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Foundations of Anatomy and Physiology I

Foundations of Anatomy and Physiology I is the first in a set of two semester-long lab courses that introduce students to basic anatomy and physiology. The first unit covers directional terminology and those aspects of chemistry and cellular biology that students must master in order to study anatomy and physiology. It also teaches students how to use lab equipment safely. Then students learn about the following body systems: integumentary, skeletal, muscular, nervous, and endocrine, with separate lessons on the brain and the senses. Students make connections to their personal health and the prevention of disease for each body system studied. As they conduct research, complete wet labs, participate in a wide range of group activities, and take quizzes and exams, students develop the skills they need for college-level work and careers in the health professions.

The project for this course requires students to work in small groups to develop public service announcements (PSAs) that inform the public about a condition affecting a body system that they have studied. First they work together to write a research report, which forms the basis of the information presented in the PSA. Students present their PSAs to an invited audience at a health care PSA showcase. The driving question for the project is, "How can we, as health professionals, make best use of a PSA to inform the public about a condition affecting a body system?"

This course is expected to take a total of 73 50-minute class periods.

KEY LEARNING OBJECTIVES FOR THE COURSE

List the 16 key objectives

Course Introduction	6			Explain the concept of homeostasis and feedback mechanisms
Surfaces, Planes, and Directions	3			Label body surfaces, planes, cavities, and directions
Biochemistry	5			Define pH and electrolytes and describe their relationship to homeostasis
The Integumentary System	6			Describe the basic functions of the integumentary system and its organs; specifically, explain the steps involved in perspiration, hair growth, and exfoliation
The Skeletal System				Identify and label the major bones of the skeleton
	5			Explain how skeletal injuries and disorders affect the functioning of bones and joints
The Muscular System				Compare and contrast the three types of muscle tissue (skeletal, smooth, and cardiac) in regard to locations in the body, anatomical features, and functions

	6			Label the major skeletal muscles
The Nervous System				Identify and describe the parts of a neuron
	4			Explain how nerve signals travel along and between neurons
The Brain				Identify the major brain regions and their corresponding functions
	7			Summarize the ways in which common conditions and diseases affect the brain, including Alzheimer's disease
The Senses				Describe the structures necessary for the sensation of sound and their functions
	7			Describe the structures of the eye, including the functions of each
The Endocrine System				Describe the general role of hormones in the process of homeostasis
	6			Identify the major glands and provide an example of a process that each one regulates
	13			The Coarse Project
	3			Final Exam

CULUMINATING PROJECT DESCRIPTION

In this project students develop public service announcements (PSAs) to inform a targeted audience about a condition affecting one of the body systems they have learned about in this course. Each PSA includes a PowerPoint slide with a visual that captures the attention of the intended audience and a one-minute narration covering the important points about the condition in an engaging way.

The driving question for the project is, "How can we, as health professionals, create an effective public service announcement about a condition affecting a body system?"

Students choose a condition from a recommended list or one that satisfies criteria that ensure the condition is appropriate for a PSA. Working in groups of three or four, students write reports that provide a rationale for choosing the condition for the PSA and that include research that they will draw from to create the PSA.

Students present their PSAs for an invited audience at a health care PSA showcase.

Project Components:

Students produce three project components:

1. A research report that includes:
 - The type of condition (e.g., autoimmune disease, genetic disorder) and the body system it affects
 - How prevalent it is (how many people it affects in the United States and/or elsewhere) and which populations are most at risk (if any)
 - How the affected body systems function normally and how the condition impacts that normal function
 - The impact of having this condition (Is it fatal or something people live with? How does it impact a person's life? What are the health complications associated with the condition?)

- Causes of the condition, if known
 - A description of current treatments, including:
 - A description of the most common treatments
 - How long they have been in use (new advances or older treatments?)
 - How they work
 - Their effectiveness and side effects
 - A description of the latest medical advances or research toward better treatments. This could include:
 - Research currently under way
 - New treatments or devices expected to be available soon
 - Use of currently available treatments that haven't before been applied to this disorder
 - Ideas being investigated as possible treatments to develop
 - Specific advice on prevention and/or management of the condition
 - A rationale for why this condition is appropriate for a PSA (Is the condition increasing? Is it common but poorly understood? Is it preventable with the right information?)
2. A script for a one-minute narrative that calls on the audience to act (e.g., to change to healthier behavior, watch for certain symptoms, get a diagnosis, or get treatment)
 3. A PowerPoint slide with a visual that is relevant to the narrative and that will capture the attention of the intended audience in a meaningful way

CULUMINATING PROJECT ASSESSMENT

There are two main assessment products, each of which is assessed using a rubric:

**1. The research report*

**2. The one-minute PSA that comprises PowerPoint slides and student voiceover*