

## **CHEM 3410 Instrumental Analysis**

### **Course Description:**

Spectrophotometric methods including atomic absorption and emission, x-ray fluorescence, infrared and ultraviolet visible spectroscopies. Chromatographic separation methods and mass spectrometry

### **Main Course Outline (for reference only):**

#### Part A:

- Electromagnetic radiation
- Interactions between photons and matters
- Atomic absorption spectroscopy
- Atomic emission spectroscopy
- UV-visible molecular absorption spectroscopy
- Infrared molecular absorption spectroscopy
- X-ray absorption spectroscopy
- X-ray fluorescence spectroscopy

#### Part B:

- Principles of chromatographic separation
- Gas chromatography (GC)
- High performance liquid chromatography (LC)
- Mass spectrometer as a sample-selective detector for GC/LC
- Other separation methods:
  - Supercritical fluid chromatography
  - Capillary electrophoresis