

CHME – CHEMISTRY (ENGINEERING)

CHME 103

Introductory University Chemistry I for Engineers

4.3 Credits Total (60-18-0)

This course serves as a foundation for all subsequent chemistry courses. Atomic properties as they relate to the periodic table are considered, along with quantum mechanics for hydrogen-like orbitals and electron configurations. The course provides an introduction to bonding theories as they apply to the stability, molecular geometry and intermolecular interactions of atomic, ionic and molecular species. Topics include chemical nomenclature, stoichiometry, classification of chemical reactivity, gases (both ideal and real) and thermochemistry. Note: Credit may be obtained in only one of CHEM 101 or CHME 103.

Prerequisites: Chemistry 30.

CHME 105

Introductory University Chemistry II for Engineers

3.8 Credits Total (60-18-0)

This course emphasizes the importance of chemical equilibrium as it applies to gases, acids and bases, solubility and precipitation reactions and complex ion formation. Also studied are kinetics (rates of reactions, differential and integrated rate laws, the Arrhenius equation), catalysts, thermodynamics (spontaneity, entropy, free energy), and electrochemistry (balancing redox reactions, calculating standard and non-standard cell potentials), with emphasis on some practical applications related to batteries, corrosion and industrial processes. A special topic, selected by the instructor, is covered if time permits. Note: Credit may only be obtained in one of CHEM 102 or CHME 105.

Prerequisites: Minimum grade of C- in CHME 103.