

CENTRAL WASHINGTON UNIVERSITY

Course Syllabus: Math 331 Fall 2012

Continuous Models

2:00PM - 2:50 PM

MWF / Bouillon 106

Professor: Dr. Jane Whitmire
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Office: Black Hall 225-32
Office Hours: T,W,R: 7:30-8:30 A.M. or F: 1:00-1:50 P.M.
Textbook: A First Course in Differential Equations with Applications
Author: Dennis G. Zill
Prerequisites: Math 272

Course Description

This course is an introductory survey of applied mathematics with emphasis on modeling of physical and biological problems in terms of differential equations. We will discuss formulation of the problem, derivation of the solution, and interpretation of the results.

Course Outline

Below is a general outline of the topics that we will cover in class. Lecture notes, and handouts can be found on the class website as necessary.

- Review of Ordinary Differential Equations
- Building a Mathematical Model
- One-Dimensional Models
(Examples: Population Growth, RC Circuits, and Radioactive Decay)
- Two-Dimensional Models
(Examples: Predator-Prey, Pendulum, and RLC Circuits)

Homework

The professor reserves the right to refuse homework assignments that do not meet the following criteria.

- 1) Students may work with classmates on homework, but students should write solutions using their own words.
- 2) Homework must be neat, legible, and contain complete sentences where appropriate.
- 3) Homework must be submitted in a timely manner. Late homework will not be accepted. Since accidents, car problems, court appearances, deer hunting season, illness, job interviews, oversleeping, overtime, tournaments, and weather happen, the lowest 2 homework grades will be dropped.
- 4) Emailed homework will not be accepted.
- 5) All homework will be completed in pencil, on one side of (preferably engineering) paper, and in numerical order.
- 6) Homework problems are graded by the clear and evident content of what is actually written down and nothing more. Your solution to a problem must clearly show a grasp of relevant concepts as well as a correct result for full credit. Organization counts. Neatness counts. If an approach is specified in a problem, then that approach must be used (as indicated by procedures written on the paper) in solving the problem.

Exams

Exam dates are Monday October 15, 2012 and Tuesday November 13, 2012. Exams are comprehensive and cover all material discussed in class since the previous exam. Completing the exam in the time allotted is part of the exam.

Final Exam

The final is comprehensive, covers all material discussed in class, and is to be taken at the time scheduled by the University. Completing the final in the time allotted is part of the final. The final exam for Fall 2012 is Tuesday December 4, 2012 from 12:00 PM to 2:00 PM. The final is not optional. Any student who fails to take the final automatically fails the course.

Grading

Keep all exams, homework, quizzes, and other graded material for study and for verifying records on the course Blackboard website. Everyone is graded the same way. NO EXCEPTIONS. Letter grades A/A-/B+/B/B-/C+/C/C-/D+/D/D-/F are based on a strict 93-100/90-92.9/87-89.9/83-86.9/80-82.9/77-79.9/73-76.9/70-72.9/67-69.9/63-66.9/60-62.9/BELOW 60 cutoff. Problems are graded on a 10-point scale: (A) 9 or 10; (B) 8; (C) 7; (D) 6; (F) 0 to 5. The course grade can be calculated at any time using the following proportions:

<i>Quizzes</i>	→ 10%
<i>Homework</i>	→ 30%
<i>Exams</i>	→ 30%
<i>Final</i>	→ 30%

Calculators

Calculators may be used on homework and exams. It is the student's responsibility to correctly operate the calculator and to demonstrate an understanding of the solution by providing appropriate detail. Calculators with CAS (Computer Algebra Systems) will not be allowed on exams. The TI-83 or TI-83 Plus is the official CWU authorized calculator.

Optional Project

Students have the option of completing a final project instead of taking the final exam. The project would require writing a paper and giving a one-hour class presentation on a specific continuous mathematical model that was not emphasized in class. If a student is interested in this option, they must make an appointment and meet with the professor within the first five weeks of class. Be prepared to discuss the specific topic, potential resources for research, established timeline, grading rubric, and desired presentation equipment.

Special Needs Statement

As soon as possible, students with disabilities who wish to set up academic adjustments in this class should provide a copy of their "Confirmation of Eligibility for Academic Adjustments". Eligible students without this form should contact the Disability Support Services Office by visiting Bouillon 205, emailing dssrecept@cwu.edu, or calling the phone number 509-963-2171.