biology (N) and Introductory Biology Laboratory (LN) [1]	4
or BIOL 1114	Introductory Biology (LN)	
MATH 2153	Calculus II (Q)	3
MATH 2163	Calculus III	3
or MATH 2233	Differential Equations	
Foreign Language		
See note 3		
0-6 hours		
Upper-Division General Education		
Select 6 hours outside major department		
See note 2.c.		
Hours Subtotal		**14**
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	Descriptive Inorganic Chemistry	3
or CHEM 3363	Bioinorganic Chemistry	
CHEM 3433	Physical Chemistry I	3
CHEM 3532	Physical Chemistry Laboratory	2
CHEM 3553	Physical Chemistry II	3
or CHEM 4433	Computational Chemistry and Molecular Modeling	
CHEM 4022	Modern Methods of Chemical Analysis Laboratory	2
CHEM 4023	Modern Methods of Chemical Analysis	3
or CHEM 4033	Forensic Chemistry	
CHEM 4322	Advanced Organic Chemistry Laboratory	2
or CHEM 4313	Medicinal Organic Chemistry	
CHEM 4333	Inorganic Chemistry I	3
CHEM 4990	Undergraduate Research in Chemistry (2 hours)	2
BIOC 3653	Survey of Biochemistry	3
PHYS 2014	University Physics I (LN)	4
PHYS 2114	University Physics II (LN)	4
Hours Subtotal		**47**
Electives		
Select 19 hours		19
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	**19**
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.
- **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**
   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 (Q), PHIL 3003 Symbolic Logic (Q) 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. 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).
   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 and 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 2031.

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		
CHEM 1314	Chemistry I (LN)	4
MATH 2144	Calculus I (Q)	4
General Education, College/Departmental, and/or Elective courses		6
	Hours	**14**

Spring		
CHEM 1515	Chemistry II (LN)	5
MATH 2153	Calculus II (Q)	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 or MATH 2233	Calculus III or Differential Equations	3
PHYS 2014	University Physics I (LN)	4
General Education, College/Departmental and/or Elective courses		6
	Hours	**16**
Spring		
CHEM 3153	Organic Chemistry II	3
CHEM 3112	Organic Chemistry Laboratory	2
PHYS 2114	University Physics II (LN)	4
General Education, College/Departmental, and/or Elective courses		6
	Hours	**15**
Junior		
Fall		
CHEM 2113	Principles of Analytical Chemistry	3
CHEM 2122	Quantitative Analysis Laboratory	2
CHEM 3433	Physical Chemistry I	3
General Education, College/Departmental and/or Elective courses		6
	Hours	**14**
Spring		
BIOC 3653	Survey of Biochemistry	3
CHEM 3353 or CHEM 3363	Descriptive Inorganic Chemistry or Bioinorganic Chemistry	3
CHEM 3353 and CHEM 3363 offered every other spring semester		
Select one of the following:		5
CHEM 3553 & CHEM 3532	Physical Chemistry II and Physical Chemistry Laboratory	
CHEM 4023 & CHEM 4022	Modern Methods of Chemical Analysis and Modern Methods of Chemical Analysis Laboratory	
CHEM 3553 & 3532 and CHEM 4023 & 4022 offered every other spring semester		
CHEM 4433 & CHEM 4033 offered in alternating Spring semesters as alternatives to CHEM 3553 and CHEM 4023.		
General Education, College/Departmental, and/or Elective courses		5
	Hours	**16**
Senior		
Fall		
CHEM 4322 or CHEM 4313	Advanced Organic Chemistry Laboratory or Medicinal Organic Chemistry	2
CHEM 4322 and CHEM 4313 offered every other fall semester		
CHEM 4333	Inorganic Chemistry I	3
CHEM 4990	Undergraduate Research in Chemistry	1
Elective courses		9
	Hours	**15**
Spring		
Select one of the following:		5
CHEM 4023 & CHEM 4022	Modern Methods of Chemical Analysis and Modern Methods of Chemical Analysis Laboratory	
CHEM 3553 & CHEM 3532	Physical Chemistry II and Physical Chemistry Laboratory	
CHEM 4023 & 4022 and CHEM 3553 & 3532 offered every other spring semester		
CHEM 4433 & CHEM 4033 offered in alternating Spring semesters as alternatives to CHEM 3553 and CHEM 4023		
CHEM 4990	Undergraduate Research in Chemistry	1
Elective courses		9
	Hours	**15**
	Total Hours	**120**