

Grading: Attendance & participation (5%), problem sets (15%), two midterm exams (25% each), final exam (30%).

Course materials: All course materials will be posted to Canvas. You are advised to set Canvas to notify you when new materials are posted or check the site periodically.

Attendance & participation: Full credit given for attending all lectures punctually and participating actively when called on during lecture. All students are responsible for material presented in class as well as any logistical updates that are discussed in lecture, even if they are not disseminated by email, Slack or Canvas.

Problem sets: You may work with your classmates on the problem sets, but you must turn in your own work. These are designed to gauge your level of preparation for the exam, so it is in your best interest to make sure you can do the problems on your own. There will be 3 problem sets distributed in the quarter with many extra (i.e. non-graded) problems. You are encouraged to work on these in your own time. *Each week a selection of problems from the problem set will be turned in for grading. Problem Sets are due on Fridays by 5 PM in Linda's TA mailbox on the ground floor of the chemistry building.*

Midterms: The midterms will occur at the end of the 3rd and 7th weeks of the quarter and will be 50-minute exams on material covered. They will consist of problems of a similar format to the problem sets. There will be *no make-up midterms*, no exceptions. Students absent for the midterm for a *legitimate reason* that is supported by documentation for the absence will have the final exam counted for 55% of their grade.

Final exam: You must take the final exam in order to pass the class. Students who miss the final exam for a legitimate reason (see above), may be given a grade of "incomplete," provided that the student had a passing grade before the final.

Exam regrades: Exam regrading will be performed only if a detailed written request is provided to JTS on the day the exam and returned during the class in which it is discussed. If a regrade is granted, the *entire exam will be regraded* and points may be deducted from problems other than those that are the subject of the regrade request. Do not alter your exam in any way if you request a regrade.

Academic dishonesty: Please refer to the UC Davis Student Judicial Affairs statement regarding academic conduct: <http://sja.ucdavis.edu/cac.html>. Any suspected academic dishonesty will be referred directly to SJA without prior discussion. We are all here to learn and have fun, so out of respect for yourself and your classmates don't cheat or plagiarize!

Approximate Course Schedule

- Week 1: Introduction to Multistep Synthesis, Review of Aromatic Chemistry
- Week 2: Guidelines to the Synthesis of Aromatic Compounds, C–X Bond Formations
- Week 3: Chemoselectivity, Synthesis of 1,1;1,2; 1,3 - Di–X Relationships
- Week 4: Amine Synthesis
- Week 5: Protecting Groups, C–C Bond Formation
- Week 6: Ketone Synthesis, Introduction to Stereochemistry
- Week 7: Stereoselective Reactions, Enolates
- Week 8: Asymmetric Synthesis, Alkene Synthesis
- Week 9: Alkenes/Alkynes, Carbonyl Addition Reactions

Additional Reading:

1. *The Logic of Chemical Synthesis*, E. J. Corey & X.-M. Cheng (1989).
2. *Classics in Total synthesis*, K. C. Nicolaou & E. J. Sorensen (1996).
3. *Protective Groups in Organic Synthesis*, P. G. M. Wuts & T. W. Greene (4th edition, 2007).
4. *Advanced Organic Chemistry Part B: Reactions and Synthesis*, F. A. Carey & R. J. Sundberg (4th Edition, 2001).
5. *Modern Organic Synthesis*, G. S. Zweifel & M. H. Nantz (2007).
6. *Problems in Organic Synthesis*, H. Palandoken, M. H. Nantz & G. S. Zweifel (2010).

Online Resources:

1. Scifinder web edition: <https://scifinder-n.cas.org>
2. Reaxys (web access to Beilstein database): <https://www.reaxys.com/#/search/quick>
3. *In the pipeline* (chemistry blog): <http://blogs.sciencemag.org/pipeline/>
4. *Comporgblog* (chemistry blog): <http://comporgchem.com/blog/>
5. *Encyclopedia of Reagents for Organic Synthesis* (e-EROS), available through UC Davis main library:
<https://onlinelibrary.wiley.com/doi/book/10.1002/047084289X>
6. *e-molecules*. Online resource for commercial vendors of compounds:
<http://www.emolecules.com/>