Methods of Ordinary Differential Equations
Math 2420-06

Syllabus

Spring 2020

Lecture: Tuesdays and Thursdays 2:35pm – 3:50pm in Stevenson 1307

Instructor: Dr. Lauren C. Ruth
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Office: Stevenson 1408
Office Phone: (615) 322-8473
Office Hours: Wednesdays 3:10–4:00pm, Fridays 1:10–2:00pm and 3:10–4:00pm, in Stevenson 1408

Text: *Fundamentals of Differential Equations* by Nagle, Saff, & Snyder (9th Edition). Available in the bookstore. You may consider also purchasing the corresponding student solution manual.

Sections covered: We tentatively plan to cover as much of sections 1.1–1.4, 2.2–2.4, 3.2, 4.1–4.7, 5.1–5.4, 7.2–7.6, 8.1–8.3, and 9.4–9.8 as time will allow.

Course Catalog Description: "[Formerly MATH 198] Linear first-order differential equations, applications, higher order linear differential equations, complementary and particular solutions, applications, Laplace transform methods, series solutions, numerical techniques. Not open to students who have earned credit for MATH 2400 or 2610 without permission. Total credit for this course and MATH 2400 will not exceed 4 credit hours; total credit for this course and MATH 2610 will not exceed 3 credit hours. Credit hours reduced from second course taken (or from test or transfer credit) as appropriate. Prerequisite: 2300, 2310, or 2501. [3] (MNS)"

Attendance Policy: Be advised that I will not accept homework or quizzes if you are not present during the entire class meeting. I have provided a built-in miss allowance discussed below. Please make your best effort to be punctual. A late entrance is distracting for everyone. Let me know in advance if you need to leave a class meeting early.

Written Homework: There will be weekly written homework graded for accuracy. These will be due each Tuesday at the beginning of class, starting January 14, 2020, except for the first Tuesday after each Thursday midterm exam, when no homework will be due. Each assignment can have upwards of 20 problems, but only 3 or 4 will be graded. The graded problems will be indicated with an asterisk (∗). You only need to submit those 3 or 4 problems that are marked with an asterisk. Please write neatly and with clear exposition. A messy problem will not be graded. Feel free to work on problem sets with classmates from your section, but I expect you to write up your assignment independently and in your own words. The lowest 2 homework grades will be dropped. There will be no make-up opportunities for written homework. (Dropping the lowest scores is the built-in miss-allowance I mentioned above. If you are going to miss a Tuesday, that homework will be one of your drops.) Extended (*i.e.* more than 3) excused absences (*e.g.* university-sanctioned travel or hospitalization) will be dealt with on a case-by-case basis.

Quizzes: There will be a 10-minute quiz at the beginning of each Thursday class meeting, except for midterm exam days, starting Thursday, January 16, 2020. The quiz problems will be designed to be quickly completed given that you have kept up with the course material. The lowest two quiz grades will be dropped. (This is part of the built-in miss allowance.) There will be no make-up opportunities for quizzes. As with written homework, extenuating circumstances will be dealt with on a case-by-case basis.

Quick summary: written homework due Tuesdays; quiz on Thursdays.

Midterm Exams: There will be 2 in-class midterm exams. Here is the midterm schedule:

Midterm Exam 1	Thursday, February 6, 2020
Midterm Exam 2	Thursday, March 19, 2020

If you have an acceptable reason for missing a midterm exam, *approved 1 week in advance*, I will substitute your final exam grade for your grade on the missed midterm exam.

Final Exam: The final exam will be comprehensive. You will have 2 hours to complete the final exam. Here is the date for the final exam:

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Final Exam   Wednesday, April 22, 2020, 12:00pm - 2:00pm

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Remark: You will be taught all the material necessary to answer every question on an exam. However, do not assume that you will have seen a form of each exam question before the exam.

Grading: Your grades will be weighted as follows.

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Quizzes	10%
Written Homework	10%
Two Midterms	50%
Final Exam	30%

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Technology: Calculators are not permitted during any quiz or exam. I do not care if you use them on your homework, but be careful to not let them become a crutch. Please silence all cell phones during lecture. The operation of laptops, tablets, phones, or any other electronic devices is not permitted during lecture, unless necessary for accessibility or medical reasons.

Learning Needs: If you have learning needs that have been evaluated by the Disability Services Program (DSP), please provide me with the documentation from DSP as soon as possible and at least one week prior to your first exam and/or quiz so that proper accommodations may be made. See vanderbilt.edu/ead/ds_about.html for more details.

Honor Code: All students are subject to the Vanderbilt University Honor System. See vanderbilt.edu/student_handbook/the-honor-system/ for more details.

Office Hours: My office hours are posted above, but I am also available by appointment. So if none of the above times work for you, do not hesitate to contact me to work out an alternative meeting time.

Open Enrollment and Add/Drop Period: "Students may change course enrollments in YES until Monday, January 13th. Between January 14th and 20th, withdrawals and adjustments in level or grading status must be made using a paper Change of Course Request form. If only the "DROP" section of the form is completed, the instructor may sign the form. If the "ADD" section of the form is completed (whether or not the "DROP" section is also completed), then the student must see the DUS (John Rafter) or Assistant DUS (Jakayla Robbins) in person. By Math Department policy, the only change to a math course that will be approved is a change in level (e.g., switching from Math 1301 to Math 1300 or vice versa)." — Vanderbilt Math Dept.

Some Important Dates:

- First day of classes: Monday, January 6th
- Last day to unconditionally add a class (after this date students in undergraduate math courses can switch math course levels, but not add a class): Monday, January 13th
- Last day to drop a class with no entry on the record: Monday, January 20th
- Last day to switch math course levels: Monday, January 20th
- MLK Day (No classes): Monday, January 20th
- Deficiency reports due: Wednesday, March 4th
- Spring Break (No classes): March 2nd-6th
- Last day to withdraw from a course (with a grade of W): Friday, March 13th
- Dead week begins: Tuesday, April 14th
- Last day of classes: Monday, April 20th

Disclaimer: I reserve the right to add or change anything on this syllabus. Changes will be announced to the class. Students are responsible for all class-wide announcements made in any form.

Credits: I have adapted this syllabus from the syllabi of Dr. Scott Atkinson and Dr. Ed Saff.