

# MATH 135: ORDINARY DIFFERENTIAL EQUATIONS

Winter 2022

(Note: all times Pacific standard time)

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<b>Instructor:</b> Sean Carney	<b>Time:</b> MWF 11am – 11:50am
<b>Email:</b> <a href="mailto:spcarney@math.ucla.edu">spcarney@math.ucla.edu</a>	

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*Each lecture will be recorded and posted to CCLE.*

**Lecture location:** Campus location: MS 6627; Zoom Meeting ID: TBA

**Instructor Office Hours:** MF 10am – 10:50am; additional hours will be scheduled before exam days.

**Discussion Section:** Th 11am – 11:50am; Campus location: MS 6627; Zoom Meeting ID: see Canvas

**TA Information:** Yizhou Chen, email: [chenyizhou@math.ucla.edu](mailto:chenyizhou@math.ucla.edu)

**TA Office Hours:** T 10am-11am; Zoom ID: see Canvas

**Course Information:** Differential equations are of paramount importance in mathematics because they are equations whose solutions are functions—not numbers. In *nearly all* of the fields in the physical sciences and engineering, and in many fields in the social sciences, differential equations play a *fundamental* role. Topics covered include: Laplace transforms, existence and uniqueness theorems, Fourier series, separation of variable solutions to partial differential equations, Sturm-Liouville theory, calculus of variations, two point boundary value problems, and Green's functions.

**Textbook:** *Differential Equations with Applications and Historical Notes* (3rd edition) by George F. Simmons.

**Communication:** Important information and announcements will be posted to the BruinLearn (Canvas) page. The class will utilize **Piazza** as a discussion forum to ask questions about the class. Email should generally only be used for administrative matters.

**Homework Assignments:** All homework will be posted online on BruinLearn, typically on Fridays, and then collected the following Friday. Students will upload each assignment to **Gradescope**. Typing up one's homework with  $\text{\LaTeX}$  is encouraged, but certainly not required. If homework is hand-written, please ensure it is written in a clean, clear, and concise manner. Oversized files, messy writing, and rotated pictures will not be graded. No late homework will be accepted.

**Exam Information:**

Midterm 1\* ..... Friday, January 28th (week 4)  
Midterm 2\* ..... Wednesday, February 23rd (week 8)  
Final Exam\*\* Wednesday, March 16th; 11:30am-2:30pm

\*The midterm exam dates are tentative. \*\*The final exam date is fixed by the registrar and will not change. The midterms will be in-class, and both will last 50 minutes. They will focus on material in weeks 1-4 and 5-8, respectively. The final exam will be cumulative.

No exams at a time other than the designated ones will be allowed (exceptions for illnesses with documented proof or emergencies can be made).

**Grading Policy:** the top ( $N - 1$ ) of the  $N$  homeworks will count for (25%) of the final grade; i.e. the lowest homework score will be dropped. The grading scheme for the exams will be (20%) for the two midterms and (35%) for the final.

**Important:** it is department policy that each exam must contain the statement: *“I certify on my honor that I have neither given nor received any help, or used any non-permitted resources, while completing this evaluation.”* This statement **must** be signed by the student. If it is not signed, the evaluation **must be given a failing grade**, per department policy.

**Students with Disabilities:** Students with disabilities who will need special arrangements during class and/or for the final exam/midterm should contact me as soon as possible. Please also contact the Center for Accessible Education: <https://www.cae.ucla.edu>.

**Mental Health Resources:** The importance of taking care of one’s mental health cannot be overstated. All registered UCLA students are eligible to use UCLA’s Counseling and Psychological Services (CAPS) (<https://www.counseling.ucla.edu>). 24/7 crisis support is always available by phone at (310) 825-0768.

**Title IX Responsible Employee Information:** Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the CARE Advocacy Office for Sexual and Gender-Based Violence, 1st Floor Wooden Center West, [care@careprogram.ucla.edu](mailto:care@careprogram.ucla.edu), (310) 206-2465. In addition, Counseling and Psychological Services (CAPS) provides confidential counseling to all students and can be reached 24/7 at (310) 825-0768. You can also report sexual violence or sexual harassment directly to the University’s Title IX Coordinator, 2241 Murphy Hall, [titleix@equity.ucla.edu](mailto:titleix@equity.ucla.edu), (310) 206-3417. Reports to law enforcement can be made to UCPD at (310) 825-1491.

Students should be aware that most employees, including myself as the instructor and our TA, Yizhou, are **REQUIRED** under UC Policy to inform the Title IX Coordinator should they become aware that you or any other student has experienced sexual violence, sexual harassment, domestic or dating violence, or stalking. The exceptions are the employees at the CARE Advocacy Office and CAPS, as well as the doctors at the Arthur Ashe Student Health and Wellness Center.

**Academic Integrity:** Students are encouraged to work together to study on homework problems, but all work one submits must be their own. The easiest way to ensure this is to write up one’s own solutions. Any violations of UCLA’s academic integrity code will be reported to the dean of students.