

CHEMISTRY - ASSOCIATE IN ARTS

Chemistry is the study of the properties, composition and chemical transformations of all material substances. It is often referred to as the "central science" since it draws from mathematics and physics and forms a necessary background to the understanding of earth science and all the biological disciplines, including the various medical professions. The Chemistry program at SJCC offers courses that satisfy general education requirements, allied-health science, engineers, and chemistry, biology and physics majors.

Majoring in chemistry offers a diverse array of career opportunities in areas ranging from forensic science, genetic engineering, materials science, chemical education, environmental chemistry, to chemical engineering. As well, many students become eligible for opportunities for research internships, scholarships and presenting at local and national conferences. Chemistry majors will gain skills in communication, computer technology and mathematics. The chemistry transfer program is also considered an excellent preparation for pharmacy and medical schools. For more information about careers in chemistry, go to the American Chemical Society web site at www.acs.org.

As scientists, chemists seek to understand the ever changing and more complex world we live in. Chemists continue to discover more chemicals every year either by synthetic design or isolating them from living organisms, with many of these compounds having complex structural arrangements of their atoms. The employment opportunities afforded to chemists, includes the research and development of thousands of products which truly affects our daily lives—the foods we eat, all of the chemicals and fuels we use, the air we breathe, the public policies we adopt, and even the clothes we wear. Thus, chemistry is a profoundly experimental science and much of the student's time will be spent in the laboratory.

The chemistry major usually transfers to a four-year institution to earn Bachelor's, Master's or Ph.D. degrees, with advanced degrees commensurate with more rewarding careers and higher salaries. SJCC's chemistry program is articulated with those of the UC and CSU systems and includes the standard courses needed to complete the first two years of the major. Information on course equivalencies for major requirements at UC and CSU is available at www.assist.org.

A grade of "C" or better is required for each course in the major or area of emphasis. A "P" (Pass) grade is an acceptable grade for courses in the major or area of emphasis if the course is taken on a Pass/No Pass basis.

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

- Apply increasingly challenging deductive and inductive reasoning to further develop critical thinking, problem solving, and abstract reasoning skills as they progress through the sequence.
- Employ both written and oral skills to effectively communicate scientific information.
- Evaluate and represent laboratory data using simple statistical analyses in terms of accuracy and precision.
- Utilize developed practical laboratory skills involving safe operation of laboratory equipment and materials. We also require each student

take and pass (80% correct answers) a standardized safety quiz administered at the beginning of each semester.

Major Requirements

Course	Title	Credits
CHEM 001A	General Chemistry	5
CHEM 001B	General Chemistry	5
CHEM 012A	Organic Chemistry	5
CHEM 012B	Organic Chemistry	5
MATH 071	Calculus I With Analytic Geometry	5
MATH 072	Calculus II with Analytic Geometry	5
Total Units		30

AA Degree Requirements

Course	Title	Credits
Major Requirements		30
General Education Requirements		34
Complete two courses for the U.S. History, Constitution, and American Ideals Requirement (US-1, US-2, and US-3)		
Total Units		64