Spring 2-1-2022

CHMY 465,01: Organic Spectroscopy

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CHEMISTRY 465 ORGANIC SPECTROSCOPY

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Course objective

The objective of this course is to develop a working knowledge of spectroscopy and spectrometry as applied to the structural elucidation of organic compounds. We will cover ^{1}H and ^{13}C NMR spectroscopy, infrared spectroscopy, UV-vis spectroscopy and mass spectrometry. We might not get too heavy on theory but we will cover many practice problems.

Textbooks

I do not agree with the general idea that everyone has to rush out and buy an expensive textbook only to have to sell them back for cents on the dollar. The library is full of textbooks that have already been bought using your taxes. Nowadays there is a phenomenal amount of information (most of it almost correct) on the web. I will give you copies of all the data tables that you will need. If you still have your copy of your sophomore organic laboratory textbook, that will be a good place to start. One textbook that might help, however, is Silverstein & Webster, "Spectroscopic Identification of Organic Compounds."

Assumed prerequisites

Sophomore organic chemistry – laboratory and lecture.

Grading and evaluation

The course will be graded on the A, A-, B+ … F system. There will be ten assignments given out throughout the semester which can be done at home. Each assignment will be worth 10 % of the overall grade. I expect that you will work individually on the assignment; there will be plenty of practice problems that you can work on together. Due dates for assignments will be given when assignments are handed out. Any assignment handed in late will not be graded. There will be no final examination. Assignments will be submitted via Moodle. For graduate students, one of the assignments will require determination of the structure of a provided compound.

Graduate increment

Graduate students enrolled in the class will be required to complete a short project. While the regular assignments involve deducing structures from data that has already been obtained, graduate students will be required to complete one structure determination from a sample of compound provided to them; the graduate student needs to obtain all the source data and then deduce the structure of the compound.

Accommodations for disabilities

Students with documented disabilities will receive appropriate accommodations in the course. Please provide a letter from your DSS Coordinator and discuss your needs with me within the first ten days of the semester. Information about services provided to students with disabilities is available at http://www.umt.edu/dss.

Student conduct

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The code is available for review online at http://life.umt.edu/VPSA/documents/StudentConductCode1.pdf

Important dates

March 21 – March 25	Spring break: no lectures
May 6	Last day of classes