

CUMBERLAND COUNTY COLLEGE

Course: CH 202 Organic Chemistry II

Credits: 4

Prerequisites: CH 201 or its equivalent

Description: A continuation of Organic Chemistry I with emphasis on the aromatics, aldehydes, ketones, esters, carboxylic acids and amines. The laboratory will include experiments illustrative of the above topics along with continued NMR and IR work.

Learning Outcomes:

At the completion of this course, students will be able to:

- With respect to the classroom topical outline below, name organic compounds, work with structural formulas, use reaction mechanisms, plan the synthesis of organic target molecules, use the theory and practice of IR and NMR spectroscopies.
- With respect to the laboratory topical outline below, plan and execute laboratory experiments in a safe, efficient and productive manner.
- Prepare samples for NMR and IR analysis.
- Interpret IR and NMR spectra.

Topical Outline:

Classroom

- Solvent effects
- Alkenes
- Dienes
- Alkynes
- Carbocyclic compounds
- Aromatics and aromaticity
- Aldehydes and ketones
- Carboxylic acids and their derivatives
- Amines

Laboratory

- Esterification of an unknown alcohol
- Preparation of n-butyl magnesium bromide
- Preparation of an alcohol from n-butyl magnesium bromide
- Synthesis of cinnamic acids from unknown benzaldehydes
- NMR and IR spectroscopy – team competition
- Identification of unknown aldehydes and ketones
- A Diels-Alder reaction
- Preparation of p-tert-butylphenol
- A crossed Aldol condensation – preparation of dibenzal ketones

Text:

Morrison, R. T., Boyd, R. N., & Morrison, R. T. (2014). *Organic Chemistry*, 9th ed. Englewood Cliffs, NJ: Prentice Hall.

Morrison, R. T., Boyd, R. N., & Morrison, R. T. (2014). *Organic Chemistry: Student Solution Manual*, 9th ed. Englewood Cliffs, NJ: Prentice Hall.

CCC Custom Chemistry 202 Lab Manual available at college bookstore

Student Assessment:

By means of written exams, lab reports and class/lab participation.

Academic Integrity:

Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation.

Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense. As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

Tutoring & Project Assist:

If you are having difficulty with work in this class tutoring is available through the Center for Academic & Student Success. If you think that you might have a learning disability, contact Project Assist at 856.691.8600 x 1282 for information on assistance that can be provided to eligible students.

Before Withdrawing From This Course:

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) BEFORE withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA which can limit or eliminate future financial aid in addition to causing academic suspension.