

# COURSE DESCRIPTIONS

## CHEMISTRY

### CHEM 1405 INTRODUCTORY CHEMISTRY I

**Format:** 3 lecture / 3 lab (4 credit hours)

Survey course introducing chemistry. Topics may include inorganic, organic biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Emphasis on measurement, atoms, molecules, chemical bonding, types of chemical reactions, states of matter, solutions, colloids, rates of chemical reaction, chemical equilibrium, acids and bases. Designed for allied health students and for students who are not science majors. Basic laboratory experiments supporting theoretical principles and introduction of the scientific method

**Credits:** 4

**Distribution:** CHEM

**Course Fee:** Lab Fee: \$24, Internet course fee (if applicable) = \$43

### CHEM 1407 INTRODUCTORY CHEMISTRY II

**Format:** 3 lecture / 3 lab (4 credit hours)

Survey course introducing chemistry. Topics may include inorganic/organic biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Emphasis on nuclear chemistry, the study of alkanes, alkenes, alkynes, aromatic compounds, alcohols, phenols, ethers, alkyl halides, aldehydes, ketones, carboxylic acids, esters, amines, and amides. Designed for allied health students and for students who are not science majors. Basic laboratory experiments supporting theoretical principles, introduction of the scientific method, experimental design, data collection and analysis, and preparation of lab reports.

**Prerequisite:** CHEM 1405 with grade of "C" or better.

**Credits:** 4

**Distribution:** CHEM

**Offered:** Spring Only

**Course Fee:** Lab Fee: \$24, Internet course fee (if applicable) = \$43

### CHEM 1411 GENERAL CHEMISTRY I

**Format:** 3 lecture / 3 lab (4 credit hours)

Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. Basic laboratory experiments supporting theoretical principles presented in this course; introduction of the scientific methods, experimental design, data collection and analysis, and preparation of laboratory reports.

**Prerequisite:** Math 1314-College Algebra or equivalent academic preparation. High school chemistry or CHEM 1405 Introductory Chemistry I is strongly recommended.

**Credits:** 4

**Distribution:** CHEM

**Course Fee:** Lab Fee: \$24, Internet course fee (if applicable) = \$43

### CHEM 1412 GENERAL CHEMISTRY II

**Format:** 3 lecture / 3 lab (4 credit hours)

Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry. Basic laboratory experiments supporting theoretical principles presented in this course; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.

**Prerequisite:** CHEM 1411 General Chemistry I.

**Credits:** 4

**Distribution:** CHEM

**Course Fee:** Lab Fee: \$24, Internet course fee (if applicable) = \$43

### CHEM 2389 ACADEMIC COOPERATIVE IN CHEMISTRY

**Format:** 3 lecture / 3 lab (4 credit hours)

An instructional program designed to integrate on-campus study with practical hands-on work experience in the physical sciences. In conjunction with class seminars, the individual students will set specific goals and objectives in the scientific study of inanimate objects, processes of matter and energy, and associated phenomena.

**Credits:** 4

**Distribution:** CHEM

**Course Fee:** Lab Fee: \$24, Internet course fee (if applicable) = \$43

## CHEM 2423 ORGANIC CHEMISTRY I

**Format:** 3 lecture / 4 lab (4 credit hours)

Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry structure, and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. Laboratory activities will reinforce fundamental principles of organic chemistry, including the structure, bonding, properties, and reactivity of organic molecules; properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Methods for the purification and identification of organic compounds will be examined.

**Prerequisite:** CHEM 1412 General Chemistry II with grade of "C" or better.

**Credits:** 4

**Distribution:** CHEM

**Offered:** Fall Only

**Course Fee:** Lab Fee: \$24, Internet course fee (if applicable) = \$43

## CHEM 2425 ORGANIC CHEMISTRY II

**Format:** 3 lecture / 4 lab (4 credit hours)

Advanced principles of organic chemistry will be studied, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. Laboratory activities reinforce advanced principles of organic chemistry including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules.

**Prerequisite:** CHEM 2423 Organic Chemistry I.

**Credits:** 4

**Distribution:** CHEM

**Offered:** Spring Only

**Course Fee:** Lab Fee: \$24, Internet course fee (if applicable) = \$43

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