

Anatomy & Physiology 1 - Course Outline

Anatomy and Physiology I is the first of a two-course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis.

I. Organization of the Body

1. Characteristics of Life
2. Cells, Tissues, and Organ Systems
3. Body Cavities and Serous Membranes
4. Maintenance of homeostasis and feedback loops
5. Medical terminology
6. Exploration of health careers

II. Cells & Tissues

1. Cell Structure, Membranes and Organelles
2. Cell structure and function
3. Movement of substances and metabolism
4. Cell control (DNA)
5. Mitosis and Cell Division
6. Function (epithelial, muscle, connective, nerve)
7. Location of tissues
8. Epithelial tissue and the evolution of skin color

III. The Skeletal System

1. General functions of the skeletal system
2. The bone matrix
3. Names and location of the bones of the skull
4. Names and location of the bones of the body
5. Male and female differences and changes during aging
6. Types of joints
7. Disorders of the skeletal system
8. Investigation of a disarticulated skeleton

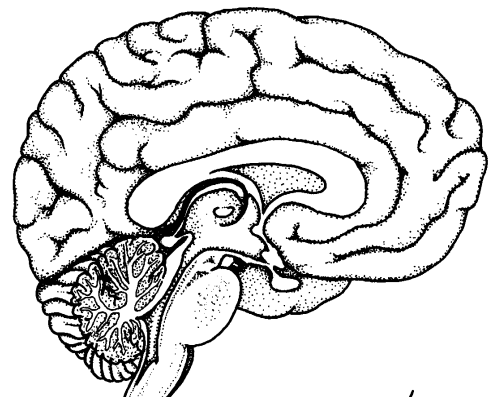


IV. The Muscular System

1. General Functions
2. Skeletal Muscle Cells - Microscopic Structures
3. Muscles - Face, Neck, Arms, Thorax, Abdomen, and Legs
4. Disorders of the muscular system
5. Investigation of muscles found in a model organism (cat)

V. The Nervous System

1. Nerve Cells - Structure, Type, and Function
2. Description of Nerve Impulses - During Action Potential
3. Structures of the brain and spinal cord
4. Cranial nerves
5. Disorders of the nervous system
6. Investigation of a preserved sheep brain



Anatomy and Physiology 2 Topics

I. Sense Organs

- A. The anatomy of the eye
- B. Dissection of a cow eye
- C. The anatomy of the ear
- D. Olfactory and gustatory sense organs

II. Endocrine System

- A. Basic functions of the endocrine system
- B. Hormones and health

III. The Circulatory System

- A. Anatomy of the heart
- B. Cardiac cycle, heart rate, and pulse
- C. Dissection of a sheep heart
- D. Identify major arteries and veins
- E. Measurement of blood pressure
- F. Types of blood cells
- G. Genetics of blood types

IV. The Digestive System

- A. Organs involved in digestion
- B. The alimentary canal and accessory organs
- C. Metabolism and energy balance (basal metabolic rate)
- D. Disorders of the digestive system

V. The Respiratory System

- A. Organs involved in respiration
- B. Breathing mechanism and gas exchange
- C. Disorders of the respiratory system

VI. Urinary System

- A. Anatomy of the kidneys (general and microscopic)
- B. Urine formation and elimination
- C. Disorders of the urinary systems

VII. Reproductive System

- A. Organs of the male reproductive system
- B. Organs of the female reproductive system
- C. Birth control and pregnancy

