

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: CHM 242

Credits: 3

Course Title: Organic Chemistry II

Course Description: Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Part II of II. Prerequisite: CHM 241 or equivalent with a grade of C or better. Lecture 3 hours. Total 3 contact hours per week.

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

Course Prerequisites and Co-requisites:

Prerequisite: CHM 241 or equivalent with a grade of a C or better

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 our daily 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 used 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. Organometallic compounds
- b. Alcohols, ethers, and epoxides
- c. Aldehydes, ketones, and nucleophilic addition to the carbonyl group
- d. Enols, enolates, and enamines
- e. Carboxylic acids and bases
- f. Acyl transfer reactions
- g. Ester enolates, alkylamines, arylamines
- h. thiols
- i. Aryl halides, phenols, carbohydrates
- j. Spectroscopy

Date Created/Updated (Month, Day, and Year): January 4, 2019