

Fall Semester 2007-2008
MATH 3303: Ordinary Differential Equations
MWF, 9:00-9:50, Room: Boyd Building 303

Textbook: *Differential Equations with Boundary-Value Problems*, Sixth Edition, by Dennis G. Zill and Michael R. Cullen, Brooks-Cole Publishing Company, 2005.

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Office Hours: Mondays, Wednesdays, and Fridays: 10:00-12:30, or by appointment. Please contact me only through campus MyUWG e-mail or in person.

Course Description:

This course is an introduction to the subject of differential equations and has three components:

1. Existence theory and classical methods for first order equations (chapters 1&2)
2. Real life applications and the theory of linear equations (chapters 3&5)
3. Techniques and methods for solving general linear equations: operator method, power series, and an introduction to the Laplace transform (chapters 4, 6&7).

We shall use the computer algebra system Maple for symbolic computations and for its linear algebra and integral transforms packages.

Learning Outcomes: the student will be able:

- To identify and classify differential equations
- To decide whether a solution is unique and find its domain of existence
- To solve first order equations by classical methods
- To model a simple process and determine its evolution for large time
- To solve an inhomogeneous equation using undetermined coefficients or variation of parameters
- To find power series solutions of linear equations with analytic coefficients
- To use transform methods to solve linear differential equations
- To use computer resources to solve ordinary differential equations symbolically

Tests and Final Exam:

There will be two in-class tests and two take-home tests worth 100 points each. Take-home tests are supposed to be completed individually. The lowest of these test scores will be dropped. You can miss at most one test, and that test will be considered to be the test with the lowest score to be dropped. The final counts 200 points. No make-up for missing tests and final exam.

9/12 : Test 1 (Take-home), due 9/14

10/19 : Test 2 (In-class)

11/7 : Test 3 (Take-home), due 11/9

11/30 : Test 4 (In-class)

12/12 : Final 8-10AM

Grading: The final letter grade will be determined by the following scale:

A = 450-500, B = 400-449, C = 350-399, D = 300-349, F = below 300

W Deadline: October 8th is the last day to withdraw with grade of W

Homework: This is an important part of the course. At the end of most classes you will be given a list of problems – these are the minimum that you should work on. These problems will not be graded. Some of these problems will be gone over in the next class session and some will be included into the in-class tests. Practice is important. I encourage you to use my office hours if you have any question about them. You should make sure to set aside some time every day to work problems.

Disabilities: Students with documented disabilities (through West Georgia's Disability Services) will be given all reasonable accommodations. Students must take the responsibility to make their disability known and request academic adjustments or auxiliary aids. Adjustments needed in relation to test-taking must be brought to the instructor's attention well in advance of the test (at least one week prior).

Attendance Policy: You are expected to attend every class. Although absences are not penalized, if a class is missed, you are responsible for all material and assignments.

Academic Honesty: You are expected to achieve and maintain the highest standards of academic honesty and excellence as described in the Undergraduate Catalog. In short, be responsible and do your own work.