

COLLEGEWIDE COURSE OUTLINE OF RECORD

CHM 102, INTRODUCTORY CHEMISTRY II

COURSE TITLE: Introductory Chemistry II
COURSE NUMBER: CHM 102
PREREQUISITES: CHM 101 Introductory Chemistry I
DIVISION: General Education
PROGRAM: General Education
CREDIT HOURS: 3
CONTACT HOURS: Lecture: 2 Lab: 2
DATE OF LAST REVISION: Spring, 2004
EFFECTIVE DATE OF THIS REVISION: Summer, 2005

CATALOG DESCRIPTION: Includes liquids and solids, solutions and solution concentrations, acids and bases, equilibrium, nuclear chemistry, and organic and biochemistry.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1. Apply the concepts of the different types of intermolecular forces to determining physical states.
2. Explain the equilibrium between a liquid and its own vapor and the process by which it is reached.
3. Interpret a graph of temperature versus energy for a substance over a range from below the melting point to above the boiling point.
4. Calculate the concentration of a solution in terms of percent, molarity, molality, and normality.
5. Determine colligative properties of a solution.
6. Calculate the pH and pOH of complex solutions.
7. Apply acid – base theory.
8. Describe the characteristics and the factors that affect a chemical equilibrium.
9. Explain the basic concepts of nuclear radioactivity.
10. Describe and perform basic quantitative and qualitative chemical analyses.
11. Describe the structure of organic and biochemical molecules.
12. Use common types of chemical glassware, equipment, and chemicals safely and appropriately, including those specifically intended for use with organic and biochemicals.
13. Describe and illustrate chemical principles in laboratory situations.
14. Obtain reproducible data from chemical experiments; analyze, interpret, and communicate the data in a logical and coherent manner.
15. Recognize uncertainties in data and identify potential sources of error.

COURSE CONTENT: Topical areas of study include --

Intermolecular forces	Nuclear radioactivity
Solutions	Organic molecules
Boiling and freezing points of a solution	Biochemical molecules
Acid – base theory and applications	Equilibrium
Qualitative and quantitative analysis	

Topical areas of study to be included in the laboratory –

Energy changes	Colligative properties
Phase changes	Chemical equilibrium
Qualitative analysis	Simple organic synthesis
Quantitative analysis	Biochemistry

ACADEMIC HONESTY STATEMENT:

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

ADA STATEMENT:

Ivy Tech State College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classroom.