

ARIZONA WESTERN COLLEGE
SYLLABUS

MAT 262 INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS/GE

Credit Hours: 3 Lec 3

PREREQUISITE: MAT 230

COURSE DESCRIPTION

Ordinary differential equations and their solutions that utilize conventional approaches, numerical techniques, matrix methods applied to systems of linear differential equations, and Laplace's transformation.

1. COURSE GOALS

- 1.1 Learn concepts of linear ordinary differential equations.
- 1.2 Explore different methods for solving ordinary differential equations.
- 1.3 Use differential equations to model real world applications.

2. OUTCOMES

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

- 2.1 solve linear first, second, and higher order differential equations using a variety of approaches.
- 2.2 model physical problems and explore the different forces acting on such problems through initial conditions and boundary values.
- 2.3 solve basic nonlinear differential equations.
- 2.4 categorize and apply different transformations to solve differential equations.

3. AWC GENERAL EDUCATION (GE) CATEGORY & CRITERIA
QUANTITATIVE REASONING

- Mathematical, statistical, and/or logical techniques and methods, and then how to use those methods to understand and solve meaningful problems
- How to express quantitative information symbolically, graphically and/or in written or oral language
- How to interpret, analyze and critique information or a line of reasoning
- How to ask critical thinking questions, develop critical thinking skills and mathematical reasoning, and follow logical procedures step by step

4. METHODS OF INSTRUCTION

- 4.1 Lecture
- 4.2 Use of computers and/or graphing calculators
- 4.3 Overheads

5. LEARNING ACTIVITIES

- 5.1 Solving problems and applications in the areas of environmental, life, and natural sciences
- 5.2 Participation in classroom lectures
- 5.3 Using computers and/or graphing calculators

6. EVALUATION

- 6.1 Homework and/or project assignments
- 6.2 Class participation
- 6.3 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 Students who are not attending as of the 45th day of the course may be withdrawn by the instructor.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