

M203A Chaotic Dynamical Systems Fall, 2008

Syllabus

INSTRUCTOR: Dr. Hundley

OFFICE: Olin 234

OFFICE HOURS: 11AM Tues, Thur, Fri. (Subject to change)

Feel free to schedule an alternative time to meet if you can't make these hours. Otherwise, if my door is open, feel free to come in. You can also email me anytime.

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Class Website: <http://www.whitman.edu/~hundledr>

1. **Text:** A First Course in Chaotic Dynamical Systems: Theory and Experiment. By Robert L. Devaney.

Author's Website: <http://math.bu.edu/DYSYS/applets/>

Chapters 1 and 2 serve as introductory material, the homework begins in Chapter 3. The core material for the course is in Chapters 3 to 10 (Chapter 10 defines Chaos).

After Chapter 10, we have some freedom as to what particular dynamical systems we can choose to look at- We will cover at least the complex dynamical systems, and perhaps look at iterated function systems, time permitting.

2. **Technology:** Experimentation is key to understanding the nature of dynamical systems. You may use either Maple or Matlab (both are available in the Math Lab). If you do not already have an account in the Math Lab, please let me know very soon.

Class on Friday, September 5th: Meet in the Math Lab to get accounts set up and do a small intro on Maple and Matlab. If you have had Calc Lab, you might look over the material from the class website- there will be some new information, but not much.

3. **Grading Criteria.**

- (a) **HOMEWORK (30%):** Homework that was marked with an asterisk will be due each Tuesday. Solutions to your homework should include a statement of the problem, and all statements you make should be in complete sentences. *Where appropriate*, you should end the problem with a statement summarizing the solution. You're at the point in your mathematical education where we want to start looking at how you are communicating.

Homework is graded on a 3-point scale: 3 points is like 95%, 2 points is like 85%, 1 point is like 75%.

- (b) EXAMS (60%): We will have two in-class exams, each will be worth 30% of your overall grade. A portion of the exam may be take-home.
 - (c) FINAL PROJECT (10%): You'll do a full paper on a final topic in place of your final exam. The due date will be the starting time of the final, so be sure to plan accordingly.
4. **Health problems.** If you're having to miss class due to health problems, you need to get in touch with me as soon as possible, either by phone or email. If you are ill on the day of an exam, we can work out other arrangements for you **only** if you receive verification from a health professional (i.e., go to the clinic and get checked out). You can then have the Dean of Student's office send a message to that effect to me- I don't need to know any details, just that you have gone through the procedures. This includes mental health problems, as well as chronic conditions.
 5. **Learning Disabilities.** If you have a learning disability, we can make the proper arrangements for you as long as you inform me in a timely manner! All arrangements need to go through the office of Academic Resources.
 6. **Academic Honesty.** Academic standards will be *strictly* adhered to as outlined in your student handbook. This means that cheating will not be tolerated. Looking at another student's exam or quiz (whether or not you mean to copy answers) while taking it will be considered cheating. Students caught cheating will fail the exam or quiz, and the incident will be referred to the Dean of Students, as outlined in your student handbook.