

CHEMISTRY

CHEM 127 General Chemistry I **3 Credits**

Grade Mode: Standard Letter, Audit/Non Audit

This course is tailored for engineering students, emphasizes practical chemical applications within engineering contexts. It delves into general chemistry concepts such as stoichiometry, atomic and molecular structures, periodic properties, bonding, states of matter, and thermochemistry. It also offers a broad survey of chemical disciplines including inorganic, and organic chemistry. The laboratory section provides foundational laboratory experience specifically designed for engineering students, offering practical laboratory applications of chemical principles relevant to engineering contexts. It emphasizes a hands-on approach with experiments focusing on measurement techniques, identification and analysis of compounds, and essential laboratory practices including safety and disposal.

CHEM 128 General Chemistry I Laboratory **1 Credit**

Grade Mode: Standard Letter

This laboratory course provides foundational laboratory experience specifically designed for engineering students, offering practical laboratory applications of chemical principles relevant to engineering contexts. It emphasizes a hands-on approach with experiments focusing on measurement techniques, identification and analysis of compounds, and essential laboratory practices including safety and disposal.

CHEM 130 General Chemistry II **3 Credits**

Grade Mode: Standard Letter, Audit/Non Audit

Prerequisite(s): CHEM 127 and CHEM 128

General Chemistry II covers advanced topics in chemistry such as oxidation-reduction systems, thermodynamics, kinetics, complex equilibria, solubility, nuclear chemistry, and further descriptive chemistry of metals and nonmetals. General Chemistry II Laboratory emphasizes practical knowledge and hands-on skills in advanced chemistry topics such as thermochemistry, spectrophotometry, chemical equilibrium, chemical kinetics, and the properties of solutions.

CHEM 131 General Chemistry II Laboratory **1 Credit**

Grade Mode: Standard Letter

General Chemistry II Laboratory emphasizes practical knowledge and hands-on skills in advanced chemistry topics such as thermochemistry, spectrophotometry, chemical equilibrium, chemical kinetics, and the properties of solutions. Prerequisite: CHEM 130.

CHEM 227 Organic Chemistry I **3 Credits**

Grade Mode: Standard Letter, Audit/Non Audit

Prerequisite(s): CHEM 130

Organic Chemistry I provides a comprehensive introduction to the chemistry of carbon compounds. It covers aliphatic and aromatic compounds, stressing modern theory and stereochemistry to illustrate the logic and predictability of chemical transformations. It includes general principles and their applications in various industrial and biological processes, with an emphasis on the energy and mechanisms of reactions, synthesis, and the structure of organic molecules.

CHEM 228 Organic Chemistry II **3 Credits**

Grade Mode: Standard Letter, Audit/Non Audit

Prerequisite(s): CHEM 227

Organic Chemistry II extends the scope of Organic Chemistry I by delving into the chemistry of various functional groups, utilizing theory to unify and clarify diverse chemical transformations and introducing qualitative organic analysis with a focus on spectroscopic methods.

CHEM 237 Organic Chemistry I Laboratory **1 Credit**

Grade Mode: Standard Letter

Organic Chemistry Laboratory I covers elementary and advanced laboratory techniques, including the preparation, reactions, purification, and properties of representative organic compounds. It introduces synthesis and purification methods for specific compounds discussed in lectures, and qualitative organic analysis.

CHEM 238 Organic Chemistry II Laboratory **1 Credit**

Grade Mode: Standard Letter

A major portion of this laboratory course is devoted to methods employed in organic qualitative analysis. The student is expected to identify several unknown compounds and mixtures.