

ARIZONA WESTERN COLLEGE  
SYLLABUS

ANS 241 PRINCIPLES OF GENETICS/GE

Same as PLS 241

Credit Hours: 4      Lec 3      Lab 3

PREREQUISITE: None

COURSE DESCRIPTION

Genetic principles of inheritance in plants and animals and their significance in agriculture and biology will be discussed. Topics include the physical basis of heredity in families and populations; introduction to chromosome biology; the molecular basis for gene expression; and modern genetic engineering tools used in animal and plant systems.

1. COURSE GOALS

- 1.1. To develop a foundational understanding of principles and concepts of genetics.

2. OUTCOMES

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

- 2.1. Understand the basic principles of genetics,
- 2.2. Understand the inheritance in families and populations,
- 2.3. Understand the chromosome and genes,
- 2.4. Understand molecular genetics engineering, DNA, RNA, non-coding RNAs testing methods.
- 2.5. Be able to evaluate basic principles of genetics and breeding.

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
- The history of scientific development
- 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
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4. METHODS OF INSTRUCTION

- 4.1 Lectures
- 4.2 Laboratory Activities
- 4.3 Slide presentations
- 4.4 Films/videos
- 4.5 Classroom/Field demonstrations
- 4.6 Research project and report
- 4.7 Internet activities

5. LEARNING ACTIVITIES

- 5.1 Assigned reading material
- 5.2 Field/Laboratory trips
- 5.3 Writing Assignments

6 EVALUATION

- 6.1 Laboratory exercises
- 6.2 Quizzes
- 6.3 Written Papers
- 6.4 Final exam or project

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

3.