6 April 2010   Protein Bioinformatics

PDF of lecture slides at course site:
   http://www.biostat.jhsph.edu/~iruczins/teaching/260.655/

Suggested reading:
   Biochemistry, Berg, Tymoczko, Stryer (or an equivalent biochem textbook)
   Chapter 3 Protein Structure and Function
   Structural Bioinformatics, Bourne, Weissig   [60-74$]
   Chapters 1 and 2

Suggested online materials:

   http://bcs.whfreeman.com/lehninger5e/
   Then choose Chapter3 on amino acid, peptides and proteins, then on the left, click on
   "interactive quizzes" and go through questions 1-9.

   An online quiz from UCSB (skip Q14 and Q15):
   http://mcdb-
   webarchive.mcdb.ucsb.edu/sears/biochemistry/practicequizzes/prqz01/aas-
   practicequiz-index.htm

   Also have chapters 10 and 11 from Jon Pevsner's book (available on request).

Objectives:

1. Identify the 20 amino acids from structure representations (1 letter code)

2. Describe the physical properties of amino acids and how these lead to similarity

3. Explain pI and molecular weight calculations (ref. 2D gels)

4. Define the peptide bond and the mainchain Phi and Psi angles

5. Describe some amino acid post translational modifications

For next class, install Java: http://java.com/en/
Install DeepView: http://spdbv.vital-it.ch/