Calendar portion revised 6-27-18

Organic Chemistry 224 - Summer 2018

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Lecture Mon/Wed/Fri 12:00 – 2:40 p.m. Mundelion Center Room 403 (Sect 004)

Office Hours Mon: 3:00 p.m. – 5:00 p.m.; Wed 3:00 p.m. – 5:00 p.m.

Required Text: David Klein, "Organic Chemistry" 3rd Ed. hard copy or eText
Required Key: WileyPLUS for Organic Chemistry (login information can be found under the resources tab in Sakai)

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. *Course Content & Objectives:* 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. Organic chemistry of conjugated π systems, aromatics, carbonyl compounds, amines, carboxylic acids and their derivatives, carbohydrates, lipids and proteins. The student should learn how to:

1. identify the various classes of organic compounds, their methods of preparation, and typical reactions.
2. name and draw specific organic compounds.
3. postulate a *logical* reaction mechanism for organic reactions.
4. discriminate among relative stabilities of reaction intermediates.
5. plan and write out multi-step syntheses using known functional group transformations, including syntheses of polyfunctional organic compounds.
6. name, draw and interpret the 2- and 3-dimensional structures of important biopolymers, and techniques for their synthesis and characterization.
7. analyze and interpret data from various instruments used in separating and identifying organic compounds including: IR, NMR, UV-vis and MS.

2. IDEA Objectives:

1. Gaining factual knowledge (terminology, classifications, methods, trends)
2. Learning fundamental principles, generalizations, or theories
3. Learning to *apply* course material (to improve thinking, problem solving, and decisions)
4. Learning how to find and use resources for answering questions or solving problems
5. Learning to *analyze* and *critically evaluate* ideas, arguments, and points of view
6. 5 extra credit points will be awarded to the entire class if there is a 95% class response to the end of the semester IDEA survey

3. *Quiz Dates (subject to change):*

Wednesday, July 11, 2018:	**Quiz 1**
Friday, July 20, 2018:	**Quiz 2**
Wednesday, August 1, 2018:	**Quiz 3**
Wednesday, August 8, 2018:	**Quiz 4**

4. *Exam Dates (subject to change):*

Wednesday, July 18, 2018:	**Mid-term Exam 1**
Friday, July 27, 2018:	**Mid-term Exam 2**
Friday, August 3, 2018:	**Mid-term Exam 3**
Friday, August 10, 2018:	**Final Exam, 9:00-11:00 a.m.**

5. *Quizzes, Exams, and Grading:*

A total of four 30-minute quizzes will be given during the discussion section. The lowest of your five quiz grades will be dropped. If you miss a quiz, that is the quiz that will be dropped. **No make-up quizzes will be given under any circumstances**.

There are three cumulative 50-minute mid-term exams and one cumulative (**THIS INCLUDES MATERIAL FROM 223**) 2-hour final exam. The three mid-term exams will be administered at the beginning of the class. The lowest of the three mid-term exams will be dropped. If you miss an hourly exam, that is the exam than 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.

WileyPLUS	10%	
Quizzes	15%	(Best three out of four quizzes)
Mid-term exams	40%	(Best two out of three mid-term exams)
Final Exam	35%	
TOTAL	100%	

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. For each exam, you are allowed a reaction crib sheet. This crib sheet will consist of an 8.5 × 11" sheet of paper (both sides!) with general examples of reactants, reagents, and products. The crib sheet must be handwritten (no photocopying) and CANNOT include: stereochemistry, definitions, or mechanisms. The reaction crib sheets will be collected with every

exam and returned with the graded exams. 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. 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.

The grading scale used to determine letter grades are as follows: **A** 100 – 93, **A-** 92 – 87, **B+** 86 – 82, **B** 81 – 77, **B-** 76 – 70, **C+** 69 – 62, **C** 61 – 55, **C-** 54 – 50, **D** 49 – 45, **F** < 45.

6. *Mastery Assignments*
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. The purpose of Mastery assignments is to help you master essential foundational concepts in the course. Remembering and understanding foundational concepts is a prerequisite to **APPLYING** those concepts and analyzing problems: you need to learn the basics first so that you can use them! There will be WileyPLUS Mastery sets assigned on Monday, Wednesday, and Friday night after each class. Monday's assignment will be due at 11:59 p.m. on Wednesday, Wednesday's assignment will be due on Friday at 11:59 p.m., and Friday's assignment will be due on Sunday at 11:59 p.m.

Mastery assignments require that you attempt each of the questions and get a total percentage correct.
Please refer to the question policies below to see the Success Threshold for the assignment and the number of points you will earn for reaching the threshold.

You can attempt each assignment only once, however if you do not get a percentage correct to reach the Success Threshold, you can reset the assignment and try again. Resetting the assignment will generate a new set of questions for you to attempt. Your best attempt at this assignment will be your final recorded score. Resetting the assignment will not change the difficulty level of the questions.

Success Threshold:	75% or more correct to receive 10 points
Intermediate:	50% or more correct to receive 5 points
Unsatisfactory:	less than 50% correct to receive 0 points

Late Score Policy: You have 2 days after the due date to complete any assignment with a 25% late penalty. After that, you can still complete any assignment with a 75% late penalty. You can also redo any assignment after meeting the Success Threshold without losing points towards your grade. Only your best score is counted, so your score can never go down once earned.

7. *Norms of Course Proceedings*: The classroom is to be a safe place to question and explore ideas. Student and teacher voices are important to this work. Collegial disagreement can be a healthy part of this process, but must always include respect for all members of the class.

Course activities will be designed to help students reach the goal of learning chemistry content and developing critical thinking skills. This will more often be driven by the use of data and reasoning to discover concepts and solutions rather than the identification and exchange of chemical facts and algorithms.

Students are expected to read individually on their own time outside of class.

Class sessions will begin and end on time. All students should attend class regularly and participate in class discussions. Absences could affect one's ability to learn chemistry during this session. Anticipated absences should be discussed with the instructor two class days before the absence. Proper documents may be requested to verify the reason for any absence. No make-up exams will be granted for any absence during an

exam day, no matter what the excuse

Class will start with a 50 minute lecture followed by a 10 minute break. The second portion of the class will start with a 30 minute discussion during which sample problems will be worked and students will be allowed to ask questions and participate in group discussions regarding the course material being covered. Another 10 minute break will be granted after this discussion session. The final 60 minutes of class will be used for lecture.

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

9. *Panopto and Recorded Lectures:* In this class software will be used to record live class discussions. As a student in this class, your participation in live class discussions will be recorded. These recordings will be made available only to students enrolled in the class, to assist those who cannot attend the live session or to serve as a resource for those who would like to review content that was presented. All recordings will become unavailable to students in the class when the Sakai course is unpublished (i.e. shortly after the course ends, per the Sakai administrative schedule: https://www.luc.edu/itrs/sakai/sakaiadministrativeschedule/). Students who prefer to participate via audio only will be allowed to disable their video camera so only audio will be captured. Please discuss this option with your instructor.
The use of all video recordings will be in keeping with the University Privacy Statement shown below:

Privacy Statement
Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

10. *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.

11. *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.

12. *Practices for Success:* Supporting claims with evidence, making applications, solving and analyzing problems, and using chemical principles to explain phenomena are critical skills in the field of chemistry.

The development of these skills is not without some frustration, but it carries the reward of deepening one's ability to think critically and solve problems in any field. The use of targeted, guiding questions, regularly scheduled work, and strategic study plans can greatly assist the learning of chemistry. With such a focus, hopefully any frustration will quickly turn to appreciation and fascination for the relevance and connectedness of chemistry in your life and within the world around you. Solving and analyzing problems is the most important feature of this work. If, at any time, you need assistance framing such plans for your work in chemistry, please do not hesitate to ask the instructor.

13. *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.

14. *Tutoring:* The tutoring Center at the university offers free tutoring to students. To see the complete tutoring schedule and find additional information, visit the Tutoring Center webpage at www.luc.edu/tutoring

15. *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

16. *Harassment (Bias Reporting):* It is unacceptable and a violation of university policy to harass, discriminate against or abuse any person because of his or her race, color, national origin, gender, sexual orientation, disability, religion, age or any other characteristic protected by applicable law. Such behavior threatens to destroy the environment of tolerance and mutual respect that must prevail for this university to fulfill its educational and health care mission. For this reason, every incident of harassment, discrimination or abuse undermines the aspirations and attacks the ideals of our community. The university qualifies these incidents as incidents of bias.

In order to uphold our mission of being Chicago's Jesuit Catholic University-- a diverse community seeking God in all things and working to expand knowledge in the service of humanity through learning, justice and faith, any incident(s) of bias must be reported and appropriately addressed. Therefore, the Bias Response (BR) Team was created to assist members of the Loyola University Chicago community in bringing incidents of bias to the attention of the university. If you believe you are subject to such bias, you should notify the Bias Response Team at this link: http://webapps.luc.edu/biasreporting/

Organic Chemistry 224 Tentative Lecture Schedule (subject to change)

7-2	14/15	IR and MS review/^{1}H and ^{13}C NMR
7-4	--	*Fourth of July*

7-6	15/16	^{1}H and ^{13}C NMR/Conjugated Pi Systems and Pericyclic Reactions
7-9	16/17	Conjugated Pi Systems and Pericyclic Reactions/ Aromatic Compounds
7-11	17	**Quiz 1**/Aromatic Compounds
7-13	17/18	Aromatic Compounds/Aromatic Substitution Reaction
7-16	18	Aromatic Substitution Reactions
7-18	19	**EXAM I (Chapters 15-18 or as announced, cumulative)**/Aldehydes and Ketones
7-20	19/20	**QUIZ 2**/Aldehydes and Ketones/Carboxylic Acids and Their Derivatives
7-23	20	Carboxylic Acids and Their Derivatives
7-25	20/21	Carboxylic Acids and Their Derivatives/Alpha Carbon Chemistry
7-27	21	**EXAM II (Chapters 18-21 or as announced, cumulative)**/Alpha Carbon Chemistry
7-30	21/22	Alpha Carbon Chemistry/Amines
8-1	22	**QUIZ 3**/Amines
8-3	22	**EXAM III (Chapters 21-22 or as announced, cumulative)**/Amines
8-6	24	Carbohydrates
8-8	25	**Quiz 4**/Amino Acids, Peptides, and Proteins
8-10	--	**FINAL EXAM 9:00-11:00 a.m. (cumulative, this includes CHEM 223 material)**