

**Dr. René Boéré**

**Chem 4000 - Principles of Electrochemistry and EPR Spectroscopy**

**Synopsis:** This course will treat the basic theoretical concepts of modern electrochemistry and treat applications primarily to voltammetric methods. The emphasis will be on applications that provide mechanistic information and information on the electronic structures of molecules. The course will not directly deal with quantitative analysis (e.g. ion sensitive electrodes) but students could use the basis provided to make those applications on their own. The course will also provide a basic introduction to the principles of electron paramagnetic resonance (EPR) spectroscopy. The use of EPR as a spectroelectrochemical technique will tie the two main topics of the course together. Other spectroelectrochemical methods may also be discussed if time permits.

A good background in modern chemistry will be necessary, and prior experience with simple quantum chemistry and molecular orbital theory will be an asset.

3 Hr Lecture; No lab is planned for this course.

Graduate enrollment as Chem 5000 (MSc) or Chem 7000 (PhD) is encouraged.