**Department of Chemistry Syllabus**

This syllabi is advisory only. For details on a particular instructor's syllabus (including books), consult the instructor's course page. For a list of what courses are being taught each quarter, refer to the Courses page. *Every instructor has prerogative to teach the course as they see fit and ultimately the instructor's syllabus supersedes all others.*

***CHE 219L: NMR Laboratory***

Approved:

**Course Content:** Structural characterization of organic compounds using NMR.

**Suggested Texts and References:** P. Crews, J. Rodriguez, M. James“*Organic Structure Analysis*”

VNMRJ manual (see Smartsite)

Bruker Tools:

<https://www.bruker.com/products/mr/nmr/nmr-software/software/complete-molecular-confidence.html>

<https://www.bruker.com/fileadmin/user_upload/8-PDF-Docs/MagneticResonance/CMC_Classroom_0315_T154271.pdf>

<https://store.bruker-biospin.com/shop/US/category/48/>

UC Davis NMR Webtools

http://chemistry.ucdavis.edu/facilities/nmr.html

**Suggested Schedule:**

Week Description

1 Introduction to laboratory/safety

2 Basics of NMR instrument setup (sweepwidth, FT, etc.)

3 1H NMR, 90° pulse, lock/shim

4 Homonuclear decoupling; 1D NOE

5 13C, DEPT135, mass spectrometry

6 2D NMR experiment: COSY

7 2D NMR experiment: HSQC

8 (make up)

9 ***LABORATORY PRACTICAL***

**Learning Goals**:

* Practical usage of NMR instruments and software (i.e. VNMRJ, Bruker MestReNova) with full competence and proficiency
* Familiarization with NMR spectrometers to assist in independent research