Course: CHM1456HS, Advance NMR Spectroscopy

Instructor: Lewis E. Kay

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Lectures: On-line, Monday 5-7 Using Zoom (Details will be sent to students via email prior to the start date of Monday, January 10).

Recommended Texts: Fundamentals of Protein NMR Spectroscopy, by Gordon Rule and T. Kevin Hitchens

Marking Scheme: In class exam 50%, take-home exam 50%.

Web: Lecture notes will be available on-line as will be discussed during the first lecture.

Office hours: Students are encouraged to email me to set up zoom-calls to discuss material.

Course Description: This course builds upon a foundation of calculus, linear algebra, and elementary quantum mechanics to develop many of the concepts in solution NMR spectroscopy. The course covers the quantum mechanics necessary to understand complex pulse sequences, and includes a detailed survey of experimental methods explained in a rigorous manner. Applications to protein systems are described. Topics that will be covered include, but are not limited to,

- Density matrix quantum mechanics
- Product Operators
- Spin Physics, focusing on spin ½ particles and briefly spin 1 particles
- Quantitative Explanation of Modern NMR Experiments