

Organic Chemistry II, CHEM 224, Spring 2017

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Lecture	Tu/Th	10:00 – 11:15 AM	Cuneo 210 (CHEM 224-004)
Discussion	Tue	11:30 AM – 10:10 AM	Flanner Hall 105 (CHEM 224-005)
	Tue	1:00 PM – 1:50 PM	Flanner Hall 105 (CHEM 224-006)

Office Hours: Wednesdays & Fridays 11:00 a.m. – 12:00 noon*Required Text:* L.G. Wade, Jr., "Organic Chemistry" 8th Ed. ISBN-13 978-0321768414 **or** 7th Ed. ISBN 978-0-321-59231-6 **or** 6th Ed. ISBN 0-13-147871-0*Required Key:* J.W. Simek, "Solutions Manual Organic Chem.", 8th Ed. ISBN-13 978-0321773890 **or** 7th Ed. ISBN 978-0321598714 **or** 6th Ed. ISBN 0-13-147882-6*Required:* Pick your favorite molecular modeling kit from wherever. Here are just a couple of options.

- Darling Molecular Modeling Kit #3, ~\$13.75 (inexpensive!) in *Loyola Bookstore*
- Prentice Hall Molecular Model Set, ~\$103 (colorful & pretty!) in *Loyola Bookstore*

Extra Resources:

- Organic Chemistry as a Second Language I (first semester topics) by David R. Klein
- Organic Chemistry as a Second Language II (second semester topics) by David R. Klein
- *Pushing Electrons* by Daniel Weeks for extra help with *mechanisms*

CHEM 224 Course Description

Second semester of a two semester sequence for non-chemistry majors. Mastery of the second semester material requires comprehensive understanding and recall of the first semester material and will continue the functional group-based approach with an emphasis on mechanisms toward understanding the synthesis and reactions of conjugated π systems, aromatics, carbonyl compounds, amines, carboxylic acids and their derivatives, carbohydrates, lipids and proteins.

Outcome: Assign and understand IUPAC nomenclature, predict reaction products and mechanisms, supply starting materials and reagents for synthetic conversions, interpret as well as predict spectra (MS, IR, NMR) for organic molecules, and learn aspects of executing organic reactions in the lab.

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 (drugs) that are prescribed by doctors and dispensed by pharmacists to treat diseases. Organic chemistry is also essential for inventing new dyes, plastics, resins, and detergents, and it is also used in creating new photoreceptors for renewable solar energy and LEDs for display panels (organic LEDs = OLEDs).

1. *Syllabus:* The current syllabus is posted on Sakai and is subject to change (dated at the top) during the semester. *You are responsible for all changes announced 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	100 points	(Best two out of three mid-term exams)
Mid-term exam	100 points	
Mid-term exam	-----	(Lowest mid-term dropped, <i>or any exam missed is the drop</i>)
<u>Final Exam</u>	<u>150 points</u>	
TOTAL	350 points	

A curve will be applied based on the average and the standard deviation with the approximate guidelines of > 90% A; 75-90% B; 55-75% C. I will give statistics including the mean, the median, and the standard deviation for all exams. 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. All exams are closed book and closed notes. 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.

There are no make-up exams. If you miss an exam for any reason, the final exam will be weighted to compensate for the missed exam. Exams will be graded and returned 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 attention no later than one week after the graded exam is returned.

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 practice speaking and writing it, so the best way to learn organic is to work problems every day. Homework problems will be assigned for each chapter, but will not be collected, so you must be disciplined about your own studying and problem solving, which includes working assigned problems and keeping up with the pace of the lecture. Experience has clearly demonstrated a direct correlation of exam success with consistently working the assigned problems in the book. Your grade in my organic chemistry section will be determined only by your exam scores. If you are unable to be disciplined about doing homework and you would like for someone to collect and grade your homework on a regular basis, please switch sections.

4. *Discussion:* The discussion section will be devoted to working homework problems plus questions over lecture/text material. *Attendance and participation are expected.*

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

6. *Academic Honesty:* First off, let me say that I grade all exams individually and personally, and I pay especially close attention to written answers in order to check your understanding and to assign appropriate credit for work demonstrate. I grade each page in order (i.e., I grade page 1 on all exams, then page 2 on all exams, etc.) to ensure that partial credit is awarded consistently and fairly. Thus, it is very obvious to me when two exams have identical answers, especially when the answer has some peculiar flaw. Therefore, resist the temptation to ever let eyes drift during an exam, first of all because copying is cheating and is wrong, and secondly, because I am very good at detecting duplicate answers. Furthermore, be mindful of your own exam by not providing an attractive nuisance for wandering eyes of other possibly weak-willed students. All students in this course are expected to

have read and to abide by the appropriate standard of personal honesty and integrity, drafted by the College of Arts & Sciences, that can be viewed online at <http://www.luc.edu/cas/advising/academicintegritystatement/>.

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.

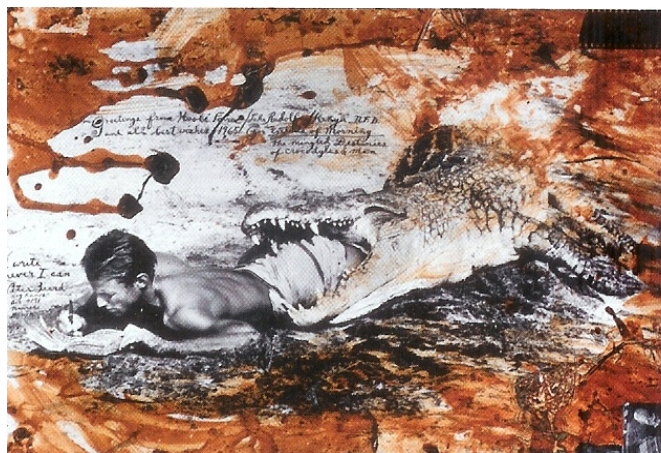
7. *Strategies and Suggestions:*

- The best method of learning organic chemistry is to work the assigned problems and write out the answers. *Then* check your answers versus the Solutions Manual by Simek.
- Study at least 12 hours per week and maintain a steady pace of studying. Organic chemistry continually builds, like a language, so studying every day is most effective.
- Homework will not be collected, but it is essential to work problems in a timely fashion.
- Skim the current chapter before the 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.

9. 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/>.

10. Students wanting to drop lecture may stay in the co-req lab only if midterm grade posted in LOCUS is a D or better. Students should continue to attend lecture until the week of the drop date to gain as much knowledge as possible.



Never miss an opportunity to work some organic chemistry problems.

Organic Chemistry 224 Tentative Lecture Schedule (subject to change)

1/17	12	IR and MS review
1/19	13	^1H and ^{13}C NMR review
1/24	14	Ethers, Epoxides, and Sulfides
1/26	15	"
1/31	15	Conjugated Systems, Orbital Symmetry, UV
2/2	15	"
2/7	16	Aromatic Compounds
2/9	--	EXAM I (Chapters 12-15 or as announced, cumulative)
2/14	16	Aromatic Compounds
2/16	17	Reactions of Aromatic Compounds
2/21	"	"
2/23	18	Ketones & Aldehydes
2/28	"	"
3/2	19	Amines
3/7	--	<i>Spring Break, No Classes</i>
3/9	--	<i>Spring Break, No Classes</i>
3/14	19	Amines
3/16	--	EXAM II (Chapters 16-18 or as announced, cumulative)
3/21	20	Carboxylic Acids
3/23	--	"
3/28	21	Carboxylic Acid Derivatives
3/30	"	"
4/4	22	α -Substitution, Condensations of Enols & Enolates
4/6	"	"
4/11	23	Carbohydrates and Nucleic Acids
4/13	--	Exam III (Chapters 19-22 or as announced, cumulative)
4/18	23	Carbohydrates and Nucleic Acids
4/20	24	Amino Acids, Peptides and Proteins
4/25	"	"
4/27	25-26	Lipids & Polymers
5/2	--	<u>Cumulative</u> Final, Tuesday, May 2 at 1:00-3:00 p.m. in Cuneo 210