

University of Tennessee

Math 231 Differential Equations I

Meeting Time and Place: TR 16:30-17:45, AYR-123

Syllabus Fall 2021

Welcome to Our Differential Equations Class

Course description: First course in differential equations emphasizing solution techniques.

Prerequisites: Math 142, 148 or Calculus II.

Instructor: Dr. Wenbo Li

Office hours and location: Monday 14:00 pm - 15:30 pm, Thursday 9:50 am - 10:50 am at my office Walters F225 & by appointment.

Ways to contact: wli50@utk.edu, or messages on canvas.

Course communications: I will post course materials, grades, and class announcements on Canvas. You are always welcome to visit my office during office hours, contact me through email or canvas, or make an appointment.

Back-up zoom meeting link: <https://tennessee.zoom.us/j/8217664472> . We will use this zoom link in case that we could not meet in the classroom. Meeting through zoom is also a way for discussion if you cannot come to my office hours.

Student learning outcomes: Upon completion of Math 231, students will be able to

- Identify and classify a variety of differential equations
- Solve and interpret solutions to differential equations
- Apply Laplace transform to solve differential equations
- Find power series solutions to linear differential equations
- Use differential equations to model a variety of applied problems

Textbook: *Fundamentals of Differential Equations, 9th Edition*, Nagle, Saff and Snider, Pearson. We will be covering selected sections from Chapters 1-5, 7, 8.

Assessment and evaluations methods: (no extra points)

Worksheets (0%) + Homework (0%) + Quizzes (16%) + Midterm exams (52%) + Final (32%)

Worksheets: sometimes there will be in-class worksheet problems for you to practice like a recitation session, but I will not collect them. Solutions will be posted on canvas after the class.

Homework: students are encouraged to do all suggested homework problems (see class schedule at the end), but I will not collect the homework problems.

Quizzes: there will be six 20 minutes quizzes in total, only your five best quiz scores count. The quizzes will be given at the beginning of the lecture, see the schedule at the end for the dates.

Midterms: there will be three midterm exams, see the schedule at the end for the dates.

Final: a comprehensive exam covering all the materials we learn this semester.

Letter grades will be based on the following scale:

Grade	A	B+	B	C+	C	D+	D	F
%-Score	90+	87-89	80-86	77-79	70-76	67-69	60-66	0-59

I reserve the right to change this scale, provided the change benefits all students. All grades will be made available online.

Test environment conditions: During a test or quiz, students must adhere to the following:

- All tests and quizzes are closed-book: Students must put away notes and textbooks.
- Students must not use cell phones.
- Students must finish (stop writing) within the time limit.

Calculators: The use of a **basic calculator** (addition, subtraction, multiplication, division, exponentiation, and logarithm) as an auxiliary tool is allowed in this class. Advanced calculators that could perform derivative, integration and solving equations are not allowed. Devices with Internet capability such as cellphone calculators are prohibited during the quizzes and exams. To obtain credit, all the steps leading to the solution of a problem must be clearly written.

Make up policies: There will be NO make up for the quizzes. Make ups for the midterm and final exams will be given only if a student can present evidence that an absence was caused by serious illness, a death in the immediate family, religious observance, or participation in University activities at the request of University authorities. For an illness, you must present a signed statement from a doctor that your illness was sufficiently serious to make you miss class. A note saying only that you visited the doctor or the Health Center will not Suffice.

Final exam rescheduling: Students are not required to take more than two exams on any day. Students who have three or more exams scheduled for a single day should contact their instructors by Wednesday, November 17, for exam rescheduling. The instructor(s) of the last

nondepartmental exam(s) on that day must reschedule the student's exam during Final Exam Week.

Learning environment and classroom expectations/etiquette:

Everyone is expected to maintain an atmosphere that fosters a positive learning environment.

- Mask wearing is required in the classroom.
- Attending every class is mandatory.
- Questions are welcomed.

COVID Guidelines: Students, faculty, and staff will be required to wear masks in classrooms and labs, and for indoor academic events required for students such as orientation. We will continually re-evaluate the need for masks based on COVID-19 case counts in our community.

The best way to take care of ourselves and one another and to beat this virus is to get vaccinated. Vaccines are safe, free, and effective. With the highly transmissible Delta variant now in our community, if you are not vaccinated you are at greater risk of getting sick than you were last year on campus. More information about vaccines, including a vaccination event at Neyland Stadium, [is available on the UT website](#).

Math Tutorial Center: Free tutoring is provided for all 100 level and most 200 level math courses including this course. I highly recommend you take advantages of this resources provided by the university.

STUDENTS WITH DISABILITIES -- <http://sds.utk.edu>

ACADEMIC INTEGRITY: Each student is responsible for his/her personal integrity in academic life and for adhering to UT's Honor Statement. The Honor Statement reads: "An essential feature of the University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."

How to be successful in this course:

- Show up in class and be on time.
- Listen carefully, take notes, and ask questions during the lecture.
- Think, work smarter and discuss with classmates after class.
- Review and rework problems that you got wrong.
- Start preparing for exams early.

If the instructor finds it necessary to make informational changes (e.g. office hours, schedule adjustments) due to students' needs or unforeseen circumstances, students will be notified in writing/email of any such changes.

Key Dates - Fall 2021: [UT Calendar](#)**Math 231 Projected Schedule Fall 2021**

	Section	Homework Problems and Other Information (Keep updating)
8/19	1.1 1.2	1.1: 1-16 1.2: 1-6,9-12,
8/24	1.2 1.3	1.2: 18,19,20,22,23,25,26,27,29 1.3: 1,3,5,7,9
8/26	2.1 2.2	Appendix A: 1,3,6,9,11,15,21,24,25,27,29,31,34 2.2: 1,3,5,7,9,11,17-21
8/31	2.3	Quiz 1, first quiz, don't panic and be prepared. 2.3: 1,3,5,7,10,11,15,17,18,19,25,28,29
9/2	2.4 2.5	2.4: 1,3,5,9,11,15,17,21 2.5: 7,9,12,13
9/7	2.5 2.6	Quiz 2 2.6: 9,12
9/9	3.2 3.4	3.2: 1,2,3,4,19 3.4: None
9/14	Exam 1	Covers chapters 1, 2, 3
9/16	4.1 4.2	4.1: 1,2,3,7,9 4.2: 3,5,7,13,19,20
9/21	4.3	4.3: 1,3,5,21,22,27,31(a)(c)
9/23	4.4	Quiz 3 4.4: 1,3,5,11,13,17,19,21
9/28	4.5	4.5: 1,3,7,9,11,19,20,21,23,24,25,27,29,31,33,35
9/30	No class	Fall Break!
10/5	4.6	4.6: 1,3,5,6,9,18
10/7	5.2	Quiz 4 5.2: 1,3,7,12,19,20
10/12	5.4	5.4: 3-6; and additional homework in pdf file on canvas
10/14	Review	Review for the Exam 2
10/19	Exam 2	Covers chapters 4, 5
10/21	7.1 7.2	7.2: 1-5,9,11,13,15,17,19
10/26	7.3	7.3: 1-10,13,14,22
10/28	7.4	7.4: 1-9,11-13,15,22,23,25
11/2	7.5	Quiz 5 7.5: 1,3,5,7,15,17,25,29,30

11/4	7.6	7.6: 1,3,5,7,9,11,12,13,15,21,23,27,29
11/9	8.1	8.1: 1,3,5,6
11/11	8.2	8.2: 9,11,13,17,23,25,26
11/16	8.3	Quiz 6 8.3: 11,13,15,16,17,19,21,25,26
11/18	Review	Review for the Exam 3
11/23	Exam 3	Covers chapters 7, 8
11/25	No class	Thanksgiving
11/30	Review	Review for Final
12/9	Final Exam	Comprehensive Exam: Thursday, December 9, 1:15 PM - 3:15 PM. GOOD LUCK!!!