

JCC OFFICIAL COURSE OUTLINE

Course number, title and credits; total time allocation

Course Letter/Number	<u>CEM 241</u>	Credits	<u>4</u>	Title	<u>Organic Chemistry I</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 This course is a comprehensive study of the major class of organic compounds, their structures and reactions. The stereochemical properties and spectra of molecules and their 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 142

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

Structure Determines Properties

Alkanes and Cycloalkanes: Introduction to Hydrocarbons

Alkanes and Cycloalkanes: Conformations and cis-trans Isomers

Alcohols and Alkyl Halides

Structure & Preparation of Alkenes: Elimination Reactions

Addition Reactions to Alkenes

Stereochemistry

Nucleophilic Substitution

Alkynes

Conjugation in Alkadienes and Allylic Systems

Arenes and Aromaticity

Reactions of Arenes: Electrophilic and Nucleophilic Aromatic Substitution

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 (\$250.00)

LABORATORY MANUAL: Introduction to Organic Laboratory Techniques, a Microscale Approach, 4rd Edition. (\$191.75)

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 scheduled

Day: Fall Winter Spring

Evening: 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

Summary Form

TAXONOMY (Master Course File)*

**All fields must be completed*

Effective Date: Fall, 2011

CEM DISCIPLINE 241 NUMBER

TITLE: Organic Chemistry I

TITLE ABBREVIATION: Organic Chemistry I
(20 characters)

75 Credit Hours (15 contact hrs = 1 cr hr) I Credit Type
I=Institutional C=Cont Ed

120 Billing Credits (BCH) (15 contact hrs = 1 BCH) _____ Continuing Ed Units

\$57 Course Fee 120 Instructor Load (1 BCH = 15 contact hrs)

N Pass or Fail Course (Y or N) 24 Maximum Seating Capacity

_____ Instructor Permission Required (Y or N)

Number of times course can be taken for credit (most courses are one time – see Registrar for options)
1

Pre-Requisites Required: CEM 142

Co-Requisites Required:

Special Program Requisites:

COURSE DESCRIPTION:

COURSE DESCRIPTION This course is a comprehensive study of the major class of organic compounds, their structures and reactions. The stereochemical properties and spectra of molecules and their 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 142

Signature of Department Chair / Date Signature of Academic Dean/ Date Curriculum Committee Chair / Date

Registrar / Date

ACS Code

Catalog Description for CEM 241

CEM 241 Organic Chemistry I (5 CR)

Comprehensive study of the major classes of organic compounds, their structures and reactions. The stereo-chemical properties and spectra (IR and NMR) of molecules and their mechanisms of reactions are stressed.

The laboratory experiments demonstrate techniques used in organic reactions, syntheses illustrating types of reactions, analysis of major classes of compounds, and kinetic studies. Prerequisite: CEM 142