

# CHEMISTRY MAJOR

## Requirements

### Degree Requirements

This major is available as a bachelor of arts or bachelor of science degree, as defined in the section on degree requirements (<http://catalog.linfield.edu/degrees-and-programs/undergraduate/ba-bs-bsn/>) for all majors in this catalog.

Since the department's curriculum is approved by the Committee on Professional Training of the American Chemical Society (ACS), a student may select the specific set of courses that leads to an ACS-certified major. Students also have the option of meeting the major requirements with courses that more closely reflect their particular interests and more optimally prepare them for certain advanced fields of study. A chemistry major may also elect to complete a series of education and certification courses and teach chemistry at the high school level following graduation.

### Major Requirements

40 credits from within the department, plus an additional 18 credits from outside the department, for a combined total of 58 credits<sup>1</sup>:

Code	Title	Credits
CHEM 210	GENERAL CHEMISTRY	4
CHEM 211	GENERAL CHEMISTRY	4
CHEM 321	ORGANIC CHEMISTRY	4
CHEM 322	ORGANIC CHEMISTRY	4
CHEM 330	WRITING IN CHEMISTRY	4
CHEM 335	QUANTITATIVE ANALYSIS	4
CHEM 340	INSTRUMENTAL METHODS OF ANALYSIS	4
CHEM 361	PHYSICAL CHEMISTRY I	4
CHEM 362	PHYSICAL CHEMISTRY II	4
CHEM 350	INORGANIC CHEMISTRY I	4
or CHEM 440	BIOCHEMISTRY	
Non-CHEM Requirements: <sup>2</sup>		
MATH 170	CALCULUS I	5
MATH 175	CALCULUS II	3
PHYS 210	INTRODUCTION TO MECHANICS	5
PHYS 211	INTRODUCTION TO ELECTROMAGNETISM	5
<b>Total Credits</b>		<b>58</b>

<sup>1</sup> Students seeking ACS certification must complete a total of 66 credits. In addition to the courses listed above, students must take CHEM 350, CHEM 440, and either CHEM 351 or BIOL 441. A minimum of 400 laboratory hours are also required for ACS certification.

<sup>2</sup> The department also recommends that Chemistry majors take MATH 200 and MATH 210.

- ask questions, design experiments, and interpret results
- demonstrate safety consciousness and safe work habits
- work productively while exhibiting high ethical standards, both as an individual and as a team member

## Oregon Preliminary Teaching Licensure in Chemistry

Students who are also seeking an Oregon Preliminary Teaching License must also complete a Secondary Education major with Licensure. In order to complete the Secondary Education major with Licensure, students should begin taking education courses no later than their sophomore year. The student must be advised by faculty in both majors.

## Student Learning Outcomes

- demonstrate knowledge of chemistry in four of the five traditional subdisciplines (analytical, biochemistry, inorganic, organic, physical)
- obtain, evaluate, and use information from the scientific literature
- communicate effectively, both orally and in writing, in genres appropriate to the discipline