

Cellular Anatomy and Physiology Outline

Cells: Organelles and Cellular Processes

- I. Cell Organelles
 - a. Eukaryotic Cells
 - b. Nucleus
 - c. Nucleolus
 - d. Endoplasmic reticulum
 - i. Smooth
 - ii. Rough
 - e. Golgi apparatus
 - f. Lysosome
 - g. Mitochondria
 - h. Peroxisome
- II. Cell membrane
 - a. Phospholipid Bilayer
 - i. Phospholipid
 - ii. Protein
 - 1. channel
 - 2. receptor
 - 3. enzyme
 - 4. connections
 - a. with other cells
 - b. with extracellular matrix
 - 5. markers/ ID
 - iii. Cholesterol
 - iv. Glycolipid/ Glycoprotein
 - b. Fluid Mosaic Model
- III. Cytoskeleton
 - a. Microtubules
 - b. Intermediate filaments
 - c. Microtubules
 - d. Cilia
 - e. Flagella
 - f. Microvilli
- IV. Cell Connections
 - a. Desosomes
 - b. Gap Junctions
 - c. Tight Junctions
- V. Cell Transport
 - a. Diffusion
 - b. Osmosis
 - c. Facilitated Diffusion
 - d. Active Transport
 - e. Endocytosis

This website is EXCELLENT!! It has tutorials on all of the following:

1. Cell Membrane – structure and cell transport
2. The Cell Cycle & Mitosis
3. Meiosis
4. Cytoskeleton

Use this website to learn and study!!!

http://www.biology.arizona.edu/cell_bio/cell_bio.html

- i. Phagocytosis
 - ii. Pinocytosis
 - f. Exocytosis
- VI. Enzymes
 - a. Structure
 - i. Lock-and-key fit
 - ii. Active site
 - b. Coenzymes
 - c. Naming enzymes
 - i. Oxidation-reduction enzymes
 - ii. Hydrolyzing enzymes
 - iii. Phosphorylating enzymes
 - iv. Carbon dioxide adding/ removing enzymes
 - v. Rearranging enzymes
 - vi. Hydrases
 - d. Enzyme Function
 - i. Active site
 - ii. Competitive inhibition
 - iii. Noncompetitive inhibition
 - iv. Allosteric effectors
 - v. End-product inhibition
 - vi. Proenzymes
 - 1. kinases
- VII. Cellular Respiration
 - a. Glycolysis
 - b. Aerobic verses Anaerobic Respiration
 - c. Aerobic Respiration
 - i. Citric Acid Cycle/ Kreb's Cycle
 - ii. Electron Transport System
 - d. Anaerobic Respiration
 - i. Fermentation
- VIII. DNA Replication
 - a. Chargaff's Rule
 - b. Semi-conservative Replication
- IX. Protein Synthesis
 - a. Transcription
 - b. Translation
- X. Cell Cycle
 - a. Interphase
 - i. G1
 - ii. S Phase
 - iii. G2
 - b. Cell Division
 - i. Mitosis
 - ii. Meiosis
 - c. Cytokinesis