Chem 567 Chemical Dynamics Winter 2012

Professor	e-mail	Office Hour	Office
Eitan Geva	eitan@umich.edu	Upon request	2000D Chem.

Prerequisites:
Chem571 (or an equivalent advanced course in quantum mechanics).
Chem575 (or equivalent course statistical mechanics).

Website:
Course materials will be posted on the course CTools web site (https://ctools.umich.edu/).

Textbook:

"Chemical Dynamics in Condensed Phases: Relaxation, Transfer, and Reactions in Condensed Molecular Systems", by Abraham Nitzan.

The textbook is available electronically through MLibrary at the following URL:
http://mirlyn.lib.umich.edu/Record/010346412

Class Schedule:

MWF 11:00 AM -12:00 PM Room 1640 CHEM

Grading:

2 Problem Sets	200 pts.
Final Project	200 pts.
Total pts:	400 pts.

Problem Sets

Chem 567 students are **required** to submit 2 problem sets and a final project. Each problem set is worth 100 points. The final project will consist of writing a literature review or a research proposal related to the material covered in the course. **The problem sets will be posted on the web site a few weeks before submission deadline**. The submission deadlines are given below:

Problem set #	Submission deadline
1	February 20
2	March 19
Final project	April 23

Problem sets must be prepared legibly with work shown in an orderly and logical manner. Explanations of your procedure should be given as needed to make clear what you have done. A specific numerical answer for each problem must be given with correct units and **highlighted (or enclosed in a box).**

Tentative list of topics

1. Time correlation functions (Chapter 6).
2. Introduction to stochastic processes (Chapter 7).
3. Stochastic equations of motion (Chapter 8).
4. Introduction to quantum relaxation processes (Chapter 9).
5. Quantum open systems (Chapter 10).
6. Linear response theory (Chapter 11).
7. The spin-boson model (Chapter 12).
8. Vibrational relaxation (Chapter 13)
9. Chemical reactions in the condensed phase (Chapter 14).
10. Solvation dynamics (Chapter 15).
11. Electron transfer processes (Chapter 16).
12. Resonance energy transfer (Chapter 18.4).