JCC OFFICIAL COURSE OUTLINE

Course number, title and credits; total time allocation

Course Letter/Number	**CEM 241**	Credits	**4**	Title	**Organic Chemistry I**

Lecture/Discussion	**4.0**	hrs/semester	Lab	**4.0**	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	___	a limited amount of material	Able to compute	___	basic, pre-algebraic problems
	___	an average amount of material		x	simple algebraic problems
	x	an above average amount of material		___	higher order mathematical problems
Able to read	___	relatively easy material	Able to write	x	short compositions
	___	moderately difficult material		x	medium length compositions
	x	technical or sophisticated material		___	lengthy compositions
Able to use technology	x	keyboard skills/familiar with computer	Other necessary abilities	___	
	x	computer application		___	
	x	web navigation		___	

The course is usually scheduled

Day: [x] 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)
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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