**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 131: Modern Methods of Organic Synthesis***

Approved:

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

*Organic Synthesis: The Disconnection Approach*. Stuart Warren and Paul Wyatt, 2nd edition (2008).

Suggested 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: Stereselective Reactions, Enolates
* Week 8: Asymmetric Synthesis, Alkene Synthesis
* Week 9: Alkenes/Alkynes, Carbonyl Addition reactions

Additional Notes:

This course will provide an introduction to the synthesis of complex organic molecules. Transformations for C-X and C-C bond-formation, functional group reactivity, chemoselectivity, regioselectivity, and the strategy of multistep synthesis will be the core subjects covered. Topics will include strategy/retrosynthesis, advanced aromatic chemistry, protecting groups, stereochemistry, enolates and other carbonyl chemistry, alkene synthesis, reduction/oxidation (introductory), heterocycles, cross-coupling reactions and other modern methods of synthesis.

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.