

**Organic Chemistry II & Lab, CHEM 222 - Spring 2013**

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Lecture	MWF	2:45 – 3:35 PM	Cuneo 312 (CHEM 222-001, Class #1178)
Discussion	Tue	1:00-2:15 PM	Cuneo 311 (CHEM 222-002, Class #1179)
Laboratory	Tue	2:30-5:15 PM	LSB 115 (CHEM 222-003, Class #2576)
	Thur	2:30-5:15 PM	Mundelein 514 (CHEM 222-003, Class #2576)

Office Hours M/W 3:45-4:45 (immediately after lecture)

*Required Text:* *Organic Chemistry – Structure and Function* (6th Edition) by K. Peter C. Vollhardt and Neil E. Schore, W. H. Freeman and Company, ISBN: 1-4292-0494-X

*Required Key:* *Study Guide and Solutions Manual for Organic Chemistry* (6th Edition) ) by K. Peter C. Vollhardt and Neil E. Schore, ISBN-10: 142923136X | ISBN-13: 978-1429231367

*Required Lab Text:* *Catalyst* by Tim Thomas, (ISBN: 0-536-94370-2)

*Recommended:* Your favorite molecular modeling kit. Here are just a few options. (\$ approximate)

- Darling Molecular Modeling Kit #3, \$13.75 (inexpensive) *in Loyola Bookstore*
- Prentice Hall Molecular Model Set, about \$63 (colorful & pretty) *in Loyola Bookstore*
- Prentice-Hall Framework Molecular Models (Brumlik) \$49.86 (tubes to cut)
- HGS Fundamental Organic Set \$16.00 (inexpensive & compact)

*Extra Resources:*

- Organic Chemistry as a Second Language II (second semester topics) by David R. Klein
- Organic Chemistry as a Second Language I (first semester topics) by David R. Klein
- *Pushing Electrons* by Daniel Weeks for extra help with *mechanisms*
- *OrgoCards* by Barron's ISBN 0-7641-7503-3 if you like flashcards, or make your own

*CHEM 222 Course Description*

Prerequisite: CHEM 221 or 223. Chemistry majors only. CHEM 222 is a lecture, discussion and laboratory course (222L) for chemistry majors continuing from 221 covering nomenclature, properties, reactions, syntheses, and spectroscopy of further classes of aliphatic and aromatic compounds, carbohydrates and other polyfunctional compounds.

Outcome: Students will be able to assign IUPAC names, spectroscopically identify, prepare, and propose reactions for these groups.

*Why Orgo?*

Do you have an interest in human health, prescription medicines and drugs? Organic chemistry is utilized by medicinal organic chemists for the design and construction of new molecules that are prescribed by doctors and dispensed by pharmacists to treat diseases. Organic chemistry is also the essential science for inventing new soaps and detergents, dyes, plastics, and resins, and it is also used in creating certain types of new photoreceptors for renewable solar energy.

### 1. Syllabus

The current syllabus is available online. There may be changes to the syllabus during the semester. *You are responsible for all syllabus changes made in class whether or not you are in attendance.*

### 2. Exams and Grading:

There are three 1-hour mid-term exams and one 2-hour final exam. The lowest of the three mid-term exams will be dropped. If you miss an hourly exam for any reason, that is the exam that will be dropped. No make-up mid-term exams will be given under any circumstances. The final exam is cumulative and cannot be dropped.

Mid-term exam I	20%
Mid-term exam II	20%
Mid-term exam III	20%
Laboratory work & exams	20%
<u>Final Exam</u>	<u>20%</u>
TOTAL	100%

I grade on a curve based on the average and the standard deviation. I will give statistics including the mean, the median, and the standard deviation for each exam. I do not predict cutoffs, but can tell you what the cutoff was for a previous test or class.

You must bring a form of photo identification, such as your Loyola Student ID or your driver's license, with you to the exam, which you may be asked to show. During exams, you will be required to leave your books, backpacks, notebooks, etc. at the front of the room. All exams are closed book and closed notes unless otherwise noted. When you are finished with your exam, please bring your completed exam to the front, and leave the room quietly without disturbing the other students.

Exams will be graded and returned to you as quickly as possible, usually by the following class period. All grading questions, points of clarification, and grading errors must be brought to the instructor's attentions during office hours no later than one week after return of the exam.

3. *Homework:* Organic chemistry is a new language that is spoken in words and in structures. The best way to learn a language is to work some problems every day. Homework problems will be assigned for each chapter, but will not be collected. You must work problems in a timely manner. Past experience has shown that exam success is a direct result of working the problems in the book.

4. *Discussion:* The discussion section will be devoted to answering questions regarding homework problems. *Attendance and participation are expected.*

5. *Blackboard Materials:* Handouts given in class are mirrored on Blackboard so you can access materials and obtain extra copies if you wish.

6. *Academic Honesty:* All students in this course are expected to have read and to abide by the demanding standard of personal honesty, drafted by the College of Arts & Sciences, that can be viewed at: [http://www.luc.edu/cas/pdfs/CAS\\_Academic\\_Integrity\\_Statement\\_December\\_07.pdf](http://www.luc.edu/cas/pdfs/CAS_Academic_Integrity_Statement_December_07.pdf)

For this course, all exams are closed book and closed note. Academic dishonesty includes using notes or books during exams, looking at another student's test during the exam period, or talking during an exam. The consequence of academic dishonesty is failure of the course, and the incident will be

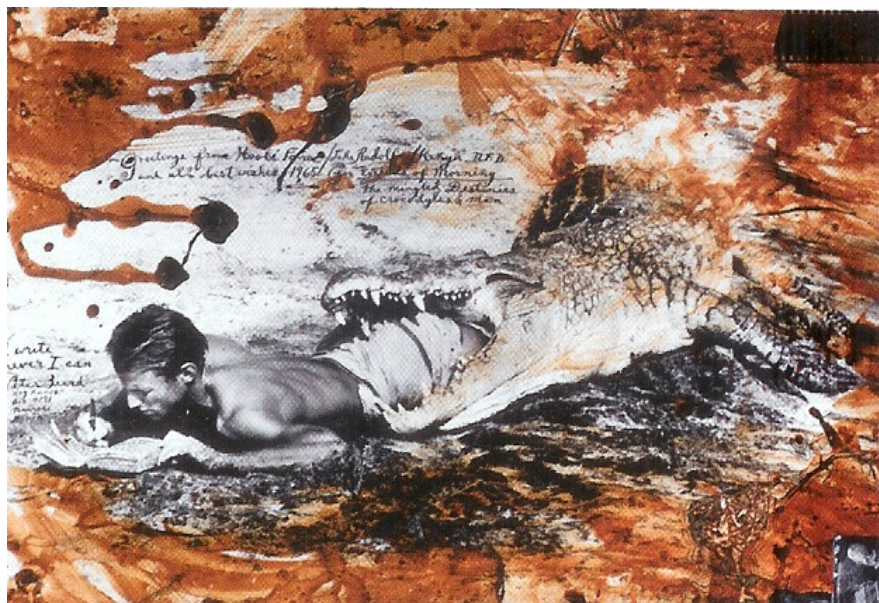
reported to the Chemistry Department Chair and the Office of the Dean. Additional sanctions including expulsion from the university may be imposed. The Undergraduate Handbook contains a complete description of the University policy regarding academic dishonesty. Anything you submit that is incorporated as part of your grade in this course (quiz, exam, lab report, etc.) must represent your own work. Any student caught cheating will, at the very minimum, receive a grade of “zero” for the item that was submitted. Cheating on any lab material results in zero points for the lab portion of the course. If cheating occurs during a course exam, the incident will be reported to the Chemistry Department Chair and the Office of the CAS Dean. Additional sanctions may be imposed.

#### 7. *Strategies and Suggestions:*

- The best method of learning organic chemistry is to work the assigned problems and write out the answers. *Then* check your answers versus the Answer Key.
- Study at least 10 hours per week and maintain a steady pace of studying. Organic chemistry continually builds, like a language, so studying some every day is most effective.
- Homework will not be collected, but it is essential that you work the assigned problems in a timely fashion.
- Skim the current chapter before the corresponding lecture, so that you will be aware of the topics to be covered.

8. The Tutoring Center offers free small group tutoring and lab (drop-in) tutoring for Loyola students. The groups meet once a week through the end of the semester and are led by a student who has successfully completed study in the course material. To learn more or request tutoring services, visit the Tutoring Center online at [www.luc.edu/tutoring](http://www.luc.edu/tutoring).

9. Please note that CAS has accommodations for students with disabilities (SSWD), including a testing center in the Sullivan Center. For more information see <http://www.luc.edu/sswd/>.



Never miss an opportunity to work through  
some organic chemistry problems

**Organic Chemistry 222 Tentative Schedule (subject to change)**

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	1/14 Ch 14 $\pi$ systems	1/15 Intro to Lab	1/16 $\pi$ systems	1/17 No lab	1/18 $\pi$ systems
2	1/21 MLK Day No class	1/22 Spectroscopy & Safety Training	1/23 $\pi$ systems	1/24	1/25 Ch 15 aromaticity
3	1/28 aromaticity	1/29 Reduction of Benzophenone	1/30 aromaticity	1/31	2/1 Ch 16 EAS
4	2/4 EAS	2/5 Structural Effects on Acidity	2/6 Ch 17 Ald & Ket	2/7 Midterm I	2/8 Ald & Ket
5	2/11 Ald & Ket	2/12 Diels-Alder	2/13 Ch 18 Enols & Aldol	2/14	2/15 Enols & Aldol
6	2/18 Enols & Aldol	2/19 Ketones	2/20 Ch 19 Carboxylic Acids	2/21	2/22 Carboxylic Acids
7	2/25 Carboxylic Acids	2/26 Oxidation	2/27 Ch 20 Carboxylic Acid Derivatives	2/28 Midterm II	3/1 Carboxylic Acid Derivatives
8	3/4 Spring Break no classes	3/5 Spring Break no classes	3/6 Spring Break no classes	3/7 Spring Break no classes	3/8 Spring Break no classes
9	3/11 Carboxylic Acid Derivatives	3/12 Fischer Esterification	3/13 Ch 21 Amines	3/14	3/15 Amines
10	3/18 Amines	3/19 Acylation	3/20 Amines	3/21	3/22 Ch 22 Chem of Benzene Subst
11	3/25 Benzene Subst	3/26 Grignard set-up	3/27 Benzene Subst	3/28 Grignard work- up	3/29 Easter Break no class
12	4/1 Easter Break no class	4/2 Nitration	4/3 Ch 23 Ester Enolates & Claisen	4/4 Midterm III	4/5 Ester Enolates & Claisen
13	4/8 Ch 24 Carbohydrates	4/9 Soap/Nylon	4/10 Carbohydrates	4/11	4/12 Carbohydrates
14	4/15 Ch 25 Heterocycles	4/16 Aldol set-up	4/17 Heterocycles	4/18 Aldol work-up	4/19 Heterocycles
15	4/22 Ch 26 Amino Acids	4/23 Lab Exam	4/24 Amino Acids	4/25 Lab check-out	4/26 Amino Acids
16	4/29 -----	4/30 -----	5/1 -----	5/2 Final Exam (Cumulative)	5/3 -----