MONROE COUNTY COMMUNITY COLLEGE

Course Outcome Summary

Standard Course

CHEM 252 Organic Chemistry II

Course Information

Division	**Science/Mathematics**
Contact Hours	**90**
Lecture Hours	**45**
Lab Hours	**45**
Total Credits	**4**

Prerequisites CHEM 251

Course Description

A continuation of Chemistry 251 with consideration of ketones, aldehydes, carboxylic acids and derivatives, polyenes, aromatics, amines, carbohydrates and amino acids. Laboratory develops basic organic chemistry techniques and skills as well as instrumental methods, including chromatography and spectroscopy. The course includes three hours of lecture and three hours of laboratory each week.

CHEM 252 Course Outcomes

This course will enable the student to understand how profoundly scientific and technological developments affect society and environment. The fully successful student will also realize the following specific learning outcomes:

1. Identify and predict reagents and products for the synthesis and reactions of alkanes, alkenes, alcohols, aldehydes, ketones, carboxylic acids and derivatives, aromatic compounds and amines, including regiochemical and stereochemical outcomes as appropriate.
2. Draw detailed mechanisms for representative examples of polyene addition reactions, addition or addition-elimination reactions of carbonyl compounds, radical-based reactions and electrophilic aromatic substitution.
3. Relate acid-base theories to organic reactions and their mechanisms.
4. Name and draw organic compounds in terms of their functional groups under the IUPAC system of nomenclature and other accepted common terminology.
5. Integrate knowledge of reactions to propose new or modified reactions and multi-step syntheses and to relate these reactions to pharmaceutical and medicinal chemistry applications.
6. Distinguish between thermodynamic and kinetic control of a chemical reaction.
7. Construct and interpret energy diagrams for a variety of chemical processes.
8. Utilize infrared (IR), ultraviolet-visible (UV-Vis) and nuclear magnetic resonance (NMR) spectroscopy to assist in the elucidation of molecular structure.
9. Apply a working knowledge of laboratory safety when handling equipment and implementing lab techniques.

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