



# STAFFORD COUNTY PUBLIC SCHOOLS

## Curriculum Overview Biology Level II Anatomy and Physiology

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### **Course Description:**

This is an advanced course which covers anatomy, physiology, and the pathology of humans. It is designed primarily for the student anticipating a medical career or life science major in college. Lab emphasis is on dissection and microscope usage.

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### **Essential Skills/Processes:**

This advanced course covers anatomy, physiology, and the pathology of humans. Students will have multiple laboratory experiences where they will demonstrate lab safety and extensive dissection.

- Identify major body planes, regions, and cavities
- Demonstrate the anatomical position
- Identify the major body systems
- Describe the role of pH in the body
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- Understand the role of water in maintaining homeostasis
- Define enzymes and explain their role
- Contrast synthesis, decomposition, and exchange reactions
- Give examples of positive and negative feedback
- Identify the categories of organic compounds and their structures and functions
- Identify and describe the function of cell organelles
- Describe the structure of the cell membrane and explain how various transport processes account for the directional movements of substances across the membrane
- Describe and explain the importance of mitosis
- Explain the process of protein synthesis
- Identification of four types of tissue – epithelial, connective, muscle, and nervous
- List the function and location of each membrane type – cutaneous, mucous, serous, and synovial
- Identify the structure and function of the layers of the skin and its parts
- Understand the anatomy of a long bone
- Name the three major categories of joints and compare the amount of movement allowed