

CHEM/MBIO 2780 Elements of Biochemistry 2

Course Outline Winter 2021

Principal Lecture Topics

Introduction to metabolic pathways:

- Bioenergetics
- Organization and structure of pathways
- Review of TCA and mitochondrial electron transport chain

Photosynthesis:

- Light reactions
- Calvin cycle

Carbohydrate Metabolism:

- Review of glycolysis
- Glycogen metabolism
- Pentose phosphate pathway

Lipid Metabolism:

- β -oxidation
- Fatty acid synthesis
- Cholesterol and hormone synthesis
- Regulation of lipid metabolism

Amino acid and nitrogen metabolism:

- Nitrogen fixation
- Amino acid synthesis
- Amino acid catabolism
- Urea cycle

Biosynthesis of nucleic acids

DNA replication and repair

RNA transcription

Protein synthesis