

METROPOLITAN STATE COLLEGE of DENVER  
Office of Academic Affairs

**REGULAR COURSE SYLLABUS**

School of: Letters, Arts & Sciences

Department: Chemistry

CIP Code: 40.0504

Prefix & Course Number: CHE 3110

Crosslisted With\*: \_\_\_\_\_

Course Title: Organic Chemistry II

Check All That Apply: Required for Major:  Required for Minor:  Specified Elective: \_\_\_\_\_

Required for Concentration:  Elective: \_\_\_\_\_ Service Course: \_\_\_\_\_

Credit Hours: 3 (3+0)

Total Contact Hours per semester (assuming 15-16 week semester):

Lecture 45 Lab \_\_\_\_\_ Internship \_\_\_\_\_ Practicum \_\_\_\_\_ Other (please specify type and hours): \_\_\_\_\_

Schedule Type(s): L Grading Mode(s): L

Variable Topics Courses (list restrictions, including the maximum number of hours that can be earned\*\*):

\_\_\_\_\_  
\*\* NOTE: This information must be included in the course description.

Restrictions (Variable Topics Course): None

Prerequisite(s): CHE 3100

Corequisite(s): \_\_\_\_\_

Prerequisite(s) or Corequisite(s): \_\_\_\_\_

Banner Enforced:

Prerequisite(s):

Corequisite(s):

Prerequisite(s) or Corequisite(s):

**Catalog Course Description:**

This course is a continuation of CHE 3100 and includes a study of the nomenclature, structure, physical/chemical/spectroscopic properties, synthesis, and reactions of the major families of organic compounds.

APPROVED:

Charles A. Tindall

Department Chair OR Program Director

Hal Sandy

Dean OR Associate Dean

Linda S. Curran

Associate VP, Academic Affairs

11/7/05

Date

11/18/05

Date

2/6/06

Date

Prefix and Course Number: CHE 3110

**Required Reading and Other Materials will be equivalent to:**  
Organic Chemistry, McMurry, Brooks/Cole, 6th Edition, 2004.

**Specific, Measurable Student Behavioral Learning Objectives:**

Upon completion of this course the student should be able to:

1. Write chemical equations for the preparation and reactions of alcohols, ethers, epoxides, carboxylic acids and their derivatives, aldehydes, ketones, amines, and phenols.
2. List significant reactions possible for carbanions and utilize them in condensation reactions.
3. Apply the reactions of monofunctional group compounds to multifunctional group compounds.
4. Use blocking and de-blocking groups for organic synthesis.
5. Write and use various organic oxidation and reduction reactions.

**Detailed Outline of Course Content (Major Topics and Subtopics) or Outline of Field Experience/Internship (experience, responsibilities and supervision) (format: I, A, 1, a, etc.):**

- A. Alcohols, Preparation
  - a. industrial preparation
  - b. laboratory preparation
- B. Alcohols, Reactions
  - a. C-O bond cleavage
  - b. O-H bond cleavage
  - c. synthesis
- C. Ethers and Epoxides
  - a. ethers
  - b. epoxides
- D. Carboxylic Acids
  - a. preparation
  - b. reaction
- E. Aldehydes and Ketones
  - a. preparation
  - b. reactions
- F. Derivatives of Carboxylic Acids
  - a. acid chlorides
  - b. acid anhydrides
  - c. amides
  - d. esters
- G. Carbanion Chemistry
  - a. reactions
  - b. synthesis
- H. Amines
  - a. preparation
  - b. reactions
- I. Phenols
  - a. preparation
  - b. reactions

**Evaluation of Student Performance (format: 1, a, i, ii, etc.):**

Students will be given periodic fifty minute examinations. These examinations will be supplemented by short quizzes. A final exam one hundred minutes long will terminate the course. The final grade determination will be based on the student's performance on the examinations, quizzes, final exam, and the instructor's evaluation of homework assignments.