

CHEMISTRY, ASSOCIATE OF SCIENCE

The Associate of Science Degree in Chemistry prepares students for transfer to a four-year school as juniors in either chemistry or biochemistry majors. The curriculum provides fundamental knowledge of the major fields of chemistry, covering a full year of both general and organic chemistry. Students will gain laboratory experience in organic synthesis, analytical methods, and spectroscopy. Chemistry is called the central science and as such, it serves as a foundation for careers in many fields, such as medicine, environmental science, and materials science.

This degree is designed to transfer to Southern Oregon University's Bachelor of Science in Chemistry program. Other transfer options may be available. Consult your advisor for details.

GRADUATION REQUIREMENTS

Students must complete a minimum of 93 credit hours with a cumulative Grade Point Average (GPA) of 2.0 or better. All courses must be completed with a grade of 'C' or better. Twenty-four (24) credits must be completed at Southwestern before the degree is awarded.

Courses that are developmental in nature, (designed to prepare students for college transfer courses), are not applicable to this degree.

Students must complete the graduation application process one term prior to the term of completion (e.g., spring term graduates must apply during winter term).

PROGRAM STUDENT LEARNING OUTCOMES

Upon successful completion of this program, the student will be able to:

1. Demonstrate knowledge of chemical structure to predict and explain the physical properties of chemical materials.
2. Demonstrate knowledge of chemical reactivity to predict and explain the outcomes of reactions.
3. Demonstrate knowledge of chemical quantitation to predict and explain chemical phenomena.
4. Critical Thinking: Collect and analyze data using classical methods and modern instrumentation and evaluate experimental results using the principles of the scientific method.
5. Information Literacy: Locate, summarize, and critique scientific articles, as well as synthesize scientific information from various sources to communicate the results of their own experiments.
6. Global Learning: Demonstrate personal and social responsibility, environmental stewardship, and global self-awareness.

PRE-PROGRAM COURSES

Students are required to take the following courses *prior to* the program courses, depending on students' college placement information. See advisor for details:

Code	Title	Credits
CIS90	Computer Basics (or demonstrate proficiency)	2
WR90R	Academic Literacy (or placement in higher writing course)	4
MTH112	Trigonometry	4

PROGRAM GUIDE

Course	Title	Credits
First Year		
Fall		
CHEM221	General Chemistry I	5
MTH251 or MTH251H	Calculus I Differential Calculus or Calculus I w/Honors	4
WR121 or WR121H	English Composition or English Composition w/Honors	3
BI201	Introductory Biology	4
		Credits
		16
Winter		
CHEM222	General Chemistry II	5
BI202	Introductory Biology	4
MTH252 or MTH252H	Calculus II Integral Calculus or Calculus II w/Honors	4
WR227	Report Writing	3
		Credits
		16
Spring		
CHEM223	General Chemistry III	5
BI203	Introductory Biology	4
SP111	Fundamentals of Public Speaking	3
Western Culture ¹		3
		Credits
		15
Second Year		
Fall		
CHEM245	Organic Chemistry I	4
MTH254	Vector Calculus I	4
PH211	General Physics with Calculus I	5
Difference, Power, and Discrimination ²		3
		Credits
		16
Winter		
CHEM246	Organic Chemistry II	4
PH212	General Physics with Calculus II	5
Social Processes and Institutions ³		3
Cultural Diversity ⁴		3
		Credits
		15
Spring		
CHEM247	Organic Chemistry III	4
PH213	General Physics with Calculus III	5
PE231	Wellness for Life	3
Literature and the Arts ⁵		3
		Credits
		15
		Total Credits
		93

- ¹ Western Culture - options: ART204, ART205, ART206, ENG107, ENG108, ENG109, ENG201, ENG204, ENG205, ENG206, HST101, HST102, HST103, HST201, HST202, HST203, MUS201, MUS202, MUS203, PHL101, PHL102.
- ² Difference, Power, and Discrimination - options: HST201, HST202, HST203, SOC206, SOC213
- ³ Social Processes and Institutions - options: ANTH221, ANTH222, ANTH223, ECON201, ECON202, HST101, HST102, HST103, PS201, PS205, PSY201, PSY202, PSY203, SOC204 or SOC204H, SOC205.
- ⁴ Cultural Diversity - options: ANTH224, ANTH230, ANTH231, ANTH232, HST104, HUM204, HUM205, HUM206
- ⁵ Literature and the Arts - options: ART204, ART205, ART206, ENG104, ENG105, ENG106, ENG107, ENG108, ENG109, ENG201, ENG204, ENG205, ENG206, ENG262, MUS201, MUS202, MUS203.
- * All Honors courses may substitute for their equivalent requirements.