Math 2410Q Syllabus - Spring 2024

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

Instructor
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Office hours: Tuesday 10:00 AM - 11:30 AM and Thursday 11:00 AM - 12:30 PM. Other times may be requested; just email me. Potentially, I would entertain meetings online as well using the "WebEx office" link in HuskyCT.

Course title and description: MATH 2410Q - Elementary Differential Equations. Introduction to ordinary differential equations and their applications, linear differential equations, systems of first order linear equations, numerical methods.

Class meeting times: T/Th from 3:30 PM to 4:45 PM.

Classroom: We meet in MONT 419 for in-person instruction.

Course announcements: Announcements will be posted in HuskyCT on occasion, which will also be sent out as e-mail to the address you have posted in HuskyCT. These may be important; all students are responsible to check their e-mail and/or HuskyCT with reasonable frequency (before each class, ideally).

Text: *A First Course in Differential Equations with Modeling Applications* (11^{th} edition) by Dennis Zill. The eBook is available in WebAssign (see below).

Homework: Homework is assigned and organized according to book section. However, homework is also intended to help prepare you for specific exams. All homework pertaining to a certain exam is due at the **start** of that exam. Late homework fails to help in preparing you for the exam and is not accepted without an exception, which would only be granted under extreme circumstances. Documentation may be requested to grant such exceptions.

- Click the "WebAssign" link in the course HuskyCT page to connect.
- **NOTE:** use Chrome or FireFox. Allow pop-ups, third-party cookies, Java for the site if you encounter any problems. One can very quickly Google instructions to make these sorts of changes in a browser.

Worksheets: These are done on Thursdays during class, except on exam days (see schedule below). Material covered on worksheets is always from the previous week.

Exams: Two midterms and one final exam. The final exam in this course is cumulative. Make-ups are only possible with permission granted in advance. In particular, rescheduling of a final exam must be done by contacting the Dean of Students office at `dos.uconn.edu/reschedule-finals` and they usually post a deadline to apply. Exceptions due to emergency/illness on the final exam day are also handled through the Dean of Students office (see website).

Grade Calculation: The following weights are applied in the course grade calculation.

- Homework score: 15%
- Worksheet score: 15%
- Midterm exam 1 score: 20%
- Midterm exam 2 score: 20%
- Final exam score: 30%

"Scores" are converted to percentages out of the total points for that assessment category (semester total for homework and worksheets) **before** applying the above weights. The final grade is then determined via the classical grading scale.

University Policy on Integrity: student conduct is expected to comply with the policy at this site: `https://policy.uconn.edu/2023/07/11/academic-scholarly-and-professional-integrity-and-misconduct-aspim-policy-on/`

Student Support and Resources

Q Center (tutoring): The Q Center is online this semester and may offer some support for 2410Q. More information is available at `qcenter.uconn.edu` and this link is also embedded in the HuskyCT site, for convenience.

Husky Study Groups: Are you interested in forming a study group with other students in the class? There is a study group application in Nexus that can help you get started. Look at `https://nexus.uconn.edu/secure_per/studygroups/index.php` for more information.

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: 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.

Course Topics and Schedule

Week	Dates	Book Sections	Topics	Thursday
1	Jan. 16, 18	1.1, 1.2, 1.3	Definitions, Initial-value problems, models	—
2	Jan. 23, 25	2.1, 2.2	Direction fields, autonomous DEs, separable equations	Worksheet: 1.1-1.3
3	Jan. 30, Feb. 1	2.3, 2.4	Linear equations exact equations	Worksheet: 2.1-2.2
4	Feb. 6, 8	2.5, 2.6	Solution by substitutions, a numerical method	Worksheet: 2.3-2.4
5	Feb. 13, 15	—	Review through 2.4	Exam 1 Homework 1.1 - 2.4
6	Feb. 20, 22	3.1, 3.2, 3.3	Modeling with first-order equations	Worksheet: 2.5-2.6
7	Feb. 27, 29	4.1, 4.3	Higher-order linear equations, homogeneous with constant coefficients	Worksheet: 3.1-3.3
8	Mar. 5, 7	4.4, 4.6	Undetermined coefficients, variation of parameters	Worksheet: 4.1, 4.3
–	Mar. 12, 14	—	Spring break	—
9	Mar. 19, 21	5.1, 7.1	Higher-order modeling, Laplace transform	Worksheet: 4.4, 4.6
10	Mar. 26, 28	Exam 2	Review 2.5 through 4.6	Exam 2 Homework 2.5 - 4.6
11	Apr. 2, 4	7.2, 7.3	Inverse transforms, transforms of derivatives, translations	Worksheet: 5.1, 7.1
12	Apr. 9, 11	7.4, App. B	Properties of transforms, linear algebra	Worksheet: 7.2, 7.3
13	Apr. 16, 18	8.1, 8.2	First-order, linear systems	Worksheet: 7.4, App. B
14	Apr. 23, 25	Final review	All topics, weighted toward 5.1 and later	Worksheet: 8.1, 8.2
15	FINAL EXAM TBA		**All homework due before Apr. 29**	