BIOL G221: INTRODUCTION TO ANATOMY AND PHYSIOLOGY

Item	Value
Curriculum Committee Approval Date	11/17/2020
Top Code	041000 - Anatomy and Physiology
Units	4 Total Units
Hours	108 Total Hours (Lecture Hours 54; Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)
Local General Education (GE)	• GWC Physical Universe*** (GB1)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5B Biological Sciences (5B) • Cal-GETC 5C Laboratory Activity (5C)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5B Biological Sciences (5B) • IGETC 5C Laboratory Activity (5C)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B2 Life Science (B2) • CSU B3 Laboratory Activity (B3)

Course Description

Formerly: BIOL G155. This course describes and relates the elements of human structure and function. Topics explored are the body system, cell structure and function, the maintenance of physiological balance and equilibrium (e.g., fluid and electrolytes, blood pressure, acid-base levels), and the physiology of nutrition and exercise. Designed for nonscience majors. Transfer Credit: CSU; UC: Credit Limitations: No credit for BIOL G221 if taken after BIOL G220 or BIOL G225.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Outline normal physiological processes and their role in maintaining homeostasis.
3. Label anatomical structures of the human body in a laboratory setting.
4. Interpret data generated by physiological investigations.
5. Apply critical thinking to relate anatomical structure to physiological processes.
6. Summarize the organ systems of the human body and their interactions.

Course Objectives

- 1. Describe the basic chemical and physical principles that govern human body function.
- 2. Give examples of the major inorganic and organic molecules that make up the human body.
- 3. Describe both the structure and function of all major organ systems and how they work together to maintain homeostasis.
- 4. Summarize how every organ system is interrelated to each other.
- 5. Describe the anatomical structure of major tissues and organs of the human body.

Lecture Content

Understanding the Language of Anatomy and Physiology Structure vs. Function Levels of structural organization -- chemical, cellular, tissue, organs, organ systems, organism Concepts of homeostasis and feedback mechanisms Anatomical Position -- directional terms, anatomical terms, body planes, body cavities Chemistry Matter -- structure of atoms and elements Chemical bonds -- covalent, ionic, hydrogen bonds Inorganic and Organic Molecules Cell structure and Function Organelles Mitosis and Cancer Plasma Membrane Membrane transport -- passive mechanisms, active mechanisms Integumentary System Functions Cutaneous membrane Accessory organs Skin cancer Burns Skeletal System Functions Bone -- structure and function Bone diseases Joints Muscle System Functions Action Potential Skeletal muscle anatomy Sliding Filament Theory -- skeletal muscle contraction Muscle physiology -- contraction at the molecular and organ level Nervous System Functions CNS, PNS, ANS Special and General senses Nerve pathways Cardiovascular System Functions Heart anatomy and physiology Blood Vessel anatomy and physiology Blood anatomy and physiology Respira tory System Functions Respiratory anatomy and physiology Digestive System Functions Digestive system anatomy and physiology Urinary system Functions Urinary anatomy and physiology Reproductive System Functions Male and Female reproductive anatomy and physiology

Lab Content

Introduction to the Human Body Anatomical terminology -- directional terms, body planes, regional anatomy Homeostasis and feedback systems Cells and Tissues Microscopy Key features of tissues of the body General features of primary tissues Key features of of various tissue types Chemistry Matter -- structure of atoms and elements Chemical bonds -- covalent, ionic and hydrogen bonds Acids, bases, pH Integumentary System, Mitosis Structures of the skin Mitosis and cytokinesis Skeletal system Classification Bone -- microscopic and gross structures and functions; axial, appendicular Nervous System Central and peripheral nervous systems -- structures and functions Special and General senses -- structures and functions Cardiovascular System Components of blood Blood typing Heart anatomy and physiology Respiratory System Respiratory anatomy and physiology Digestive System Digestive system anatomy and physiology Urinary (renal) System Urinary anatomy and physiology Reproductive System Male and Female reproductive anatomy and physiology

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)
- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

Reading Assignments

Textbook

Writing Assignments

3-hour lab once a week. A. Lab includes hands-on experiments and questions that need to be completed during lab time for credit. B. Lab quizzes given to ensure comprehension of lab material.

Out-of-class Assignments

1. Interpretation of laboratory experiments2. Discussion (write-ups) of laboratory concepts and terms

Demonstration of Critical Thinking

1.The weekly laboratory exercise write-ups (laboratory checks) involve questions requiring subjective answers, analysis and synthesis.

Required Writing, Problem Solving, Skills Demonstration

3-hour lab once a week. A. Lab includes hands-on experiments and questions that need to be completed during lab time for credit. B. Lab quizzes given to ensure comprehension of lab material.

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.

Textbooks Resources

1. Required Kelly A. Young, James A. Wise, et al.. Anatomy Physiology, 1st ed. OpenStax College, 2019 Rationale: OpenStax Anatomy Physiology is a zero-cost solution for students that provides adequate information for the course.

Manuals Resources

1. Chang, Wayne; Egan, Kate; Roohk, Bonnie; Vu, Nam. GWC Custom Manual for Introduction to Anatomy and Physiology, Golden West College , 10-08-2019