

Chemistry 204 (Organic Chemistry) Syllabus and Schedule

Basic Course Information

Semester:	Fall 2016	Instructor Name:	Dr. Alto Benedicto
Course Title & #:	Chemistry 204	Email:	alto.benedicto@imperial.edu
CRN #:	11109	Units:	5
Classroom:	2734 (Lec); 2715 (Lab)	Office #:	2779
Class Dates:	Aug 15 to Dec 9, 2016	Office Hours:	MTWR 6:10 – 6:25 pm (Rm 2734) MTWR 9:40 – 10:10 pm (Rm 2715) S 9:00 – 10:00 am (Rm 2715) or special appointment
Class Days:	Monday & Wednesday	Office Phone #:	(760)355-5751
Class Times:	4:45 pm - 6:10 pm (Lec) 6:30 pm – 9:40 pm (Lab)	Emergency Contact:	Department 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. Formulate reaction mechanisms for the synthesis and reactions of alkanes, alkenes, alkynes, alkyl halides, aromatic compounds, alcohols, phenols, and ethers. (ISLO 2, ISLO 4)
2. Evaluate effects of functional groups and stereochemistry on physical properties of organic molecules. (ISLO 2, ISLO 4)
3. Name alkanes, alkenes, alkynes, alkyl halides, aromatic compounds, alcohols, phenols, and ethers according to IUPAC rules. (ISLO 2, ISLO 4)
4. Conduct multistep synthesis and characterization of organic molecules using analytical instrumentation such as FT-IR, GC, and NMR, and traditional separation and purification techniques such as distillation, liquid-liquid extraction, recrystallization, and chromatography. (ISLO 2, ISLO 4)

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:

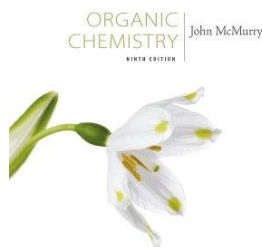


Figure 1: Organic Chemistry book by John McMurry, 9th edition

1. *Organic Chemistry*, by John McMurry. Cengage Learning, 9th Ed, ISBN: 9781337158459 (see #2 on how to purchase)
2. Purchase OWL2 via <https://www.cengagebrain.com/shop/ISBN/9781305779822>, then register with OWL2 via <http://login.cengagebrain.com>. This purchase includes the following: *OWL2 online HW, LabSkills prelab, digital copy of Organic Chemistry*, by John McMurry, and the loose-leaf version 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*; or *General Chem Kit #1001A \$17+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 comply with safety rules such as wearing Safety Goggles, etc.), you will be marked absent for that Lab, and will garner zero points for the experiment.
2. 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.
3. 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.
4. 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.
5. **Due dates for Online Chapter HWs are found in the Class Schedule of Topics (see last page).**
6. **Due dates for Quizzes are found in the Class Schedule of Topics (see last page).**
7. **Due dates for Pre-lab Reading HW are found in the Class Schedule of Topics (see last page).**
8. 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.
9. 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.**
10. 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.
11. 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.
12. There are no bonus work available. Kindly seek assistance immediately to clarify any questions.
13. 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	6 @ 50	300 pts
Lecture Final Exam	1 @ 150	150 pts
Quizzes	16 @ 10	160 pts
Online Homework	16 @ 10	160 pts
Pre-lab HW	10 @ 10	100 pts
Lab Experiments and Typewritten Report	10 @ 10 1 @ 10	100 pts 10 pts
Lab Final Exam	1 @ 50	50 pts

OVERALL POINTS = 1,030 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.**

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.

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 (!!!)].

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 importance 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.

Anticipated Class Schedule/Calendar

*****Class Schedule is tentative, subject to change without prior notice*****

Chem Club members are offering free tutoring services. They get paid nothing to tutor.

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

Imperial Valley College Course Syllabus – Chemistry 204 (Organic Chemistry I)

WK	DATE	CHAPTER READINGS	LABORATORY	Due dates
1	Aug 15 – Aug 20	Ch 1: Hybridization, Skeletal Structures	Safety Video & Quiz; How to Keep A Lab Notebook	Pre-lab A; HW1
2	Aug 22 – Aug 27	Ch 2: Resonance, Acid Strengths	Lab 1: Synthesis of Aspirin; m.p. of aspirin	Quiz 1; Pre-lab B; HW2
3	Aug 29 – Sep 3	Ch 3: Alkane Nomenclature	Lab 2: Separation of a Mixture by Simple & Fractional Distillation	Quiz 2; Pre-lab C; HW3
4	Sep 5 – Sep 10	Ch 4: Alkane/Cycloalkane Conformations	Lab 3: Molecular Modeling using Physical Models Lecture Exam 1 (covers Ch 1, 2, 3)	Quiz 3; Pre-lab D; HW4
5	Sep 12 – Sep 17	Ch 5: Stereoisomers, Chirality	Lab 4: Synthesis of Banana Oil; IR Banana Oil	Quiz 4; Pre-lab E; HW5
6	Sep 19 – Sep 24	Ch 6: General Rxn Mechanisms and Symbols	Ch 12: Infrared Spectroscopy (omit Mass Spectrometry) Lecture Exam 2 (covers Ch 4, 5)	Quiz 5; Pre-lab F; HW6
7	Sep 26 – Oct 1	Ch 7: Alkene Names and Stability	Lab 5: Isolation of Caffeine from Tea Leaves	Quiz 6; Pre-lab G; HW7
8	Oct 3 – Oct 8	Ch 8: Alkene Reactions and Synthesis	Lab A: Molecular Modeling using Computers Lecture Exam 3 (covers Ch 6, 7)	Quiz 7; Pre-lab H; HW8
9	Oct 7 – Oct 15	Ch 9: Alkyne Rxn and Synthesis	Lab 6: Isolation of Leaf Pigments through Chromatography	Quiz 8; Pre-lab I; HW9
10	Oct 17 – Oct 22	Ch 10: Alkyl Halides	Lab 7: Dehydration of 2- and 4-Methylcyclohexanol; GC chromatogram	Quiz 9; Pre-lab J; HW10
11	Oct 24 – Oct 29	Ch 11: S _N 2, S _N 1, E2, E1 reactions	Lab B: Exercises in Nucleophilic Substitutions and Eliminations Lecture Exam 4 (covers Ch 8, 9, 10)	Quiz 10; Pre-lab K; HW11
12	Oct 31 – Nov 5	Ch 13: NMR Spectroscopy	Lab 8: Isolation of Eugenol from Cloves	Quiz 11; Pre-lab L; HW13
13	Nov 7 – Nov 12	Ch 14 Conjugated Dienes, and UV Spectroscopy	Lab 9: IR and NMR problems Lecture Exam 5 (covers Ch 11, 12, 13)	Quiz 13; HW14
14	Nov 14 – Nov 19	Ch 17: Alcohols and Phenols	Lab 10: Identification of Unknowns	Quiz 14; HW17
15	Nov 21-26	<i>Thanksgiving Break</i>		Quiz 12; HW12
16	Nov 28 – Dec 3	Ch 18: Ethers and Epoxides	Lecture Exam 6 (covers Ch 14, 17)	Quiz 17; HW18

WK	DATE	CHAPTER READINGS	LABORATORY	Due dates
17	Dec 5 – Dec 9	FINAL EXAM (on Last Day)	Lab Final Exam and Locker Checkout (on second to last day)	<i>Quiz 18;</i>

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