

**Organic Chemistry 224 - Fall 2011**

Dr. Daniel Becker, Ph.D.

Flanner Hall 215, Loyola University

email: [dbecke3@luc.edu](mailto:dbecke3@luc.edu)webpage: [http://luc.edu/chemistry/facultystaff/faculty\\_becker.shtml](http://luc.edu/chemistry/facultystaff/faculty_becker.shtml)

Lecture Tu/Th 2:30 – 3:45PM Flanner Hall 133 Auditorium (CHEM 224-01)

Discussion Wed 1:40PM – 2:30M Flanner Hall 7 (CHEM 224-02)

Wed 2:45PM – 3:35PM Flanner Hall 7 (CHEM 224-03)

Office Hours Tu/Th 4:00 – 5:00PM (immediately after lecture)

*Required Text:* L.G. Wade, Jr., "Organic Chemistry" 7<sup>th</sup> Ed. ISBN 978-0-321-59231-6  
*or* 6<sup>th</sup> Ed. ISBN 0-13-147871-0 (*or* 5<sup>th</sup> Ed.)*Required Key:* J.W. Simek, "Solutions Manual Organic Chem.", 7<sup>th</sup> Ed. ISBN 978-0321598714  
*or* 6<sup>th</sup> Ed. ISBN 0-13-147882-6 (*or* 5<sup>th</sup> Ed.)*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

*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. 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	

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.

2. *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.

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

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

5. *Academic Honesty:* 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.

6. *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.

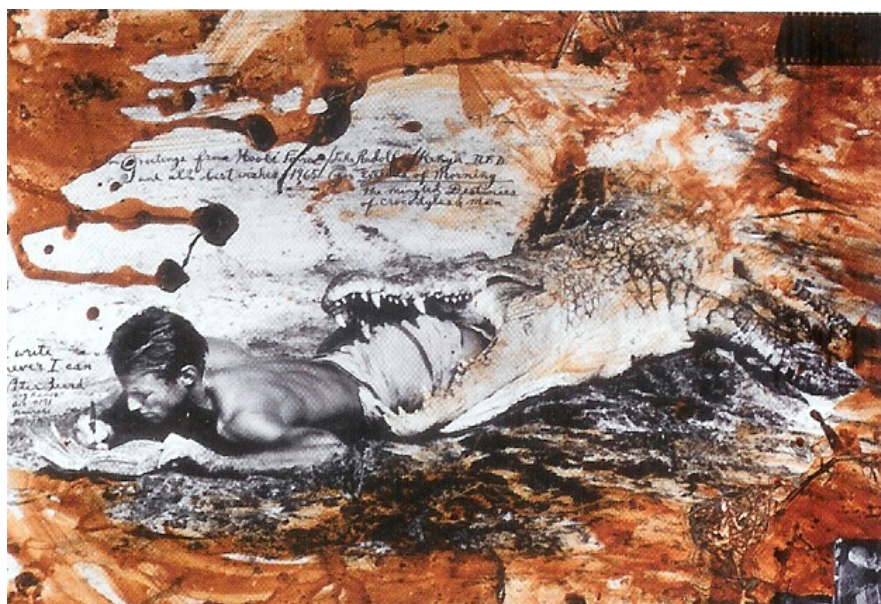
7. The Tutoring Center offers free small group tutoring and lab (drop-in) tutoring for Loyola students. The groups meet once a week through the end of the semester and are led by a student who has successfully completed study in the course material. To learn more or request tutoring services, visit the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

**Organic Chemistry 224 Tentative Lecture Schedule (subject to change)**

8/30	12	IR and MS review
9/1	13	$^1\text{H}$ and $^{13}\text{C}$ NMR review
9/6	14	Ethers, Epoxides, and Sulfides
9/8	"	"
9/13	15	Conjugated Systems, Orbital Symmetry, UV
9/15	"	"
9/20	16	Aromatic Compounds
9/22	--	<b>EXAM I (Chapters 12-15 or as announced, cumulative)</b>
9/27	"	Aromatic Compounds ( <i>cont.</i> )
9/29	17	Reactions of Aromatic Compounds
10/4	"	"
10/6	18	Ketones & Aldehydes
10/11	--	<i>Fall Break, No Class</i>
10/13	"	Ketones & Aldehydes ( <i>cont.</i> )
10/18	19	Amines
10/20	"	Amines
10/25	--	<b>EXAM II (Chapters 16-18 or as announced, cumulative)</b>
10/27	"	Amines ( <i>cont.</i> )
11/1	"	"
11/3	20	Carboxylic Acids
11/8	"	"
11/10	21	Carboxylic Acid Derivatives
11/15	"	"
11/17	22	$\alpha$ -Substitution, Condensations of Enols & Enolates
11/22	--	<b>Exam III (Chapters 19-21)</b>
11/24	--	Thanksgiving Break, No Class
11/29	"	$\alpha$ -Substitution, Condensations of Enols & Enolates ( <i>cont.</i> )
12/1	23	Carbohydrates and Nucleic Acids
12/6	24	Amino Acids, Peptides and Proteins
12/8	25-26	Lipids & Polymers
12/15	--	<b><u>Cumulative</u> Final, Thursday, Dec. 15, 9:00-11:00 a.m. in FH-133</b>

**Ch Assigned Problems for Wade 7<sup>th</sup> Edition**

12. 2-12, 14-20, 22-29
13. 2-27, 29-44, 46-49
14. 1-23, 25-39, 41-44, 46-47
15. 1-27, 30-33
16. 1-22, 24-28, 30, 32-36, 38-39, 41-42, 46-47
17. 2, 4-26, 29-30, 32-56, 68
18. 1-13, 15-21, 23-32, 34-49, 51-52, 55-57, 60, 62-67
19. 1-21, 23-33, 35-45, 47-51, 53, 55-56, 58
20. 1-12, 14-21, 23-27, 29-41, 44-46
21. 1-10, 12-14, 16-20, 22, 24-32, 34-41, 43-48a-f, 49-54, 61-62, 64-65
22. 1-24, 26, 28-40a-c, 42-48a, 51, 53, 55-65, 67-71, 73-74
23. 1-5, 7-12, 14, 16-19, 21-24, 26-31, 33-36, 39-40, 42-46, 48-56, 59, 61-63
24. 1-11, 13-18, 20, 22-23, 25, 27, 30, 32-39, 41, 48
25. 1-15, 24
26. 1, 4, 7-8, 12-13, 22



Never miss an opportunity to work through  
some organic chemistry problems