

CHEMISTRY (CHEM)

CHEM 9 Chemistry of Everyday Life

3 Units (Degree Applicable, CSU, UC)
UC Credit Limitation
Lecture: 54

Chemistry for non-majors. States of matter, scientific measurements and experimentation, periodic table, nomenclature, atomic and molecular structure, bonding, solubility, reactions, and acids and bases. Emphasis on chemistry principles and the scientific method as applied in medicine, health, environment, and everyday lives.

CHEM 10 Chemistry for Allied Health Majors

5 Units (Degree Applicable, CSU, UC)
UC Credit Limitation
Lecture: 72 Lab: 54
Prerequisite: Eligibility for MATH 71

Measurements, structure, nomenclature (includes organic), formulas, reactions, radioactivity, energy, acids, bases, solutions and pH, and properties of solid, liquid, and gas. This course is appropriate for allied health majors. Completion does not give eligibility for CHEM 50.

CHEM 20 Introductory Organic and Biochemistry

5 Units (Degree Applicable, CSU, UC)
UC Credit Limitation
Lecture: 54 Lab: 108
Prerequisite: CHEM 10 or CHEM 40

Nomenclature, structure, function, and reactions of major classes of organic compounds and of biomolecules, including amino acids, lipids, carbohydrates, nucleic acids (DNA and RNA), and proteins. Structure and function of vitamins, coenzymes, and enzymes. Metabolic pathways and biochemical energy. Recommended for allied health majors.

CHEM 40 Introduction to General Chemistry

5 Units (Degree Applicable, CSU, UC, C-ID #: CHEM 101)
UC Credit Limitation
Lecture: 72 Lab: 54
Prerequisite: Eligibility for MATH 71
Advisory: Eligibility for ENGL 1A

Measurements, atomic structure, chemical equations, stoichiometry, gases, solutions, acids and bases, bonding, nomenclature, matter, and energy. Completion prepares students to take CHEM 50.

CHEM 50 General Chemistry I

5 Units (Degree Applicable, CSU, UC, C-ID #: CHEM 110, CHEM120S(50+51))
UC Credit Limitation
Lecture: 54 Lab: 108
Prerequisite: CHEM 40 or satisfactory score on Chemistry Placement Examination; and MATH 71 or MATH 71B or MATH 71X or equivalent.

General Chemistry topics including chemical formulas, equations, nomenclature, reactions, stoichiometry, thermochemistry, periodic trends, atomic structure, chemical bonding and structure, and properties of gases, liquids, solids, and solutions. Emphasis is on critical thinking as well as mathematical and dimensional analysis problem-solving. Laboratory experiments emphasize the scientific method as well as computer-based technologies in data acquisition and analysis. Introduces laboratory report writing skills.

CHEM 50H General Chemistry I - Honors

5 Units (Degree Applicable, CSU, UC, C-ID #: CHEM 110, CHEM120S(50+51))
Lecture: 54 Lab: 108
Prerequisite: Acceptance into the Honors Program. CHEM 40 or satisfactory score on Chemistry Placement Examination, and MATH 71 or MATH 71B or MATH 71X or equivalent.

General Chemistry topics including chemical formulas, equations, nomenclature, reactions, stoichiometry, thermochemistry, periodic trends, atomic structure, chemical bonding and structure, and properties of gases, liquids, solids, and solutions. Emphasis is on critical thinking as well as mathematical and dimensional analysis problem-solving. Laboratory experiments emphasize the scientific method as well as computer-based technologies in data acquisition and analysis. Introduces laboratory report writing skills. An honors course designed to provide an enriched experience. Students may not receive credit for both CHEM 50 and CHEM 50H.

CHEM 51 General Chemistry II

5 Units (Degree Applicable, CSU, UC, C-ID #: CHEM120S(50+51))
Lecture: 54 Lab: 108
Prerequisite: CHEM 50 or CHEM 50H

Kinetics, equilibrium, thermodynamics, acid-base and oxidation-reduction reactions, transition metals, electrochemistry, and nuclear chemistry. Emphasis is on critical thinking and mathematical problem-solving. Laboratory experiments support lecture topics and use a variety of instrumentation and technology in data acquisition and analysis.

CHEM 51H General Chemistry II - Honors

5 Units (Degree Applicable, CSU, UC, C-ID #: CHEM120S(50+51), (50H+51H))
Lecture: 54 Lab: 108
Prerequisite: Acceptance into the Honors Program and CHEM 50 or CHEM 50H

Kinetics, equilibrium, thermodynamics, acid-base and oxidation-reduction reactions, transition metals, electrochemistry, and nuclear chemistry. Emphasis is on critical thinking and mathematical problem-solving. Laboratory experiments support lecture topics and use a variety of instrumentation and technology in data acquisition and analysis. An honors course designed to provide an enriched experience. Students may not receive credit for both CHEM 51 and CHEM 51H.

CHEM 55 Chemistry for Engineers

5 Units (Degree Applicable, CSU, UC)
Lecture: 72 Lab: 54
Prerequisite: CHEM 40 and MATH 71 or MATH 130 or satisfactory score on Chemistry Placement Examination

Topics including periodic table and atomic structure, bonding in solids, stoichiometry, chemical reactions, gases, thermodynamics, kinetics, equilibrium, electrochemistry, organic, polymers, and nuclear chemistry for engineering majors. Completion does not give eligibility for CHEM 51.

CHEM 80 Organic Chemistry I

5 Units (Degree Applicable, CSU, UC, C-ID #: CHEM 150,

CHEM160S(80+81))

UC Credit Limitation

Lecture: 54 Lab: 108

Prerequisite: CHEM 51

Designed for chemistry, biochemistry, chemical engineering and biology majors; also for those in pre-professional programs such as medicine, veterinary medicine, dentistry, optometry and pharmacy. Nomenclature, structure-reactivity relationships, energetics, reactions, reaction mechanisms, synthesis, separation, characterization and spectroscopic methods for organic compounds.

CHEM 81 Organic Chemistry II

5 Units (Degree Applicable, CSU, UC, C-ID #: CHEM 160 S, (80 + 81))

Lecture: 54 Lab: 108

Prerequisite: CHEM 80

The second semester of a one-year course. Fundamental principles and concepts of organic chemistry including, structure, bonding, nomenclature, stereochemistry, and functional groups with emphasis on reactions and reaction mechanisms of aromatic compounds, phenols, ethers, carbonyl compounds, carboxylic acids, amines, and their derivatives. Multi-step syntheses, stereochemistry of reactions, and structure elucidation using modern instrumental methods are also included. An introduction to biomolecules (carbohydrates, lipids, and proteins) is presented.

CHEM 99 Special Projects in Chemistry

2 Units (Degree Applicable, CSU)

Lecture: 36

Prerequisite: CHEM 50

Offers selected students recognition for their academic interest and ability and the opportunity to explore their disciplines to greater depth. The content of each course and the methods of study vary from semester to semester and depend on the particular project under consideration. Students must have an instructor's authorization before enrolling in this class.