Organic Chemistry II, CHEM 224 Summer 2018

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Lecture: Tu/Wed/Thr 12:00pm-2:40pm Mundelein Center 407 (CHEM 224-007)

Office Hours:Wednesdays 9:30-11:30am

Required Text: "Organic Chemistry" (3rd Edition, by David Klein), Wiley (Required) ISBN-13: 978-1119110477

Solutions Manuals: "Organic Chemistry Student Study Guide and Solutions Manual" (Recommended) (by David Klein), Wiley ISBN-13: 978-1119378693

Recommended: Pick your favorite molecular modeling kit from wherever.
Here are just a couple of options:
-Darling Molecular Modeling Kit #3, ~$18.75 (inexpensive!) in Loyola Bookstore
-Prentice Hall Molecular Model Set, ~ (colorful & pretty!) in Loyola Bookstore
-HGS Fundamental Organic Set

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).

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.***

Lecture/Discussion: Each class period is comprised of both a lecture and discussion unless otherwise stated. The first lecture will last 60 minutes followed by a 5 minute break. The second lecture will last 50-55 minutes followed by a ten minute break. The discussion section (25-30 minutes) will be devoted to working homework problems plus questions over lecture/text material. Feel free to bring your books and modeling kit to class AND USE THEM. Prepare for lecture by scanning the textbook. You are responsible for all material covered in lecture. If you miss a lecture, please get the notes from another student in class. The discussion section will develop your problem-solving skills through working problems and taking quizzes. Come prepared for discussion. Attendance and participation are expected.

Quizzes: There are three take home quizzes that will be assigned over the course of the class that will make up 20% of your final grade. You make work on the quiz in groups, however any answers you write and turn in must clearly be your own and written in your own words. In order to receive full credit for the take home quizzes you need to be present during the class period that it is given out. Any quiz turned in to the instructor from a student that was not present will not be accepted under any circumstances. If you are absent you must see the instructor to receive a quiz to be turned in for late credit. Quizzes must be handed to the instructor at the beginning of class by the student themselves.

Exams and Grading: There are three 1-hour mid-term exams and one 2-hour final exam. The mid-term exams will be given at the beginning of the class period. The second lecture and discussion will occur on all test days. The lowest of the three mid-term exams (25% each) 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 (30 %) is cumulative and cannot be dropped.

Take home quiz 1	40 points
Take home quiz 2	40 points
Take home quiz 3	40 points
Mid-term Exam 1	150 points
Mid-Term Exam 2	150 points
Mid-Term Exam 3	(Dropped lowest grade)
Final Exam	180 points
TOTAL	600 points

A curve will be applied based on the average and the standard deviation with the approximate guidelines of >90% A; 75-89% B; and 55-75% C. I will provide statistics of the mean, the median and the standard deviation for all exams. 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, 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.

The exams will be graded and returned to you as quickly as possible. Any grading questions, errors, or clarifications should be brought to the instructor's attention during office hours within three class periods after the graded exam is returned.

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.

Classroom Etiquette: Please be respectful of your time, the instructor's time and your peers. Please be on time, silence all electronics, no sleeping and no talking during lecture. No disruptive behavior or bullying of any kind will be tolerated.

Academic Honesty: 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. 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 and 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 https://luc.edu/media/lucedu/cas/pdfs/academicintegrity.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. Any student caught cheating will, at the very minimum, receive a grade of "zero" for the item that was submitted.

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.

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.
- Study at least 10 hours per week and maintain a steady pace of studying. Organic chemistry continually builds, like a language, so studying every day is most effective.
-Skim the current chapter before the lecture, so that you will be aware of the topics to be covered.
-All material is summarized at the end of the chapter. This is excellent study material as well.

Tutoring: 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.

Disabilities: 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/.

Course/Instructor Evaluation – IDEA Loyola has the IDEA (Individual Development and Educational Assessment) program for instructor and course evaluations. At the end of the semester, you will complete an online evaluation of this course based on criteria set by IDEA and by the instructor. For this course, the main objectives are as follows:

1) Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)
2) Learning to apply course material (to improve thinking, problem solving, and decisions) 3) Gaining a broader understanding and appreciation of intellectual/cultural activity (music, science, literature, etc.)

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.

Homework/Discussion Problems:

CH 16: 1, 2, 5, 6, 9, 13, 17a-c, 18a-c, 21, 23, 25, 26, 30, 33, 35-37, 44, 52, 58, 66, 74 and 76
CH 17: 1-3, 8, 13, 17, 18, 20, 22, 23, 25, 27, 29, 30, 34, 36, 38, 42, 43, 44, 55, 57 and 67
CH 18: 4, 5, 8, 9, 11, 16, 18, 20, 22, 24-26, 34, 38, 41-43, 52-54, 59, 64, 68, 74, 90 and 91
CH 19: 1, 2, 5, 6-8, 11, 13, 15, 19, 22, 23, 26, 28, 31, 32, 34, 39, 40, 47, 49, 55, 65, 69, 75, 78, 91 and 94
CH 20: 1-4, 9, 10, 12, 14, 16, 17, 20, 23, 25, 27, 30, 35, 40, 46, 48, 51, 62, 67, 70, 76, 87 and 88
CH 21: 1-3, 6-8, 10, 14, 19, 24, 27, 29, 31, 35, 36, 38, 46, 49, 51, 58, 61, 62, 65, 74, 81, 93, 96 and 103
CH 22: 1, 2, 6, 10, 12, 16, 17, 23, 26, 30, 33, 39, 46, 48, 57, 60, 63, 65, 73, 78, 88, 94, and 99
CH 23: 2, 5, 8, 12, 10, 17, 20, 24, 27, 37, 43, 52 and 68
CH 24: 1, 3, 5, 12, 15, 17, 18, 25, 43, 46, 48, 53, 60, 79, 85, and 86
CH 25: 2-4, 12, 13, 15, 17, 21, 22, 34, 35, 48, 49, 55, 76, and 89
CH 26: 1, 2, 6, 10, 12, 24, 25, 45 and 52
CH 27: 1, 6, 7, 12, 13, 15, 22, 28, 33, 37, 45 and 47

Quiz Dates:

#	Date Given	Date Due
1	July 5th	July 11th
2	July 17th	July 19th
3	July 26th	August 1st

Exam Dates:

Exam 1	July 12th	Chapters 16-18
Exam 2	July 25th	Chapters 19-21
Exam 3	August 2nd	Chapters 22,23,25
Exam 4	August 9th	FINAL Cumulative

TENTATIVE SCHEDULE

Dates	Chapters	Topic
3-Jul	16	16-Conjugate pi Systems and Pericyclic Reactions
4-Jul	**NONE**	**Independence Day *SCHOOL HOLIDAY* No class**
5-Jul	16-17	17-Aromatic Compounds
10-Jul	17-18	18- Aromatic Substitution reactions
11-Jul	18	Quiz 1 due
12-Jul	19	**EXAM CH 16-18**
17-Jul	19	19- Aldehydes and Ketones
18-Jul	20	20-Carboxylic Acids and Their Derivatives
19-Jul	20-21	Quiz 2 due
24-Jul	21	21- Alpha Carbon Chemistry: Enols and Enolates
25-Jul	22	**EXAM CH 19-21**
26-Jul	22	22- Amines
31-Jul	23	23- Intro to Organometallics
1-Aug	25	Quiz 3 Due: 25-Amino Acids, Peptides and Proteins
2-Aug	24	**EXAM CH 22-23, 25;** 24-Carbohydrates
7-Aug	26	Lipids
8-Aug	27	Synthetic Polymers
9-Aug	**Final**	**Final, Cumulative**