

CHE 512 E – Basic Practical NMR Spectroscopy

Fridays 3:00 – 4:00 PM, 684 NSC

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Course description:

This is a 1-credit mini-course designed to teach the use of Varian NMR spectrometers. Students will learn to use the VNMR menus to acquire and process data. They will also be taught the importance of proper procedures for locking, shimming, optimization of NMR parameters and phasing of NMR spectra, as well as its presentation. The following experiments will be covered: 1D proton, 1D carbon, DEPT, COSY and HSQC. A basic theoretical description of NMR spectroscopy and various NMR experiments will also be presented. Class participation is encouraged. This course is more of a “how-to” course.

Grading will be based on an in-class examination and a take-home assignment.

Recommended Texts:

1. J. K. M. Sanders & B. K. Hunter, Modern NMR Spectroscopy – a guide to chemists, Oxford University Press (1982)
2. A.E. Derome, Modern NMR Techniques for Chemistry Research,. Pergamon Press, Oxford (1987)

There are no prescribed texts. References will be provided. Also, handouts will be distributed periodically to cover the course material.

Course Outline:

1. Introduction to spectroscopy
2. Magnetic Resonance phenomena
3. NMR instrumentation
4. NMR parameters
5. An NMR experiment
6. Instrument training for 1D
7. Introduction to 2D NMR
8. 2D NMR specifics
9. 2D NMR applications
10. Instrument Training on 2D NMR
11. Other Topics