Math 256 - 75193 - Applied Differential Equations (4)
Syllabus - OSU - Summer 2015

Instructor: Filix Maisch  
e-mail: maischf@math.oregonstate.edu
Meetings: MWF 4 - 5 : 20 PM  
Room: Kidder 350

Office: Bexell 429

Off. hrs: MW 11 : 30 - 12 : 30 and by appt. during 1 – 3 PM on MWF

Text: Elementary Differential Equations with Boundary Value Problems, Trench (Free! See link on course webpage.)

Web: people.oregonstate.edu/~maischf/

Enforced Prerequisites: Math 254 with a C- or better.

Attendance: Regular attendance to lecture and recitation is expected.

Honor Code: Students are expected to be familiar with Oregon State University’s Student Conduct Code. Please review this statement at the following web link:
http://studentlife.oregonstate.edu/studentconduct/university-policies

Accommodations: Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term. Students who believe they are eligible for accommodations should contact DAS immediately at 737-4098.

Course Description: We cover first order linear and nonlinear equations, as well as second order linear equations. Applications may include mixing problems, motion with resistance, springs, as well as others appropriate for science and engineering. Introduction to the Laplace transform, and higher order equations (time permitting).

Schedule: See web for tentative term schedule.

Evaluation: Your grade is determined by online homework, quizzes, unannounced in-class true-false discussion quizzes, one midterm, and one final. Here is the point breakdown:

- Online Homework .. 70 (80% of each set is enough for full credit! See below.)
- Quizzes .................. 50 (Top 5 of 6 quizzes worth 10 points each.)
- T/F Quizzes ............ 20 (Top 2 of 3 true-false quizzes worth 10 points each.)
- Midterm ................. 100 (Friday, July 17th, in-class)
- Final .................... 160 (Part of Wed., Aug. 12 and all of Fri., Aug. 14, in-class)

Grades will not be harder than:
360 - 400 A/A-, 320 - 359 B+/B/B-, 280 - 319 C+/C, 240 - 279 D, 0 - 239 F.

I do not use blackboard/canvas. At the end of this syllabus you have a page on which you can record and track your scores.

Resources: The Math Learning Center is in Kidder 108H and is a great place to drop in for help. It is open from 9 AM to 4 PM, Monday through Friday, from the second week onward.


Online Homework: Homework is done online using WebWork. See web link on web page (or type it in):
http://webwork.science.oregonstate.edu/webwork2/Math256/_Maisch

Your username is the same as for your onid account. So if your OSU e-mail address is smithz@oregonstate.edu then your username is smithz. E-mail me ASAP if it doesn’t work. Your password is your OSU student ID number (no dashes). Keep track of the due dates as homework CANNOT be completed late:

Homework1 - 06/30/2015 at 11:59pm PDT
Homework2 - 07/07/2015 at 11:59pm PDT
Homework3 - 07/14/2015 at 11:59pm PDT
Homework4 - 07/19/2015 at 11:59pm PDT
Homework5 - 07/30/2015 at 11:59pm PDT
Homework6 - 08/04/2015 at 11:59pm PDT
Homework7 - 08/11/2015 at 11:59pm PDT

Each assignment is worth 10 points. Getting 80% or better on each is enough for full credit. Below that you start to lose credit prorated to 80%.

Quizzes: No resources are allowed on the in-class unannounced true-false discussion quizzes, but you are intended to share your reasoning with fellow students out loud. These quizzes can occur anytime during class, so try not to be late to lecture. No make-ups are allowed unless you can prove you missed class for an OSU-based obligation.

The in-class quizzes will consist of 2 – 3 problems similar to that week’s suggested textbook homework (see web page). Starting the second week you will take one recitation quiz per week in numerical order (except the week of the final). You are allowed to use your handwritten solved textbook homework, but you may not use the textbook, nor a calculator.

Tests: No calculators are allowed on the midterm/final. You are allowed both sides of one 5x8 inch handwritten note card for the midterm and for the final exam (will contain a table of Laplace transforms), but no other resources (including no calculator). Tests are not allowed to be made-up unless the circumstances are truly exceptional and contact requesting the accommodation is made PRIOR to the test.

Specific Learning Outcomes: A successful student in Math 256 will be able to...

1. Identify and solve first order differential equations that are separable, exact, homogeneous, or linear or can be reduced to such equations by a simple change of variable.
2. Construct and analyze models for physical systems (such as for mixing, cooling, radioactive decay) that can be described by first order linear or nonlinear differential equations. Also, be able to solve nonlinear autonomous second order differential equations and apply these methods to some physical problems.
3. Describe the basic structure of the solution space for linear differential equations (principally of second order) and be able to use this structure to solve such equations.
4. Construct and analyze models for physical systems that can be described by second order linear differential equations.
5. Use Laplace transforms to solve initial value problems.
Write down your scores!

(1) Homework: ......out of 70

(2) Quiz 1 : ......out of 10

(3) Quiz 2 : ......out of 10

(4) Midterm : ......out of 100

(5) Quiz 3 : ......out of 10

(6) Quiz 4 : ......out of 10

(7) Quiz 5 : ......out of 10

(8) Quiz 6 : ......out of 10

(9) True-False Quiz 1: ......out of 10

(10) True-False Quiz 2: ......out of 10

(11) True-False Quiz 3: ......out of 10

(12) Final: ......out of 160