SCHEDULE FOR SECTION 1 (MW)

**Week 1**
March 28  Introduction to the course. Discussion of quantum mechanics and molecular mechanics (Dr. Kalju Kahn).
   **All groups:** Allantoin Part I: Conformational analysis in the gas phase.
March 30  Discussions of Monte Carlo and Molecular Dynamics (Dr. Kalju Kahn)
   **All groups:** Allantoin Part II: Monte Carlo simulation in solution

**Week 2**
April 4  **All groups:** NMR Lecture (Dr. Kalju Kahn) at 2 PM
   **All groups:** Demonstration of the CD spectrophotometer at 3 PM
   **All groups:** Review of the program SCIENTIST in the Mesa lab (Phelps 1525) at 4 PM
April 6  **Group A1:** Allantoin Part III: NMR data acquisition
   **Group B1:** UV/VIS binding study of NAG to lysozyme
   **Group A2 and B2:** Independent work with SCIENTIST (Mesa lab open from 4 – 5:50 PM)

**Week 3**
April 11  **Group A2:** Allantoin Part III: NMR data acquisition
   **Group B2:** UV/VIS binding study of NAG to lysozyme
   **Group A1 and B1:** Independent work with SCIENTIST (Mesa lab open from 2 – 5:50 PM)
April 13  **Group B1:** Allantoin Part III: NMR data acquisition
   **Group A1:** UV/VIS binding study of NAG to lysozyme
   **Group A2 and B2:** No meeting

**Week 4**
April 18  **All Groups:** SCIENTIST assignment due
   **Group B2:** Allantoin Part III: NMR data acquisition
   **Group A2:** UV/VIS binding study of NAG to lysozyme
   **Group A1:** Preparation of solutions for the lysozyme unfolding at 17 °C
April 20  **All Groups:** Lecture and Discussion: Enzyme Kinetics I (Dr. Kalju Kahn)
   **Group A1:** Circular dichroism: Unfolding of lysozyme at 17 °C
   **Group A2:** Enzyme kinetics: Multi-substrate kinetics with GAPDH
   **Group B1:** Preparation of solutions for the lysozyme unfolding at 20 °C

**Week 5**
April 25  **All Groups:** Lecture and Discussion: Enzyme Kinetics II (Dr. Kalju Kahn)
   **Group B1:** Circular dichroism: Unfolding of lysozyme at 20 °C
   **Group A2:** Enzyme Kinetics: Inhibition of GAPDH
   **Group B2:** Preparation of solutions for the lysozyme unfolding at 25 °C
April 27  **All groups:** “Conformational Analysis of Allantoin” project due.
   **Group B2:** Circular dichroism: Unfolding of lysozyme at 25 °C
   **Group A1:** Enzyme kinetics: Multi-substrate kinetics with GAPDH
   **Group A2:** Preparation of solutions for the lysozyme unfolding at 30 °C
April 28  **All groups:** Reserved lab time in the Mesa Computer Lab 3 PM – 4 PM
Biophysical and Bioanalytical Laboratory (Chem 112L)

**Week 6**
May 2  
All Groups: “Ligand Binding to Lysozyme” project due.
All Groups: Mass spectrometry lecture (Dr. James Pavlovich)
Group A1: Enzyme kinetics: Inhibition of GAPDH
Group A2: Circular dichroism: Unfolding of lysozyme at 30 °C
Group B1 and B2: MS demonstration and data collection

May 4  
Group A1 and A2: MS demonstration and data collection
Group B1: Enzyme kinetics: Multi-substrate kinetics with GAPDH
Group B2: RNA association equilibrium

**Week 7**
May 9  
All Groups: “Circular dichroism: Unfolding of lysozyme” project due.
Groups A1 and A2: Protein crystallography: set up crystallization trials at 2 PM
Groups B1 and B2: Protein crystallography: set up crystallization trials at 2 PM

May 11  
All Groups: First Midterm. Computer modeling, NMR, CD, UV, protein folding, and ligand binding
All Groups: Protein crystallography lecture (Dr. Martin Sagermann): from crystals to structure

**Week 8**
May 16  
All Groups: “Protein Mass Spectrometry” project due
Groups A1 and A2: Protein crystallography: microscopic analysis of crystals
Group B2: Enzyme kinetics: Multi-substrate kinetics with GAPDH
Group B1: RNA association equilibrium

May 18  
Groups A1 and A2: Protein crystallography: analysis of diffraction patterns
Group B1: Enzyme kinetics: Inhibition of GAPDH at 2 PM
Group B2: Enzyme kinetics: Inhibition of GAPDH at 4 PM

**Week 9**
May 23  
Groups A1 and A2: “Enzyme Kinetics” project due
All groups: Discussion: How to prepare for the poster session (Kahn)
Groups B1 and B2: Protein crystallography: microscopic analysis of crystals
Group A1: RNA association equilibrium
Group A2: No experiment today

May 25  
Groups B1 and B2: “RNA association equilibrium” project due
Groups B1 and B2: Protein crystallography: analysis of diffraction patterns
Group A2: RNA association equilibrium
Group A1: No experiment today

**Week 10**
May 30  
Memorial Day on Monday;
Groups B1 and B2: “Enzyme Kinetics” project due on May 31
Groups A1 and A2: “Protein Crystallography” project due May 31

June 1  
Groups A1 and A2: “RNA association equilibrium” project due
Groups B1 and B2: “Protein Crystallography” project due

June 3  
Class will meet on June 3 (Friday) for the poster presentation (Noon ?)

Second midterm (MS, Enzyme Kinetics, Protein Crystallography) will be at the time allocated by the registrar for the final