University of Connecticut – Avery Point

MATH 2410Q (Elementary Differential Equations)
Spring 2026

Course Outline

Instructor: Robert Dolan
Email: robert.dolan@uconn.edu
Office Hours: M/W 9:40AM-10:10AM & 12:10PM-1:10PM or by appointment.

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

Course Description: Qualitative, analytical, and numerical methods for first- and second-order single ordinary equations as well as first-order constant coefficient linear systems and some special nonlinear systems. Laplace transform and its application to differential equations.

Prerequisites: MATH 1132, 1152, or 2142. Recommended preparation: A grade of C- or better in MATH 1132; MATH 2110 or 2130. Cannot be taken after MATH 2144, 2420, 2720, 3146, 3150, 3410, 3412, 3510, 3170. Repeat restrictions apply; see advising.uconn.edu/repeat-policy.

Textbook Information: The textbook for the course is **"A First Course in Differential Equations with Modelling Applications" by Dennis G. Zill, 12th edition with WebAssign access**. The online textbook and homework (WebAssign) are included in the Husky Book Bundle. They can also be purchased separately online.

Software/Technical Requirements: HuskyCT/Blackboard, Adobe Acrobat Reader, Dedicated access to high-speed internet.

- **NOTE**: This course has NOT been designed for use with mobile devices.
- This course uses the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the Help Center. You also have 24x7 Course Support including access to live chat, phone, and support documents.
- Student technology training is now available in a new HuskyCT short course created by students for students. It will prepare you to use the IT systems and services that you will use throughout your time at UConn, whether learning online or on-campus. It is available at https://lms.uconn.edu/ultra/courses/_80016_1/cl/outline.

Policies & Resources:

1. **Make-Up/Late Policy:** Course due dates are identified in this syllabus, on HuskyCT, and on WebAssign. Deadlines are based on Eastern Time unless otherwise specified. In fairness to everyone, there are generally **no** make-ups and **no** extensions for written assignments and exams. Only extreme situations with an officially documented excuse will allow you to make up an evaluation/assessment. Whenever possible, these excuses must be presented before the evaluation/assessment is due or is supposed to take place in class.

2. **Academic Integrity:** This course expects all students to act in accordance with UConn's Policy on Academic, Scholarly, and Professional Integrity and Misconduct (ASPIM) (https://policy.uconn.edu/2023/07/11/academic-scholarly-and-professional-integrity-and-misconduct-aspim-policy-on/). In mathematics, this means that all work that you turn in should be written up independently by you, in your own words, and should represent your honest understanding of the material. On exams and quizzes, it should be noted that this means you must not consult any sources or materials: neighbours' papers, calculators, and any notes, books, or electronic devices are off-limits. Violations of this policy may range from a zero on the assignment to a grade of F in the course. If you have questions about academic integrity or intellectual property, you should consult with your instructor. Additionally, consult UConn's guidelines for academic integrity (http://community.uconn.edu/the-student-code-appendix-a/).

3. **Zero Tolerance Policy:** If a student is caught cheating on any of the assessment components of this course the student shall receive a **F** for the entire course and will be reported to the community standards office. **No exceptions.**

4. **Resources for Students Experiencing Distress:** The University of Connecticut is committed to supporting students in their mental health, their psychological and social well-being, and their connection to their academic experience and overall wellness. The university believes that academic, personal, and professional development can flourish only when each member of our community is assured equitable access to mental health services. The university aims to make access to mental health attainable while fostering a community reflecting equity and diversity and understands that good mental health may lead to personal and professional growth, greater self-awareness, increased social engagement, enhanced academic success, and campus and community involvement
    a. Students who feel they may benefit from speaking with a mental health professional can find support and resources through the **Student Health and Wellness-Mental Health** (SHaW-MH) office. Through SHaW-MH, students can make an appointment with a mental health professional and engage in confidential conversations or seek recommendations or referrals for any mental health or psychological concern.
    b. Mental health services are included as part of the university's student health insurance plan and also partially funded through university fees. If you do not have UConn's student health insurance plan, most major insurance plans are also accepted. Students can visit the **Student Health and Wellness-Mental Health located in Storrs on the main campus in the Arjona Building, 4th Floor,** or contact the office at **(860) 486-4705, or** **https://studenthealth.uconn.edu/** for services or questions**.**

5. **Accommodations for Extended Absences:** If life circumstances are affecting your ability to focus on courses and your UConn experience, students can email the Dean of Students at dos@uconn.edu to request support. Regional campus students should email the Student Services staff at their home campus to request support and faculty notification.

6. **Accommodations for Students with Disabilities:** The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.
    a. Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (Retrieved March 24, 2013 from Blackboard's website.

Grading

WebAssign Homework (online)	10%
In-Class Quizzes	15%
Exam 1	22.5%
Exam 2	22.5%
Final Exam	30%

Grade	Percentage	Grade	Percentage
A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	59 & below

*__Note on Final Exam Score:__ Your final exam grade may replace a lower exam if it benefits you. If not, it just counts as the final and you keep your midterm scores as they are.

- **WebAssign Homework:** Online homework is assigned and completed using WebAssign. To access the homework you will have to go through Husky CT single sign-on. In your account you will find a link to do your homework using WebAssign. There will be homework assignments for each section of the text.
  - **You will get five attempts for each question that is not multiple choice and fewer than five attempts for each multiple choice question; the exact number of attempts will depend on the number of choices.** After each attempt, you will be told whether your answer is correct or not.
  - **WebAssign assignments for sections covered in a given week are due the following Monday at 11:59PM**.
  - Automatic extensions are setup on WebAssign. You may request an extension on any WebAssign assignment within **two weeks** after the due date. There is a 20% penalty on extended WebAssign assignments and they must be completed within **two days** of the extension request. The 20% penalty will only be applied to questions you complete *after* the due date. You do not need to request an extension and the penalties are applied automatically.

- **In-Class Quizzes:** There will be a short weekly in-class quiz every **Monday**. **The quiz will be based on the topics covered in the previous week.** The main objective of these quizzes is to provide exposure to problems similar to those you will see on the exams. The lowest two quizzes will be dropped at the end of the semester.

- **Exams:** There will be two midterm exams and a final exam in this course. The final exam for the course will be cumulative. The exam dates are listed below. You are **required** to take the exam during this time only. There will not be any makeup exams given. If there is an emergency and you must miss an exam, you will be responsible for notifying your instructor **ahead of time** or you will not get credit for that exam. As for the final exam, students are required to be available for their exam during the time stated in the Registrar's Office Schedule. If you have a conflict with this time you must visit the Office of Student Services. Below are the exam dates:
  - **Exam 1:** Monday February 23, 2026
  - **Exam 2:** Wednesday April 15, 2026
  - **Final Exam:** Final Exam Week (TBD - See Registrar's Office Schedule)

Tentative Outline		
Date	Section	Topic
Week 1		**No Class Monday**
	1.1	Intro to DEs: Definitions and Terminology
Week 2	1.2	Initial-Value Problems (IVPs)
	2.1	Solution Curves Without a Solution
Week 3	2.2	Separable Equations
	2.3	Linear Equations
Week 4	2.4	Exact Equations
	2.5	Solutions by Substitutions
Week 5	2.6	A Numerical Method
	Review	**Exam 1 Review**
Week 6		**Exam 1**
	3.1/3.2	Linear & Nonlinear Models
Week 7	3.3	Modelling with Systems of First-Order DEs
	4.3 Part 1	2nd-Order Linear Homogeneous Equations with Constant Coefficients
Week 8	4.3 Part 2	2nd-Order Linear Homogeneous Equations with Constant Coefficients
	4.2/4.1 Part 1	Reduction of Order/Fundamental Sets of Solutions
Week 9		**Spring Break**
Week 10	4.1 Part 2	Nonhomogeneous Differential Equations
	4.4	Undetermined Coefficients
Week 11	4.6	Variation of Parameters
	6.1	Power Series Solutions
Week 12		**Exam 2 Review**
		Exam 2
Week 13	7.1	Definition of the Laplace Transform
	7.2	Inverse Transforms and Transforms of Derivatives
Week 14	7.3	Laplace Transform: Operational Properties 1
	7.4	Laplace Transform: Operational Properties 2
Week 15	9.1	Euler Methods and Error Analysis
	9.2	Runge-Kutta Methods
Week 16		**Final Exam**