

Course: CHEM 532

Instructors: James Gleason, Alex Wahba and Robin Stein

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Brief course description: A practical course on the application of modern spectroscopic methods for the determination of structures of complex organic and organometallic compounds.

The course will cover several spectroscopic techniques used on an everyday basis for structure determination. Although understanding of the basic theory of all spectroscopic techniques is essential, the main focus of the course will be on choosing the appropriate experiments, executing them properly, and correctly interpreting the data obtained. The goal is for the student to integrate data from multiple spectroscopic experiments to solve the structure of novel and/or unknown molecules. As the course is envisioned to provide the necessary tools for basic research in synthetic chemistry, it incorporates a practical component as part of a term project: students will learn the workings of modern MS and NMR instruments and acquire spectra using self-selected techniques in order to determine the structure of an unknown molecule.

Method of Delivery: Live Zoom lectures and remote instrument demos and operation. If all registered students are able to attend, classes and unknown determinations may be in-person, pending University approval and provincial guidelines.

Evaluation Scheme:

Problem Sets	20%
Midterm	30%
Final Exam	30%
Term Project (unknown(s) determination)	20%