I - Chemistry becomes Biochemistry, Richardson & Oas section

A homework assignment is given each lecture day, due next class.
Material for homework distributed on class web site.

1 Mon-8/29
   3D and thermodynamic literacy
   macromolecular computer graphics and KiNG.

2 Wed-8/31
   Peptide geometry and handedness

3 Fri-9/2
   Secondary structures, motifs, models

4 Mon-9/5 (Duke classes are in session on Labor Day)
   Structural Motifs & Domains; Classification (→Coloring Book)

5 Wed-9/7
   Hydrogens: all-atom contacts, H-bonds, and waters

6 Fri-9/9
   Roles of amino acids and mutations

7 Mon-9/12
   Conformational thermodynamics

8 Wed-9/14
   Ligand binding

9 Fri-9/16
   Allostery/MWC

10 Mon-9/19
   Alternate Conformations and Ensembles

11 Wed-9/21
   Motions, Allostery

12 Fri-9/23
   In-class exam
II - Structure meets Biology, Beese section

Examples chosen to illustrate the molecular underpinnings of the Central Dogma of Molecular Biology: DNA to RNA to protein

**Mon-9/26**
Principles of protein-nucleic acid recognition: Procaryotic transcription factors

**Wed-9/28**
Eukaryotic transcription

**Fri-9/30**
Enzyme catalysis: Serine & HIV proteases

**Mon-10/3**
Enzyme catalysis: DNA polymerases and HIV-1 reverse transcriptase

**Wed-10/5**
The Ribosome

**Fri-10/7**
Structure determination methodology – Part I

**Mon-10/10**
**Duke Fall Break** (no class)

**Wed-10/12**
Structure determination methodology – Part II

**Thu-10/13**
Frontiers in Structural Biology – Time to be determined