

6. Describe the process of protein synthesis and its relationship to cell metabolism
7. Describe the process of cell division and describe its stages.
8. Define resting membrane potential and describe its importance
9. Define or describe relevant terms in the text including:
solute cytokinesis cytoskeleton solvent
mitosis histology chromosome transcription translation

Tissues

1. Define tissue and list the four major tissue types and the general structure and functioning of each.
2. Describe the structure of the matrix and its fibers in various kinds of tissues
3. Contrast and compare the structure and function of the four major tissue types.
4. Describe the process of tissue repair and wound healing.

Lecture Study Objectives

BIOL 2404: Introductory ANATOMY AND PHYSIOLOGY

(Ziser, 2016)

The following is an outline of the core knowledge in BIOL 2404. After completing each topic below you should be able to:

The Human Body: An Orientation

1. Define 'anatomy' and 'physiology' and give examples of topics related to each
2. Describe how "models" are used to understand anatomy and physiology; give some specific examples
3. What exactly is science and how is it used to understand the human body; why are the methods of science more useful for this endeavor than other methods of inquiry
4. Describe "levels of structural organization" and the relationships between them.
5. What exactly is "life"; Describe the characteristics, properties or qualities of life
6. Describe the basic requirements for life
7. Define all terms as indicated in lab related to anatomical position, directions, planes and sections.
8. Define all terms related to visual anterior and posterior body landmarks.
9. Describe the major body cavities and their subdivisions and list the major organs that extend into each
10. Name and describe each of the major organ systems of the body, the major functions of each and several of the major organs of each.
11. Describe the major components of homeostatic control mechanisms and its relationship to positive and negative feedback
12. Learn the common metric values and conversions as discussed in lecture and lab
13. Be able to give examples of which organs might be found in the quadrates and the nine abdominal regions
14. Define and describe relevant terms including:

anatomy	distal	receptor	tissue	positive feedback
integument	homeostasis	organ system	effector	negative feedback
proximal	gluteal	axillary	frontal	lymphatic system

Basic Chemistry

1. List the 6 most common elements in the body and their major uses.
2. Distinguish between inorganic and organic molecules.
3. Discuss the importance of water to life.
4. Describe the major kinds of inorganic molecules common in the body
5. State the essential function of ATP and its importance to the body.
6. Define metabolism, anabolism and catabolism
7. Describe the characteristics of enzymes and how they work
8. Define pH and describe some of the factors that affect it
9. Define and describe relevant terms in the text, including:

acid	base	electron	synthesis	chemical reaction
element	pH	decomposition	organic molecule	bond

Cells

1. Name and describe the major functions of organelles and inclusions of a typical cell.
2. Define selective permeability, diffusion, facilitated diffusion, dialysis, osmosis, solute pumping, phagocytosis, pinocytosis, isotonic, hypotonic, and hypertonic.
3. Describe the structure of the cell membrane and how it relates to proper functioning.
4. List and describe the specializations of the cell membrane and the major functions of each.
5. Briefly describe the process of DNA replication and the importance of mitosis.