

# CHEMISTRY (CHEM)

## CHEM 1A - General Chemistry I (5 units)

*Letter Grade (LG) or Pass/No Pass (P/NP) • Total hours: 51 hours lecture; 102 hours lab*

This is the first course of a two-semester sequence. It is designed for students entering science, medicine, and related professions. The course covers nomenclature, quantum theory, periodic properties, chemical reactions, stoichiometry, gas laws, molecular structure and bonding, states of matter, descriptive chemistry, and solutions. Portions of instruction may be offered online; may also be offered fully online. [C-ID CHEM 110; CHEM 120S (with CHEM 1B)]

*Prerequisite(s): CHEM 2 or CHEM 30A or high school chemistry; and, intermediate algebra or higher, or eligibility for transfer-level mathematics*  
*Advisory: Completion of or concurrent enrollment in ENGL 1A or ENGL 1AE; and students are urged to complete both CHEM 1A and CHEM 1B at MPC*  
*Credit transferable: Transfers to CSU & UC*  
*GE Credit: CSU B1 Physical Science, B3 Laboratory Activity; IGETC 5A Physical Science, 5C Science Laboratory; MPC B Natural Sciences (must include lab)*

## CHEM 1B - General Chemistry II (5 units)

*Letter Grade (LG) or Pass/No Pass (P/NP) • Total hours: 51 hours lecture; 102 hours lab*

This is the second semester of a two-semester general chemistry sequence designed for students entering science, medicine, and related professions. Topics covered include organic chemistry, kinetics, equilibrium, solution chemistry, acids and bases, thermodynamics, electrochemistry, coordination chemistry, and nuclear chemistry. The six-hour laboratory is closely correlated to the lecture and includes qualitative and quantitative analysis. Portions of instruction may be offered online; may also be offered fully online. [C-ID CHEM 120S (with CHEM 1A)]

*Prerequisite(s): CHEM 1A; and MATH 263 or high school intermediate algebra*  
*Credit transferable: Transfers to CSU & UC*  
*GE Credit: CSU B1 Physical Science, B3 Laboratory Activity; IGETC 5A Physical Science, 5C Science Laboratory*

## CHEM 2 - Fundamental Chemistry (4 units)

*Letter Grade (LG) or Pass/No Pass (P/NP) • Total hours: 51 hours lecture; 51 hours lab*

CHEM 2 is an introductory-level course in chemistry designed to prepare students for CHEM 1A. It provides study of the basic principles of chemistry with special emphasis on problem solving methods. The course is designed especially for the student who plans to enroll in CHEM 1A but lacks the necessary prerequisites. Portions of instruction may be offered online; may also be offered fully online.

*Prerequisite(s): Elementary algebra or higher or eligibility for transfer-level mathematics*  
*Advisory: Completion of or concurrent enrollment in ENGL 1A or ENGL 1AE*  
*Credit transferable: Transfers to CSU & UC*  
*UC Transfer Limits: CHEM 2, CHEM 10 combined: maximum credit 4 units; credit for either CHEM 2 or 30A; no credit for CHEM 2 or CHEM 10 or CHEM 30A if taken after CHEM 1A*  
*GE Credit: CSU B1 Physical Science, B3 Laboratory Activity; IGETC 5A Physical Science, 5C Science Laboratory; MPC B Natural Sciences (must include lab)*

## CHEM 10 - Everyday Chemistry (4 units)

*Letter Grade (LG) or Pass/No Pass (P/NP) • Total hours: 51 hours lecture; 51 hours lab*

CHEM 10 is a non-mathematical course for non-science majors and anyone else interested in how chemistry is involved in the workings of everyday objects and events in their lives. Topics of current and global importance are discussed, including the greenhouse effect and the ozone layer. Students are also provided fundamental laboratory examination of topics introduced in CHEM 10. Portions of instruction may be offered online; may also be offered fully online.

*Advisory: Completion of or concurrent enrollment in ENGL 1A or ENGL 1AE*  
*Credit transferable: Transfers to CSU & UC*  
*UC Transfer Limits: CHEM 2, CHEM 10 combined: maximum credit, 4 units; no credit for CHEM 2 or 10 or 30A if taken after CHEM 1A*  
*GE Credit: CSU B1 Physical Science, B3 Laboratory Activity; IGETC 5A Physical Science, 5C Science Laboratory; MPC B Natural Sciences (must include lab)*

## CHEM 12A - Organic Chemistry I (5 units)

*Letter Grade (LG) or Pass/No Pass (P/NP) • Total hours: 51 hours lecture; 102 hours lab*

This course is the first semester of a two-semester sequence for science majors entering fields such as biology, biochemistry, chemistry, chemical engineering, dietetics, dentistry, medicine, medical technology, toxicology, environmental science, and pharmacy. Students are exposed to many areas of organic chemistry such as structure, reactions, nomenclature, kinetics, and reaction mechanisms. The laboratory teaches the skills necessary for laboratory investigations and procedures in organic chemistry, including instrumental analysis. Portions of instruction may be offered online; may also be offered fully online. [C-ID CHEM 150; CHEM 160S (with CHEM 12B)]

*Prerequisite(s): CHEM 1B*  
*Advisory: Completion of or concurrent enrollment in ENGL 1A or ENGL 1AE*  
*Credit transferable: Transfers to CSU & UC*  
*UC Transfer Limits: Credit for either CHEM 12A or CHEM 30B*  
*GE Credit: CSU B1 Physical Science, B3 Laboratory Activity; IGETC 5A Physical Science, 5C Science Laboratory*

## CHEM 12B - Organic Chemistry II (5 units)

*Letter Grade (LG) or Pass/No Pass (P/NP) • Total hours: 51 hours lecture; 102 hours lab*

This course is the second semester of a two-semester sequence for science majors entering fields such as biology, biochemistry, chemistry, chemical engineering, dietetics, dentistry, medicine, medical technology, toxicology, environmental science, and pharmacy. Students are exposed to many areas of organic chemistry such as structure, reactions, nomenclature, and kinetics and reaction mechanisms. The laboratory teaches the skills necessary for laboratory investigations and procedures in organic chemistry, including instrumental analysis. Portions of instruction may be offered online; may also be offered fully online. [C-ID CHEM 160S (with CHEM 12A)]

*Prerequisite(s): CHEM 12A*  
*Advisory: Completion of or concurrent enrollment in ENGL 1A or ENGL 1AE*  
*Credit transferable: Transfers to CSU & UC*  
*GE Credit: CSU B1 Physical Science, B3 Laboratory Activity; IGETC 5A Physical Science, 5C Science Laboratory*

**CHEM 30A - Introductory Chemistry for Health Sciences (4 units)**

*Letter Grade (LG) Only • Total hours: 51 hours lecture; 51 hours lab*

This is an introductory chemistry course covering the principles of inorganic and organic chemistry. It is designed for students intending to enter many health science fields. The course is appropriate for most baccalaureate programs in nursing, dental hygiene, family and consumer science, and kinesiology. Does not meet chemistry requirements for pre-medicine, pre-dentistry, or laboratory technician majors. Portions of instruction may be offered online; may also be offered fully online.

*Prerequisite(s): High school algebra or MATH 260 or MATH 261*

*Advisory: Completion of or concurrent enrollment in ENGL 1A or ENGL 1AE*

*Credit transferable: Transfers to CSU & UC*

*UC Transfer Limits: Credit for either CHEM 2 or 30A; no credit for CHEM 2 or 10 or 30A if taken after CHEM 1A.*

*GE Credit: CSU B1 Physical Science, B3 Laboratory Activity; IGETC 5A*

*Physical Science, 5C Science Laboratory; MPC B Natural Sciences (must include lab)*

**CHEM 30B - Organic and Biological Chemistry for Health Sciences (4 units)**

*Letter Grade (LG) Only • Total hours: 51 hours lecture; 51 hours lab*

This is the second semester of a two-course sequence designed for students entering baccalaureate programs in nursing, dental hygiene, home economics, or physical education. It offers an in-depth study of principles of organic and biological chemistry related to the health science field, including organic nomenclature, structures, properties, and reactions as well as biomolecules, metabolism, and physiological chemistry. It does not meet chemistry requirements for pre-medicine, pre-dentistry, or laboratory technician majors. Portions of instruction may be offered online; may also be offered fully online.

*Prerequisite(s): CHEM 30A*

*Advisory: Completion of or concurrent enrollment in ENGL 1A or ENGL 1AE*

*Credit transferable: Transfers to CSU & UC*

*UC Transfer Limits: Credit for either CHEM 12A or 30B.*

*GE Credit: CSU B1 Physical Science, B3 Laboratory Activity; IGETC 5A*

*Physical Science, 5C Science Laboratory*