

# CHEMISTRY

## Program Description

Chemistry is often referred to as the "central science" because it overlaps with many life science and physical science disciplines. The knowledge gained in the study of chemistry may be applied to wide-ranging fields such as medicine, pharmacy science, engineering, or environmental science, among others. A chemistry associate degree is a great choice for students who want to explore science but are not sure about their specific career direction.

Students who complete an associate degree in chemistry will not only be well-prepared for transfer to a four-year college or university, but will gain skill in a number of laboratory techniques that will help them prepare for work in industry or undergraduate research. Foothill College provides a welcoming and supportive environment that will prepare students well for the mastery of concepts and laboratory skills in the chemistry AS degree program.

Learn more about the program on the [Chemistry website](#).

## Program Learning Outcomes

- Students will have knowledge of current theories and applications in the field of chemistry.
- Students will be able to effectively evaluate and assess scientific data and published work.
- Students will communicate effectively using the language of chemistry.
- Students will have facility in the safe handling of chemicals and the execution of common laboratory techniques.

## Career Opportunities

Chemistry graduates work in a wide variety of highly rewarding careers. Students with an associate degree may work as lab technicians or research assistants. A bachelor degree in chemistry can lead to a career in the chemical, pharmaceutical, biomedical, or environmental science industries, as well as provide a strong foundation for graduate study in chemistry or medical, dental, veterinary, and pharmacy schools. Chemistry graduates are sought after for their technical skills by a large number of employers in outside disciplines as well, including marketing and sales, scientific information, patent law, consulting, and material science. With an advanced degree, graduates can also pursue careers in academia as university professors, academic researchers, or college lecturers.

## Award Type(s)

- AS = Associate in Science Degree

## Units Required

- Major: 60

## Additional Information

**Note:** Please refer to the catalog from the transfer institution of choice regarding a possible language requirement.

## Associate Degree Requirements

Code	Title	Units
<b>English Proficiency</b>		
Select one of the following:		
ENGL 1A	COMPOSITION & READING	5
ENGL 1AH	HONORS COMPOSITION & READING	5
ESLL 26	ADVANCED COMPOSITION & READING	5
or equivalent		
<b>Ethnic Studies</b>		
Any course in the ETHN (Ethnic Studies) subject code, currently approved for Area F of CSU GE and Area 7 of IGETC		
<b>Mathematics Proficiency</b>		
College-level math course at or above the level of Intermediate Algebra		

A minimum of 90 units is required<sup>1</sup> to include:

- Completion of one of the following general education patterns: Foothill General Education, CSU General Education Breadth Requirements or the Intersegmental General Education Transfer Curriculum (IGETC)
- Core courses (60 units)

<sup>1</sup> Additional elective course work may be necessary to meet the 90-unit minimum requirement for the associate degree.

**Note:** All courses pertaining to the major must be taken for a letter grade. In addition, a grade of "C" or better is required for all core courses used for the degree.

## Core and Support Courses

Code	Title	Units
<b>Core Courses</b>		
CHEM 1A	GENERAL CHEMISTRY	5
CHEM 1B	GENERAL CHEMISTRY	5
CHEM 1C	GENERAL CHEMISTRY & QUALITATIVE ANALYSIS	5
CHEM 12A	ORGANIC CHEMISTRY	4
CHEM 12AL	ORGANIC CHEMISTRY LABORATORY	2
CHEM 12B	ORGANIC CHEMISTRY	4
CHEM 12BL	ORGANIC CHEMISTRY LABORATORY	2
CHEM 12C	ORGANIC CHEMISTRY	4
CHEM 12CL	ORGANIC CHEMISTRY LABORATORY	2
And three courses from the following:		15
MATH 1A	CALCULUS	
or MATH 1A HONORS CALCULUS I		
MATH 1B	CALCULUS	
or MATH 1B HONORS CALCULUS II		
MATH 1C	CALCULUS	
MATH 1D	CALCULUS	
MATH 2A	DIFFERENTIAL EQUATIONS	
And 12 units from one of the following options:		12
<i>Option 1</i>		

PHYS 2A & 2AM	GENERAL PHYSICS and GENERAL PHYSICS: CALCULUS SUPPLEMENT
PHYS 2B & 2BM	GENERAL PHYSICS and GENERAL PHYSICS: CALCULUS SUPPLEMENT
PHYS 2C & 2CM	GENERAL PHYSICS and GENERAL PHYSICS: CALCULUS SUPPLEMENT
<i>Option 2</i>	
PHYS 4A	GENERAL PHYSICS (CALCULUS)
PHYS 4B	GENERAL PHYSICS (CALCULUS)
PHYS 4C	GENERAL PHYSICS (CALCULUS)
PHYS 4D	GENERAL PHYSICS (CALCULUS)
<b>Total Units</b>	<b>60</b>