CHM 539  
APPLIED ORGANIC SPECTROSCOPY

Oakland University  
College of Arts and Science  
Department of Chemistry

WINTER SEMESTER 2006  
(3 Credits)  
Course reference 15322  
Tuesday, Thursday  5:30-7:17 pm  SEB 130  
Instructor: Roman Dembinski  
Contact information: tel. (248) 370-2248, see also http://www2.oakland.edu/chemistry/

PREREQUISITE

CHM 235 (Organic Chemistry II)

Each student is expected to have a thorough command of all material in the organic chemistry sequence. The text used last year was "Organic Chemistry" 8th edition and "Study Guide and Solutions Manual to Accompany Organic Chemistry" 8th edition by T. W. Grahams Solomons and Craig B. Fryhle John Wiley & Sons, New York, 2004, however, most of the variety available organic chemistry textbooks are adequate as a background.

TEXT


This title has been submitted to the University Bookstore as an official title. There are, however, several equivalent textbooks covering a very similar, if not identical, material. Those can be used in as a substitute for the official textbook, or as extended study materials (especially for students specializing in organic chemistry). In case of the financial hardship the instructor recommends searching for used books. Several internet resellers are available, including www.half.com, www.amazon.com, or www.allbookstores.com.

Other books that can be used as a substitute:

LECTURES

Homework problems will be reviewed and worked out in detail. You are encouraged to come with specific questions from lectures, the text, and assigned problems. Calculator (simple model) will be used for some classes.
OFFICE HOURS
There are no office hours. The instructor (SEB 225) prefers walk-ins. The instructor is also available on weekends (most often Sunday afternoon; call in advance), but no later than 7:00 pm.

COURSE GRADING
Homework will count as 44% of the course grade, practical NMR component 6%, and the final exam will count as 50% of the course grade. Ranking (distribution curve) will be posted.

LECTURES PLAN
1. Analytical Methods in Organic Structure Analysis
2. Introduction into Nuclear Magnetic Resonance
3. Interpretation and Use of Proton and Carbon Chemical Shifts
4. Interpretation and Use of Proton and Carbon Coupling Constants
5. Multi-pulse and Multidimensional NMR Techniques
6. Electron Spin Resonance
7. Mass Spectrometry. Theory and Interpretation
8. Additional MS Techniques
9. Infrared Spectroscopy
10. Ultraviolet/Fluorescence Spectroscopy
11. Methods used to Determine Stereochemistry (CD, NMR, X-ray)
12. Problems in Structure Analysis
13. Practical Nuclear Magnetic Resonance
14. Practical Nuclear Magnetic Resonance

FINAL EXAMINATION
Tuesday, April 20th, SEB 130, 7:00-10.00 pm.