

SYLLABUS

MATH 320-01: Elem. Diff. Equations

Fall 2015

INSTRUCTOR INFORMATION

Instructor:

Debendra P. Banjade, Ph.D.
phone: 349-6569
dpbanjade@coastal.edu

Office Hours:

Wall 101J
M/W: 3:00 PM–4:00 PM
F: 11:00 AM–12:00 PM or by appointment

COURSE DESCRIPTION

Class Schedule: MWF 2:00 PM-2:50PM, Wall 206

Textbook: *Elementary Differential Equations* by William F. Trench
<http://ramanujan.math.trinity.edu/wtrench/texts/index.shtml>

Prerequisite: Math 161 with a minimum grade of “C” or equivalent

Course Objectives: This course represents a systematic introduction to ordinary differential equations. Topics we study include first order equations, linear equations with constant coefficients, Laplace transforms, series solutions, variation of parameters, systems of equations, and numerical solutions. As the course progresses, we will develop a conceptual understanding of differential equations and general critical thinking skills which will allow us to understand, analyze, solve and interpret many new types of problems with confidence.

Tests: There will be three tests, and a cumulative final exam. The exact test dates will be provided in class (expected: Test 1: Wed, 09/23, Test 2: Fri, 10/23, Test 3: Fri, 11/20). The final exam will be given on Wednesday, December 09 at 1:30 PM.

Quizzes: I will give short quizzes regularly throughout the semester. You should be able to answer the quiz questions if you have attended the class of that section, reviewed the corresponding section in the textbook, and got started on the assigned homework from that section. At the end of the semester, one of your lowest quiz will dropped.

Homework: You are encouraged to form study groups to work on the problems. However, you need to write your own homework. Homework questions will be provided in class or will be posted in Moodle.

Calculator: No calculator of level TI 89 or higher is allowed for any exams or quizzes. If you have questions about your calculator please let me know. Absolutely no cell phones are allowed in class at any time.

Grade Guidelines: Quizzes = 10%, Homework = 10%, 3 Tests = 51%, Final Exam = 29%

Grade Scale:	A: 90–100	B+: 86–89	B: 80–85	C+: 76–79
	C: 70–75	D+: 66–69	D: 60–65	F: below 60

Math 320 - Student Learning Outcomes: When a student successfully completes MATH 320, he/she should be able to do the following:

- Know how to solve first order differential equations for the following types and by the following methods:
 - (a) Separable equations, separation of variables
 - (b) Homogeneous equations
 - (c) Exact equations
 - (d) Linear equations by integrating factor
- Know how to solve the following applications of first order ODEs
 - (a) Growth and Decay
 - i. bacteria growth/decay
 - ii. population growth/decay
 - iii. radioactive substance decay (half-life)
 - (b) Newtons Law of Cooling
 - (c) Free-Falling Bodies
- Know how to solve n^{th} -order linear differential equations with constant coefficients by the following methods:
 - (a) Method of Undetermined Coefficients
 - (b) Variation of Parameters
 - (c) Laplace Transforms
- Be able to set up, read, and solve Mass-Spring System problems. Additionally, know how to categorize a system as harmonic, under damped, critically damped, over damped or none of the above.

Students with Disabilities: Any student with a documented disability needing academic adjustments or accommodations is requested to speak with me during the first week of class. All discussions will remain confidential.

Statement of Student Conduct: Coastal Carolina University is an academic community that expects the highest standards of honesty, integrity and personal responsibility. Members of this community are accountable for their actions and reporting the inappropriate action of others and are committed to creating an atmosphere of mutual respect and trust.

Attendance Policy: See here: <http://www.coastal.edu/policies/pdf/acad-125classattendance.pdf>

The syllabus is for planning purpose only and is subject to change anytime.