

J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: CHM 101 Credits: 4

Course Title: Introductory Chemistry

Course Description :

Explores the experimental and theoretical concepts of general chemistry while emphasizing scientific reasoning, critical and analytical thinking. Designed for the non-science major. This is a Passport Transfer course and UCGS transfer course. Co-requisite: MTH 154 or higher. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. 4 credits

General Course Purpose:

Introductory chemistry is a course for students whose college and career paths require knowledge of the fundamentals of chemistry as applied to health, the environment and general knowledge of how chemistry affects our lives.

Course Prerequisites/Co- requisites :

Co-requisite: MTH 154 or higher

Course Objectives:

Upon completing the course, the student will be able to:

Scientific Literacy

- ” Apply the scientific method of inquiry to analyze data and draw conclusions supported by the data
- ” Propose one or more solutions that indicate comprehension of a problem

Quantitative Literacy

- ” Apply mathematical reasoning and techniques in discipline specific ways (including, but not limited to, quantitative analysis of data)

Matter and States of matter

- ” Classify matter as an element, compound, heterogeneous mixture or homogeneous mixture.
- ” Distinguish between physical and chemical properties/ changes.
- ” Apply kinetic molecular theory (conceptual) to explain/predict the characteristics and behavior of gases, solids and liquids.
- ” Calculate the pressure, volume or temperature of a gas after a change in conditions.
- ” Calculate the pressure, volume, temperature or moles of gas from the ideal gas equation.
- ” Identify and predict how intermolecular forces affect the physical properties of a specific substance.
- ” Describe the energy changes that accompany changes of state.

Measurement and Laboratory techniques

- ” Identify basic units of measurement in the American and metric systems of measurement.

- ” Convert measurements between American and/or metric units using dimensional analysis.
- ” Express any number in scientific notation.
- ” Identify the number of significant digits in a given measurement.
- ” Apply understanding of the inherent precision of laboratory glassware and equipment
- ” Perform arithmetic operations, rounding to the correct number of significant digits.
- ” Calculate the density

