Bayou Academy 2017-2018 Mrs. Alicia Braswell

Biology II (Anatomy & Physiology) Objectives (students will be able to):

- Differentiate between anatomy and physiology and give the divisions of each study.
- Review the structure and function of cells.
- Review the chemistry of life: carbohydrates, lipids, proteins, and nucleic acids.
- Recall other main cellular activities learned in Biology I, such as protein synthesis, mitosis, and transport across the cellular membrane.
- Analyze how heredity and family history can impact personal health.
- Discuss observed inheritance patterns caused by various modes of inheritance, including dominant, recessive, codominant, sex-linked, polygenic, and multiple alleles.
- List the four main types of tissues in the body and identify parts of the body made up of the various tissue combinations
- Demonstrate their knowledge of using a microscope by using it properly to examine different tissue samples
- Identify the types of cells and extracellular material in various types of tissues and draw/label what they see
- Practice safety rules in using laboratory equipment and supplies.
- Perform investigative dissections on a cow eyeball, sheep brain, sheep heart, and mink, noting and identifying all the parts of the anatomy and functions of them in the body.
- Design and conduct a Science Fair experiment.
- Distinguish between and identify the bones of the axial skeleton and the appendicular skeleton.
- Identify and label the major muscles of the body.
- List the steps involved in the sliding filament of muscle contraction.
- Describe the anatomy, histology, and physiology of the central and peripheral nervous systems and name the major divisions of the nervous system.
- Describe the physiology of nerve conduction, including the generator potential, action potential, and the synapse.
- Describe the structure of vertebrate sensory organs; relate structure to function in vertebrate sensory systems.
- Give all 12 of the glands of the endocrine system and list the hormones each produces, describing the physiology of hormones - the different types and the mechanisms of their action.
- Describe the composition and physiology of blood, including that of the plasma and the formed elements.
- Give the 3 types of blood vessels and 2 types of circulation; discuss the anatomy of the heart and blood vessels; explain blood pressure.
- Use a blood typing kit to determine their own blood types (with parental permission).
- Give the main structures of the lymphatic system; list the functions of lymph vessels and tissue; discuss the difference between lymph tissue, nodules, and nodes.
- Explain the basic functions of the human immune system, including specific and nonspecific immune response, vaccines, and antibiotics.

- List the main organs of the alimentary canal (GI tract) and describe their anatomy, characteristics, and functions.
- Describe the physiology of the respiratory system including the mechanisms of ventilation, gas exchange, gas transport and the mechanisms that control the rate of ventilation.
- Describe the seven purposes of the urinary system; list the steps of urine production
- Describe the basic anatomy and physiology of the human reproductive system and the process of human development from fertilization to birth.
- Apply knowledge of human body processes to their daily lives.
- Evaluate career opportunities using anatomy and physiology.
- Evaluate the findings of current research in the field of human biology.
- Design, research, and perform a presentation to the class on a non-infectious disease, including an interview with someone who has personal knowledge and experience with the disease.