Organic Chemistry for Science Majors Sequence A

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| **C-ID Number** | CHEM 160 S |
| **Discipline** | Chemistry |
| **Date Approved** | June 01, 2011 |

## General Course Description

This is a one-year course in organic chemistry intended for majors in the natural sciences (chemistry, biochemistry, biology, physics, and pre-medicine).

## Minimum Units

8 (at least 4, incl at least 1 lab for each sem)

## Any rationale or comments

## Advisories/Recommendations

CHEM 120S

## Course Content

The complete one-year course will present fundamental principles and concepts of organic chemistry including, but not limited to structure, bonding, nomenclature, stereochemistry and functional groups with emphasis on reactions and reaction mechanisms of alkanes, alkenes, alkynes, alkyl halides, aromatic compounds, alcohols, phenols, ethers, carbonyl compounds, carboxylic acids, amines and their derivatives. Special emphasis is placed on multi-step synthesis, reaction mechanisms, stereochemistry of reactions and structure elucidation using modern instrumental methods. In addition an introduction to bio-molecules is presented.

## Laboratory Activities

The laboratory work includes multistep synthesis and characterization of organic molecules using analytical instrumentation such as FT-IR and GC. Traditional separation and purification techniques are used as distillation, liquid-liquid extraction, and recrystallization.

## Course Objectives

At the conclusion of this course, the student should be able to:
The American Chemical Society (ACS) Organic Chemistry Guide and the Organic Chemistry examinations provide information on topics and indicate an appropriate level of this sequence of courses, including learning goals and objectives. At the conclusion of the course, each student should be able to employ standard laboratory concepts appropriate to the course content.

## Prerequisites

CHEM 110

## Corequisites

None

## Methods of Evaluation

ExaminationsQuizzesHomeworkLab workPortfoliosProjectsWritten papers and/or reports

## Sample Textbooks

Organic Chemistry, McMurry, Cengage
Organic Chemistry, Solomons, Wiley
Organic Chemistry, Wade, Pearsons
Introduction to Organic Laboratory Techniques: A Microscale Approach, Pavia, Cengage.
Microscale Organic Laboratory: with Multistep and Multiscale Syntheses, Mayo, Wiley

## Notes