

MATH 3130 - 01 Differential Equations
Fall 2006 Semester 2006
MWF 8:00 - 8:55 CX 116

Instructor: Dr. Samuel Jator

Communications:

- I invite you to come by my office (CX 329 A) as follows: **9:00-11:00 MWF; 10:00-11:00 and 1:00-2:00 TuTh.**
- By phone, dial 931-221-7313(Office) or 931-358-9433(Home).
- My email address is Jators@apsu.edu.
- You can also visit my web site at <http://www.apsu.edu/Jators>.

Prerequisite: MATH 3120

Credit: 3 Credit Hours.

Text: Differential Equations with Boundary – Value Problems / Dennis G. Zill, Michael R. Cullen, Sixth Edition, 2005.

Course Description:

The Laplace transform and its applications to differential equations, systems of linear differential equations, numerical methods. Fourier series and the solution of boundary value problems involving partial differential equations such as the heat equation and the wave equation.

Course Objectives:

1. To study mathematical models for physical systems and the use of Laplace transform to solve them.
2. To study how to solve differential equations numerically.
3. To study Fourier series and its applications.
4. To study how to solve partial differential equations.

Course Contents:

1. The Laplace transform (chapter 7).
2. Systems of Linear First – Order Differential Equations (chapter 8).
3. Numerical Solutions of Ordinary Differential Equations (chapter 9).
4. Orthogonal Functions and Fourier Series (chapter 11).
5. Partial Differential Equations and Boundary –Value Problems in Rectangular Coordinates (chapter 12).

Calculator Requirement

The suggested calculator is the TI-83 or the TI-84 since these calculators do a very good job on statistical features. If you already have a calculator, such as the TI-86, it is not necessary to purchase a new calculator since those should be adequate.

Course Software

The software used for this course will be Mathematica.

Requirements/Grading

Homework: Regular homework assignments and quizzes will be given and will count 100 points toward the final grade. Late submission of required homework to be graded will be unacceptable. Poor presentation of the assignments will be penalized in points.

Examinations: There will be three tests and each will have a weight of 100 points. Each test is focused on the material covered since the previous one, but may include questions about supporting materials from previous sections in the course. The total score for the activities will be 500 points, and will be converted to reflect the grading scale shown below.

Project: The project topics will be taken from chapter 9 of the text. The content of the project will include writing a paper in Latex, writing a program in Mathematica, and a PowerPoint presentation.

Make Up Tests: A make up test will be given only when a documented evidence justifying the reason for missing a test is provided. Make up tests are generally more difficult than the regular in class tests. There is no make up for the quizzes and they cannot be taken early.

Summary:

The above activities can be summarized as follows:

Test 1	100
Test 2	100
Test 3.....	100
Homework/Quizzes....	100
Project	100

Total	500
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How Points and Percentages Equate to Letter Grades

90-100%	A
80-89%	B
70-79%	C
60-69%	D
0-59%	F

Note: A mid-term grade will be awarded for all students in this course. The grade awarded may not necessarily be based on 50% of the course requirements and may or may not differ from the final grade. Your mid-term grade will be posted on AP Web on October 24, 2006.

Attendance

Regular attendance is expected. Unavoidable absences that might be due to illness must be proven with a medical report. Students are strongly discouraged from irregular attendance that will normally lead to poor performance in the course.

Disability

Students with disabilities are encouraged to consult the office of disability. I will respect all university policies for students under this category. The telephone number for the Office of Disability Services is 221-6230.

Cell Phones

In order to be fair to other students, please turn off your cell phones before entering class.

University Policy on Minors

According to APSU policy #3:032, minors (defined as those under the age of 18) are not allowed in classrooms. For additional information on minors on campus, contact the Office of Student Affairs in the Morgan University Center.

Withdrawing From Class

My policy is to grant W's to those students who withdraw officially on or before the date listed in the university calendar as the last day to drop a class with a "W" or "F".

Academic and Classroom Misconduct:

Students are expected to conduct themselves appropriately at all times. Academic and classroom misconduct will not be tolerated. Students must read the "Code of Student Conduct" in the new Student Handbook for an understanding of what will be expected of them within the academic setting.

Caveat: ("The above schedule and procedures are subject to change in the event of extenuating circumstances.").

Tentative Schedule for Fall 2006- Math 3130

Week	Chapter in Text
8/28-9/1	7.1 & Project Topics from Chapter 9
9/4-9/8	7.2 & 7.3
9/11-9/15	7.4 & 7.5
9/18-9/22	7.6, Review & Test 1 (chapters 7)
9/25-9/29	8.1 & 8.2
10/2-10/6	8.3 & 8.4
10/9-10/13	(Project abstracts due September 13), 11.1 & 11.2
10/16-10/20	11.3 & 11.4
10/23-10/27	Review and Test 2 (chapter 8 &11)
10/30-11/3	12.1 & 12.2
11/6-11/10	12.3 & 12.4
11/13-11/17	Projects Due, (November 17 at the TAS Meeting),
11/20-11/24	12.5 & 12.6
11/27-12/1	12.7 & 12.8
12/4-12/6	12.8
12/7	Study day
12/08	Review & Test 3 (chapters 12)