Organic Chemistry II

CEM242.01

Winter 2020

Number of Credits: 4

Days Class Meets: M/W/F

Meeting Times: M/W 1-2:50, F 11:30-3:30

Location: JM 231

Instructor: John Ireland, Ph.D.

Office: JM 136A

Contact Phone: NA

Contact Email: irelandjohn@jccmi.edu

Office Hours: See JetNet

Online: See JetNet

Course Description

Comprehensive study of the major classes of organic compounds, their structures and reactions. The stereochemical 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(s)

CEM241

Course Goals

This is a second-year undergraduate chemistry course for STEM and Preprofessional students (pre-medicine for example). The course is designed to be continued in a two-semester sequence with CEM242 (Organic Chemistry II) and a final cumulative exam designed by the American Chemical Society (ACS) is used at the end of the second semester. The course involves advanced reading skills and active critical use of materials used in the prerequisite Chemistry course sequence (CEM141/142). A significant amount of out of class problem practice is required to be successful. The course involves a wet lab component using chemicals with some chemical risks inherent in their use and use of Personal Protection Equipment (PPE) is required.

Course Objectives

The course goals and objectives incorporate specific General Education Outcomes (GEOs) established by the JC Board of Trustees, administration, and faculty. These goals are in concert with four-year colleges and universities and reflect input from the professional communities we serve. GEOs guarantee students achieve goals necessary for graduation credit, transferability, and professional skills needed in

many certification programs. The GEOs and course objectives addressed in this class include the following: GEO4 Scientific Reasoning

Textbook

- Organic Chemistry, A Mechanistic Approach by Tadashi Okuyama and Howard Maskill, Oxford University Press, 2014, ISBN: 978-0-19-969327-6
- Electronic Versions available from Amazon

Text Book Zero! *This text is available in a digital format. Please see the links posted on our class Jet Net site. This text is available to rent or purchase in digital format through the JC Bookstore.*

Extras

Chemical Safety Goggles and a Chemical Safety Apron are required for the lab. In addition, closed toed shoes must be worn in the laboratory.

Grading Procedure

This is a 200-level course that transfers as the chemistry majors-level organic chemistry course at our partner institutions and as such the grading for this course is rigorous and I typically find students to be very competitive. The grading is less granular than introductory level courses, but in line with partner institutions.

Lecture Portion

- Best three (4) of four (5) unit exams 400 PTS
- Final Exam (Cumulative) 60 PTS

Laboratory Portion

- Best twelve (12) of thirteen (13) lab reports 120 PTS

All exams will be curved to the lower (non-negative) value of either the curve needed to take the class median to 74% or the curve needed to take the top score to 100% (excluding outliers >2 SD away from the median)

Failure

Failure to pass either the lab or lecture component of the class will result in an overall failure of the class due to significant failure in content. Failure to take two (2) unit exams or failure to turn in three (3) lab reports will result in an automatic drop, or failure of the class (Grade of 0.0), if the class is after the last HQV date.

Grading Scale

Grade	Percentage	Grade	Percentage
4.0	100 – 93.0%	1.5	65.0 – 69.9%
3.5	85.0 – 92.9%	1.0	60.0 – 64.9%
3.0	80.0 – 84.9%	0.5	55.0 – 59.9%
2.5	75.0 – 79.9%	0.0	0.0 – 54.9%
2.0	70.0 – 74.9%		

Academic Honesty Policy

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

Plagiarism is defined as the failure to give credit for the use of material from outside sources. Plagiarism includes but is not limited to:

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

Cheating is defined as obtaining answers/material from an outside source without authorization. Cheating includes, but is not limited to:

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

Course Management

Under extraordinary circumstances, a student can request as Incomplete, to be completed in a timely fashion after the end of the normal term. Incompletes are governed by the JC Policy on Incomplete grades (see JC Policy page on the JC website) and are only given if a small percentage of work is left

incomplete, the student is currently passing the class when they request the incomplete, and there is a reasonable expectation the work can be completed within the next term.

Students that have medical issues during the term should discuss the possibility of a medical withdrawal from the course with the Admissions Office.

Makeup Policy

There are no make-up laboratories granted in this class due to the nature of work done, but the lowest lab grade is dropped. Exams are generally not available for make-up, but under extraordinary circumstances, alternative times prior to the original time may be arranged at the discretion of the instructor. Note, prior planned travel (i.e. leaving for a vacation early) is NOT considered a legitimate reason for alternative times.

Help

Available learning services or opportunities for students seeking help with their course work. May include information about tutors, learning centers, reserved library materials, open labs, counseling services.

It is important to contact a Center for Student Success professional prior to the start of the semester in order to receive accommodations in a timely manner. While we will make every effort to coordinate accommodations in a timely manner, failure to self-identify prior to the start of the semester may delay notification to instructors and timeliness of acquiring accommodations. Accommodations do not automatically carry over to the next semester.

https://www.jccmi.edu/center-for-student-success/accommodations-for-students-with-disabilities/

Student Responsibilities

Regular attendance and participation is required for successful completion. This class will also require considerable out of classroom study, reading, and practice. Organic Chemistry is a discipline that requires the regular exercise of new material to facilitate integration and synthesis. There are no extra-credit assignments.

Attendance Policy

Attendance and participation are required to succeed in the course. Jackson College requires that attendance be recorded for each class and reported on Jetstream.

Reasons to be Dropped from the Course

There are various reasons why you will be dropped from the class.

- You fail to show for the first week of class and do not contact me.
- You fail to attend for five class sessions with explanation offered to me.
- You fail to attend three laboratories
- You fail to take two exams.

Important Dates: Winter 2020

DATE	EVENT
JAN. 13, 2020	DAY AND EVENING CLASSES BEGIN
JAN. 13 – MAY 3, 2020	SEMESTER DATES
JAN. 31, 2020	IN-SERVICE DAY. NO CLASSES
MAR. 9-15, 2020	MID-SEMESTER BREAK, NO CLASSES
MAY 2, 2020	COMMENCEMENT
MAY 3, 2020	END OF WINTER SEMESTER
MAY 5, 2020	GRADES DUE

Caveat

All policies above are subject to change, with notice, by the instructor for reasons the instructor deems necessary (pedagogic issues, school closings, illness of the instructor, etc.).

Calendar

**all dates below are subject to change by the instructor with prior notice, at least one week in the case of major assessments (such as exams).*

WEEK #	DATE	TOPIC	CHAP.	ASSESSMENTS AND LABS
1	9/3/18	Review	1	No Lab
2	9/10/18	Structure and Shape	2	Lab 1
3	9/17/18	No Class (9/17)	-	Exam 1 (9/19), Lab 2
4	9/24/18	Functional Groups	3	Lab 3
5	10/1/18	Confirmation and Strain	4	Lab 4
6	10/8/18	Conjugation	5	Exam 2 (10/8), Lab 5
7	10/15/18	Aromaticity/Acids	5/6	Lab 6
8	10/22/18	Acids and Base	6	Lab 7
9	10/29/18	Reaction Types	7	Exam 3 (10/29), Lab 8
10	11/5/18	Mechanism/Nucleophile	7/8	Lab 9
11	11/12/18	Aldehydes and Ketones	8	Lab 10
12	11/19/18	Carboxylic Acids	9	Exam 4 (11/19), Lab 11
13	11/26/18	Acid Derivatives/Hydrides No Class (11/28)	9/10	No Lab (Thanksgiving)
14	12/3/18	Organometallic Reagents	10	Lab 12
15	12/10/18	Stereochemistry (intro)	11	Exam 5 (12/10), Finals Review
16	12/17/18	Final Exam		