UCONN
UNIVERSITY OF CONNECTICUT

Math 2410Q
Elementary Differential Equations
Spring 2026

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 and Instructor Information

Course Title: Elementary Differential Equations
Credits: 3
Mode/Format: In-Person
Prerequisites: MATH 1132Q, 1152Q, or 2142Q. Recommended preparation: A grade of C- or better in MATH 1132Q; MATH 2110Q or 2130Q. Cannot be taken after MATH 2144Q, 2420Q, 2720, 3146, 3150, 3410, 3412, 3510, 3170. Repeat restrictions apply; see advising.uconn.edu/repeat-policy.
Course communication: Much of the communication for this course will occur online, via email. Please check course HuskyCT announcements, and your UConn email regularly for updates related to MATH 2410Q. However, you are also expected to be in class every lecture to receive important communications there. Please contact a classmate, or your instructor if you miss class, to ensure you have not missed important course information. I will respond to your email within 24 hours on weekdays.
Time Zone: *All times* for due dates, online and in-person classes, student hours, etc., in this course are given in **US Eastern Time.**

Professor: Ningwei Jiang
Pronouns: He/him/his
Email: ningwei.jiang@uconn.edu
Student Hours/Availability: I will (tentatively) have student hours on Tuesday 2:30 PM – 3:30 PM and Thursday 9:45 AM – 10:45 AM. You are welcome to stop by my office, MONT 402, to ask questions or discuss course material without an appointment during these times. If you are unavailable during these times (or they are too busy), feel free to reach out to me and we can schedule an appointment to meet at another time.

Course Materials

The textbook for the course is *A First Course in Differential Equations with Modeling Applications* by Dennis G. Zill, 12th edition that bundled with the WebAssign.

This course is part of the campus' course material delivery program. **If you do not opt out of the Husky Book Bundle, the digital required materials for this course have been integrated with Blackboard. Please sign into Blackboard to access your course and course materials.**

Calculators: Calculators are permitted for homework. You will NOT be allowed to use a calculator for any of the quizzes and exams.

Course Description

The following is the math department's official 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.

Course Objectives

By the end of the semester, students should be able to:

1. Solve first order ordinary differential equations (ODE) for separable equations, linear first order, exact equations or any first order ODE which can be transformed into one of those forms via substitutions.
2. Solve higher order homogeneous linear ODE with constant coefficients; solve higher order nonhomogeneous linear ODE with constant coefficients using underdetermined coefficients approach, annihilator approach or variation of parameters.
3. Solve Euler-Cauchy equation.
4. Know how to find Laplace transform and inverse Laplace transform of given functions, using Laplace transform solving initial value problems for differential equations.
5. Solve first order linear system (homogenous and nonhomogeneous) with constant coefficients and know how to draw phase plane pictures for basic cases.

Course Outline (Tentative)

Week	Sections covered	Assessments Due
1	1.1 Definitions and Terminology 1.2 Initial-Value Problems	Learning Reflection on 1/23
2	2.1 Solution Curves without a Solution 2.2 Separable Equations	Learning Reflection on 1/30
3	2.3 Linear Equations 2.4 Exact Equations	Worksheet Reflection on 2/4 Quiz 1 on 2/5 WebAssign and Learning Reflection on 2/6
4	2.5 Solutions by Substitutions 2.6 A Numerical Method (Euler's Method)	Worksheet Reflection on 2/11 Quiz 2 on 2/12 WebAssign and Learning Reflection on 2/13
5	3.1 Linear Models 3.2 Nonlinear Models	Worksheet Reflection on 2/18 Quiz 3 on 2/19 WebAssign and Learning Reflection on 2/20
6	Midterm Exam 1 Review (Sections 1.1-1.2, Chapter 2 and sections 3.1-3.2)	Midterm Exam 1 on 2/26 Exam Worksheet on 2/26 WebAssign on 2/27
7	4.1 Preliminary Theory-Linear Equations 4.2 Reduction of Order (No WebAssign) 4.3 Homogeneous Linear Equations with Constant Coefficients	Worksheet Reflection on 3/4 Quiz 4 on 3/5 Learning Reflection on 3/6
8	4.4 Undetermined Coefficients-Superposition Approach	Worksheet Reflection on 3/11 Quiz 5 WebAssign on 3/13
	Spring Break, No Class	
9	4.6 Variation of Parameters 7.1 Definition of Laplace Transform	Worksheet Reflection on 3/25 Quiz 6 on 3/26 WebAssign and Learning Reflection on 3/27
10	7.2 Inverse Transforms and Transforms of Derivatives 7.3 Operational Properties I	Worksheet Reflection on 4/1 Quiz 7 on 4/2 WebAssign and Learning Reflection on 4/3

11	7.4 Operational Properties II B.1 Basic Definitions and Theory	Worksheet Reflection on 4/8 Quiz 8 on 4/9 WebAssign and Learning Reflection on 4/10
12	Midterm Exam 2 Review (Chapter 4, 7 and sections B.1-B.2)	Midterm Exam 2 on 4/16 Exam Worksheet on 4/16 WebAssign on 4/17
13	B.2 Gaussian and Gauss-Jordan Elimination (No WebAssign) B.3 The Eigenvalue Problem 8.1 Preliminary Theory-Linear Systems	Worksheet Reflection on 4/22 Quiz 9 on 4/23 Learning Reflection on 4/24
14	8.1 Preliminary Theory-Linear Systems 8.2 Homogeneous Linear Systems Take-home Practice Set (Cover all sections) Due 5/3	Worksheet Reflection on 4/29 Quiz 10 on 4/30 WebAssign and Learning Reflection on 5/1

Course Requirements and Grading

Category	Overview	Weight
WebAssign	Due Friday on WebAssign	20%
Weekly Learning Reflection	Due Friday on HuskyCT	5%
Quiz Worksheet Reflections	Due Wednesday on HuskyCT	5%
Quizzes	In-Class on Thursday, 15 mins	15%
Exam Practice Worksheets	Due on Exam date	5%
Midterm Exams	In-Class on Thursday, 75 mins	20 % each 40 % total
Take-home Practice Set	Cover all sections	10 %

Online Homework: WebAssign

You will have a WebAssign online homework assignment due for each covered section of the text. You will need to access WebAssign via the link in your HuskyCT lecture section. Each assignment will be made available on WebAssign before the section is covered in class. The due date for each assignment will be set by your instructor.

You will get TEN attempts for each question that is not multiple choice, ONE attempt for T/F question, 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. If you are not able to get the correct answer after your initial attempts, we recommend that you seek help from your peers, or your instructor via student hours, the Q-Center, a tutor, or another student before attempting to answer the problem again.

Automatic WebAssign Extensions: Late submission will be accepted with a 10% deduction to your score. To access late homework in WebAssign, you need to click on “Past Assignments” to request an automatic extension. Late homework must be completed within **two weeks** of the original due date. **No Manual extension will be granted.**

Warning: When accessing your online homework, use **Firefox or Chrome as your browser**; there are problems that can occur if you use Internet Explorer or Safari. **Please use this WebAssign Tips.pdf document for help with accessing WebAssign and entering your answers correctly.**

Some of your lowest WebAssign scores will be dropped from your grade at the end of the semester.

Learning Reflection

Each week, you will need to complete a short reflection to share your learning. These reflections are not graded for right or wrong answers—they are an opportunity for you to think critically about what you've learned, where you're confident, and where you are struggling. Full credit is given for honest, thoughtful effort and completion.

Quiz Worksheet Reflections

Quiz worksheets will be posted on HuskyCT a week prior to each quiz. You must attempt these problems to the best of your ability using your course notes and the textbook. You are welcome to use additional resources in an appropriate way. Once you have completed this worksheet, you should submit it to HuskyCT. Once you have submitted it, you will be given access to the solutions. You must use the solutions to check your answers and then fill out the reflection activity for each worksheet. The initial submission will be graded on completeness while the reflection will be graded based on the rubric provided in HuskyCT.

This worksheet will help you prepare for the quiz.

In-class Individual Quizzes

There will be closed-book quizzes (15 mins, two problems) given on Thursday each week covering previous week's material, except the exam weeks. These quizzes will be given at the beginning of the class. They are graded on correctness, and will be returned online by Thursday the following week. You **CANNOT** make up missing quizzes but **four lowest quiz scores will be dropped from your final grade.**

Exam Practice Worksheets

There two practice worksheets that correspond to each exam. You can access them on HuskyCT. Each worksheet lists the topics for the exam and has a few practice problems. These practice problems are meant to prepare you for the exams. These worksheets need to be turned in on HuskyCT and will be graded for correctness, completeness and/or clarity. If you get stuck, review your class notes and the textbook and/or attend student hours.

Exams

There are two exams scheduled on:

- Thursday, Feb 26, 2026 covering Chapters 1, 2 and 3.
- Thursday, April 16, 2026 covering Chapters 4, 7 and sections B.1.

Each exam is closed-book and 75 mins long, but one 8.5"x11" pieces of paper (two sides) with anything you want on it is allowed. Please turn in this "cheat sheet" with the exam.

In case of a missed exam, please contact your instructor by the end of the exam date.

For additional information on undergraduate grading policies see here: https://registrar.uconn.edu/grades/

If you are discovered cheating or using any other unapproved resources you will receive a 0% on the assessment and/or the failure in the course.

Grading Scale

Grade/ Points Earn	Letter Grade	GPA

93-100	A	4.0
90-92.9	A-	3.7
87-89.9	B+	3.3
83-86.9	B	3.0
80-82.9	B-	2.7
77-79.9	C+	2.3
73-76.9	C	2.0
70-72.9	C-	1.7
67-69.9	D+	1.3
63-66.9	D	1.0
60-62.9	D-	0.7
<60	F	0.0

Exam Make-up Policy

I will generally expect students to take exams on time, but I understand that sometimes events out of your control happen. Please reach out to me, and I will do my best to work with you in a way that is consistent, compassionate, and fair. **If you missed an exam, please contact the instructor no later than the end of the exam date to arrange the makeup!**

Extra Credit: In-Class Practice

In-class practice problems will be offered at least once each week. Students may earn extra credit by actively working on these problems and turn in the work during class. The total extra credit earned from in-class practice is capped at **5% of the overall course grade** and will be computed **proportionally** based on participation.

For example, if 20 in-class practice opportunities are offered over the semester and a student completes 16 of them, the student will earn $\frac{16}{20} \times 5\% = 4\%$ extra credit toward the final course grade.

In addition to above extra credit opportunity, requests to improve the final course grade at the end of the semester (e.g., emails asking for a grade "bump") will not be considered. Students are expected to make a plan for success from the beginning of the semester and to take advantage of all available learning and assessment opportunities.

Feedback and Grades

I will make every effort to provide feedback and grades within one week. (Exams will be returned one week after they are taken to allow time for make-ups). To keep track of your performance in the course, please refer to My Grades in HuskyCT.

Weekly Time Commitment

You should expect to dedicate 9 to 12 hours a week to this course. This expectation is based on the various course activities, assignments, and assessments and the University of Connecticut's policy regarding credit hours. (More information related to hours per week per credit can be accessed at the Online Student website).

Academic Integrity

Learning math is a process, and it is okay if that process includes challenges. The best way to grow as a learner is to work through problems on your own and take ownership of your understanding—even when it's hard. In our class, you are expected to follow the university's academic honesty policies, but also to take pride in your own progress. That means:

- Doing your own work and showing your own reasoning.

- Citing any sources you use, including explanations from websites, textbooks, or other people.
- Using tools like calculators, online resources, or AI (such as ChatGPT) **only in ways that support your learning**—not as a substitute for doing the work yourself.

Below is a list of examples of academic misconduct in this course:

1. **Cheating or helping others cheat on a quiz or an exam.** Using unauthorized materials on quizzes or exams including looking at your neighbors' papers, your notes, books, or electronic devices is cheating. Communicating with any other human being (besides the instructor) during a quiz or an exam is cheating.

2. **Cheating or helping others cheat on a project or homework.** Turning in work on a project that was not written up independently by you and your partners is cheating. All work submitted should represent you and your partners' honest understanding of the material. You are allowed to work on homework with other students, but your submissions should reflect your honest understanding of the material.

3. **Distributing your instructor's materials to students' outside of this course, including posting materials on the internet.** You are forbidden from sharing or posting projects, exams, quizzes, and homework problems created by your instructor. You are also forbidden from sharing or posting your solutions to projects, exams, quizzes, and homework.

Any student who commits an act of misconduct will be reported to the university. Violations of this policy may range from a zero on the assignment to a grade of F in the course.

If you are ever unsure about what is allowed—or if you are feeling stuck—please reach out and utilize the student hours. You do not have to go through it alone. I am here to help, and there are also great campus and online resources. It is always better to ask for help than to risk your integrity.

This is a space where effort and honesty matter more than perfection.

How to Succeed in this Course

You should attend each class meeting and complete all assignments. It would be best to read through the material before the week begins to get an idea of what we will cover (see course schedule below). This will help you to follow the topics and ideas more closely and ask questions that will better help you to understand the concepts and mechanics. I cannot stress enough the importance of practicing mathematics regularly.

Throughout the semester, it is normal to run into challenges in this course. These might be compounded by outside stressors. It is sometimes difficult to find the balance between using challenges as an opportunity to push yourself and knowing when to take a step back for your personal health and well-being. Reach out! I am here to help you navigate the challenges in the course. You may also consider reaching out to the various support offices on campus, listed below.

Dean of Students Office, Academic Achievement Center, Writing Center, Quantitative Learning Center, Center for Students with Disabilities, Title IX Office, Student Health and Wellness -- Mental Health

Importance of Inclusivity

Throughout this course, you will be asked to interact with me and your classmates in different ways. Through these interactions, it is important to be mindful of the diversity of background and experience each of us brings to the class. I will do my best to ensure each student in the class has equitable access to the course material as well as to opportunities to earn credit. I ask when you are working with other students you create a good environment for your classmates. This might take the form of using someone's preferred pronouns, acknowledging differences in learning styles or background knowledge, or respecting someone's choice to maintain physical distance in the classroom space. If at any time you feel that you or someone around is not being treated respectfully, please do not hesitate to let me know.

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.

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.

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**.**

Accommodations for Illness or Extended Absences

Please stay home if you are feeling ill and please go home if you are in class and start to feel ill. If illness prevents you from attending class, it is your responsibility to notify me as soon as possible. You do not need to disclose the nature of your illness, however, you will need to work with me to determine how you will complete coursework during your absence.

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.

COVID-19 Specific Information: People with COVID-19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness. These symptoms may appear 2-14 days after exposure to the virus and can include:

- Fever,
- Cough,
- Shortness of breath or difficulty breathing
- Chills
- Repeated shaking with chills
- Muscle pain
- Headache
- Sore throat
- New loss of taste or smell

Additional information including what to do if you test positive or you are informed through contract tracing that you were in contact with someone who tested positive, and answers to other important questions can be found here: https://studenthealth.uconn.edu/updates-events/coronavirus/

Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and

academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important standards, policies and resources, which include:

- The Student Code
  - Academic Integrity
  - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Credit Hours and Workload
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

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. 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/.

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)

Software/Technical Requirements (with Accessibility and Privacy Information)

The software/technical requirements for this course include:

- Equipment Recommendations (https://remotework.uconn.edu/equipment-recommendations/)
- HuskyCT/Blackboard (HuskyCT/ Blackboard Accessibility Statement, HuskyCT/ Blackboard Privacy Policy)
- Adobe Acrobat Reader (Adobe Reader Accessibility Statement, Adobe Reader Privacy Policy)
- Google Apps (Google Apps Accessibility, Google for Education Privacy Policy)
- Microsoft Office (free to UConn students through uconn.onthehub.com) (Microsoft Accessibility Statement, Microsoft Privacy Statement)
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).
- WebCam

Privacy Statement: For information on managing your privacy at the University of Connecticut, visit the University's Privacy page. NOTE: This course has NOT been designed for use with mobile devices.

Help

Technical and Academic Help provides a guide to technical and academic assistance.

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

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 .

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.

Evaluation of Course Experience

Students will be given an opportunity to provide feedback on their course experience and instruction using the University's standard procedures, which are administered by the Office of Institutional Research and Effectiveness (OIRE).

The University of Connecticut is dedicated to supporting and enhancing teaching effectiveness and student learning using a variety of methods. The Student Evaluation of Teaching (SET) is just one tool used to help faculty enhance their teaching. The SET is used for both formative (self-improvement) and summative (evaluation) purposes.

Additional informal formative surveys and other feedback instruments may be administered within the course.