

CHEMISTRY (CHEM)

◆CHEM 1405

Introductory Chemistry I for Non-Science Majors

CRT HRS:4 LEC HRS:3 LAB HRS:3 OTH HRS:0

This course is a survey course introducing inorganic chemistry designed for students who are not science majors. Fundamental concepts are presented in lecture and laboratory including the periodic table, atomic structure, chemical bonding, reactions, stoichiometry, states of matter, properties of metals, nonmetals, nonmetals and compounds, chemical nomenclature, acid-base theory, oxidation-reduction, solutions and chemical applications in everyday life. Descriptive chemistry is emphasized.

Prerequisite: TSI Complete in Math or MATH 0100 with a grade of "C" or better.

◆CHEM 1407

Introductory Chemistry II for Non-Science Majors

CRT HRS:4 LEC HRS:3 LAB HRS:3 OTH HRS:0

This course is a continuation of CHEM 1405 introducing chemistry designed for students who are not science majors. Fundamental concepts are surveyed in lecture and lab including solution calculations, solubility, colligative properties, reactions, stoichiometry, acid-base theory, chemical equilibrium, nuclear chemistry, electrochemistry, organic chemistry, and biochemistry. These concepts are studied and its applications to everyday life.

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

◆CHEM 1409

General Chemistry for Engineering Majors

CRT HRS:4 LEC HRS:3 LAB HRS:3 OTH HRS:0

This course is the fundamental principles of chemistry for engineering majors; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, acid-base concepts, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, phase-diagrams, introduction to chemical equilibrium, chemical thermodynamics, electrochemistry, and an introduction to descriptive inorganic chemistry and organic chemistry. *Students taking CHEM 1409 to fulfill the Life and Physical Science elective must take CHEM 1412 to complete the sequence. Students should not take both CHEM1411 and CHEM1409.

Prerequisite: MATH 1414 with a grade of "C" or better.

◆CHEM 1411

General Chemistry I

CRT HRS:4 LEC HRS:3 LAB HRS:3 OTH HRS:0

This course will cover 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, property gasses, and an introduction to thermodynamics and descriptive chemistry. Basic laboratory experiments supporting theoretical principles presented in CHEM 1411 will be performed. Introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports will be emphasized.

Prerequisite: TSI complete in Reading and completion of MATH 1414 with a grade of "C" or better or equivalent.

◆CHEM 1412

General Chemistry II

CRT HRS:4 LEC HRS:3 LAB HRS:3 OTH HRS:0

This course will cover 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 CHEM 1412 will be performed. Introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports will be emphasized.

Prerequisite: CHEM 1411 with a grade of "C" or better.

◆CHEM 2423

Organic Chemistry I

CRT HRS:4 LEC HRS:3 LAB HRS:3 OTH HRS:0

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. Laboratory activities will reinforce fundamental principles presented in CHEM 2423 lecture. Methods for the purification and identification of organic compounds will be examined. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS.

Prerequisite: CHEM 1412 with a grade of "C" or better.

◆CHEM 2425

Organic Chemistry II

CRT HRS:4 LEC HRS:3 LAB HRS:3 OTH HRS:0

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. Laboratory activities reinforce advanced principles of organic chemistry presented in CHEM 2425 lecture. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS.

Prerequisite: CHEM 2423 with a grade of "C" or better.