



MASTER COURSE OUTLINE

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COURSE TITLE

Chemical Concepts

GENERAL COURSE INFORMATION

Dept.: CHEM&

Course Num: 105

(Formerly: CHM 100)

CIP Code: 40.0501

Intent Code: 11

Program Code: N/A

Credits: 5

Total Contact Hrs Per Qtr.: 55

Lecture Hrs: 55

Lab Hrs: 0

Other Hrs: 0

Distribution Designation: Natural Science NS

COURSE DESCRIPTION (as it will appear in the catalog)

This course is intended for non-science majors. The focus is on fundamental topics of chemistry such as; atoms and molecules, periodic table, organic chemistry, biochemistry, and radioactivity as they relate to current society. This class is intended to increase scientific literacy in non-science majors. This class can also provide some preparation for students with a limited chemistry background planning to continue on to CHEM& 121. This course is distinct from CHEM& 110 in both content and practice.

PREREQUISITES

Passing grade in MATH 094 or placement in MATH 098

TEXTBOOK GUIDELINES

A liberal arts chemistry text approved by the chemistry department. Typical titles are 'Concepts of Chemistry', 'Chemistry in Your Life', and 'The World of Chemistry'.

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. Describe the difference between physical and chemical changes.
2. Explain the relation of the subatomic particles to characteristics of an atom.
3. Recognize a minimum of 5 organic functional groups.
4. Describe the chemical composition of the four classes of biomolecules..
5. Identify characteristics of acids and bases and define them in chemical terms.
6. Write a balanced chemical equation.
7. Describe radioactive decay and use the concept of half-life to draw conclusions regarding isotopes.
8. Predict the type and nature of chemical bonding between two elements.

INSTITUTIONAL OUTCOMES

IO1 Communication: Students will be able to communicate clearly and effectively.

COURSE CONTENT OUTLINE

1. The composition of matter
2. How elements combine to form compounds
3. The structure of an atom (protons, neutrons and electrons)
4. Nuclear processes
5. Chemical bonding
6. Mixtures: solubility and concentrations
7. Chemical reactions, chemical equations
8. Acids and Bases, the pH scale
9. Oxidation-reduction reactions
10. An introduction to organic chemistry
11. The chemistry of human nutrition
12. Chemistry and the environment

DEPARTMENTAL GUIDELINES *(optional)*

Evaluation will be accomplished by examination, quizzes, discussions, and presentations.

PO5 should be assessed: Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources.

DIVISION CHAIR APPROVAL

DATE