

CHEMISTRY

Program Description

Due to our increasingly technology-driven society, chemistry graduates will find an impressive array of opportunities for exciting careers in a wide range of fields. A chemistry degree can provide preparation for careers in areas such as basic research, pharmaceuticals, environmental protection, instrumentation, new product and process development, and education.

There is an increasing need for technical expertise in expanding fields such as nanotechnology, biotechnology, forensic science, clinical chemistry, food science, occupational safety and alternative fuels.

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 have an enhanced ability to research, assess and evaluate topics of interest.
- Students will have an enhanced ability to 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

Aside from careers in research and development in the chemical industry, there is a need for technically trained people in non-traditional areas such as marketing and sales, scientific information, patent law, health and safety, and handling of hazardous materials. Academic careers for chemists include university teaching and science teaching in the secondary school, an area that will expand greatly in the future. A bachelor degree can also provide a strong foundation for graduate study at medical, dental, veterinary, and pharmacy schools. Students with chemistry degrees have been notably successful in these areas.

Award Type(s)

- AS = Associate in Science Degree

Units Required

- Major: 60-62

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
English Proficiency		
Select one of the following:		
ENGL 1A	COMPOSITION & READING	5
ENGL 1AH	HONORS COMPOSITION & READING	5
ENGL 1S & ENGL 1T	INTEGRATED COMPOSITION & READING and INTEGRATED COMPOSITION & READING	8
or equivalent		
Mathematics Proficiency		

Select one of the following:

MATH 105	INTERMEDIATE ALGEBRA	5
MATH 180	QUANTITATIVE REASONING	5

or any MATH course approved for Foothill GE Area V, Communication & Analytical Thinking

A minimum of 90 units is required¹ 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 (60-62 units)

¹ 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
Core Courses		
CHEM 1A or CHEM 1AH	GENERAL CHEMISTRY HONORS GENERAL CHEMISTRY	5
CHEM 1B or CHEM 1BH	GENERAL CHEMISTRY HONORS 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 or CHEM 13BH	ORGANIC CHEMISTRY LABORATORY HONORS ORGANIC CHEMISTRY LABORATORY	2-3
CHEM 12C	ORGANIC CHEMISTRY	4
CHEM 12CL or CHEM 13CH	ORGANIC CHEMISTRY LABORATORY HONORS ORGANIC CHEMISTRY LABORATORY	2-3
And three courses from the following:		15
MATH 1A or MATH 1AI	CALCULUS HONORS CALCULUS I	
MATH 1B or MATH 1BI	CALCULUS HONORS CALCULUS II	
MATH 1C	CALCULUS	
MATH 1D	CALCULUS	
MATH 2A	DIFFERENTIAL EQUATIONS	
And two courses from the following:		12
PHYS 4A	GENERAL PHYSICS (CALCULUS)	
PHYS 4B	GENERAL PHYSICS (CALCULUS)	
PHYS 4C	GENERAL PHYSICS (CALCULUS)	
PHYS 4D	GENERAL PHYSICS (CALCULUS)	

Total Units **60-62**