



## CHM 113: Fundamentals of Chemistry I

This course is designed for students majoring in science and engineering. Topics covered include scientific measurements and dimensional analysis, the structure of matter, chemical nomenclature, chemical formulas, chemical equations, mole and stoichiometry, thermochemistry, the gas laws, the quantum model of the atom, and periodicity of atomic properties. The laboratory component provides applications of concepts covered in lecture. Prerequisite: C or better in high school chemistry or in CHM 090. Three lecture hours, one recitation hour and three laboratory hours per week. Instructional Support Fee applies. Gen. Ed. Competencies Met: Scientific Reasoning and Discovery. 4 credits Fall, Spring

### Course Student Learning Outcomes

1. Classify chemical substances as elements, compounds, or mixtures, recognize the names and formulas of pure substances, and perform calculations involving the mole concept.
2. Accurately measure and record physical quantities such as mass, volume, length, etc. and analyze their data using techniques such as the method of dimensional analysis.
3. Employ balanced chemical equations to solve stoichiometric problems.
4. Perform calculations involving volume, temperature, pressure, and amount of gas using the correct gas laws.
5. Carry out calculations involving amounts of reactants, products, and enthalpy of reaction.
6. Explain the relationship between the electron configuration of elements and their chemical properties.

**Credits:** 4

**Program:** Chemistry