CH 104 : INTRODUCTION TO CHEMISTRY I

Transcript title
Introduction to Chemistry I

Credits
5

Grading mode
Standard letter grades

Total contact hours
70

Lecture hours
40

Lab hours
30

Prerequisites
MTH 095 (or higher) or minimum placement Math Level 14.

Course Description
Introduces basic principles of general chemistry, including atomic theory, chemical formulas and equations, bonding, stoichiometry, acid/base chemistry, and solutions. Supporting laboratory work included. Not designed for science majors.

Course learning outcomes
1. Interpret the periodic table to describe elements of atomic structure for the elements and to make predictions about properties based on the position of elements on the table.
2. Apply atomic theory in describing atomic structure, making predictions about bonding and compound formation, and interpreting chemical reactions.
3. Construct and interpret Lewis structures as models for ionic and covalent compounds.
4. Describe ionic and covalent bonding and distinguish between the two, including descriptions of substances of each type at the observable scale.
5. Solve problems using dimensional analysis involving chemical substances and reactions, drawing on understanding of the mole concept, formula masses and reaction stoichiometry.
6. Read, write, and interpret balanced chemical equations using proper equation syntax and standard symbolism to link such descriptions to phenomena that occur at the observable scale.
7. Interpret and carry out a set of written experimental instructions and then to convey the experimental results in a laboratory report.
8. Apply kinetic-molecular theory to describe solids, liquids, and gases.
9. Recognize acids and describe acidity according to the Bronsted-Lowry definition.
10. Use scientific (inductive) reasoning to draw appropriate conclusions from data sets or theoretical models.
11. Characterize arguments as scientific or not scientific.
12. Make measurements and operate with numbers properly to convey appropriate levels of certainty when drawing conclusions from experimental data.
13. Identify patterns in data by graphical means.

General education/Related instruction lists
- Science Lab