Chemistry 3420/7420
Instrumental Analysis
Fall 2010

Prerequisites: 
Chem 41 or 41W and PHY 2 or 2.5

Instructor: 
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Required Text: 

Lectures: 
T/Th 6:30-7:20 PM

Labs: 
T/Th 7:30-10:20 PM

Office Hours: 
T 5:30-6:30 PM
W 12-1 PM

Assignments: 
Homework problems from the text will be assigned but not collected. The homework will serve as an indication of the type and level of difficulty of the exam problems.

Grading: 
There will be two one-hour exams and one two-hour final examination. Each hour exam is worth 15% of your grade, the final is worth 30% and lab is worth 40%. The lab portion of your grade is based on laboratory reports. It is strongly suggested that you keep a laboratory notebook for your own benefit.

Academic Honesty: 
Academic dishonesty will not be tolerated. Evidence of cheating on exams, or copying of lab reports will result in a failing grade for the course, without exception.

Course Topics: 
Measurement Basics (Chapters 1-5)
DC Electronics
AC Electronics
Signals and Noise

Electroanalytical Chemistry (Chapters 22-25)
Potentiometry
Coulometry
Voltammetry

Exam I
Course Topics (cont’d)

Atomic Spectroscopy (Chapters 6-10)
  Atomic Absorption
  Atomic Emission

Molecular Spectroscopy (Chapters 13-18)
  UV-Visible Absorption Spectrometry
  Luminescence Spectrometry
  Infrared Spectrometry
  Raman Spectroscopy

Exam II

Molecular Spectroscopy (Chapters 19-20)
  Nuclear Magnetic Resonance Spectroscopy
  Mass Spectrometry

Separation Methods (Chapters 26-30)
  Gas Chromatography
  Liquid Chromatography
  Electrophoresis

Final Exam