

## Bio 111 Final Exam Study Guide

### Highlights

- 4 Major Biomolecules
- Protein Structure – levels
- Molecular bonds and interactions
  
- Cell structure – organelles
- Endomembrane System
- Nuclear membrane and transport
  
- Cellular Respiration, Fermentations
- Oxygen and Carbon Dioxide and glucose – how are they used?
- Electron Transport Chains and chemiosmosis
  
- Photosynthesis
- Light Reactions and Calvin Cycle
- Electron transport chains
- Light
  
- Enzymes, Substrate, Active Sites, Competition
- Free Energy, Exergonic, Endergonic
  
- Signal Transduction
- Signals, Receptors, Transduction
  
- Cell Cycle
- Mitosis Meiosis
- Chromosome separation during division
  
- DNA replication
- 5' and 3' ends
- Chromatin
  
- Transcription
- Translation
- Start codons
- Mutations
  
- Lac operon
- Trp Operon
  
- Biotech
- Gel electrophoresis, Current and charge