

**Biochemistry 601
Fall 2015**

Structure and Function of Proteins and Enzymes

two exams (100 points each) and two homework assignments (150 points each)

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Target Audience: upper level students in Biochemistry and other related areas

Time: Lectures on Tuesdays and Thursdays at 9:55 in Nutritional Sciences, Room 290.

Goal: The goal of this course is to provide an overview of the properties of proteins. In particular, the course will cover the fundamentals of protein structure and stability and the role of proteins as catalysts.

Important instructions for the homework: The homework answers must be typed. Also, the homework must have attached to it the scoring sheet. Do not hand in the homework without this sheet.

Lecture:	Instructor	Date
(1) Basic Stereochemistry of Protein Components	Holden	Sept. 3
(2) Chemical Properties of the Amino Acids	Holden	Sept. 8
(3) Chemical Properties of the Amino Acids	Holden	Sept. 10
(4) Noncovalent Forces and Protein Conformation	Holden	Sept. 15
(5) Tertiary Structure/Protein Motifs	Holden	Sept. 17
(6) Tertiary Structure/Protein Motifs	Holden	Sept. 22
(7) Tertiary Structure/Protein Motifs	Holden	Sept. 24

(8) Quaternary Structure	Salinger	Sept. 29
(9) Post-translational Modifications	Salinger	Oct. 1
(10) X-ray Crystallography for Dummies	Rayment	Oct. 6
(11) X-ray Crystallography for Dummies	Rayment	Oct. 8

Homework Assignment No. 1 Due on October 13th

First Exam

Oct. 13

(12) Protein Stability	Rayment	Oct. 15
(13) Kinetics	Holden	Oct. 20
(14) Kinetics	Holden	Oct. 22
(15) Kinetics	Holden	Oct. 27
(16) Catalysis	Holden	Oct. 29
(17) Protein Folding	Rayment	Nov. 3
(18) Consequences of Site-Directed Mutagenesis	Rayment	Nov. 5
(19) Protein Evolution	Rayment	Nov. 10
(20) Membrane Proteins	Rayment	Nov. 12
(21) Cofactors/Coenzymes	Holden	Nov. 17
(22) Cofactors/Coenzymes	Holden	Nov. 19
(23) ATP-Dependent Enzymes	Rayment	Nov. 24
(24) Molecular Motors	Rayment	Dec. 1
(25) Peptidases	Holden	Dec. 3
(26) What Can Go Wrong in an X-ray Analysis	Holden	Dec. 8
(27) Why Take Biochem 601?	Holden	Dec. 10

Homework Assignment No. 2 Due on December 15th

Second Exam

Dec. 15