

CHEMISTRY 237
Experimental Spectroscopy
Spring, 2010

Instructor: Joel Tellinghuisen, SC 5521
Office Hours: 12-1 TWR

Assistant: Seth Byers

Texts: *Physical Chemistry*, by Ira N. Levine (McGraw-Hill, 2008)
Experiments in Physical Chemistry, by Garland, Nibler, and
Shoemaker (GNS, McGraw-Hill, 2009)
ClassPak

The course will cover aspects of the material in Chapters 17-20 of Levine, most of which you will have studied already in Chemistry 230. The experiments to be done will be mainly from the realm of optical spectroscopy, and will include the absorption spectrum of a conjugated dye (Experiment 34 in GNS), the recording and analysis of the emission spectrum of atomic hydrogen and deuterium, the infrared rotation-vibration spectrum of HCl (GNS Expt. 37), and the absorption/fluorescence spectrum of I₂ (GNS Expt. 39).

The course will be roughly 60% "lecture" and 40% "lab." More specifically, there will be

- (a) two exams — one before spring break, the other in the scheduled final exam slot or at some other mutually agreeable time at the end of the term. The latter exam will not be comprehensive, except to the extent that some topics (e.g., error propagation) carry over from the first part of the semester.
- (b) 8-10 quizzes/problem assignments.
- (c) laboratory data analyses and writeups.

The approximate credit breakdown for these assignments will be as follows:

Exams	200
Problems/quizzes	100
Labs/data analysis	200

Much of your lab work will be done by lab teams, with each team member sharing the same credit. Collaboration with the members of your team is of course permitted and expected on these assignments. Some of the lab-related data analysis and all quizzes and exams are to be done individually, on the Honor System, unless otherwise specified.

As always, the use of laboratory data not collected by you or your team (called "dry-labbing") is prohibited under the Honor Code, unless specifically authorized.