

CHM 3230 Organic Chemistry III
Fall 2008 TR 8:00 - 9:15 AM
Building 11, Rm 223



Professor: Dr. Michael T. Huggins
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Required text:

Structure Determination of Organic Compounds: Tables of Spectral Data, Pretsch, E, Bühlmann, P., Affolter, C.; Springer-Verlag, Berlin, **2000**.

Stereochemistry, Morris, D. G. The Royal Society of Chemistry. Cambridge, **2001**. This book is in their series, *Tutorial Chemistry Texts*. It is available over the internet: <http://www.rsc.org> It is not available in the bookstore.

Organic Structural Spectroscopy, Lambert, Shurvell, Lightner, & Cooks Prentice-Hall, Upper Saddle River, New Jersey, **1998**. (ISBN: 0132586908)

Recommended text:

A general organic chemistry textbook, such as
McMurray, J., *Organic Chemistry*, 5th Edition, Brooks/Cole Publishing Company

Books on Library Reserve:

There are several books on reserve in the library for this course on 24 hour check-out. These books should be useful sources for background and additional information on the topics covered in lecture.

Prerequisites:

Organic Chemistry I & II (CHM 2210 & 2211) with a grade of a C- or better.

Homework & Quizzes:

At various times, there will be homework assignments given which will be related to the material discussed in lecture. In addition, short in class quizzes will be given periodically to monitor progress in learning the lecture material. Quizzes will be given during the first 10-15 minutes of lecture, and no opportunity will be given for make-ups. The homework and quizzes will count 20% of your final grade.

Exams: There will be three take-home exams and in-class final exam for this course. The exams will be given on the following schedule:

Exam	Topics	Due Date	Exam Value
One	Organic I & II Review	Sept 9 th	10%
Two	Spectroscopy	Oct 9 th	25%
Three	Stereochemistry	Nov 13 th	20%
Final	EVERYTHING!!	Dec 9 th	25%

These dates are tentative and subject to change.

For the final exam, you may leave when finished, but only after turning in your exam. Once you have turned in your exam, it will not be returned for any reason. **Academic dishonesty will NOT be tolerated in any form!!**

Grades:

I DO NOT curve exams, rather I set a curve for the grading scale. The following grading scale will be used for this course:

A	100 - 90%	A⁻	89 - 85%		
B⁺	84 - 80%	B	75 - 79%	B⁻	74 - 70%
C⁺	69 - 65%	C	64 - 55%	C⁻	54 - 50%
D	49 - 40%	F	39 - 0%		

Student Learning Outcomes:

- identify organic functional groups and other organic structural elements and predict its impact on molecular stereochemistry and spectroscopic data
- analyze spectroscopic data as it relates to organic structure analysis and determination
- effectively communicate chemical concepts using scientific terminology and chemical structures, especially as it related to spectroscopy and stereochemistry
- recognize and explain elements of molecular conformation, stereochemistry, and molecular properties and predict its impact on spectroscopic data
- select appropriate spectroscopic techniques for conducting stereochemical analysis
- apply molecular modeling techniques for problem solving as it related to stereochemistry and molecular conformation
- Demonstrate basic techniques in on-line searches for specific reference/review articles and select resources based on quality standards and currency

Course Outline:

The course is divided into three main topics:

1. Spectroscopy (~12 lectures)
 - a. UV-Visible Spectroscopy
 - b. Mass Spectrometry
 - c. Infrared Spectroscopy
 - d. Nuclear Magnetic Resonance Spectroscopy
2. Stereochemistry (~10 lectures)
3. Organic synthesis - conformational and stereochemical aspects (~6 lectures)

In addition to these main topics, it is expected that you will learn to use the chemical literature. This includes the following:

- understanding basic article types (communications, articles, patents, and review articles)
- use of Chemical Abstracts (CA) and Beilstein chemistry databases
- use of SciFinder Scholar for searching CA and Medline databases
- access print & online journals and books
- conduct literature searches to find relevant information on various topics

There will be a strong connection between the use of the chemical literature for CHM 3230 and CHM 3740L. It is expected that you will use the literature equally for both classes.

General Hints:

Organic chemistry is made fun and hard by the fact that considerable information must be committed to memory, and not just temporarily (memorizing) for the purpose of taking one exam. In a sense, all exams will be comprehensive due to the building-up nature of organic chemistry. It is expected that you will have an Organic Chemistry textbook to use as a reference. I expect you to use it to refresh your memory on an “as needed” basis for topics covered during CHM 2210 and CHM 2211. Very little, if any, class time will be used to review materials from Organic Chemistry I & II. However, a working knowledge of this material will greatly improve your success in this class. In particular, you should be familiar with the following topics:

- Acid/Base Chemistry
- Nomenclature
- Functional Groups
- Spectroscopy
- Stereochemistry
- Conformations
- Spectroscopy (^1H , ^{13}C , IR, MS)
- Molecular Structure
- Hybridization & Bonding
- Basic Organic Reactivity

We will not spend very much time on organic reactions. However, it is assumed that you know the basic organic reactions and reactivity of organic functional groups.

Withdrawals: Friday, October 31th is the last day to withdraw from this course and receive an automatic grade of **W**. This grade appears on your transcript but does not affect your GPA nor does it count towards graduation. After **Friday, October 31th**, only a withdrawal from the University is possible and your grade will be **WF** if you are failing the course at the time. A **WF** is equivalent to an **F**.

Students with Special Needs: Students with special needs who require specific accommodations for examinations or other course activities should contact Barbara Fitzpatrick, Director of the Student Disability Resource Center (SDRC) (web address: <http://www.uwf.edu/SDRC>, e-mail: sdrc@uwf.edu, telephone: 474-2387). SDRC will provide the student with a letter for the instructor that will specify recommended accommodations for individual students.

Cell Phones: Please turn your cell phones off for the 75 minutes you are in lecture. Most all cell phones come with voicemail, PLEASE USE IT!!! If your cell phone should ring during class, you will be asked to leave class for the remainder of the lecture. Such distractions are rude and discourteous to both me and your fellow students.

Expectations for Academic Conduct/Plagiarism Policy:

As members of the University of West Florida, we commit ourselves to honesty. As we strive for excellence in performance, integrity—personal and institutional—is our most precious asset. Honesty in our academic work is vital, and we will not knowingly act in ways which erode that integrity. Accordingly, we pledge not to cheat, nor to tolerate cheating, nor to plagiarize the work of others. We pledge to share community resources in ways that are responsible and that comply with established policies of fairness. Cooperation and competition are means to high achievement and are encouraged. Indeed, cooperation is expected unless our directive is to individual performance. We will compete constructively and professionally for the purpose of stimulating high performance standards. Finally, we accept adherence to this set of expectations for academic conduct as a condition of membership in the UWF academic community.