BIOL A200: ADVANCED ANATOMY PRACTICUM

Item	Value
Curriculum Committee Approval Date	12/04/2024
Top Code	041000 - Anatomy and Physiology
Units	2 Total Units
Hours	72 Total Hours (Lecture Hours 18; Lab 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
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)

Course Description

Advanced exploration and discussion of topics and concepts within Human Anatomy, which include: structural organization of the human body: gross and microscopic structure of the integumentary, skeletal, muscular, nervous, sensory, endocrine, cardiovascular, lymphatic, respiratory, digestive, excretory, and reproductive systems from cellular to organ system levels of organization. Taught from a functional perspective, it emphasizes the relationship of structure (Anatomy) to function (Physiology). Laboratory participation and instructor shadowing are required. This course is primarily intended for students who have successfully completed BIOL A220 (Human Anatomy) and desire to further their knowledge and understanding of Human Anatomy, while being mentored by instructors in laboratory discussion and presentation, and instructing, mentoring and tutoring current anatomy students. BIOL A200 students will be expected to assist BIOL A220 (Human Anatomy) students utilizing newly acquired educational techniques in the following: dissection; identification of specimens and structures on both the micro- and macroscopic level. PREREQUISITE: BIOL A220. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Describe the field of anatomy and identify the structures and structural hierarchy that comprise the organ systems of the human body.
2. Demonstrate the dissection skills and the proper microscope techniques needed to investigate the tissues and organs that comprise the human body.
3. Defend the contention that structure and function are inextricably correlated and apply that understanding to the fields of anatomy and physiology.

Course Objectives

- I Primary Course Objectives
- I. 1. Analyze and present anatomical concepts, structures, and models as they relate to the function of the human body.
- I. 2. Discuss and evaluate basic physiological concepts presented in case studies and scientific literature as related to the study of anatomy.
- I. 3. Apply pedagogical techniques in laboratory presentations.
- II Additionally
- II. 1. Assist BIO 220 (Human Anatomy) students utilizing newly acquired educational techniques in the following: dissection; identification of specimens and structures on both the micro- and macroscopic level.

Lecture Content

Introduction/Orientation Cellular structures Cell cycle and cell division Histology Embryology Integumentary System Skeletal System Articulations Cartilage and Osseous Tissue Bone Growth Development Muscular System Surface (External) Anatomy Nervous System including special senses (sensory organs) Central Nervous System Peripheral Nervous System Endocrine System Cardiovascular System Blood Heart Vessels Lymphatic Immune Systems Respiratory System Urinary System Digestive System Reproductive System Comparison of normal versus diseased, injured or age-related structural changes in any or all of the above organ systems. Introduction to Pedagogical Techniques

Lab Content

This course includes a laboratory component with greater than 80% hands-on learning supporting the course outcomes. Students will be able to assist BIO 220 (Human Anatomy) students and present the following: 1. Identification of microscopic structures and tissues.

i. Demonstrate skill in the use of a compound light microscope. 2. Identification of bones and bone features. 3. Identification of skeletal musculature and muscle features. 4. Identification of internal organs and internal organ features. Additionally: 1. Dissection of organs or observation of dissected organs. 2. Dissection of organisms or observation of dissected organisms. 3. Identification of structures on models. 4. Use the language of medicine effectively.

Method(s) of Instruction

- Lecture (02)
- Lab (04)

Instructional Techniques

1. Collaborative group work 2. Interactive discussion 3. Question and answer 4. Cooperative demonstration 5. Case study analysis

Reading Assignments

Appropriate textbook, scientific literature, and case study reading assignments are given to coincide with lecture and lab. (2hrs)

Writing Assignments

Students will complete a capstone paper summarizing their experience and application of newly acquired anatomical concepts and pedagogical techniques. (1 hr)

Out-of-class Assignments

Supplementary assignments are posted online to reiterate concepts delivered in lecture. Some are required, some are optional. They might include worksheets (labeling, drawing, short answer, etc), links to videos or interactive websites. (1 hr)

Demonstration of Critical Thinking

In the discussion component of the class: oral and demonstrative assessments with objective and written components. In the laboratory

component of the class: oral presentation of concepts, models and specimens.

Required Writing, Problem Solving, Skills Demonstration

Students must be able to relate structure to function (e.g. sliding filament theory), describe processes, and with respect to problem solving students should be able to apply concepts to other situational examples (i.e., critical thinking skills).

Eligible Disciplines

Biological sciences: Master's degree in any biological science OR bachelor's degree in any biological science AND master's degree in biochemistry, biophysics, or marine science OR the equivalent. Master's degree required.

Textbooks Resources

1. Required Marieb, E., Wilhelm, P.B., Mallatt, J.. Human Anatomy, 8 ed. Pearson, 2017 2. Required Tortora. Principles of Human Anatomy, 14 ed. Wiley, 2018

Manuals Resources

1. Sabastiani, A.M., and Fishbeck, D.W.. Mammalian Anatomy of the Cat, Morton Publishing , 01-01-2005