

General syllabus for MBioS 303, Introductory Biochemistry (two 75-minute lectures per week, 15-week semester, 50-minute recitation session each week)

Text: Lehninger: Principles of Biochemistry

Instructors: varies with the semester

Proteins: (14 lectures)

Amino acids: pH, charge, properties

Protein structure: 1°, 2°, 3°, 4° structure

Myoglobin and hemoglobin: structure, function, allostery

Enzyme kinetics

Enzyme mechanisms

Metabolism: (13 lectures)

Carbohydrate structure

Introduction to metabolism

Glycolysis

TCA Cycle

Oxidative phosphorylation

Glycogen metabolism

Metabolic integration

Molecular Genetics: (14 lectures)

Central dogma

DNA structure

Packaging

Replication

DNA repair

RNA and transcription

The genetic code

Translation

Protein targeting

Control of gene expression

DNA technology