



**La Costa Canyon High School**

**Science**

***Anatomy and Physiology***

<b>Level of Difficulty</b>	<b>Estimated Homework Time</b>	<b>Prerequisites</b>
<input type="checkbox"/> Moderate <input checked="" type="checkbox"/> <b>Difficult</b> <input type="checkbox"/> Very Difficult	<p align="center"><b>60 minutes per day*</b></p> <p align="center">*This is a general guideline for planning and scheduling purposes. A student's ability level may affect actual preparation time needed.</p>	<p><b><u>District</u></b> N/A</p> <p><b><u>Department</u></b> C or better in Biology Please see student background expectations</p>

**Course Description**

Anatomy and Physiology is designed to expand the students' knowledge of the structure and function of the human body. The course will explore anatomical structures in various body systems as they relate to the physiology, or inner workings, of that system. Emphasis will be placed on the interactions of organs as they work together to maintain balance or homeostasis. During class students will participate in lecture/discussions, conduct laboratory investigations including dissection, microscopy and human performance, and gather information on a variety of medical and health related topics. Topics include: Body organization and tissues, muscles, respiratory, circulatory, digestive, urinary, endocrine, nervous, reproductive system and the senses. Instruction and materials are at a college preparatory level. Students will explore these topics through discussions, laboratory investigations, teacher demonstrations, and in-class assignments.

**Student Background**

A student entering Anatomy and Physiology should be able to:

- 7th grade Science Investigation and Experimentation Standards:

- Select and use appropriate tools and technology (including calculators, computers, balances) to perform tests, collect data, and display data.
  - Use a variety of print and electronic resources (including the internet) to collect information and evidence as a part of a research project.
  - Communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.
  - Communicate the steps and results from an investigation in written report and oral presentations.
- 8th grade Science Investigation and Experimentation Standards:
- Plan and construct a scientific investigation to test a hypothesis.
  - Construct appropriate graphs from data and develop quantitative statements about the relationships variables.
  - Apply simple mathematical relationships to determine a missing quantity in a mathematic expression, given the two remaining terms (including  $\text{speed}=\text{distance}/\text{time}$ ,  $\text{density}=\text{mass}/\text{volume}$ ,  $\text{volume}=\text{area} \times \text{height}$ )
- 9th-12th Biology Standards:
- Describe how the complementary activity of major body systems provides cells with oxygen and nutrients and removes toxic waste products such as carbon dioxide.
  - Explain how the nervous system mediates communication between different parts of the body and the body's interactions with the environment.
  - Explain how feedback loops in the nervous and endocrine systems regulate conditions in the body.
  - Describe the functions of the nervous system and the role of neurons in transmitting electrochemical impulses.
  - Explain the roles of sensory neurons, interneurons, and motor neurons in sensation, thought, and response.
- 9th-12th Science Investigation and Experimentation Standards:
- Formulate explanations by using logic and evidence.
  - Distinguish between hypothesis and theory as scientific terms.
  - Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.
  - Analyze situations and solve problems that require combining and applying concepts from more than one area of science.
  - Solve scientific problems by using quadratic equations and simple trigonometric, exponential, and logarithmic functions.

### **Grading**

The grading system is based on weighted percentages. Each assignment will have a point value and be weighed according to the category it falls under. Individual teachers may make slight modifications on the weighted percentages.

**Additional Information for Students/Parents**

- 10 credits
- Meets UC/CSU subject area "d" requirement
- Meets graduation requirement for life science or elective credits