

# CHEMISTRY (CHEM)

**CHEM 1105 Introductory Chemistry I (lab) 1 Credit (0 Lec, 3 Lab)**

This survey course is introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. This course will NOT count towards the Core Curriculum or transfer path if you are pursuing an AS in Natural Science. THIS COURSE IS DESIGNED FOR NON-SCIENCE MAJORS.

Prerequisite(s): Reading level 7, Writing level 6, Math level 6

Co-requisite(s): CHEM 1305

Course Type: Academic

**CHEM 1109 General Chemistry for Engineering Majors (lab) 1 Credit (0 Lec, 3 Lab)**

This course covers basic laboratory experiments supporting theoretical principles presented in CHEM 1309; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.

Co-requisite(s): CHEM 1309

Course Type: Academic

**CHEM 1111 General Chemistry I (lab) 1 Credit (0 Lec, 3 Lab)**

This lab course covers basic laboratory experiments supporting theoretical principles presented in CHEM 1311; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports.

Prerequisite(s): Math 1314, MATH 2412, MATH 2413, MATH 2414, MATH 2415, MATH 2318, or MATH 2320, Reading level 7, Math level 9

Co-requisite(s): CHEM 1311

Course Type: Academic

**CHEM 1112 General Chemistry II (lab) 1 Credit (0 Lec, 3 Lab)**

This second semester of the general inorganic chemistry lab covers basic laboratory experiments supporting theoretical principles presented in CHEM 1312; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.

Prerequisite(s): CHEM 1311 and CHEM 1111, Reading level 7, Math level 9

Co-requisite(s): CHEM 1312

Course Type: Academic

**CHEM 1305 Introductory Chemistry I (lecture) 3 Credits (3 Lec, 0 Lab)**

This lecture survey course is introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. This course will NOT count towards the Core Curriculum or transfer path if you are pursuing an AS in Natural Science. THIS COURSE IS DESIGNED FOR NON-SCIENCE MAJORS.

Prerequisite(s): Reading level 7, Writing level 6, Math level 6

Co-requisite(s): CHEM 1105

Course Type: Academic

**CHEM 1309 General Chemistry for Engineering Majors (lecture) 3 Credits (3 Lec, 0 Lab)**

This course covers 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.

Prerequisite(s): MATH 1314

Co-requisite(s): CHEM 1109

Course Type: Academic

**CHEM 1311 General Chemistry I (lecture) 3 Credits (3 Lec, 0 Lab)**

This lecture course covers the 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.

Prerequisite(s): MATH 1314, MATH 2412, MATH 2413, MATH 2414, MATH 2415, MATH 2318, or MATH 2320, Reading level 7, Math level 9

Co-requisite(s): CHEM 1111

Course Type: Academic

**CHEM 1312 General Chemistry II (lecture) 3 Credits (3 Lec, 0 Lab)**

This second semester of the general inorganic chemistry lecture covers chemical equilibrium, phase diagrams and spectrometry, acid-base concepts, thermodynamics, kinetics, electrochemistry, nuclear chemistry, an introduction to organic chemistry and descriptive inorganic chemistry.

Prerequisite(s): CHEM 1311 and CHEM 1111, Reading level 7, Math level 9

Co-requisite(s): CHEM 1112

Course Type: Academic

**CHEM 2123 Organic Chemistry I (lab) 1 Credit (0 Lec, 3 Lab)**

This laboratory course accompanies CHEM 2323, Organic Chemistry I. Laboratory activities will reinforce fundamental principles of organic chemistry, 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. Methods for the purification and identification of organic compounds will be examined.

Prerequisite(s): CHEM 1312/CHEM 1112 Reading level 7, Math level 9

Co-requisite(s): CHEM 2323

Course Type: Academic

**CHEM 2125 Organic Chemistry II (lab) 1 Credit (0 Lec, 3 Lab)**

This laboratory course accompanies CHEM 2325, Organic Chemistry II. 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(s): CHEM 2323 and CHEM 2123

Co-requisite(s): CHEM 2325

Course Type: Academic

**CHEM 2323 Organic Chemistry I (lecture) 3 Credits (3 Lec, 0 Lab)**

In this introductory organic chemistry lecture course 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.

Prerequisite(s): CHEM 1312 and CHEM 1112

Co-requisite(s): CHEM 2123

Course Type: Academic

**CHEM 2325 Organic Chemistry II (lecture) 3 Credits (3 Lec, 0 Lab)**

This second semester of introductory organic chemistry lecture course 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.

Prerequisite(s): CHEM 2323 and CHEM 2123

Co-requisite(s): CHEM 2125

Course Type: Academic

**CHEM 2389 Academic Cooperative 3 Credits (1 Lec, 8 Lab)**

This is 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 student will set specific goals and objectives in the scientific study of inanimate objects, processes of matter and energy, and associated phenomena.

Prerequisite(s): Eight hours of Chemistry, Reading level 7, Writing level 7, Math level 8

Course Type: Academic