ARIZONA WESTERN COLLEGE
SYLLABUS

BIO 201 HUMAN ANATOMY AND PHYSIOLOGY I/GE
Credit Hours: 4 Lec: 3 Lab: 3

PREREQUISITE: BIO 156 or BIO 181 or pass an AWC pre-test.

NOTE: CHM 130 is highly recommended.

COURSE DESCRIPTION
Study of structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system.

1. COURSE GOALS
   - 1.1 Relate the structural organizational hierarchy of the human body (molecules, cells, tissues, organs, organ systems, and organism) to homeostasis.
   - 1.2 Locate, recognize, and label various structures (microscopic and gross), soft tissues, and organs of the body.
   - 1.3 Describe the basic anatomy and physiological processes of the following body systems:
     - 1.3.1 Integumentary system
     - 1.3.2 Skeletal system
     - 1.3.3 Muscular system
     - 1.3.4 Nervous system
   - 1.4 Succeed in Anatomy and Physiology II.

2. OUTCOMES
   Upon satisfactory completion of this course, students will be able to:
   - 2.1 Use correct anatomical terms to describe body directions, regions, and planes/sections utilizing specimens and imaging studies.
   - 2.2 Differentiate organ system functions based on visual and tactile observations using dissections, virtual anatomical models, simulations, and comparative analogues.
   - 2.3 Construct, model, and interpret feedback loop diagrams using interactive tools or physical representations, and identify disruptions through case-based applications (e.g., diabetes, hemorrhage).
   - 2.4 Demonstrate and describe how chemical bonds, water properties, pH balance, and organic molecules contribute to the structure and function of the human body.
   - 2.5 Analyze the structure and function of cellular components and evaluate how molecular transport, membrane potential, and protein synthesis contribute to cell function, division, and homeostasis.
   - 2.6 Evaluate the structural and functional characteristics of the four major tissue types and analyze how their cellular organization, intercellular connections, and regenerative capacities contribute to organ function and tissue repair.
   - 2.7 Analyze the structural and functional relationship of the components of the integumentary system and subcutaneous layers to explain how they contribute to homeostasis, utilizing clinical case studies and virtual simulations.
   - 2.8 Integrate the skeletal system's microscopic and gross anatomical features and accurately identify important bony features. Explain structural and functional roles in support, movement, protection, and homeostasis. Predict physiological implications of developmental, traumatic, and age-related changes.

2.9 Analyze joints' anatomical and functional classifications to explain how structural features determine range and type of movement. Predict the biomechanical and physiological consequences of joint dysfunction or injury.

2.10 Integrate anatomical, physiological, and biochemical principles to explain muscle tissue structure, function, and neural regulation. Identify major skeletal muscles and their actions. Predict the effects of pathological conditions or physiological stressors on muscle performance and homeostasis.

2.11 Analyze the structural and functional organization of the nervous system to explain the role of sensory input, motor output, and homeostatic regulation. Predict the physiological consequences of injury, disease, and dysfunction affecting neural pathways, protective structures, or neurophysiological processes.

2.12 Apply anatomical and physiological concepts to accurately identify human body structures and demonstrate competency in essential laboratory techniques- including microscopy, model analysis, and dissection- to investigate tissue organization, organ systems, and structure-function relationships.

3. AWC GENERAL EDUCATION (GE) CATEGORY & CRITERIA
NATURAL SCIENCES

3.1 How to describe explain, and predict natural phenomena using scientific, logical, and quantitative reasoning and empirical evidence from observation and experimentation.

3.2 The use of experimentation and/or observation to study natural phenomena, using the scientific method.

3.3 How to communicate information about the natural world using written, numeric, and/or visual formats; and when possible, how to use computational/simulation programming environments as a method for solving systems and simulating theoretical or experimental data.

3.4 The history of scientific development.

3.5 How to critically evaluate scientific information, including visual displays and quantitative data.

4. METHODS OF INSTRUCTION

4.1 Lecture by professors and/or guest lecturers
4.2 Laboratory exercises
4.3 Films and other audio-visual presentations
4.4 Classroom demonstrations
4.5 Student discussion and group activities
4.6 Homework activities
4.7 Interactive audio-visual materials

5. LEARNING ACTIVITIES

5.1 Take notes during lecture on the structure and function of the human body
5.2 Utilize audio-visual materials, and other interactive activities
5.3 Participate in recitation, class discussion, and internet activities
5.4 Complete laboratory investigations of anatomy and physiology including:
- 5.4.1 Examination of preserved specimens (gross and microscopic)
- 5.4.2 Examination of models and diagrams
- 5.4.3 Demonstrations by the instructor
- 5.4.4 Experimentation to enhance understanding of physiological principles

5.5 View Instructor demonstrations
5.6 Complete writing assignments

6. EVALUATION

6.1 Quizzes
6.2 Group activities
6.3 Laboratory exercises
6.4 Homework assignments
6.5 Exams

7. STUDENT RESPONSIBILITIES

7.1 Under AWC Policy, students are expected to attend every session of class in which they are enrolled.

7.2 If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. Students who are not attending as of the 45th day of the course may be withdrawn by the instructor. If the student does not withdraw from the course and fails to complete the requirements of the course, the student will receive a failing grade.

7.3 Americans with Disabilities Act Accommodations: Arizona Western College provides academic accommodations to students with disabilities through AccessABILITY Resource Services (ARS). ARS provides reasonable and appropriate accommodations to students who have documented disabilities. It is the responsibility of the student to make the ARS Coordinator aware of the need for accommodations in the classroom prior to the beginning of the semester. Students should follow up with their instructors once the semester begins. To make an appointment call the ARS front desk at (928) 344-7674 or ARS Coordinator at (928) 344-7629, in the College Community Center (3C) building, next to Advising.

7.4 Academic Integrity: Any student participating in acts of academic dishonesty—including, but not limited to, copying the work of other students, using unauthorized "crib notes", plagiarism, stealing tests, or forging an instructor's signature—will be subject to the procedures and consequences outlined in AWC's Student Code of Conduct.

7.5 Texts and Notebooks: Students are required to obtain the class materials for the course.

7.6 Arizona Western College students are expected to attend every class session in which they are enrolled. To comply with Federal Financial Aid regulations (34 CFR 668.21), Arizona Western College (AWC) has established an Attendance Verification process for "No Show" reporting during the first 10 days of each semester.

Students who have enrolled but have never attended class may be issued a "No Show" (NS) grade by the professor or instructor and receive a final grade of "NS" on their official academic record. An NS grade may result in a student losing their federal financial aid.

For online classes, *student attendance in an online class is defined as the following* (FSA Handbook, 2012, 5-90):

- Submitting an academic assignment
- Taking an exam, an interactive tutorial, or computer-assisted instruction
- Attending a study group that is assigned by the school
- Participating in an online discussion about academic matters
- Initiating contact with a faculty member to ask a question about the academic subject studied in the course