

# Bemidji State University

## CHEM 3312: Organic Chemistry II

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Continuation of study of the properties of functional groups and the theories and mechanisms to account for those properties. Prerequisite: CHEM 3311.

**B. COURSE EFFECTIVE DATES:** 08/02/2010 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Radicals
2. Alcohols and Ethers
3. [O] and [H]
4. Conj. Unsaturated Systems
5. Aromatic Compounds
6. Reactions of Aromatics
7. Aldehydes and Ketones I
8. Aldehydes and Ketones II
9. Carboxylic Acids
10. B-Dicarbonyl Comp
11. Amines

#### **D. LEARNING OUTCOMES (General)**

1. will be able to show on the American Chemical Society standardized exam your ability to meet the following learning outcomes:
2. Explain and to predict the effects of substituents on the reactivity and regiochemistry of electrophilic aromatic substitution reactions.
3. Know the structures and chemical properties of carboxylic acid derivatives; be able to write the mechanisms for nucleophilic substitution and hydrolysis reactions of such compounds, and to predict the products of such reactions.
4. Write mechanisms for nucleophilic addition reactions and for addition-elimination reactions of aldehydes and ketones, and be able to predict the products of such reactions.
5. Understand the reason for and the consequences of the acidity of protons alpha to carbonyl groups, be able to write mechanisms for the reactions of enolate anions, and predict the products of such reactions.
6. Write the mechanism for radical reactions of alkanes, and to predict the products of such reactions.
7. Identify aromatic and antiaromatic compounds and appreciate the chemical consequences of aromaticity; be able to write the mechanisms for and predict the products of electrophilic aromatic substitution reactions.

#### **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

#### **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

#### **G. SPECIAL INFORMATION**

None noted