ROCHESTER COMMUNITY AND TECHNICAL COLLEGE COMMON COURSE OUTLINE

Course discipline/number/title: CHEM 2100: Survey of Organic Chemistry

A. CATALOG DESCRIPTION
1. Credits: 4
2. Hours/Week: 4
3. Prerequisites (Course discipline/number): CHEM 1117 or CHEM 1128
4. Other requirements: None
5. MnTC Goals (if any): NA

B. COURSE DESCRIPTION: This course is a survey of organic compounds. Students are presented an overview of structures, bonding, nomenclature, and reactivity of the major functional groups. The study of reactions will be focused on the mechanisms to explain concepts such as selectivity.

C. DATE LAST REVISED (Month, year): February, 2024

D. OUTLINE OF MAJOR CONTENT AREAS:
1. Structure and Bonding in Organic Chemistry
   a) Formal charge
   b) Structural formulas
   c) Isomers and Isomerism
   d) Hybridization
   e) Resonance

2. Nomenclature and Physical Properties
   a) Major functional groups
   b) Acid Base Properties
   c) Intermolecular forces
   d) Chirality and stereocenters
   e) R, S and E, Z stereochemistry

3. Reactions of Organic Molecules
   a) Electrophilic addition
   b) Nucleophilic substitution
   c) Nucleophilic addition
   d) Elimination
   e) Proton transfer
   f) Alcohols
   g) Carboxylic acids and their derivatives

4. Reaction Considerations
   a) Competition between mechanisms
   b) Stereochemistry
   c) Regiochemistry
   d) Synthesis

E. LEARNING OUTCOMES (GENERAL): The student will be able to:
1. Recognize and name organic functional groups.
2. Solve simple synthesis problems.
3. Illustrate chemistry in three-dimensional space including stereochemistry and optical activity.
4. Describe and draw common reaction mechanisms.

F. LEARNING OUTCOMES (MNTC): NA

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:
1. Homework/discussion
2. Quizzes

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to: Continued. . .
3. Exams

H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s): Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

I. SPECIAL INFORMATION (if any): None