

# **CHEM 3811: Biochemistry – Proteins**

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**Text:** Lehninger Principles of Biochemistry, 5<sup>th</sup>, 6<sup>th</sup> or 7<sup>th</sup> Edition, Nelson and Cox, W.H. Freeman and Company

## **Week 1**

- 1.1 Cellular foundations
- 1.2 Chemical foundations
- 1.3 Physical foundations
- 2.1 Weak interactions
- 2.2 Weak acids and Weak bases
- 2.4 Water
- 3.1 Amino acids
- 3.2 Peptides and Proteins
- 3.3 Working with proteins
- 3.4 Primary Structure
- 3.4 Sequence analysis

## **Week 2**

- 4.1 Overview of protein structure
- 4.2 Secondary Structure
- 4.3 Tertiary Structure
- 4.3 Quaternary Structure
- 4.4 Protein Denaturation/Folding
- 5.1 Myoglobin/Hemoglobin
- 5.2 Immune System

## **Week 3**

- 5.3 Actin, Myosin, and Molecular motors
- 6.1 Enzymes/Intro
- 6.2 How enzymes work
- 6.3 Enzyme Kinetics
- 6.4 Catalytic Strategies
- 6.5 Enzyme regulation

There will be 4 in-class assignments. The total value of these exercises is 120 points.

Hour Exams: Three hour exams, each worth 100 points

Exam I: Friday, June 26, 2020

Exam II: Friday, July 3, 2020

Exam III: Friday, July 10, 2020

Total Points = 420 points