

# CHEMISTRY

Chemistry is a central science. It is an integral part of biological, geological, medical and environmental sciences. Every sight, sound, touch, smell, taste, and even thought is a result of chemical processes. An understanding of chemistry helps to make sound decisions in our increasingly technological society.

Courses for non-majors are offered in addition to the rigorous sequence designed for majors and transfer students.

## Career Opportunities

Agricultural Technician, Analytical Chemist, Biochemist, Synthetic Organic Chemist, Environmental Chemist and Attorney Geochemist, Chemical Engineer, Materials Scientist, Pharmaceutical Technician, Laboratory Technician, Science Teacher Technical Salesperson

## Faculty

Kennedy, Thomas

Montgomery, Jane

Negrete, Alejandro

Nguyen, John

## Transfer

- California State University, San Bernardino: Biochemistry and Chemistry majors
- University of California, Riverside: Biochemistry and Chemistry majors

For the most up-to-date information on these programs and others, visit [assist.org](http://www.assist.org) (<http://www.assist.org>). Please stop by the Transfer Center in Building 23 or make an appointment with a counselor if you have questions.

## Associate Degree

No associate degree is offered with a major in Chemistry. Chemistry courses may be used to fulfill requirements for an Associate in Science degree with a major in Math/Science or an Associate of Arts degree with a major in Liberal Arts. See respective listings for each major. CHEM 138 Work Experience Education Chemistry may be used as elective credit, but may not be used to fulfill major requirements.

## Chemistry Courses

### CHEM 100 Introductory Chemistry (4.0 Units)

An introductory course in general, organic, and biological chemistry. This course is specifically designed for students preparing for careers in allied health, such as nursing and various fields of therapy. The course satisfies general education requirements for non-majors and assumes no background in chemistry. Basic math skills are highly recommended. (UC credit limitation). C-ID: CHEM 101. CSU/UC  
Lecture Hours: 54.0; Lab Hours: 54.0  
Transfer: Transfers to both UC/CSU

### CHEM 138 Work Experience Education Chemistry (1-8 Units)

Work Experience Education is a key element of Victor Valley College's comprehensive approach to career development. Work Experience Education is a 16-, 12-, or 8-week course that enables students to receive college credit for paid or unpaid work opportunities. This course helps students gain valuable on-the-job work experience while providing practical education, best practices in professional development, and academic guidance through the course of their work opportunity. The combination of practical experience and curricular development empowers students to be more competitive, efficient and valuable employees upon completion of this program and/or their academic program trajectory. The course is ideal for students who are cross-training at their current worksite for upward mobility or seeking career changes, as well as those looking for entry-level occupational training through work-based learning experiences such as through an internship. Work Experience Education transforms community businesses, industries, and public agencies into expanded educational training laboratories. Credit is awarded on the basis of learning objectives completed and the number of hours the student trains. Students must create/complete new learning objectives each semester they enroll. Students may utilize their present work sites. More details are available in the Work Experience Education Office, (760) 245-4271, ext. 2281. The office, located in the Academic Commons, is open Monday-Thursday, 8:00 a.m.-1:00 p.m., 2:00-6:00 p.m., and by appointment. Please refer to the Work Experience Education section in this catalog for more information. CSU

Transfer: Transfers to CSU only

### CHEM 201 General Chemistry (5.0 Units)

The theories of atomic structure, and the application of these theories to an understanding of bonding, solution processes, states of matter, gas laws, general properties of matter, and principles of stoichiometric calculations. Laboratory emphasis is on the development of experimental skills. C-ID: CHEM 120 S. CSU/UC  
Prerequisite(s): MATH 105, Minimum grade C  
Lecture Hours: 54.0; Lab Hours: 108.0  
Transfer: Transfers to both UC/CSU

### CHEM 202 General Chemistry (5.0 Units)

Use of atomic theory developed in Chemistry 201 to examine the principles of periodic classification of the elements, thermodynamics, acids and bases, chemical equilibrium, reaction kinetics, coordination compounds. A basic survey of nuclear, organic, and biochemistry is included. Laboratory emphasis is on the development of technical skills. C-ID: CHEM 120 S. CSU/UC  
Prerequisite(s): CHEM 201  
Lecture Hours: 54.0; Lab Hours: 108.0  
Transfer: Transfers to both UC/CSU

### CHEM 206 Introductory Chemistry II: Organic Chemistry (4.0 Units)

An introduction to fundamental concepts of organic chemistry for students entering professional careers in allied health. Emphasis is on the structure, reactivity and mechanisms, chemical properties and nomenclature of major organic functional groups and their relationship to biological systems. (UC credit limitation). CSU/UC  
Prerequisite(s): CHEM 100, Minimum grade C  
Lecture Hours: 54.0; Lab Hours: 54.0  
Transfer: Transfers to both UC/CSU

**CHEM 207 Introductory Chemistry III: Biochemistry (4.0 Units)**

A one semester survey course in the fundamental principles of biochemistry for students entering professional careers in allied health. Emphasis is on the structure, function and physiological role of carbohydrates, lipids, proteins and nucleic acids. CSU,UC

Prerequisite(s): CHEM 100, Minimum grade C

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to both UC/CSU

**CHEM 281 Organic Chemistry (4.0 Units)**

An introduction to general principles of organic chemistry covering the structures, properties and reactivity of organic compounds. Emphasis is on molecular orbital theory, functional group reactivity, nomenclature, substitution and elimination mechanisms, stereochemistry, chemical equilibria and spectroscopy. Laboratory techniques include isolation, purification, synthetic procedures and spectroscopy. This is the first semester of a two semester sequence. (UC credit limitation). C-ID: CHEM 150.

Prerequisite(s): CHEM 202, Minimum grade C

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to both UC/CSU

**CHEM 282 Organic Chemistry II (4.0 Units)**

Principles and experimental techniques developed in CHEM 281 are extended to include synthesis and identification, nomenclature, derivatives, spectroscopy, and reactions of functional groups, heterocyclics, and aromatic compounds. Biochemistry of carbohydrates, lipids, proteins, nucleic acids, and other biologically significant compounds is also examined. C-ID: CHEM 160S. CSU/UC

Prerequisite(s): CHEM 281, Minimum grade C

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to both UC/CSU