**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 219: Spectroscopic Determination of Organic Chemical Structure***

Approved:

**Course Content:** Structural characterization of organic compounds using NMR, IR, UV/Vis and Mass spectrometry.

**Suggested Text:** Phillip Crews, Jaime Rodriguez, Marcel James “*Organic Structure Analysis”*

**Suggested Schedule:**

Week 1 – Using Spectroscopic and Analytical Data in Organic Structure Analysis

Week 2 – Introduction to Nuclear Magnetic Resonance

Week 3 – Interpretation and Use of Proton and Carbon Chemical shifts

Week 4 – Interpretation and Use of Proton and Carbon Coupling Constants

Week 5 – Mass Spectrometry: Core Techniques and Ionization Processes

Week 6 – Mass Spectrometry Analysis of Small and Large Molecules

Week 7 – Solid State NMR

Week 8 – Infrared Spetroscopy

Week 9 – Optical and Chiroptical Techniques: UV-Vis Spectroscopy

Week 10 – Strategies and Tactics in Determining Structure and Steroechemistry

**Additional Notes:** Each week consists of one lecture session and one problem solving session.

**Learning Goals:** To use spectroscopy to determine the structure and purity of compounds.