Course Title: Anatomy & Physiology

Course #: 1535-1536

Course Description: Students engage in further exploration of the concepts associated with human anatomy and physiology. It is a rigorous second year Biology course for students interested in human biology, medicine and its related professions. Extensive reading and study are required.

UC/CSU Approval: “d” approved

Grade Level: 10-12

Estimated Homework Per Week: approximately 2 hours per week

Prerequisite: Completion of Biology with a “C” of higher.

Recommended Prerequisite Skills: Grade-level reading comprehension

Course Grade Scale:
- 10% - Class Assignments & Homework
- 20% - Quizzes
- 20% - Labs & Projects
- 30% - Tests
- 20% - Semester Exam

Major Assessments/Units/Topics:
Each unit will encompass hands-on laboratory activities and will culminate in a summative unit test. The semester final exams are cumulative; the spring semester exam includes concepts from the spring semester only. An approximation of content by unit is given below:

Units of Study:
Overview of Human Body - An introduction to regional and directional terminology, homeostasis, and conditions necessary for life.

Body Tissues - Learning the structural and functional characteristics of the four tissue types that make up the human body.
Integumentary System - The skin, its accessories and the complex functions the integumentary system performs to protect the body while allowing it to interact with/respond to its environment.

Skeletal System - In addition to learning the arrangement of the bones and connective tissue that holds them together, this unit also explores the many dynamic functions that the human skeletal system performs to support other body systems.

Blood - Students will learn about how this dynamic fluid performs many functions in support of all cells in the body.

Immune System - Both the innate and adaptive immune systems will be investigated. This unit culminates with students doing a project to share an immune challenge or disorder with the class.

Cardiovascular System - This unit begins with the structure of the heart and blood vessels, then progresses to show how the cardiovascular system supports the needs of cells in every tissue of the body.

Respiratory System - In addition to the structures of the respiratory system, this unit looks at the respiratory zones where gas exchange happens both in the lungs and at the cellular level.

Digestive System - Essential to the functioning of all cells is the acquisition and absorption of nutrients necessary for cellular processes. The mechanical and chemical digestion of nutrients, plus the importance of absorption in the intestines, is a key focus of this chapter. This unit ends with students completing a dietary analysis of their own food intake.

Organization of the Nervous System - The anatomy of the brain, plus an overview of how sensory input is translated into appropriate responses by the body, is the main focus of this unit.

Muscular System - This unit not only studies the major muscles and the actions they produce, but also investigates neuromuscular junctions, the relationship between the nervous system and the muscles it commands.