

Math 2074-003 – Dynamical Systems – Spring 2015

(MWF 11:15–12:10pm; 620 Swift Hall)

Instructor: Michael Goldberg; Office: 4428F French Hall

Office hours: M 12:30-2:30pm and Th 11:30am-12:30pm, and by appointment

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Prerequisites: A minimum of C- in Math 1062 (Calculus II) or equivalent.

Text: *Introduction to Differential Equations with Dynamical Systems* by Stephen L. Campbell and Richard Haberman (Princeton University Press, ISBN: 978-0-691-12474-2).

Course description: In this course, students will be introduced to ordinary differential equations (ODEs) and dynamical systems. Students will study first- and second-order ODEs, Laplace transforms, and the qualitative behavior of two-dimensional dynamical systems through phase-plane analysis.

Exams: There will be three one-hour exams during a class period and a final exam (two hours). There is a substantial penalty for missing an in-class exam unless a valid reason is presented to the instructor prior to the exam date or, if circumstances mandate, immediately afterward. In such situations, the student may be excused from the missed exam. Only extreme and well-documented situations will result in a student's being excused from an exam, and such situations **do not** include vacations of any sort. In rare situations, such as when a student misses more than one exam, all for valid reasons, the student may be given a make-up.

The penalty for missing an in-class exam is either zero points on that test, or else excusing the test and assessing a full letter-grade reduction to the student's final grade, whichever is less severe.

Final exam info: The final exam is a two-hour comprehensive test, on **Monday April 27, from 9:45-11:45am**.

Quizzes and Homework: Almost every week when we cover new material (i.e. not review or exams), there will be at least one graded assignment: a quiz, homework, or both. The schedule of quizzes and graded homework will be posted on Blackboard, with reminders given in class. No make-up quizzes will be given, but the lowest of the quiz/homework scores will be dropped at the end of the term before calculating students' average score.

In addition, in order to maintain facility with the course material, the students should do many practice problems. The **minimum** list of recommended problems by section is posted in the schedule of assignments. It may be updated as the course proceeds. To succeed in the course, it may – likely, will – be necessary to do more problems from the sections covered than are on the list. Some quiz problems may come directly from this list.

Tentative Schedule: Please refer to <http://homepages.uc.edu/~goldbem1/Teaching/Math2074/Spring15/2074Schedule.xlsx> for an up-to-date schedule of readings and assignments.

Calculator policy: No calculators of any kind may be used on any in-class assignments.

Electronic communication policy: Cellphones, pagers, and similar electronic devices must be silenced during class time. If you must make or take a call, please quietly leave the classroom.

Attendance: Students enrolled in the course are expected to be present for all classes, barring a medical or personal emergency. If you are absent from class, you are responsible for knowing the material covered. Office hours are not to be used as a substitute for missed lectures.

Special needs policy: Students with special needs should meet with the instructor as soon as possible to arrange for reasonable provisions to ensure an equitable opportunity to meet all of the requirements of this course. At the discretion of the instructor, some accommodations may require prior approval by Disability Services.

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MASS Center: Students may be able to get help at the Math and Science Support Center. For location, hours, and various tutoring options, please consult the MASS Center website:

<http://www.uc.edu/aess/lac/masscenter.html>

Grading: Three one-hour exams – $16\frac{2}{3}\%$ each;
quizzes and homework – $16\frac{2}{3}\%$ total;
the final exam – $33\frac{1}{3}\%$.

Estimated grade scale: A: 90–100%; B: 80–89%; C: 70–79%; D: 60–69%; F: 0–59%.

Academic integrity: The University Rules, including the Code of Conduct, and other documented policies of the department, college, and university related to academic integrity, will be enforced. Any violation of these regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the misconduct. The Code of Conduct can be found at http://www.uc.edu/conduct/Code_of_Conduct.html. A failure to know these rules does not constitute a valid excuse for violating any of them.

Some important dates:

- **Monday, January 12:** first day of class
- **Monday, January 19:** Martin Luther King holiday, no class
- **Monday, January 26:** last day to drop a course
- **Friday, March 20:** last day to withdraw from a course
- **Monday-Friday, March 16-20:** Spring Break, no class
- **Friday, April 24:** last day of class.

Tentative test dates:

- Exam I: Wednesday, January 28
- Exam II: Wednesday, February 25
- Exam III: Wednesday, April 1
- Final Exam: Monday, April 27, 9:45-11:45am.

See other important dates and deadlines at:

http://www.uc.edu/content/dam/uc/registrar/docs/calendars/fall_2014_dates_deadlines.pdf

The course specifics outlined in this document (lesson format, material covered, test schedule, etc.) are subject to change. Changes will be kept to a necessary minimum and announced in advance of taking effect, either in class, on Blackboard, or both. Students are responsible for abiding by the updated syllabus once it takes effect.