Instructor: Dr. Jim Bisgard
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Office Hours: M-F 9:00 - 9:50, and by appointment.

Course Goals: The goal of the course is to introduce you to the ideas of differential equations: how to use analytic, graphical and/or numerical methods to investigate the solutions of differential equations, as well as how to derive differential equations to describe phenomena in different sciences. More precisely, we will study first and second order equations. Topics for first order equations include slope fields, bifurcation diagrams and how they describe qualitative behavior. In addition, we will learn some analytic solution techniques including separation of variables and integrating factors. For second order equations, we shall look at the relation between the phase plane and qualitative behavior of solutions, as well as analytic techniques of solution such as the method of undetermined coefficients and variation of parameters. In terms of our text, we will cover most of Chapters 1, 2, and 3.

Required Text: Logan, J. David; <u>A First Course in Differential Equations</u>, **2nd** edition; published by Springer Verlag

Computer Requirements: Your homework assignments may have a few problems that you'll need to use the computer for. We will be using two java programs for the class. They may be found at: `http://math.rice.edu/~dfield/dfpp.html`. It is not a requirement, but it will be very, very helpful to have access to a computer outside lab that will run these programs. The computers in Bouillon 103 certainly run these, as do many of the computers in the various labs on campus.

1 Grades/Exams/Homework

- Grades

  Grades will be calculated using the following weighting system:
  Exams: 55% total, broken up as follows: 15% for each mid-term and 25% for the final;
  Homework: 45%;
  and the following scale:

	$87 - 89.9 : B+$	$77 - 79.9 : C+$	$67 - 69.9 : D+$	below 60 : F
$93 - 100 : A$	$83 - 86.9 : B$	$73 - 76.9 : C$	$63 - 66.9 : D$	
$90 - 92.9 : A-$	$80 - 82.9 : B-$	$70 - 72.9 : C-$	$60 - 62.9 : D-$	

- Exams

  There will be two exams during the course of the quarter, and a final exam. The exams during the quarter will be Friday, October 18 and Wednesday, November 6. The final exam will be on Tuesday, December 10, and the final will be cumulative.

- Homework

We will have weekly homework assignments. They will be handed out on Wednesday, and be due the following Wednesday at noon. To do some of the problems, you might need to use a computer. You may work with your classmates on homework (and in fact, I encourage you to do this!), but you should write your solutions using your own words. In addition, your homework must be neat and legible, and written using complete sentences where appropriate.

2 Important Dates

October 1 - Last Day for Add/Drop
October 18 - Mid-term Exam #1
November 6 - Mid-term Exam #2
November 8 - uncontested withdrawal deadline
December 10 - final exam

3 Legalese/Fine Print

Students with disabilities who wish to set up academic adjustments in this class should give me a copy of their "Confirmation of Eligibility for Academic Adjustments" from the Disability Support Services Office as soon as possible so we can discuss how the approved adjustments will be implemented in this class. Students without this form should contact the Disability Support Services Office, Bouillon 205 or dssrecept@cwu.edu or 963-2171.