
Math 316 - Differential Equations**Course information****Winter 2021****Section 3:** MWF 12-1pm**Zoom meeting ID:** 942 7919 4211**Passcode:** 845147**Instructor:** Ricardo Grande**Email:** grander@umich.edu

Textbook: *Elementary Differential Equations and Boundary Value Problems*
Boyce, DiPrima & Meade, 11th ed.

You are expected to read the sections of the textbook listed in the class schedule on Canvas thoroughly and carefully. There will be regular quizzes based on the required reading.

Office Hours: Zoom meeting ID: 949 5209 2587 Passcode: 395050.

Tuesday 10:30-11:30am,
Friday 9:00-10:00am (+ by appointment)

You may also attend Thomas Silverman's office hours (on Canvas). You are encouraged to take advantage of this opportunity.

Prerequisites: Math 215 or 285; and Math 217.

Course Description: This is an introduction to differential equations for students who have studied linear algebra (Math 217). It treats techniques of solution (exact and approximate), existence and uniqueness theorems, some qualitative theory, and many applications. Proofs are given in class; homework problems include both computational and more conceptually oriented problems. We will cover most of chapters 1-9 in the textbook.

Important course policies:

Video Lectures: Enrolled students will be given access to a Google Drive folder which they can use to access video lectures and additional content for each lecture. Lectures will be posted by noon (ET) on the day before the lecture noted in the schedule below.

Recordings: Students are prohibited from recording/distributing any class activity without written permission from the instructor, except as necessary as part of approved accommodations for students with disabilities. Any approved recordings may only be used for the students own private use.

Classes: The scheduled class times will be used for Zoom Q&A sessions. Please come prepared after viewing the Lecture Slides and doing the assigned reading. We will provide some example problems to work on in breakout rooms if you did not bring any specific questions.

Attendance: Expect to attend all classes, labs and exams. Students who regularly miss class or don't actively participate in class struggle to keep up with the material, especially under the current circumstances.

Campuswire: Students are encouraged to post questions about the course material and HW assignments on Campuswire. Please follow the guidelines:

- Questions about HW, lectures, or course logistics should be posted in the relevant folder on Campuswire.

- Students may post anonymously. However, their identity is known to the professors.
- Students are encouraged to post questions and to answer one another's questions. While there is no Campuswire component in the course grade, positive activity on Campuswire (e.g. asking good questions or providing clear answers) will be noted. If a student's final course grade is near a letter grade cutoff and they have been a helpful, active poster on Campuswire, this could result in a student's grade being bumped up.
- Professors will try to answer questions and/or endorse correct answers regularly.
- Question posts and their corresponding answers should never reveal full solutions to a HW problem, but professors may provide hints. Revealing a solution will be considered a violation of the University Honor Code and will be treated accordingly.

Grading policy: Students will be evaluated on the basis of

- Reading assignments and online quizzes: 10%. These are generally due at noon on the day the corresponding material is covered in lecture.
- Homework: 10%. Homework problems will be posted regularly, with roughly one assignment per week. Note: many exam questions will be adapted from versions of the homework problems. Therefore, to succeed in the course it is necessary to understand and be able to solve the homework problems on your own. You are also encouraged to take advantage of office hours to learn how to solve the problems. Late written homework assignments will not be accepted, but your lowest written homework score will be dropped.
- Labs: 10%. A lab manual in the form of a Mathematica notebook or applet and other source files you will need for the lab will be posted on Canvas before each lab. You do not need to purchase a copy of Mathematica to do the labs. A student license is provided here. Your edited lab notebook file will be due by the time posted in the lab notebook. Late labs will not be accepted.
- Exams (same dates/times for all three sections):
 - Midterm Exam I: 10%. Available starting Tuesday, February 9th at 12PM(ET), due by Wednesday, February 10th by 12PM (ET). Time limit: 90 minutes.
 - Midterm Exam II: 25%. Available starting Thursday, March 11th at 12PM(ET), due by Friday, March 12th by 12PM (ET). Time limit: 90 minutes.
 - Final Exam: 35%. TBD.

The dates for the exams are absolutely firm. Make plans now to be certain these dates are in your calendar. Note that travel is not a sufficient excuse to have an exam scheduled on a different day. It is your responsibility to determine if a conflict exists, and your first recourse in such a situation is to determine whether the conflicting course offers an alternate exam. Any exam conflicts must be reported to your instructor as soon as they are confirmed, and no later than three weeks prior to the exam.

Grades given on individual quizzes, homeworks, labs, and exams will not be "curved". However the historical average cumulative grade for Math 316 is about a B, and you should expect a similar statistic for our class.

Policy statement on academic honesty: By handing in any quiz, assignment, or exam, you are officially asserting that what you are submitting is entirely your own work. Any violation of the honor code will be taken very seriously. It is allowable to discuss homework problems or lab problems with others, or to seek out other sources to learn from. However anything you hand in for credit must be completely your own work (including thought process). It is not allowed to use or submit any materials derived from past Math 316 courses, even if these materials are your own, unless explicitly indicated by your instructor. If you have any questions about this policy, please ask your instructor.

Accommodations for Students with Disabilities: If you think you need an accommodation for a disability, please let me know as soon as possible. In particular, a Verified Individualized Services and Accommodations (VISA) form must be provided to me at least two weeks prior to the need for a test/quiz accommodation. The Services for Students with Disabilities (SSD) Office (G664 Haven Hall; <http://ssd.umich.edu>) issues VISA forms.