I - Structural Principles

<table>
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<th>Date</th>
<th>Topic</th>
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| Mon-8/24 | Overview, molecular 3D Literacy  
Introduction to macromolecular computer graphics                                                 |
| Wed-8/26 | Peptide geometry and handedness                                                                 |
| Fri-8/28 | Polypeptide chain and amino-acids                                                             |
| Mon-8/31 | Secondary structures and motifs                                                                |
| Wed-9/2  | Domains, Subunits, and Superfolds                                                              |
| Fri-9/4  | Hydrogens: all-atom contacts, H-bonds, and waters                                               |
| Mon-9/7  | Labor day, NO class                                                                            |
| Wed-9/9  | Structural roles of the amino acids                                                             |
| Fri-9/11 | Motions                                                                                       |
| Mon-9/14 | Alternate Conformations and Ensembles                                                           |
II - Structure, Function & Engineering

Wed-9/16
Protein-nucleic acid recognition: General Principles

Fri-9/18
Sequence-specific DNA recognition: Procaryotic
and eukaryotic transcription factors

Mon-9/21
Enzyme catalysis: Serine & HIV-1 proteases

Wed-9/23
Enzyme catalysis: DNA polymerases & HIV-1 reverse transcriptase

Fri-9/25
The Ribosome

III - Structural Techniques

Mon-9/28
Structure determination by X-ray crystallography

Wed-9/30
Structure determination (continued)

Fri-10/2 – Pei Zhou
Structure determination by NMR

Mon-10/5- Duke Fall Break, No class

Wed-10/7
Immunoglobins

Fri-10/9
Frontiers in Structural Biology