

## Chem 451: Nuclear Magnetic Resonance and its Applications

*Course description:* The use of Nuclear Magnetic resonance (NMR) in synthetic and mechanistic chemistry.

### Course Goals

Develop an understanding of the basic theory and application of NMR spectroscopy

Develop the ability to correlate NMR spectroscopic data with molecular structure

Develop the ability to extract thermodynamic and kinetic data from NMR experiments

Develop an understanding of heteronuclear NMR; challenges, limitations, and information provided

Develop an understanding of issues surrounding peak resolution and signal intensity in NMR

Develop the ability to choose appropriate NMR experiments for structure assignment

Apply the concepts of NMR to practical projects

### Program Goals

Develop the ability to represent chemical information.

Develop the ability to apply error analysis and determine significant figures.

Develop competence in problem solving.

Develop the ability to disseminate scientific information orally and in writing.

Develop the ability to work effectively in a team.

Develop the ability to engage in scientific discussions.