



CHEMISTRY 744

Organic Spectroscopy, Fall 2015

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Books on reserve in the Library:

Introduction to Spectroscopy 3rd Ed., Pavia, Lampman, Kriz; Saunders Publishing, 2001.
Spectrometric Identification of Organic Compounds 5th Ed., Silverstein, Bassler, Morrill; Wiley, 1991.
Basic one- and two-dimensional NMR Spectroscopy, Horst, Weinheim, 2005.
NMR - from spectra to structures: an experimental approach, Mitchell and Costisella, Springer, 2004.
Structure elucidation by modern NMR: A workbook, Duddeck, Dietrich, Toth, Springer, 1998.

Other References and Texts:

Organic Structure Analysis, Crews, Rodríguez, Jaspars; Oxford Press, 1998
Spectrometric Identification of Organic Compounds 6th Ed., Silverstein, Bassler, Morrill; Wiley, 1998.
ABCs of FT-NMR, Roberts, University Science Books, 2000.

INTRODUCTION: This course is designed to provide a theoretical and practical working knowledge of modern spectroscopic techniques as applied to the elucidation of the structure of organic compounds. Mass spectroscopy, infrared spectroscopy, and NMR spectroscopy will be covered. If time permits, we will discuss Raman and UV spectroscopy. You are expected to have a solid understanding of physical organic chemistry and organic structure.

GRADING: Homework (25%); Midterm exam (25%); Final exam (50%). Grades will be assigned as follows (subject to change): A 85-100%; B 70-84%; C 57-69%; D 45-56%; F <45%.

HOMEWORK: Homework problems will be given periodically throughout the course and must be completed by the date assigned. A grade reduction of 10% per day will be applied to any late homework.

Special Needs: Any students who need special accommodations for learning or who have special needs are invited to share these concerns or requests with the instructor as soon as possible.

Academic Responsibility: It is assumed that students at NDSU have the integrity to complete examinations on their own. I will provide an examination environment that discourages temptation otherwise. Any student who is found to have acted dishonestly on an exam will receive an F for the course. The policy applied is that of the Code of Academic Responsibility and Conduct as outlined in NDSU University Senate Policy, Section 335: Code of Academic Responsibility and Conduct (<http://www.ndsu.nodak.edu/policy/335.htm>).

Tentative Class Schedule

Date	Topic
Aug 25/27	Introduction and Basics of NMR Spectroscopy
Sep 1/3	NMR Spin Coupling and Multiplet Analysis
Sep 8/10	Multiplet Analysis and Multipulse NMR
Sep 15	NMR Stereochemistry
Sep 17	MIDTERM EXAM
Sep 22/24	NMR Practical Considerations and 2D NMR
Sep 29/Oct 1	Mass Spectrometry
Oct 6/8	Infrared Spectroscopy
Oct 13	UV Spectroscopy
TBA*	FINAL EXAM
	*we will schedule the final for the week of Oct 19.