

8 April 2010 Protein Bioinformatics

**PDF of lecture slides at course site:**

<http://www.biostat.jhsph.edu/~iruczins/teaching/260.655/>

**Suggested reading:**

Protein Structure and Function, Petsko, Ringe [35-53\$]  
Most of Chapter 1 (sections 0-10, 12-14, 19-22)

Introduction to Protein Structure, Branden, Tooze  
In general

Structural Bioinformatics, Bourne, Weissig [60-74\$]  
Chapter 2 and some of chapters 8+9

**Online materials:**

Excellent interactive online review:

[http://bcs.whfreeman.com/lehninger5e/content/cat\\_030/index.html](http://bcs.whfreeman.com/lehninger5e/content/cat_030/index.html)

Click on the “Protein Architecture” icon

Look at the three sections under “secondary structure”

Also the 1<sup>st</sup> and 3<sup>rd</sup> sections under “tertiary structure”

Quiz. Questions 1-8:

<http://mcdmwebarchive.mcdm.ucsb.edu/sears/biochemistry/practicequizzes/prqz10/prqz10f.htm>

**Objectives.**

1. Define the hierarchy of protein structure
2. Describe a Ramachandran plot and how it relates to protein structure
3. Describe common secondary structure elements and their properties
4. Understand amino acid secondary structure preferences