# **Chemistry (CHEM)**

### CHEM 001A General Chemistry I

(5)

Class Hours: 54 Lecture | 108 Laboratory Prerequisite(s): MATH 063 or MATH 064

Transfers to: UC/CSU C-ID: CHEM 120S

General Chemistry I

CHEM 001A is the first semester of a one-year course in chemistry intended for majors in the natural sciences (chemistry, biochemistry, biology, physics, pre-medicine), mathematics, and engineering.

### CHEM 001B General Chemistry II

(5)

Class Hours: 54 Lecture | 108 Laboratory

Prerequisite(s): CHEM 001A Transfers to: UC/CSU C-ID: CHEM 120S

General Chemistry II

CHEM 001B is a continuation of the study of the principles of chemistry with an emphasis on chemical thermodynamics (H, S, G), kinetics and mechanisms, equilibrium, electrochemistry, spectroscopy, nuclear chemistry, introductory organic and biochemical systems, and selected elemental chemistries of metals, non-metals, and metalloids. The laboratory includes lecture-matched qualitative and instrumental evaluation of selected species and parameters as well as microprocessor and computerized data gathering, processing and reduction, and computer simulations. Appropriate training in chemical safety is provided. The Chemistry 001A-001B sequence is required of all students majoring in chemistry, chemical engineering, engineering sciences, biology, microbiology, and all applied sciences (medicine, pharmacy, veterinary science, nursing,home economics, etc).

# CHEM 002A Introductory Chemistry

(4)

Class Hours: 54 Lecture | 54 Laboratory

Prerequisite(s): MATH 063 Advisory(s): ENG 051A Transfers to: UC/CSU C-ID: CHEM 101

Introductory Chemistry

CHEM 002A is a study of the applied principles of chemistry for the allied science and non-science majors. Included are scientific methodology, composition of matter, physical and chemical changes, bonding, nomenclature, chemical periodicity and reactivity, stoichiometry, states of matter, atomic and molecular modeling, chemical energetics, properties and models of solids, liquids, gases, aqueous solution and Redox reactions, pH, reactions of elements/acids/bases/salts, and a brief introduction to organic chemistry. Appropriate training in chemical safety is provided. The Chemistry 2A, 2B sequence is a state university curriculum requirement for students planning to transfer to majors in agriculture, nursing, home economics, industrial technology, industrial arts, and other applied sciences.

## CHEM 012A Organic Chem for Sci Majors I

(3)

Class Hours: 54 Lecture
Prerequisite(s): CHEM 001A

Advisory(s): CHEM 001B (Recommended, Previous or concurrent).

Transfers to: UC/CSU
C-ID: CHEM 150

Organic Chemistry for Science Majors I

CHEM 012A is the first course in a two course sequence in organic chemistry intended for majors in the natural sciences (chemistry, biochemistry, biology, physics, and pre-medicine). A study of all aspects of fundamental organic chemistry including nomenclature, chemical and physical properties, reactions and syntheses of the major classes of organic compounds will be cover by the two-course sequence. The course sequence includes advance topics of organic chemistry such as theorical aspects, reaction mechanisms, multistep syntheses, and the chemistry of polycyclic and heterocyclic compounds. This course is more extensive an intensive than CHEM 002B and includes a greater emphasis on reaction mechanisms and multistep syntheses.

## CHEM 012AL Organic Chemistry Lab for Scie

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Class Hours: 54 Laboratory
Prerequisite(s): CHEM 001A
Corequisite(s): CHEM 012A
Transfers to: UC/CSU

Organic Chemistry Lab for Science Majors I

CHEM 012AL is the first laboratory course of a one-year lab course sequence in organic chemistry intended for majors in the natural sciences (chemistry, biochemistry, biology, physics, and pre-medicine). A study of all aspects of fundamental organic chemistry including nomenclature, chemical and physical properties, reactions and syntheses of the major classes of organic compounds will be cover by the two-course sequence. The course sequence includes advance topics of organic chemistry such as theoretical aspects, reaction mechanisms, multistep syntheses, and the chemistry of polycyclic and heterocyclic compounds. This course is more extensive and intensive than CHEM 002B and includes a greater emphasis on reaction mechanisms and multistep syntheses.