

Chemistry 204 (Organic Chemistry) Syllabus and Schedule

Basic Course Information

Semester:	Fall 2022	Instructor Name:	Dr. Alto Benedicto
Course Title & #:	Chemistry 204	Email:	alto.benedicto@imperial.edu
CRN #:	10519	Units:	5
Classroom:	Zoom online	Office #:	2779 online
Class Dates:	Aug 15 to Dec 10, 2022	Office Hours:	MTWTh 6:30 am – 7:30 am Zoom
Class Days:	online	Office Phone #:	(760) 355-5751
Class Times:	online	Emergency Contact:	Dept. Secretary (760) 355-6155

Course Description

This course is a study of various reaction mechanisms and properties of hydrocarbons, alkyl halides, alcohols, thiols, and ethers. Stereochemical properties of compounds are investigated and related to structure and observed reactions. Instrumental methods of analysis such as IR, UV-VIS, NMR, and mass spectrometry are discussed. This course is intended for students majoring in chemistry, biology, and pre-medical sciences. (CSU, UC). Prerequisite: Chem 200

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Solve chemical problems using modern atomic theory (ISLO 2, ISLO 4)
2. Perform chemical experiments in a scientific manner, using proper techniques, analysis, and safety equipment. (ISLO 2, ISLO3, ISLO4)

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. demonstrate knowledge covalent bonding and molecular geometry.
2. describe structure and reactions of alkanes and cycloalkanes.
3. demonstrate knowledge organic acids and bases.
4. demonstrate knowledge of stereochemistry and its effects of molecular properties.
5. demonstrate knowledge of the structure and reactions of alkenes.
6. demonstrate knowledge of alkyl halides and radical reactions.
7. demonstrate knowledge of nucleophilic substitution and beta elimination.
8. demonstrate knowledge of the structure and reactions of alcohols and thiols.
9. demonstrate knowledge of the structure and reactions of alkynes.
10. demonstrate knowledge of the structure and reactions of ethers, sulfides, and epoxides.
11. identify organic molecules using various instrumental methods such as mass spectrometry and nuclear magnetic resonance spectrometry (NMR) as well as infrared (IR) and UV-Visible spectroscopy.

Textbooks & Other Resources or Links

REQUIRED MATERIALS:

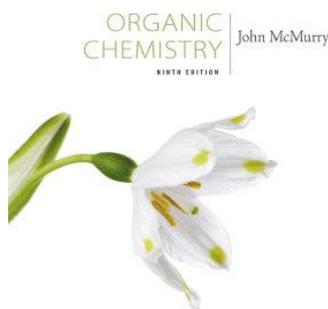


Figure 1: Organic Chemistry book by John McMurry, 9th edition

1. *Organic Chemistry*, by John McMurry. Cengage Learning, 9th Ed, ISBN: 9781337158459 (see #2 on how to purchase)
2. Purchase OWL2 <https://www.cengage.com/dashboard/#/course-confirmation/E-KY656TYZ6WS6C/initial-course-confirmation> . This purchase should include the following: OWL2 online HW, LabSkills prelab, digital copy of *Organic Chemistry*, by John McMurry of the book. You may also purchase all these through the IVC bookstore.
3. Select Experiments in *A Small Scale Approach to Organic Laboratory Techniques*, by Donald Pavia, G. Lampman et al. (Cengage Learning, 3rd edition or latest) (See last page of Syllabus for list of experiments)
4. *Chemistry 204 Lecture and Lab Notes**, by Alto Benedicto.
5. **Molecular Models* (HGS Maruzen Organic Chem Kit #1003A \$28+tax)**
6. ~~Research Lab Notebook* (9 x 11, Hardbound, numbered pages, non-spiral permanent bound, graphed or lined pages)~~
7. ~~Chemistry Laboratory Coat* (white, long sleeve, knee length)~~
8. ~~Eight (8) Scantron Sheets Form No. 889-E (submitted on the second day of class) and pencil~~
9. ~~safety goggles* (\$5; needed on second class day), non-programmable scientific calculator (\$15 – \$25), close toed shoes~~

* Available at **IVC Chemistry/STEM Club**.

RECOMMENDED MATERIALS:

1. *Study Guide with Student Solutions Manual for McMurry's Organic Chemistry*, 9th Edition. (Amazon Rent: \$18.34)
2. *Odyssey Molecular Explorer (Student Edition)*, by Wavefunction, Inc. (Molecular Modeling software)

Course Requirements and Instructional Methods

1. Attendance for the entire class period is mandatory for Chem 204 Lab Classes. A Lab roll call will be initiated by the instructor within the first 5 minutes of Lab class. ~~If you are sent out during class (e.g., failure to obey safety rules such as wearing Safety Goggles, etc.), you will be marked absent.~~

- There are **no make-up Exams or Lab Classes**. A score of **zero (0)** will be recorded unless the absence is attributed to representation of official college functions. It is the student's responsibility to show proof of such function **prior** to the date of the absence.
- During Exam, the only things allowed are: **pencil, nonprogrammable calculator, and I.D.** You will be supplied with a Scantron. You may use the Exam Questionnaire as scratch paper. The Exam Questionnaire, and Scantron are to be submitted at the end of the Exam. **Possession of electronic devices (phones, ipod, programmable calculator, etc.) during Exam is considered cheating** and will be dealt with according to IVC policy.
- Each student is REQUIRED to **buy the Chem 204 textbook** and to **sign up for online HW (OWLv2 and LabSkills) no later than the second week of class**. Personal laptop is highly encouraged for online HW during Lab Class.
- Due dates for Online Chapter HWs are found in the Class Schedule of Topics (see last page).**
- Due dates for Quizzes are found in the Class Schedule of Topics (see last page).**
- Due dates for Pre-lab Reading HW are found in the Class Schedule of Topics (see last page).**
- ~~Prior to start of Lab Class, students are to fill out the Lab Notebook with INK with the following **Prelab Information: Date, Descriptive Title, Chemical Equation, Side Reactions, Table of Physical Constants, Calculations, Illustration of Apparatus Setup, Outline of Procedure.** Submit the notebook **within the first two minutes of class** for full pre-lab credit, therefore, don't be late!!! At times, Prelab quiz on said experiment will be given prior to start of the experiment.~~
- ~~Before leaving the Lab Class, make sure the **instructor has signed** your Lab Notebook. Cross out mistakes with a single strike through line. Use appropriate verb tense. Cross out large blank areas in the notebook. Sign and date your notebook. **Notebook (containing Graphs, Spectroscopic Data, % Yield, etc. as need be) with answer to Post-Lab Questions are to be submitted within the first two minutes of the next time Lab meeting.**~~
- Products obtained from Labs must be submitted in a vial with the following information: **Your Name, Name of Compound, melting point and other relevant data, purity, yield in grams**. Points will be subtracted for missing information.
- Lab clean-ups are done 15 minutes before the end of lab. A **wet towel** should be used to wipe the lab bench in order to gain full points. Make sure sink and work area is clean. Points will be deducted to the entire class if the common work areas (fume hood, analytical balances) are dirty.
- There are no bonus work available. Kindly seek assistance immediately to clarify any questions.
- Keep up with the chapter readings. Seek help immediately on unclear concepts.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

Course Grading Based on Course Objectives

Assessment Type	How many	Total Points
Lecture Exams	5 @ 60	300 pts
Lecture Final Exam	1 @ 150	150 pts
Quizzes	3 @ 12 12 @ 8 1 @ 4	136 pts

Assessment Type	How many	Total Points
Online Homework	3 @ 12 8 @ 8 5 @ 4	120 pts
Pre-lab HW	6 @ 10	60 pts
Labster Simulations	9 @ 10 1 @ 4	90 pts 4 pts
Lab Midterm Exam	1 @ 50	50 pts
Lab Final Exam	1 @ 100	100 pts
Canvas Discussion	1 @ 2; 4 @ 4	18 pts

OVERALL POINTS = 1,028 pts

Grading Scale Percentage	Letter Grade
85.00% to 100 %	A
75.00% to 84.99%	B
60.00% to 74.99%	C
50.00% to 59.99%	D

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. **A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped.** For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.
- **Absences during Lab Classes, or leaving during Lab Classes** automatically result in a **grade of zero (0) for the Lab Experiment**

Online Netiquette

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed by the instructor.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the [General Catalog](#).
- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

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Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the [General Catalog](#) for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Additional Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

- [Canvas Support Site](#). The Canvas Support Site provides a variety of support channels available to students 24 hours per day.
- [Learning Services](#). There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your [Campus Map](#) for the [Math Lab](#); [Reading, Writing & Language Labs](#); and the [Study Skills Center](#).
- [Library Services](#). There is more to our library than just books. You have access to tutors in the [Study Skills Center](#), study rooms for small groups, and online access to a wealth of resources.

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the [Disabled Student Programs and Services](#) (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid StudentHealth Fee.

- [Student Health Center](#). A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provides basic health services for students, such as first aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6128 in Room 1536 for more information.
- [Mental Health Counseling Services](#). Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC [Mental Health Counseling Services](#) at 760-355-6196 in Room 2109 for more information.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC [General Catalog](#).

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC [Library Department](#) provides numerous [Information Literacy Tutorials](#) to assist students in this endeavor.

TUTORING RESOURCES

- 1) Our Class Tutor is _____ (Zoom ID 930 5535 9930—ask for _____). Tutoring Times are: _____
- 2) My Tutoring Hours: MTWTh 6:30 am – 7:30 am. (Zoom link in Canvas Announcement)
- 3) **Online Tutoring** in left margin of Canvas seven days a week allows you to access live tutoring from State of California

Anticipated Class Schedule/Calendar. *Tentative, subject to change without prior notice*****

WK	DATE	CHAPTER READINGS	OWL Online due dates (Quiz due Tu 11:55 pm) (HW due Sat 11:55 pm)	Due date for ANY Labster is Dec 6 (T) 11:55 pm Lec Exam Thurs 6 pm – 8 pm (Pre-Lab due Thurs 11:55 pm)
1	Aug 15 – 20	Orientation 6:30 am Aug 16 (T) via Zoom (will be emailed to you) Ch 1: Hybridization, Skeletal Structures	(Zoom Meet ID will be emailed to Registered & WaitListed on Aug 15) HW1	IVC Safety Quiz (Webstar; no points) Labster 0: Chem Safety Canvas Discussion #1 due
2	Aug 22 – 27	Ch 2: Resonance, Acid Strengths	Quiz 1; HW2	Pre-lab A; Labster 1: Org Chem Intro
3	Aug 29 – Sep 3	Ch 3: Alkane Nomenclature	Quiz 2; HW3	Pre-lab B; Labster 2: Org Chem Reactivity
4	Sep 5 – 10	Ch 4: Alkane/Cycloalkane Conformations	Quiz 3; HW4	Lec Exam 1 (covers Ch 1,2,3)
5	Sep 12 – 17	Ch 5: Stereoisomers, Chirality	Quiz 4; HW5	Pre-lab C; Canvas Discussion #2 due
6	Sep 19 – 24	Ch 6: General Rxn Mechanisms and Symbols	Quiz 5; HW6	Pre-lab D; Labster 3: Electrophilic Add'n of Alkenes/Alkynes
7	Sep 26 – Oct 1	Ch 7: Alkene Names & Stability	Quiz 6; HW7	Lec Exam 2 (covers Ch 4, 5, 6)
8	Oct 3 – Oct 8	Ch 8: Alkene Reactions and Synthesis	Quiz 7; HW8	Pre-lab E; Labster 4: HPLC (Reverse Phase LC)
9	Oct 10 – Oct 15	Ch 9: Alkyne Rxn and Synthesis	Quiz 8; HW9	Pre-lab F; Labster 5: Nucl. Subst. Rxn: Alkyl Halide (S_N2 , S_N1)
10	Oct 17 – Oct 22	Ch 10: Alkyl Halides	Quiz 9; HW10	Lec 3 (covers Ch 7,8,9) Canvas Discussion #3 due
11	Oct 24 – Oct 29	Ch 11: S_N2 , S_N1 , E2, E1 reactions	Quiz 10; HW11	Lab Midterm Exam (Thurs 6pm-7:20p) Labster 6: Elimination Rxns: Polymers via ROH (E2, E1)
12	Oct 31 – Nov 5	Ch 12: IR Spectroscopy (omit Mass Spectrometry); Ch 13: NMR Spectroscopy	Quiz 11; HW13	Labster 7: Substitution vs Elimination (S_N2 , S_N1 , E2, E1)
13	Nov 7 – Nov 12	Ch 14 Conjugated Dienes, and UV Spectroscopy	Quiz 13; HW14	Lec Exam 4 (covers Ch 10, 11, 12) Canvas Discussion #4 due
14	Nov 14 – Nov 19	Ch 17: Alcohols and Phenols	Quiz 14; HW17	Labster 8: NMR (2D NMR)
15	Nov 21 – Nov 26	<i>Thanksgiving Break</i>	Quiz 12; HW12	Labster 9: Nucleophilic Addition (with Grignard)
16	Nov 28 – Dec 3	Ch 18: Ethers and Epoxides	Quiz 17; HW 18	Lec Exam 5 (covers Ch 13, 14, 17) Canvas Discussion #5 due
17	Dec 5 – Dec 8	Lab Final Exam on Mon 6:00 pm -8:00 pm	Quiz 18	LEC FINAL EXAM on Wed 6:00 pm-8:30 pm

Quizzes (designated as Quiz) are due every Tuesday at 11:55 pm

Pre-lab Reading HW (designated as Pre-lab) are due every Thursday at 11:55 pm

Online Chapter HW (designated as HW) are due every Saturday at 11:55 pm