J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: CHM 241 **Credits:** 3

Course Title: Organic Chemistry I

Course Description: Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Part I of II. Prerequisite: CHM 112 or equivalent. Lecture 3 hours. Total contact 3 hours per week.

General Course Purpose: This is a transfer course in organic chemistry for science majors that will satisfy various pre-heath degree requirements. This course is designed for students pursing bachelor's degrees in biology, chemistry or chemical engineering and as a prerequisite for students seeking professional degrees in medical, pharmaceutical, dental, and veterinary programs and for certain advanced nursing programs.

Course Prerequisites and Co-requisites:
Prerequisite: Chemistry 112 or equivalent

Student Learning Outcomes:
Upon completing the course, the student will be able to:
a. Understand what an important role carbon compounds play in life systems; explain what role carbon compounds play in our economy and ~~in~~ our dally life;
b. Predict the outcome and mechanism of typical reactions that organic molecules undergo;
c. Explain the concept of stereochemistry;
d. Use the complex naming system for naming organic molecules;
e. Be introduced to specific classes of biological molecules - proteins, carbohydrates, lipids, and nucleic acids;
f. Effectively write and speak on scientific matters; and
g. Effectively use the chemical literature to gather chemical information.

Major Topics to Be Included:
a. Covalent Bonding and Shapes of Molecules
b. Alkanes and Cycloalkanes
c. Stereoisomerism (Chirality)
d. Acids and Bases
e. Alkenes
f. Halo alkanes
g. Nucleophilic Substitution and Elimination
h. Alcohols
i. Alkynes
j. Spectroscopy

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