Synthetic Organic Chemistry

Chemistry 755

Section: G100

Term: 2004 Fall

Instructor: Dr. P. Wilson. Office: SSB-7106.

Discussion Topics: General Course Description:

This course teaches the principles involved in the planning and execution of the synthesis of organic molecules. Emphasis is on synthesis of naturally occurring compounds of biological importance.

3 lecture hours/week; 1 tutorial hour/week; 0 lab hours.

Topics:

An advanced treatment of the strategies and tactics that are used in multi-step organic synthesis will be provided (retrosynthetic analysis, protecting groups, linear and convergent synthesis). The principles and uses of modern synthetic methods will be introduced. The approach employed in this course will be to examine the syntheses of biologically active natural products (steroids, terpenes, alkaloids, polyethers and antibiotics) as well as compounds that have novel molecular architecture. This will provide a historical perspective of the development of the art and science of total synthesis over the course of the past century. This approach will also illustrate the use of functional group interconversions, carbon-carbon bond formation reactions, organometallic chemistry, asymmetric synthesis, pericyclic reactions and enzymes in total synthesis.

Grading: 20% One oral presentation by each student.

20% Midterm Examination.

60% Final Examination.

Required Texts: No required text.

The following text will be on Reserve at the Library:

"Advanced Organic Chemistry: Part A. Structure and Mechanisms. Part B. Reactions and Synthesis", Carey and Sunberg, Plenum Press, 1990.

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"Advanced Organic

Recommended Texts: None.

Materials/Supplies: None.

Prerequisite/Corequisite: Prerequisite: CHEM 381 or permission of the instructor.

Notes: None.