

Spring 26 MA303: Differential Equations and Partial Differential Equations for Engineering and the Sciences

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Office Hours: TR 2:00-3:00pm

Course Description

Credit Hours: 3.00

This methods course is for students in any branch of engineering and science designed to follow MA 26200 or MA 26600. Materials to be covered are: linear systems of ordinary differential equations, nonlinear systems, Fourier series, separation of variables for partial differential equations, and Sturm-Liouville theory. By the end of the course, you will be able to discuss the dynamics and solution behavior of linear and nonlinear systems of differential equations and solve a range of differential equations using tools including the eigenvalue method, Laplace transform, numerical methods, and Fourier series.

Textbook

The course textbook is Differential Equations and Boundary Value Problems: Computing and Modeling (6th edition), by Edwards, Penney, and Calvis, Plus MyLab Math with Pearson eText. Note that access to MyLab Math includes access to a digital copy of the textbook (an eText), so it is not necessary to purchase a physical textbook. MyLab Math should be accessed through the Brightspace course page, and instructions on how to purchase an access code for MyLab Math for this course are available on our Brightspace page.

Homework

Online homework: through the Pearson MyLab Math platform.

Handwritten homework: can be found and submitted on BrightSpace. The assigned problems are from Pearson eText.

Policy on late homework: Homework due dates are typically weekly at 11:59pm on Sundays and will be announced throughout the course, so please check Brightspace and MyLab Math regularly. Except in cases of University approved reasons, late homework will not be accepted. At the end of the semester, the 3 lowest online homework scores and the 3 lowest handwritten scores will be dropped.

Grades

Course grades are determined from your overall total score as follows:

- Online homework (through MyLab): 20%
- Written homework (submitted through Brightspace): 10%
- Midterm 1 (in class, tentatively Feb 20th): 20%

- Midterm 2 (in class, tentatively Mar 25th): 20%
- Final exam (location and date TBD): 30%

Grading Scale

Provisional grade cut-offs (in percentage):

A+	[97, 100]
A	[93, 97)
A-	[90, 93)
B+	[87, 90)
B	[83, 87)
B-	[80, 83)
C+	[77, 80)
C	[73, 77)
C-	[70, 73)
D+	[67, 70)
D	[63, 67)
D-	[60, 63)

While it is possible that the final grade scale may change at the end of the semester, cut-offs will be no stricter than those given above.

Policy on Makeup and Accommodated Exams

Makeup exams will be given only under circumstances described in and according to the Attendance Policy (see below). In order to secure the integrity of the exam, no makeup exam is possible before the scheduled date and time of the actual exam. In addition, generally, no makeup exam is possible once the exams are returned to the students (which is typically one week from the exam's date). Refer to the Department of Mathematics ADA information page as well as read the section on Accommodation for Students with Disabilities (see below). Similar to makeup exams, accommodated exams cannot be taken before the date and time of the actual exam or after the exams are returned to the students.

Other Information

Calculators: Calculators are not allowed on exams, but are allowed for homework assignments.

ChatGPT and generative AI policy: Use of ChatGPT and other forms of AI is highly discouraged for this class, as our focus is on learning and implementing new methods.

Important Dates:

- **Add/Drop** https://catalog.purdue.edu/preview_program.php?catoid=18&poid=33634
- **Quiet period:** the week preceding final exams is designated as the Quiet Period (December 8–13 for Fall 2025). During this time, no assignments (including homework) can be assigned or collected.

Accommodation for Students with Disabilities: Purdue University strives to make learning experiences accessible to all participants. If you anticipate or experience physical or academic barriers based on disability, you are encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247, as soon as possible. If the Disability Resource Center (DRC) has determined reasonable accommodations that you would like to utilize in this class, you must send your Course Accommodation Letter to the instructor. Instructions on sharing your Course Accommodation Letter can be found by visiting: <https://www.purdue.edu/drc/students/course-accommodation-letter.php> Additionally, you are encouraged to contact your instructor asap to discuss implementation of your accommodation.

Attendance Policy: This course follows Purdue's academic regulations regarding attendance, which states that students are expected to be present for every meeting of the classes in which they are enrolled. When conflicts or absence can be anticipated, such as for many University-sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification to the instructor is not possible, the student should contact the instructor as soon as possible by email or phone. For cases that fall under the University's excused absence regulations, the student or the student's representative should contact or go to the Office of the Dean of Students (ODOS) website to complete appropriate forms for instructor notification. Under academic regulations, excused absences may be granted by ODOS for cases of grief/bereavement, military service, jury duty, parenting leave, or emergent medical care. Absences outside of those covered by the University's excused class absence regulations are at the instructor's discretion. Purdue expects each student to be responsible for class-related work missed due to an unavoidable absence. Students should contact their instructors directly to discuss the absence and opportunity to complete missed coursework. This work may be made up at the discretion of the instructor.

Inclusion and belonging: I am committed to supporting diversity in all its forms and helping foster a community of belongingness at Purdue. If something going on in or outside of this classroom is impacting your performance, please do not hesitate to let me know; I am available to talk or point you to other campus resources.

Mental Health/Wellness Statement: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours.

Nondiscrimination Statement: Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. For more information, please see Purdue's full Nondiscrimination Policy Statement.

Academic Integrity: Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breeches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.

Purdue prohibits academic dishonesty. According to University policy, cheating, plagiarism, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid, abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest. If found guilty of academic dishonesty, possible penalties can range from receiving a zero on the assignment or exam to expulsion from the University. For more details about the Purdue policy on academic dishonesty, see www.purdue.edu/odos/osrr/academic-integrity/.

Course and Instructor Evaluations: Toward the end of this semester, you will be provided with an opportunity to give feedback on this course and your instructor. Purdue uses an online course evaluation system. You will receive an official email from evaluation administrators with a link to the online evaluation site and will receive a prompt to complete the survey when you login to Brightspace. Your participation is an integral part of this course, and your feedback is vital to improving education at Purdue University. We strongly urge you to participate in the evaluation system.

Emergency Preparedness: In the event of a major campus emergency or other circumstances beyond the instructor's control, course requirements, deadlines, and grading percentages are subject to changes that may be necessitated by a revised semester calendar. Relevant changes to this course will be posted on the course Brightspace page. You are expected to read your @purdue.edu email on a frequent basis. Purdue's website on Emergency Preparation and Planning covers topics such as Severe Weather Guidance, Emergency Plans, and a place to sign up for the Emergency Warning Notification System. You are encouraged to download and review the Emergency Preparedness for Classrooms document.