



The University of
Montana

Department of Mathematical Sciences
Spring 2012, Math 414
Deterministic Models

Instructor: Dr. Emily Stone **E-mail Address:** stone@mso.umt.edu
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Office Hours: Mon. 2-3, Tues. 11-12, Wed. 12-1, Fri. 11-12
Class Web Page: <http://www.math.umt.edu/stone/math414>

Course Description: In this course we will cover much of the textbook by Strogatz, primarily one and two dimensional flows, and bifurcations thereof. Applications in the physical sciences and biology will be central to the development of the theory and the solution techniques.

Texts: • *Nonlinear Dynamics and Chaos*
Steven H. Strogatz, Addison-Wesley, 1994

Prerequisite: Math 311

Important Dates:

Feb. 10:	Last day to drop/add via Cyberbear
Feb. 20:	President's Day Holiday - no classes
March 26:	Last day to drop classes/change sections
April 2 - April 6:	Spring Break - no classes
May 4:	Last Day for Drop Petitions

Exams: (tentative, to be confirmed in class)

Feb. 24 (Friday):	Exam 1
March 28 (Wednesday):	Exam 2
May 8 (Tuesday):	Final Exam Period: Project Presentations

Grading:

Quizzes	25% of course grade
Labs (7-8)	10% of course grade
Exams (2)	40% of course grade
Final Project and Presentation	25% of course grade

SOME COMMENTS

Homework Assignments:

There will be homework assigned throughout the semester, and solutions to some problems will be presented in class. The homework will not be collected, but it is the basis of the two exams. Instead, weekly quizzes will be given on Wednesdays with a problem taken from the current HW assignment.

Computer Lab Assignments:

There will also be 7-8 computer lab assignments throughout the semester, following an in-class lab period, approximately every two weeks. A lab worksheet will be collected and graded for completeness.

Readings:

I will be working mainly from the text, but I will bring in supplemental material as needed. This will be in form of hand-outs given in class, so if you need to miss a class, have someone pick up any hand-outs for you.

Exam Information:

There will be two mid-term exams, arranged so that there is extended time available for their completion.

Final Project/Presentation:

Depending on how many people are enrolled in the course, there will be a final project for each individual, or possibly in pairs. The project will have a written report and an oral presentation. Presentations will be given on the last day of class, and during the final exam period, Tuesday May 8th 3:10-5:10. The report will also be due during finals week.

Grading:

Grading will be done on the usual percentage scale, 90-100% A, 80-89 % B, etc.

Student Conduct:

All students need to be familiar with the Student Conduct Code. You can find it in the "A to Z Index" on the UM home page. All students must practice academic honesty. (That specifically means not copying homework solution sets, sharing information on exams, or plagiarizing material in written reports.) Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

For any student with a disability:

If you have a disability that has or might have an effect on your performance in this class, please let me know. I will do my best to accommodate you.

Final Note:

Announcements made in class are considered addenda to this syllabus. Midterm exam dates are tentative, make sure you stay informed as to the progress of the class.