

JCC OFFICIAL COURSE OUTLINE

Course number, title and credits; total time allocation

Course Letter/Number	<u>CEM 242</u>	Credits	<u>4</u>	Title	<u>Organic Chemistry II</u>		
Lecture/Discussion	<u>4.0</u>	hrs/semester	Lab	<u>4.0</u>	hrs/semester	Clinical	hrs/semester

Catalog Description and Pre- and Co-requisites (Same as taxonomy and catalog)

COURSE DESCRIPTION CEM 242 is a continuation of CEM 241. It is a comprehensive study of the major classes of organic compounds, their structures and reactions. The stereochemical properties and spectra of molecules and the mechanisms of reactions are stressed. The laboratory experiments demonstrate techniques used in organic reactions, synthesis illustrating types of reactions, analysis of major classes of compounds and kinetic studies.

Prerequisite: CEM 241

Knowledge, Skills and Abilities Students Acquire from this Course (Educational Objectives)

Students will develop knowledge, attitudes, and skills in the study of organic chemistry. They will understand how some of the more advanced structural theories of matter explain the physical and chemical properties in organic, and to some extent biological chemistry.

Associate Degree Outcomes Addressed in this Course (These must appear in course syllabus.)

Chemistry 241 supports the following Associates Degree Outcomes:

#4 Students will demonstrate scientific reasoning.

#7 Students will demonstrate critical thinking

Units/topics of Instruction

Reactions of Arenes

Spectroscopy

Organometallic Compounds

Alcohols, Diols, and Thiols

Ethers, Epoxides, and Sulfides

Aldehydes and Ketones

Carboxylic Acids

Carboxylic Acid Derivatives:

Nucleophilic Acyl Substitution

Enols and Enolates

Amines

Phenols

Instructional Techniques and Procedures

Interactive lecture and face-to-face laboratory activities are the instructional techniques of this course.

Instructional Use of Computer or Other Technology

Students will use computer interface instruments in the laboratory and will use a spreadsheet for calculations and graphing applications.

Instructional Materials and Costs to Students

TEXT: Organic Chemistry, 8th Edition, Francis A. Carey

LABORATORY MANUAL: Introduction to Organic Laboratory Techniques, a Microscale Approach, 4th Edition.

CALCULATOR: A Scientific Calculator is Required

PERIODIC TABLE: SARGENT WELCH

Skills and abilities students should bring to the course

Able to read	<input type="checkbox"/> a limited amount of material <input type="checkbox"/> an average amount of material <input checked="" type="checkbox"/> an above average amount of material	Able to compute	<input type="checkbox"/> basic, pre-algebraic problems <input checked="" type="checkbox"/> simple algebraic problems <input type="checkbox"/> higher order mathematical problems
Able to read	<input type="checkbox"/> relatively easy material <input type="checkbox"/> moderately difficult material <input checked="" type="checkbox"/> technical or sophisticated material	Able to write	<input checked="" type="checkbox"/> short compositions <input checked="" type="checkbox"/> medium length compositions <input type="checkbox"/> lengthy compositions
Able to use technology	<input checked="" type="checkbox"/> keyboard skills/familiar with computer <input checked="" type="checkbox"/> computer application <input checked="" type="checkbox"/> web navigation	Other necessary abilities	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

The course is usually scheduledDay: ☐ Fall ☒ Winter ☐ SpringEvening: ☐ Fall ☐ Winter ☐ Spring

Prepared by _____

Date _____

Approved by Dept. _____

Date _____

Approved by Dean _____

Date _____

Approved by Curr. Comm. _____

Date _____

(Last names, please)

Form Revised 12/4/00