Syllabus – Chemistry 395/421 – Advanced Organic Chemistry

Instructor Information

Instructor: Dr. Chad Eichman
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Phone: 773.508.3357

Note: You should use your Loyola email address for all communication during this course. Emails from outside sources are sometimes blocked automatically.

Weekly Schedule

Lecture: Monday and Wednesday 7:00–8:15 PM in Flanner Hall 105

Office Hours

Wednesday 4:00-5:00 PM

To schedule an alternative appointment, please email me.

Course Description

This course will continue the study of synthetic organic reactions and mechanisms, building on the foundation of Organic Chemistry I & II (CHEM 221/222 or CHEM 223/224). Guest lecturers will be invited to demonstrate applications of synthesis.

Textbook and Additional Course Materials

There is no required text for this course. We will utilize the primary literature for the main course content. Listed below are suggested textbooks that will be useful reading.

"*Modern Methods of Organic Synthesis*" by William Carruthers and Iain Coldham, 4th Edition, by Cambridge Press, paperback, ISBN-13: 978-0521778305 ISBN-10: 0521778301.

"*Advanced Organic Chemistry, Part B: Reactions and Synthesis*" by Francis A. Carey and Richard J. Sundberg, 5th Ed., Springer, 2008. ISBN-13: 978-0387683546, ISBN-10: 0387683542.

"*March's Advanced Organic Chemistry: Reactions, Mechanisms, and Structure*" by Michael B. Smith, 7th Ed. Wiley, 2013. ISBN-13: 978-0470462591, ISBN-10: 0470462590.

"*Strategic Applications of Named Reactions in Organic Synthesis*" by Laszlo Kurti and Barbara Czako, 1st Ed. Elsevier Academic Press, 2005. ISBN-13: 978-0124297852, ISBN-10:0124297854.

Website: sakai.luc.edu

Graded Material

Midterm Exam

Monday, October 17 during lecture and after (7:00-9:30 PM).

Final Exam

Monday, December 12 at 7:00–9:30 PM in Flanner Hall 105.

Project
Each student will be assigned a topic that was covered in lecture. Students will prepare a written review of the topic and an oral presentation. Both the review and the presentation are due **Monday, November 28**. Specific details will be provided at a later date.

Grading Rubric

1 Midterm Exam (150 points)	150	30%
1 Final Exam (150 points)	150	30%
1 Final Project (150 points)	150	30%
Attendance and Participation (50 points)	50	10%
Total	500	100%

Excused Absences for Exams

Missed exams will be handled on a case-by-case basis. In general, if you miss an exam because of an illness, death in the family, or any other extenuating circumstance, you must provide written evidence (i.e.- note from doctor, etc.). Once approved, an alternative exam date and time will be assigned. If you miss the final exam with no prior notice, you will receive a zero on the exam and a course letter grade will be assigned.

Lecture and Reading

The class lectures will be the *most critical source* of information for this course. Attendance is factored into your final grade. Excused absences will be handled on a case-by-case basis. Class notes will be posted on Sakai throughout the semester. Suggested reading assignments will be made throughout the semester. Although some textbooks are useful for learning the content, the primary source of information will be found in the lectures and primary literature.

Problem Sets

There will be multiple problem sets throughout the semester to help you master the course material. The problems will include questions from the primary literature as well as additional problems pertaining to the current topics. These can be found on Sakai (sakai.luc.edu/) as the semester proceeds. The problem sets will NOT be graded and are there to help you prepare for exams. We will use these problem sets as part of the exam review sessions.

Class Etiquette

Come to class on time.
No talking.
No electronic devices.
No eating.

Students with multiple violations of classroom etiquette will be subject to point deductions throughout the semester.

Academic Integrity

All students in this course are expected to have read and to 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/advising/academicintegritystatement/

Anything you submit that is incorporated as part of your grade in this course (exam or project) must represent your own work. Any students caught cheating will, at the very minimum, receive a grade of "zero" for the item 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.

Dropping and Withdrawal

Be aware of the following dates in the semester:

September 6: Last day to withdraw without a "W" grade
September 11: Last day to withdraw with a 100% Bursar credit
September 25: Last day to withdraw with a 50% Bursar credit
October 2: Last day to withdraw with a 20% Bursar credit
November 4: Last day to withdraw with a "W" grade, thereafter a "WF" will be assigned

Changes to Syllabus

There may be changes to the syllabus during the semester. ***You are responsible for all syllabus changes made in class whether or not you attend.***

Tutoring

The Center for Tutoring & Academic Excellence provides Loyola University students the opportunity to engage in Collaborative Learning conversations that will increase retention of course material, improve study habits, assist in achieving higher grades, and encounter new friends. For more information concerning our free tutoring services visit: www.luc.edu/tutoring/

Disabilities and Wellness

Students with a university-documented disability should contact me immediately. If your disability requires that quizzes and exams be taken outside of the scheduled time or place, please consult: www.luc.edu/sswd/. Services for Students with Disabilities (SSWD) serves students with disabilities by creating and fostering an accessible learning environment.

If there are events in your personal life that directly affects your performance in this course and others, please consult me or contact the Wellness Center (http://www.luc.edu/wellness/) or the Dean of Students Office (http://www.luc.edu/dos/). These resources are included in your tuition and may be an invaluable resource during the completion of your degree.

Course/Instructor Evaluation – IDEA

Loyola has recently switched to the IDEA 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 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)

Keep these objectives in mind throughout the course.

TOPICS AND FALL 2016 CALENDAR

Course Topics

Organic Refresher (Boot Camp)
Frontier Molecular Orbital Theory
Diels-Alder
Pericyclic Reactions
Claisen Chemistry
Dipolar Cycloadditions
Alkenes
Horner-Wadsworth-Emmons Chemistry
Oxidation
Reduction
Protecting Groups
Enolate Chemistry
Aldol Chemistry
Special Topics

Week	Monday	Wednesday
1	8/29 Boot Camp	8/31 Boot Camp
2	9/5 Labor Day	9/7 Boot Camp "Test"
3	9/12 FMO	9/14 Diels-Alder
4	9/19 PR	9/21 PR II
5	9/26 Claisen	9/28 Dr. Monte
6	10/3 Dipole	10/5 Dr. Monte
7	10/10 Fall Break	10/12 Review
8	10/17 **MIDTERM EXAM**	10/19 Alkenes
9	10/24 HWE	10/26 Dr. Monte
10	10/31 Oxidation	11/2 Reduction/PG's
11	11/7 Enolates	11/9 Enolates II
12	11/14 Aldol	11/16 Choice
13	11/21 Dr. Monte	11/23 Thanksgiving
14	11/28 **PROJECT**	11/30 **PROJECT**
15	12/5 **PROJECT**	12/7 Review
16	12/12 **FINAL EXAM**	