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Biology (BIOL) 2250 Human Anatomy (5 Units) CSU: UC
[formerly Anatomy 6]

Advisory: Eligibility for English 1500, Math 1500, and successful completion of BIOL 1500, BIOL 1510, or HLED 1541 strongly recommended.

Hours and Units Calculations:

48 hours lecture (96 Outside of class hours); 96 hours lab (240 Total Student Learning Hours) 5 Units

Catalog Description: This course examines the 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. This course is primarily intended for nursing, allied health, kinesiology, and other health related majors. C-ID: BIOL 110B

Type of Class/Course: Degree Credit

Text: Tortora, Gerard J. and Bryan H. Derrickson. *Principles of Anatomy and Physiology*. 14th ed. Hoboken: John Wiley & Sons, Inc., 2014.

Additional Support Materials

Tortora, Gerard J. *A Brief Atlas of the Skeleton and Surface anatomy*. 14th ed. Hoboken: John Wiley & Sons, Inc., 2014.

Course Objectives:

By the end of the course, a successful student will be able to

1. describe key structural features of different human cell and major tissue types,
2. identify and describe the anatomy of the systems of the human body,
3. relate structure and function at the cellular through system levels of organization of human body systems,
4. describe structural or anatomical changes that occur in disease, injury or aging of the human body systems.
5. demonstrate the construction of a correctly spelled list of 200 human surface anatomy features.

Course Scope and Content (Lecture):

- Unit I Introduction
- A. The field of anatomy in the biological sciences
 - B. Brief history of anatomy
 - C. Body overview
 - D. Directional and regional terms
 - E. Medical imaging techniques

- Unit II Cells and Tissues
- A. Cell Types
 - B. Tissue Types
- Unit III The Integumentary System
- A. Layers of the skin
 - B. Appendages of the skin
 - C. Functions of the integument
 - D. Skin properties and conditions
- Unit IV The Skeletal System
- A. Functions of the skeleton
 - B. Histology of bone
 - C. Bone development, growth, and repair
 - D. Joint classification
 - E. Bone fractures and disorders
- Unit V The Muscular System
- A. Histology of muscles
 - B. Muscle classification and mechanics
 - C. Dangers of anabolic steroids
 - D. Muscle disorders
- Unit VI The Nervous System
- A. Introduction
 - B. Nerve tissue
 - C. Central nervous system and anatomy of the developing brain
 - D. Peripheral nervous system
 - E. Autonomic nervous system
 - F. Special senses
 - G. Nervous system disorders
- Unit VII The Endocrine System
- A. Nervous vs. endocrine system communication
 - B. Endocrine vs. exocrine glands
 - C. Endocrine glands and hormones
 - D. Endocrine system disorders
- Unit VIII The Cardiovascular System
- A. Blood
 - B. The heart
 - C. Arterial and venous circulation
 - D. Comparison of adult and fetal circulation
 - E. Lymphatic system anatomy and circulation
 - F. Cardiovascular Disease
- Unit IX The Respiratory System
- A. The respiratory tract
 - B. The lungs
 - C. Respiratory Disorders

- Unit X The Digestive System
- A. The digestive tract
 - B. Digestive glands
 - C. Digestive system disorders
- Unit XI The Urinary System
- A. The kidney
 - B. The urinary tract
 - C. Urinary system disorders
- Unit XII The Reproductive System
- A. Introduction
 - B. Male reproductive system
 - C. Female reproductive system
 - D. Role of hormones in the reproductive system
 - E. Reproductive system disorders
- Unit XIII Basic Embryology
- A. Basic body plan
 - B. Embryonic period

Course Scope and Content (Laboratory):

- Unit I Cells and Tissues
- A. Introduction to microscope
 - B. Epithelium and connective tissue
- Unit II Integument System
- A. Skin model identification
 - B. Histology sections
- Unit III Skeletal System
- A. Bone and bone marking identification
 - B. Histology sections
- Unit IV Muscular System
- A. Muscle identification and muscle features
 - B. Histology sections
 - C. Muscle construction using clay models
- Unit V Cardiovascular/Circulatory Systems
- A. Heart structure identification
 - B. Dissections of heart
 - C. Blood vessel identification
 - D. Blood circulation construction using clay models
- Unit VI Nervous Systems
- A. Brain identification
 - B. Spinal cord identification
 - C. Peripheral nervous system identification
 - D. Dissection of brain
 - E. Dissections of eye

- F. Eye structure identification
- G. Ear structure identification
- H. Central nervous system construction using clay models

- Unit VII Endocrine System
- A. Endocrine gland identification
 - B. Neurohypophysis, adenohypophysis

- Unit VIII Respiratory System
- A. Organ identification
 - B. Conductive vs. respiratory division identification
 - C. Respiratory tree models
 - D. Lung models

- Unit IX Digestive System
- A. Organ identification
 - B. Digestive tract construction using clay models

- Unit X Urinary System
- A. Organ identification
 - B. Urinary system construction using clay models

- Unit XI Reproductive System
- A. Organ identification
 - B. Surface anatomy preparation

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 6 hours per week outside of the regular class time doing the following:

1. Studying
2. Answering questions
3. Completing required reading
4. Written work

Methods of Instruction:

1. Assigned reading from text and selected references
2. Lectures and demonstrations given by instructor using models, charts, multimedia, and preserved specimens
3. Dissection of selected organs
4. Question sets on unit under study
5. Audiovisual presentations
6. Hands-on laboratory techniques and critical analysis of results
7. Construction of representative anatomical organ systems using clay models
8. IPAD photo albums
9. Practice lab exams available online and in classroom

Methods of Evaluation:

1. Writing assignments, including:
 - a. anatomy in Clay worksheets
 - b. take home assignments
2. Computational or non-computational problem-solving demonstrations, including:
 - a. unit exams
 - b. daily lecture and lab quizzes
3. Skill demonstrations, including:
 - a. dissection
 - b. construction of clay models
4. Other examinations, including:
 - a. multiple choice
 - b. completion
 - c. identification
 - 1) comprehensive written and verbal surface anatomy examination
 - 2) one on one demonstration of anatomical knowledge

Laboratory Category: Extensive Laboratory

Pre delivery criteria: All of the following criteria are met by this lab.

1. Curriculum development for each lab.
2. Published schedule of individual laboratory activities.
3. Published laboratory activity objectives.
4. Published methods of evaluation.
5. Supervision of equipment maintenance, laboratory setup, and acquisition of lab materials and supplies.

During laboratory activity of the laboratory: All of the following criteria are met by this lab.

1. Instructor is physically present in lab when students are performing lab activities.
2. Instructor is responsible for active facilitation of laboratory learning.
3. Instructor is responsible for active delivery of curriculum.
4. Instructor is required for safety and mentoring of lab activities.
5. Instructor is responsible for presentation of significant evaluation.

Post laboratory activity of the laboratory: All of the following criteria are met by this lab.

1. Instructor is responsible for personal evaluation of significant student outcomes (lab exercises, exams, practicals, notebooks, portfolios, etc.) that become a component of the student grade that cover the majority of lab exercises performed during the course.
2. Instructor is responsible for supervision of laboratory clean-up of equipment and materials.

Supplemental Data:

T.O.P. Code:	041000 (Anatomy and Physiology)
Sam Priority Code:	E: Non-Occupational
Funding Agency:	Y: Not Applicable

Program Status:	I: Program Applicable
Noncredit Category:	Y: Not Applicable
Special Class Status:	N: Course is not a special class
Basic Skills Status:	N: Not Applicable
Prior to College Level:	Y: Not Applicable
Cooperative Work Experience:	N: Course is not a part of a cooperative education program
Eligible for Credit by Exam:	No
Eligible for Pass/No Pass:	Yes
Discipline:	Biology, Nursing