CHEMISTRY (CHEM)

CHEM 001A General Chemistry 5 Units
This is the first course in general chemistry with lab, for science and pre-professional majors. It covers basic chemical principles: nomenclature, atomic structure, quantum theory, molecular structure and bonding, periodic properties, chemical reactions, stoichiometry, thermochemistry, states of matter, gas laws, solutions, oxidation-reductions, and molecular equilibrium. The role that chemistry plays in everyday life, industry, and human welfare is emphasized. (C-ID CHEM 110)

Lecture Hours: 3 Lab Hours: 6 Repeatable: No Grading: L
Prerequisite: CHEM 015 and MATH 013 or MATH 016, all with P or C grade or better, or placement by multiple measures
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3

CHEM 001B General Chemistry 5 Units
This course is the second semester of a one-year college level general chemistry sequence. The content includes thermodynamics, chemical kinetics, chemical equilibrium, electrochemistry, coordination compounds, nuclear chemistry, and organic chemistry. The laboratory emphasizes qualitative and quantitative analyses of inorganic compounds and introduces electronic instrumentation. The course is required for students majoring in physical and biological sciences and pre-professional majors such as pre-medicine and dentistry. The course also completes the basic chemistry requirements for students majoring in chemical and materials engineering.

Lecture Hours: 3 Lab Hours: 6 Repeatable: No Grading: L
Prerequisite: CHEM 001A with C or better
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3
Credit by Exam: Yes

CHEM 012A Organic Chemistry 5 Units
The first course of a two-semester sequence in organic chemistry with emphasis on structure, reaction mechanisms, and their kinetics. Topics include nomenclature, stereochemistry, mechanisms, reactions, and spectroscopic studies of organic compounds. Problem-solving techniques will be used to elucidate mechanistic, structural, and stereochemical features of reactions and molecules. Lecture and laboratory will cover synthesis, isolation, purification, elucidation, and identification of organic structures, instrumental methods and data interpretation. (C-ID CHEM 150)

Lecture Hours: 3 Lab Hours: 6 Repeatable: No Grading: L
Prerequisite: CHEM 001B with C or better
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3

CHEM 012B Organic Chemistry 5 Units
This is the second course of a two-semester sequence in organic chemistry designed to follow Chemistry 012A. Topics include nomenclature, stereochemistry, mechanisms, reactions, and spectroscopic studies of aliphatic and aromatic alcohols, aldehydes, ketones, acids, and other classes of organic and biological compounds (such as amino acids, proteins, and nucleic acids). Problem-solving techniques will be used to elucidate mechanistic, structural, and stereochemical features in chemical reactions. Lectures and laboratory methods will focus on synthesis, isolation, purification, elucidation, and identification of organic structures as well as instrumental methods and data interpretation.

Lecture Hours: 3 Lab Hours: 6 Repeatable: No Grading: L
Prerequisite: CHEM 012A with C or better
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3

CHEM 015 Fundamentals of Chemistry 4 Units
This course covers the fundamentals of modern inorganic chemistry with emphasis on atomic structure, chemical bonding, chemical formulas, nomenclature, equations, stoichiometry, gas laws, solutions and related topics. It is intended primarily as a preparation for the Chemistry 001A and 001B sequence. The central nature of chemistry among other branches of science is stressed, and examples of the important role that chemistry plays in our lives are presented. (C-ID CHEM 101)

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Prerequisite: MATH 013 with P grade or placement by multiple measures
Recommended: MATH 013 may be taken prior to or concurrent with CHEM 015
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3

CHEM 030A Introduction to Chemistry 4 Units
This course covers the basic principles of chemistry. Content includes measurements, matter and energy, atomic structure, periodicity, chemical bonding and nomenclature, chemical reactions and equations, gases, solutions and colloids, oxygen, hydrogen and water, and acids, bases and salts. It is designed to meet the chemistry requirements for the nursing major, other allied health majors, and non-science majors.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Prerequisite: Eligible for transfer level mathematics
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3

CHEM 030B Introduction to Chemistry 4 Units
This course is a continuation of Introductory Chemistry with emphasis on the basic principles of organic and biological chemistry. It is designed for allied health and industrial technology majors. Topics that will be covered will include hydrocarbons, alcohols, ethers, carbonyl compounds, carboxylic acids, esters, and amines. It will also include an introduction to the structures and properties of carbohydrates, lipids, and other biopolymers. (C-ID CHEM 102)

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Prerequisite: CHEM 030A or CHEM 015 or CHEM 001A with grade C or better
Advisory Level: Read: 3 Write: 3 Math: None
Transfer Status: CSU/UC Degree Applicable: AA/AS
CSU GE: B1, B3 IGETC: 5A, 5C District GE: B1, B3