**Department of Chemistry Syllabus**

This syllabi is advisory only. For details on a particular instructor's syllabus (including books), consult the instructor's course page. For a list of what courses are being taught each quarter, refer to the Courses page. *Every instructor has prerogative to teach the course as they see fit and ultimately the instructor's syllabus supersedes all others.*

***CHE 231A: Organic Synthesis: Methods and Strategies***

Approved:

Suggested Textbook: (actual textbook varies by instructor; check your instructor)

*Organic Chemistry by Inquisition.* K. Burgess (2009).

Additional course material is available on LibreTexts chem.libretexts.org)

Suggested Schedule:

Week 1 Intro to synthetic strategy

Week 2 Conformational analysis, torsional strain, cyclohexanes, A-values

Week 3 Fürst-Plattner rule, allylic strain, Protecting groups

Week 4 RMgX, RLi, carbonyl addition, chemoselectivity, cuprates

Week 5 Stereoselective carbonyl addition: Felkin-Anh, Cram chelate

Week 6 Reduction

Week 7 Oxidation

Week 8 Enolates, part 1

Week 9 Enolates, part 2

Week 10 Diels-Alder reaction

Additional Notes:

This course will provide an introduction to the synthesis of complex organic molecules. Reactivity, stereoselectivity, and the strategy of multistep synthesis will be the core topics that are covered. Topics will include strategy/retrosynthesis, stereochemistry, conformational analysis, protecting groups, enolates and other carbonyl chemistry, alkene synthesis, reduction, oxidation, and the Diels-Alder reaction.

Learning Goals:

Upon completion of this course, students should be familiar with basic strategies and techniques for the synthesis of organic compounds. Students should be able to recognize key retrosynthetic simplifications for devising multistep syntheses.