MATH 2171-003 Fall 2007

TR 9:30a.m.–10:45a.m. Denny 202

Text: Differential Equations and Boundary Value Problems, by C. H. Edwards and D.E. Penney (Third Edition), 2004.

Instructor: Prof. You-lan Zhu, Office: 390F Fretwell, Phone: 704-687-4909,
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Office Hours: TR 8:40a.m.-9:20a.m. & 10:55a.m.-11:30a.m.
and by appointment

Homework will be assigned every lecture and at the first lecture of a week students should turn in all the homework problems assigned last week. You need to give the details of your solutions, not just the final answers. Homework (including Maple assignments) counts 20% of your grade.

There will be two tests and a final. No makeup tests will be given without a reasonable, documented excuse. Test 1, test 2, and final count 20, 25 and 35% of your grade respectively. You should expect that an average of 90% or better will be needed for an A, 89% - 80% for a B and 79% - 70% for a C. Otherwise a D (69% - 60%) or F (below 60%) will be given.

As with most mathematics classes, the material covered in one class usually depends heavily on the material from previous classes. It is very important that you try to keep up with class assigments. If you have any questions, do not hesitate to ask me.

P.S.

	Estimated Dates	Percentages	Chapters
Test 1	9/18 or so	20%	1-2
Test 2	11/6 or so	25%	3-5
Final	12/13 (8:00a.m.-10:45a.m.)	35%	1-5, 7

Preliminary Syllabus for

MATH 2171: Differential Equations

Prerequisite: MATH 1242 with a grade of C or better

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Lecture(s)	Section(s)	Contents
1	1.1–1.3,	Differential Equations, General and Particular Solutions Slope Fields and Solution Curves
2	1.4	Separable Equations
3	1.5	Linear First-Order Equations
4	1.6	Substitution Methods
5	2.1-2.3	Population and Acceleration-Velocity Models
6	2.4-2.5	Euler's Method
7	2.6	Runge-Kutta Method
8		Catch Up and Review
9		Test 1
10	3.1-3.2	Second-Order Linear Equations
11	3.3	Homogeneous Equations with Constant Coefficients
12	3.4	Mechanical Vibrations
13	3.5	Undetermined Coefficients and Variation of Parameters
14	3.6	Forced Oscillation
15	4.1-4.2	First-Order Systems and Elimination
16	5.1	Matrices and Linear Systems
17	5.2	Eigenvalue Method for Homogeneous Systems
18	5.3	Second-Order Systems
19	5.4	Multiple Eigenvalue Solutions
20	5.5	Matrix Exponentials and linear Systems
21		Catch Up and Review
22		Test 2
23	7.1	Laplace Transforms and Inverse Transforms
24	7.2	Initial Value Problems
25	7.3	Partial Fractions
26	7.4	Derivatives, Integrals & Products of Transforms
27	7.5-7.6	Unit Step and Delta Functions
28		Catch up
29		Review
30		Final