

Organic Chemistry 223 - Spring 2014

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Lecture M/W/F 2:45 – 3:35 p.m. Life Sciences Building 142 (Sect 001)

Discussion Mon 11:30 a.m. – 12:20 p.m. Dumbach Hall 227 (Sect 002)
 Mon 12:35 p.m. – 1:25 p.m. Dumbach Hall 233 520 (Sect 003)

Office Hours Wed 12:45 p.m. – 2:15 p.m.; Thurs 12:45 p.m. – 2:15 p.m.

Required Text: L.G. Wade, Jr., "Organic Chemistry" 7th Ed. ISBN 978-0-321-59231-6

Required Key: J.W. Simek, "Solutions Manual Organic Chem.", 7th Ed. ISBN 978-0-321-59871-1

Recommended: Your favorite molecular modeling kit. Here are some options. (\$ not guaranteed)

- Darling \$18.65 in LUC Bookstore with cardboard box; \$15 in stockroom
- Darling \$36.00 in LUC Bookstore with green plastic box
- Prentice Hall Molecular Model Set for Organic \$35.33 (colorful & pretty)
- Prentice-Hall Framework Molecular Models (Brumlik) \$45.80 (tubes to cut)
- HGS Fundamental Organic Set \$17.00

Extra help: *Pushing Electrons* by Daniel Weeks
The Organic Chemistry Answer by Matthew J. Hamiel

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. *Exam Dates (subject to change):*

Friday, February 7, 2014:	Mid-term Exam 1
Friday, March 21, 2014:	Mid-term Exam 2
Monday, April 14, 2014:	Mid-term Exam 3
Thursday, May 1, 2014:	Final Exam, 1:00-3:00 p.m.

2. *Exams and Grading:*

There are three 50-minute 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, 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.

Discussion	60 points
Mid-term exam	100 points (Best two out of three mid-term exams)
Mid-term exam	100 points
<u>Final Exam</u>	<u>150 points</u>
TOTAL	400 points

I generally 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.

You must bring a form of photo identification, such as your Loyola Student ID or your driver's license, with you to the exam. 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 week. 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 working on discussion hand-outs and answering questions regarding homework problems. *Attendance and participation are mandatory and worth 5 points per class.* If you leave class early for any reason, attendance points will be deducted. This semester there is a total of 12 discussion classes. Only 10 classes will be counted towards the final point total, the remaining 2 classes will be counted as extra credit.

5. *Sakai Materials:* Handouts given in class will be mirrored on Blackboard.

6. *Academic Honesty:* All students in this course are expected to have read and 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

Anything that you submit that is incorporated as part of your grade in this course (e.g. quiz, examination, homework, lab report) must represent your own work. Any students caught cheating will, at the very minimum, receive a grade of "zero" for the exam that was submitted and this grade cannot be dropped. If the cheating occurred during a course exam, the incident will be reported to the Chemistry Department Chair and the Office of the CAS Dean. Depending on the seriousness of the incident, 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.
- Skim the current chapter before the corresponding lecture, so that you will be aware of the topics to be covered.

8. *Office Hours:* My office door will be open per the times listed. Please use this time to if you have extra questions regarding this course. If you are unavailable to meet at the listed times, please feel free to email me with any questions. However, if you email me at night (after 6:00 p.m.), on weekends, or during holiday breaks I will respond to your email within 12 hours.

9. *Students with Disabilities Policy:* Eligibility for services is determined on an individual basis based on documented need. Self-disclosure and the submission of documentation can be initiated anytime during the year. However, reasonable time must be allowed before the student can expect accommodations to be in

place. Self-disclosure and documentation are required only if students plan to request accommodations. Students should provide information and documentation at a reasonably early date to allow time for the development and arrangement of appropriate accommodations. In some cases, several weeks' advance arrangement is needed. Accommodations cannot be retroactive. Accommodations begin only after documentation is received and reasonable time for accommodation development has been allowed. <http://www.luc.edu/sswd/index.shtml>

Organic Chemistry 223 Tentative Lecture Schedule (subject to change)

1-13	1	Lewis Structure & Bonding
1-15	1	Lewis Structures & Bonding
1-17	2	Structure & Properties of Organic Molecules
1-20	--	<i>Martin Luther King Day</i>
1-22	2	Structure & Properties of Organic Molecules
1-23	3	Structure & Stereochemistry of Alkanes
1-27	3	Structure & Stereochemistry of Alkanes
1-29	3	Structure & Stereochemistry of Alkanes
1-31	4	Reactions & Mechanism: Free radical halogenation
2-3	4	Reactions & Mechanism: Free radical halogenation
2-5	4	Reactions & Mechanism: Free radical halogenation
2-7	--	EXAM I (chapters 1-4)
2-10	5	Stereochemistry
2-12	5	Stereochemistry
2-14	5	Stereochemistry
2-17	6	Alkyl Halides: S _N 1, S _N 2, E1, E2
2-19	6	Alkyl Halides: S _N 1, S _N 2, E1, E2
2-21	6	Alkyl Halides: S _N 1, S _N 2, E1, E2
2-24	6	Alkyl Halides: S _N 1, S _N 2, E1, E2
2-26	7	Alkenes: structure and synthesis
2-28	7	Alkenes: structure and synthesis
3-3	--	<i>Spring Break</i>
3-5	--	<i>Spring Break</i>
3-7	--	<i>Spring Break</i>
3-10	7	Alkenes: structure and synthesis
3-12	8a	Alkenes: reactions
3-14	8a	Alkenes: reactions
3-17	8a	Alkenes: reactions
3-19	8a	Alkenes: reactions
3-21	--	EXAM II (focused on ch 5-8a, <i>cumulative</i>)
3-24	8b	Alkenes: reactions
3-26	8b	Alkenes: reactions
3-38	8b	Alkenes: reactions
3-31	9	Alkynes
4-2	9	Alkynes
4-4	10	Alcohols: structure and synthesis
4-7	10	Alcohols: structure and synthesis
4-9	11	Alcohols: reactions
4-11	11	Alcohols: reactions
4-14	--	EXAM III (focused on ch 8b-11, <i>cumulative</i>)
4-16	12	IR and MS
4-17	--	<i>Easter Break</i>

4-21	--	<i>Easter Break</i>
4-23	13	NMR
4-25	13	NMR
5-1	--	Cumulative Final Exam, Life Science Building 142 Thursday, May 1, 1:00-3:00 p.m.

Ch Assigned Problems

1. 1-11, 14-20, 23, 25, 27, 29, 31, 34-37, 40-46
2. 1-11, 13-29, 32-42, 44
3. 1-7, 9-12, 14-18, 20-21, 24-25, 27-35, 37-40, 44, 46
4. 1-15, 18-19, 21-26, 28-44, 46-50
5. 1-3, 5-10, 14-21, 23, 25-31
6. 1-7, 9-12, 14-27, 29-30, 32-53, 55-56, 66
7. 1-2, 4-6, 8-17, 20-25, 27-47
8. 1-13, 15, 17-30, 32-38, 44-47, 48a-e, 49-51, 61
9. 1-2, 4-9, 12-34
10. 1-4, 6-10, 12-20, 22-27, 29-33, 35-42, 49
11. 1-3, 5-6, 9-15, 19, 21-22, 24-26, 30-34, 36-37, 39-46, 48, 53
12. 2-9, 11-12, 14-20, 23-25
13. 2-11, 13-16, 18-20, 21b, 22-26, 29-44, 47-49
14. TBD....



Never miss an opportunity to work through
some organic chemistry problems