Chemistry 6226
Advanced Synthetic Organic Chemistry
Spring 2021

Instructor: Daniel Seidel, CCB 406-G, 352-294-7991, seidel@chem.ufl.edu
Lectures: Mondays, Wednesdays, and Fridays 12:50 – 1:40 p.m.
            Online via Zoom (link provided in Canvas)
Office Hours: By appointment as needed
Required Texts: Classics in Stereoselective Synthesis
                by Erick M. Carreira and Lisbet Kvaerno ISBN 9783527299669
                by Francis A. Carey and Richard J. Sundberg, ISBN 9780387683546
Reference Texts: Strategic Applications of Named Reactions in Organic Synthesis
                 by László Kürti and Barbara Czakó
                 by George Zweifel, Michael Nantz, and Peter Somfai
                 by William Carruthers and Iain Coldham
                 Modern Organic Synthesis
                 Dale L. Boger, TSRI press
                 Organic Synthesis, The Disconnection Approach
                 by Stuart Warren and Paul Wyatt
                 Organic Synthesis, Strategy and Control
                 by Paul Wyatt and Stuart Warren
                 Encyclopedia of Reagents for Organic Synthesis
                 Available in the Science Library Reference Section and online
                 Comprehensive Asymmetric Catalysis
                 by Jacobsen, Pfaltz, and Yamamoto eds.

Course Objective and Content: This course is intended to provide an overview of synthetic organic chemistry with an emphasis on carbon–carbon bond forming reactions. Understanding issues of chemo-, regio-, and stereoselectivity are central to developing synthetic strategies and therefore will be highlighted throughout. Portions of the course material were adopted from the classic Chem 206 course by Professor David A. Evans of Harvard University. The course consists of lectures and practice problems taken from the current literature when possible.

Tentative Course Outline:

1. Functional Group Interconversion
   - Oxidation
   - Reduction
   - Protecting Groups
   - Alkene Functionalization
   - Miscellaneous

2. Structure and Reactivity
   - Stereoelectronic Effects
   - Conformational Analysis
   - Acid-Base Properties

3. C–C and C–X Bond Forming Reactions
   - Pericyclic Reactions
   - Cycloaddition Reactions
   - Enolates, formation/alkylation/aldol reactions
   - Acyclic Stereocontrol
   - Olefination
   - Carbocations
   - Carbenes
   - Cross-coupling
   - Intro Asymmetric Organocatalysis
   - Intro Photoredox Chemistry
### Grading:

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### Exam Dates:

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<tr>
<td>Exam 1</td>
<td>February 15, 2021</td>
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<td>Exam 2</td>
<td>March 17, 2021</td>
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<td>Exam 3</td>
<td>April 21, 2021</td>
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Exams are scheduled 7:30–9:30 pm in CCB 221

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### Zoom Policy

Participation in our class is fundamental. Thus, students are required to have their cameras on from start to finish during our classes on Zoom. A default setting for our sessions in Zoom is that participants will be muted when they enter, so you will unmute yourself when you comment orally during our conversations. If you have technical issues, please immediately consult UF IT Help to resolve them. Zoom sessions will not be recorded by the instructor and may not be recorded by students. As in all courses, unauthorized recording and unauthorized sharing of recorded material is prohibited.

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Information on current UF grading policies for assigning grade points:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/

Regrade requests must occur within 1 week of when the exam is returned. Note that grading for the entire exam will be checked for accuracy.

Grade disputes must be submitted within 3 weeks of the end of the semester.

Please note that you may not share any of the course materials with anyone.
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