BIOL C102: INTRODUCTION TO THE CONCEPTS OF ANATOMY AND PHYSIOLOGY

Item	Value
Curriculum Committee Approval Date	09/08/2023
Top Code	041000 - Anatomy and Physiology
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Local General Education (GE)	• CL Option 1 Natural Sciences (CB2)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5B Biological Sciences (5B)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5B Biological Sciences (5B)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B2 Life Science (B2)

Course Description

This lecture-only course provides a general overview of the anatomy and physiology of the eleven human body systems. It is designed for the student with little or no biological background who would like to learn more about the structure and function of the human body, including anatomical and physiological terminology, the student who would like a preparatory course before embarking on the more advanced anatomy and physiology courses, and the student interested in the many of the Health Science majors, Science and Math Area of Emphasis, or the Allied Health Care Careers Certificate, or as a life science general education credit. ADVISORY: ENGL C1000. Transfer Credit: CSU; UC: Credit Limitation: Credit may be granted for either BIOL C102 or BIOL C221 or BIOL C220, BIOL C225.

Course Level Student Learning Outcome(s)

1. Correlate the structure of specific organs to their functions and the way those organs work to maintain homeostasis.
2. Identify organs of each body system and describe how they work together to perform the functions of that system.

Course Objectives

- 1. Describe the organization of the human body from atoms and molecules to organs and systems
- 2. Explain the basic cellular anatomy and physiology including mitosis and meiosis
- 3. Describe general tissue types
- 4. Describe the basic structure and function of the 11 systems of the human body
- 5. Explain how the special senses work

Lecture Content

Introduction to Anatomy and Physiology The science of anatomy and physiology Organization of the human body Mechanisms of homeostasis Anatomical terms The Chemical Level of Organization Atoms and molecules Chemical reactions Organic compounds Inorganic compounds The Structure and Function of the Cell The cell membrane The cytoplasm The nucleus Cell organelles Cell division Cellular respiration Protein synthesis The Tissue Level of Organization Epithelial tissue Connective tissue Muscular tissue Nervous tissue The Integumentary System Structure of the integumentary system Functions of the integumentary system Role of the integumentary system in homeostasis The Skeletal System Structure of bone Bone formation and remodeling Axial skeleton Appendicular skeleton Articulations The Muscular System Structure and functions of skeletal muscle Mechanism of skeletal muscle contraction The axial muscle The appendicular muscle Cardiac and Smooth muscle tissue Integration with other body systems The Nervous System Structure and function of neurons Synapse and neural communication The peripheral nervous system The autonomic nervous system Integration with other body systems The General and Special Senses The general senses: balance, proprioception The special senses: vision, hearing, smell, touch, taste The Endocrine System Overview of the endocrine system The pituitary gland The thyroid gland The parathyroid gland The adrenal gland The pancreas The pineal gland Integration with other systems The Cardiovascular System Blood The anatomy of the heart The physiology of the hear Blood vessels The pulmonary and systemic circuits The Lymphatic System and Immunity The organization of the lymphatic system Nonspecific defenses Specific responses Integration with other body systems The Respiratory System The organization of the respiratory system Respiratory physiology and control of respiration Integration with other systems The Digestive System and Nutrition Organs of the digestive system Digestion and absorption of nutrients Regulation of gastrointestinal sections and motility Diet and nutrition Metabolism The Urinary System The organization of the urinary system Urine production and transportation Fluid and electrolyte balance Integration with o the body systems The Reproductive System, Development, and Inheritance The anatomy and physiology of the male reproductive system The anatomy and physiology of the female reproductive system Fertilization and pregnancy Development and inheritance

Method(s) of Instruction

- Lecture (02)
- DE Online Lecture (02X)

Instructional Techniques

Lectures Videos Power points Discussions Current events

Reading Assignments

This course will require reading, video assignments, discussion boards, and short writing assignments.

Writing Assignments

Writing assignments involving basic library research and internet research.

Out-of-class Assignments

Reading assignments including textbooks and internet sites.

Demonstration of Critical Thinking

The student will be comparing and contrasting organ systems and how they interact to maintain homeostasis. This requires a higher order of thinking that relies on building a knowledge base to interpret how structure relates to function.

Required Writing, Problem Solving, Skills Demonstration

Writing assignments may include those based on personal experience, based on internet research, or based on reading and interpreting magazine articles. Given a real anatomical or physiological scenario, a student should be able to analyze and interpret the information and come to proper conclusions.

Eligible Disciplines

Biological sciences: Masters degree in any biological science OR bachelors degree in any biological science AND masters degree in biochemistry, biophysics, or marine science OR the equivalent. Masters degree required. Kinesiology: Masters degree in kinesiology, physical education, exercise science, education with an emphasis in physical education, kinesiology, physiology of exercise, or adaptive physical education OR Bachelors degree in any of the above AND Masters degree in any life science, dance physiology, health education, recreation administration or physical therapy OR the equivalent.

Textbooks Resources

1. Required Krumhardt, Barbara; Alcamo, Edward. E-Z Anatomy and Physiology, third ed. Barrons Educational Series, 2010 Rationale: Concise, thorough textbook for the beginning student of Anatomy and Physiology. Legacy Textbook Transfer Data: Legacy text 2. Required Marieb, Elaine. Essentials of Human Anatomy and Physiology, ed. Pearson, 2015 Rationale: - Legacy Textbook Transfer Data: Legacy text 3. Required Learning, Lumen. Anatomy and Physiology (Boundless), ed. Lumen Learning, 2020

Other Resources

1. Coastline Library