## CHEM - Chemistry

CHEM 103 - General Chemistry I (4)

Topics include atomic theory, periodicity, bonding, reactions, stoichiometry, gas laws, and thermochemistry. Laboratory experiments illustrate these concepts and develop laboratory techniques. Lecture and laboratory. 7 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics competency or appropriate score on the math placement exam.

Offered: Fall, Spring, Summer.

CHEM 103H - Honors General Chemistry I (4)

For students with a good background in science and mathematics. Topics are listed in and experiments are similar to CHEM 103, with increased emphasis on instrumentation and independent work. Lecture and laboratory. 7 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics competency or appropriate score on the math placement exam..

Offered: Fall.

CHEM 104 - General Chemistry II (4)

Topics include states of matter, solutions, kinetics, acids and bases, equilibrium theory, thermodynamics, and electrochemistry. Lecture and laboratory. 7 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 103 or equivalent with a minimum grade of C-.

Offered: Fall, Spring, Summer.

CHEM 104H - Honors General Chemistry II (4)

For students with a good background in science and mathematics. Topics are listed in and experiments are similar to CHEM 104, with increased emphasis on instrumentation and independent work. Lecture and laboratory. 7 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 103H or equivalent with a minimum grade of C-.

Offered: Spring.

CHEM 105 - General, Organic and Biological Chemistry I (4)

General chemistry in preparation for studying organic and biochemistry is introduced, including structure, bonding, energy, reactions, rates, equilibrium, acids and bases; and from organic chemistry, alkanes and alkenes. Lecture and laboratory. 6 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics competency or appropriate score on the math placement exam.

Offered: Fall, Spring, Summer.

CHEM 106 - General, Organic, and Biological Chemistry II (4)

Topics include alcohols, carbonyl compounds, amines, amides, carbohydrates, lipids, proteins, enzymes, bioenergetics, catabolism, biosynthesis, nucleic acids, hormones, and neurotransmitters. Lecture and laboratory. 6 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 105 with a minimum grade of C-.

Offered: Fall, Spring, Summer.

CHEM 205 - Organic Chemistry I (4)

Topics include structure, stereochemistry, nomenclature, and chemistry of hydrocarbons and alkyl halides, spectroscopy, reaction mechanisms, and computational chemistry. Lecture and laboratory. 7 contact hours.

Prerequisite: CHEM 104 with a minimum grade of C-.

Offered: Fall, Summer.

CHEM 206 - Organic Chemistry II (4)

Topics include reactions of functional groups, synthesis and mechanism, spectroscopic identification, and topics in biochemistry and computational chemistry. Lecture and laboratory. 7 contact hours.

Prerequisite: CHEM 205.

Offered: Spring, Summer.

CHEM 310 - Biochemistry (4)

Topics include biological macromolecule structure, function and interactions, catalysis and kinetics of biochemistry, acid-base equilibrium in biological systems, and thermodynamics of binding and recognition. Lecture.

Prerequisite: CHEM 206.

Offered: Fall.

CHEM 403 - Inorganic Chemistry I (3)

Topics include electronic structure of atoms, molecular symmetry, bond theories, acid-base chemistry, solids, redox and coordination chemistry.

Prerequisite: CHEM 206.

Offered: Fall.

CHEM 404 - Analytical Chemistry (4)

Topics include the principles and applications of volumetric, gravimetric, and selected instrumental methods of analysis, including potentiometric and spectroscopic methods. Lecture and laboratory. 6 contact hours.

Prerequisite: CHEM 104.

Offered: Spring (even years).

CHEM 405 - Physical Chemistry I (3)

Through rigorous quantitative approaches, properties of gases, kinetic molecular theory, thermodynamics, statistical