

ARIZONA WESTERN
COLLEGE SYLLABUS

BIO 202 HUMAN ANATOMY AND PHYSIOLOGY II/GE

Credit Hours: 4 Lec 3 Lab 3



PREREQUISITE: BIO 201

COURSE DESCRIPTION

Continuation of structure and function of human body. Topics include endocrine, immune, lymphatic, circulatory, respiratory, digestive, urinary, and reproductive systems.

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:
 - 1.3.1 endocrine system
 - 1.3.2 cardiovascular system
 - 1.3.3 lymphatic system
 - 1.3.4 immune system
 - 1.3.5 respiratory system
 - 1.3.6 digestive system
 - 1.3.7 metabolism and nutrition
 - 1.3.8 urinary system
 - 1.3.9 body fluids
 - 1.3.10 male reproductive system
 - 1.3.11 female reproductive system
 - 1.3.12 human growth and development

2. OUTCOMES

Upon satisfactory completion of this course, students will be able to:

- 2.1 identify the major endocrine glands and describe the functions of their hormones.
- 2.2 demonstrate knowledge of endocrine physiology, the stimulation of hormone release, the mechanism of both lipid soluble and water soluble hormones, positive and negative feedback mechanisms, and gene expression.
- 2.3 demonstrate understanding of the anatomy of the heart at the gross and microscopic level, blood flow through the heart, the physiology of heart contractions, cardio conduction, and coronary circulation.
- 2.4 identify the major blood vessels of the body, distinguish between pulmonary and systemic circulation, and describe the classification and functions of arteries, veins and capillaries
- 2.5 describe blood pressure, how it is regulated, and the perfusion of gases and nutrients at the capillary level.
- 2.6 demonstrate knowledge of the immune system, including specific and non-specific responses, passive and active immunity, and role of lymphatics in immunity.
- 2.7 describe the formation, functions, and contents of blood, clotting mechanisms, blood typing, and the normal values and functions of each of the formed elements.
- 2.8 demonstrate knowledge of the anatomy of the respiratory system at the gross and microscopic levels.
- 2.9 describe the mechanisms and control of ventilation, external and internal respiration events and mechanisms, gas transport, the role of the respiratory system in maintaining blood pH, and the consequences of homeostatic imbalance.
- 2.10 demonstrate knowledge of the anatomy of the digestive system at the gross and microscopic levels.
- 2.11 describe the physiology of digestion, absorption and elimination
- 2.12 demonstrate knowledge of the anatomy of the urinary system at the gross and microscopic levels,

- including the blood circulation at the kidney and nephron level.
- 2.13 describe the mechanisms of filtration, reabsorption, and secretion, the countercurrent exchange mechanism, the role of the urinary system in maintaining blood properties, and the consequences of homeostatic imbalance.
- 2.14 demonstrate knowledge of the anatomy of the male and female reproductive systems at the gross and microscopic levels.
- 2.15 describe the mechanisms of spermatogenesis, and the role of sex hormones in males.
- 2.16 describe the timing and mechanisms of oogenesis, the ovarian and uterine cycles and the role of sex hormones in females.
- 2.17 describe fertilization, sex chromosomes, identical and fraternal twins and implantation of the embryo.
- 2.18 demonstrate a working knowledge of basic biological processes (protein synthesis, mitosis and cellular respiration) as it relates to the eight systems.

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

- How to describe, explain, and predict natural phenomena using scientific, logical, and quantitative reasoning and empirical evidence from observation and experimentation
- The use of experimentation and/or observation to study natural phenomena, using the scientific method
- 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
- How to critically evaluate scientific information, including visual displays and quantitative data
- How the tools and techniques of the natural sciences are applied to global and local issues such as sustainability, climate change, etc.
- The importance of examining assumptions about the natural world and the implications those assumptions have for individual and societal decisions

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 assignments
- 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