

# CHEM& 161L: GENERAL CHEMISTRY WITH LAB I

For science and engineering majors. Atomic nature of matter, stoichiometry, chemical reactions, periodic table, gas laws, thermo chemistry, and quantum concepts. Three hours of lecture and four hours laboratory. (NS)

## Course Student Learning Outcomes

1. Develop problem-solving skills that are supported by algebraic and numeracy skills.
2. Use measurable quantities of matter to determine physical and chemical properties.
3. Describe the atom and understand the properties of the subatomic particles within the context of the Periodic Table.
4. Explain the relationship between the position of an element in the periodic table and its physical/chemical properties, including periodic trends.
5. Describe the differences in the structure and properties of substances based on different types and models of bonding.
6. Classify and balance chemical reactions and predict products for different types of reactions and use stoichiometric calculations to predict quantities.
7. Apply the properties of ionic and molecular substances in aqueous solution to describe systems and predict behavior.
8. Use the kinetic-molecular theory to explain the behavior of gases from a molecular perspective and apply the ideal gas law.
9. Describe intermolecular forces and chemical bonds and how they influence physical properties and phase transitions.
10. Develop laboratory practices for conducting experiments and reporting experimental results within the context of the scientific method including the proper application of significant figures, precision, and accuracy.

Credits: 5

Prerequisites: Eligibility for ENGL& 101; MATH 098/099 or higher; 2.0 or higher in high school chemistry or CHEM& 121; or permission of instructor.

Program: [Chemistry](#)