MATH 2410Q-006 - Honors Differential Equations Spring 2026

Instructor: Blake Jackson **Email:** blake.jackson@uconn.edu
Office: MONT 406
Office hours: By appointment (send me an email with your name and class number)
Classroom: MONT 320
Class Time: MoWe 12:30 PM - 1:45 PM
Text: *A First Course in Differential Equations with Modeling Applications*, 12th ed., Dennis G. Zill

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Welcome to MATH 2410Q! The goal of this course is to arm you with techniques to help you solve ordinary differential equations. If you don't know what those are, they are just equations involving a function (of a single variable), say $y = f(x)$, and its derivatives, $y', y'', ...$ The goal is to solve the differential equation for the unknown function y. We will cover techniques to help you solve differential equations of various forms.

Prerequisites: MATH 1132Q, 1152Q, or 2142Q. If you do not have the prerequisites for this class met by the time the semester starts, you must withdraw from the course.

Text: The textbook for the course is "A First Course in Differential Equations with Modeling Applications" by Dennis G. Zill (12th edition). The textbook comes bundled with a WebAssign access code, which we will use to complete online homework. If you have previously taken a Calculus course at UConn (1131Q, 1132Q, and/or 2110Q), you may already have access and don't need to do anything. If not, you can buy the bundle at the bookstore. You can also get Cengage Unlimited for $120 if you have other Cengage courses and/or don't want a physical book.

Topics covered: The topics we will cover in this course are definitions and terminology, classification of differential equations (linearity, order, ordinary/partial), solving first-order ODEs (separable equations, linear equations, exact equations), visualizing solutions with direction fields, numerical solutions to first-order ODEs, modeling with and applications of first-order ODEs, higher-order linear ODEs (theory, homogeneity, solving constant coefficient linear equations, etc.), modeling with higher-order ODEs, Laplace transforms and inverse Laplace transforms, solving initial-value problems with Laplace transforms, and solving systems of linear first-order equations using matrix methods.

Office hours: If you would like some one-on-one help, I am available to meet. I prefer meeting on Monday or Wednesday, but I am flexible! I can also meet virtually over Zoom or Webex during times when I am not on campus.

Point Distribution:

Homework	15 percent
Three Exams	60 percent
Final Project	25 percent

The grading scale used will be 93%+ A, 90-92.99 A-, 87-89.99 B+, 83-86.99 B, etc.

Homework: Homework will be submitted via WebAssign, which is accessible via HuskyCT. These assignments are meant to prepare for the exams. Please take these assignments as an opportunity to learn, as test questions are similar to homework questions. Homework makes up 15% of your final grade.

Exams: You will have three exams (60% of your final grade, 20% of your grade each). The exams will be taken on 02/11, 03/11, and 04/15 during class time (unless you have accommodations through UConn CSD).

Final Project: You will have a final project in this course (25% of your final grade). These can be completed solo or in groups of up to 4 people. The project descriptions are on HuskyCT. There will be in-class presentations for the projects during the last two weeks of the course (04/20 - 04/29). More information can be found on the project handout on HuskyCT.

Absences and Make-ups: I will not give any homework extensions or make-ups. It is your responsibility to regularly check the homework software to see when homework is due. Make-up exams will not be given. Exceptions can be made in extreme circumstances (e.g., hospitalization), provided there is documentation.

Grading Appeals: It's impossible to grade everything perfectly, so grading mistakes are inevitable. If you think something was graded unfairly, please ask me about it.

Policy Against Discrimination, Harassment, and Related Interpersonal Violence: The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community–students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured of an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate amorous relationships can undermine the University's mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate amorous relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Additionally, to protect the campus community, all non-confidential University employees (including faculty) are required to report sexual assaults, intimate partner violence, and/or stalking involving a student that they witness or are told about to the Office of Institutional Equity. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help. More information is available at equity.uconn.edu and titleix.uconn.edu.

Students with Disabilities: The University of Connecticut is committed to protecting the rights of individuals with disabilities and ensuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please contact the Center for Students with Disabilities (CSD) immediately: Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.

Inclement Weather and Emergency Preparedness: In case of inclement weather, a natural disaster, or a campus emergency, the University communicates through email and text messages. Students are encouraged to sign up for alerts through http://alert.uconn.edu. Students should be aware of emergency procedures, and further information is available through the Office of Emergency Management at http://publicsafety.uconn.edu/emergency/.

Note: The instructor reserves the right to make adjustments to this course.