MATH 1131Q (Calculus I)

Spring 2025

University of Connecticut

I General Information

Contact Information

Instructor (Sec 010): Nicole Massarelli (Nicole.Massarelli@uconn.edu)

Instructor (Sec 030): David McArdle (DMcArdle@uconn.edu)

Office Hours: TBD (Schedule posted on HuskyCT)

Course Format

The course consists of a large format lecture component with your instructor (on Tuesdays/Thursdays) along with a small format discussion component with a Teaching Assistant (on Mondays). All content is presented in lecture, while discussions are used for review and administration of course assessments.

Course Description and Objectives

MATH 1131Q is an introduction to differential and integral calculus, which is the mathematical language used in any science concerned with dynamically changing quantities. The main topics it covers are limits, derivatives, integrals, the Fundamental Theorem of Calculus, and some basic applications of these ideas. Successful completion of this course will require you to learn to:

1. Apply fundamental algebra skills to calculus problems.
2. Use common techniques to evaluate limits, and connect limits to derivatives.
3. Interpret derivatives as rates of change.
4. Combine ideas from algebra and trigonometry with knowledge of limits and derivatives to recognize features of the graph of a function.
5. Use derivatives to describe the features of a function and its graph, including maximum and minimum values and where they occur.
6. Identify applications of differential and integral calculus, and explain how calculus can be used in these applications.
7. Apply the Fundamental Theorem of Calculus and the substitution rule to evaluate definite and indefinite integrals.
8. Demonstrate how integrals are connected to the area under the graph of a function.

Course Materials

- **Textbook and HW Access:** Calculus Early Transcendentals, Single Variable by James Stewart (8th Edition), bundled with a WebAssign access code.
- **Calculators:** Calculators are not allowed on course assessments (quizzes and exams).

Note 1: If you opt out of the Husky Book Bundle, you only need to buy ONE of the three textbook/WebAssign bundles listed at the bookstore, OR a 1-term Cengage Unlimited Subscription; your choice will depend on what math classes you plan to take in the future.

Note 2: The least expensive way to get WebAssign access for all courses (MATH 1131Q, 1132Q. 2110Q, and 2410Q) in the Calculus sequence is to purchase a $125, 1-term Cengage Unlimited subscription online, directly from WebAssign, at the start of the term. This will give you access to all four courses and corresponding eBooks whenever you take them, even after the 1-term subscription expires. The only downside to this is that you do not get any physical textbook(s) included with it, or any textbook to keep for reference when you are not actively enrolled in one of the above courses.

Communication with Students

Announcements and important course information may be sent out via official University (UConn) email, through HuskyCT, or announced in class. It is the student's responsibility to check for messages and announcements regularly and to determine what was missed when absent.

Inclusion Statement

We aim to create an inclusive learning environment in which all students are given the appropriate tools to succeed and grow intellectually. To support students with diverse ways of thinking and learning, we have incorporated pedagogical innovations that support various learning styles, means of engagement, and forms of assessment. Together we will form a cohesive community of learners where we will each showcase our strengths, support one another, and discover the beauty and utility of mathematics.

II Grading

Final grades in the course will be computed via the following grading breakdown:

Course Component	Weight
Final Exam	20%
Exam 1 (Module 1)	15%
Exam 2 (Module 2)	15%
Exam 3 (Module 3)	15%
Weekly Quizzes	20%
WebAssign Homework	10%
Lecture Activities	5%

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

We will make every effort to provide feedback and grades within 72 hours. To keep track of your performance in the course, refer to My Grades in HuskyCT.

Exams

There are 3 module exams and a *cumulative* final exam. The tentative dates of these assessments can be seen below:

- EXAM 1: Monday, February 10th. Covers Module 1.
- EXAM 2: Monday, March 10th. Covers Module 2.
- EXAM 3: Monday, April 14th. Covers Module 3.
- Final Exam: TBD. Cumulative. Covers Modules 1, 2, 3 and 4.

Exams consist of multiple choice, fill-in, true/false and short-answer style questions. Module exams are administered during your Monday discussion sections. Exams are the same difficulty as weekly quizzes, WebAssign HW, and lecture examples.

Any academic integrity violation related to an exam will result in a grade of 0 on that exam and a referral to the disciplinary board.

Quizzes

Each Monday for which there isn't an exam, there will be a quiz administered in discussion. Quizzes are 15-20 minutes long and will be the same format as exams. The content of each quiz will involve all lecture content taught the previous week (e.g in week 1 we will learn Ch 2.1 and 2.2 and this content will be on the quiz in week 2).

WebAssign Homework

WebAssign can be accessed through the main HuskyCT site for this course. Each section that is covered throughout the semester will have an associated HW assignment. You are allowed 5 attempts for all non T/F or MC questions (TF and MC questions are only allowed one attempt).

All HW is due on Monday evening at 11:59p EST the week following when it is covered in lecture. (e.g. we cover Ch 2.1 and 2.2 in week 1, HW is due on Monday evening of Week 2).

Late/ Missed HW: If you miss a HW assignment, there is an automatic one-week extension (with a 50% grade deduction) that can be requested on WebAssign until the last day of class. Note that one HW score will be dropped at the end of the semester.

Lecture Activities

Throughout the semester, during each lecture (on Tuesdays and Thursdays), you will be asked to complete a lecture activity in class with your peers. The activity will involve content that was presented during that lecture (or a previous lecture) and you will be given time to work together and submit your responses on HuskyCT.

Correct responses will earn 3 points, and incorrect responses will earn 2 points. You must be present in lecture to earn credit and no make-ups will be allowed. With 28 lectures, the maximum number of points that can be earned is 84. The Lecture Activity category will be graded out of a total of 65 points (i.e. you will earn a 100% if you achieve >=65 points). This provides flexibility for missing lectures on account of illness or other personal reasons.

III Course Topics & Schedule

The course is divided into 4 Modules. Below is the list of topics for each module.

Module 1: Limits and Derivatives

- Ch 2.1: Tangent and Velocity Problems
- Ch 2.2: The Limit of a Function
- Ch 2.3: Calculating Limits with Limit Laws
- Ch 2.4: The Precise Definition of a Limit (*Not examinable)
- Ch 2.5: Continuity
- Ch 2.6: Limits at Infinity: Horizontal Asymptotes
- Ch 2.7: Derivatives and Rates of Change
- Ch 2.8: The Derivative as a Function

Module 2: Rules of Differentiation

- Ch 3.1: Derivative of Polynomials and Exponentials
- Ch 3.2: The Product and Quotient Rules
- Ch 3.3: Derivatives of Trig Functions
- Ch 3.4: The Chain Rule
- Ch 3.5: Implicit Differentiation
- Ch 3.6: Derivative of Logarithmic Functions
- Ch 3.8: Exponential Growth and Decay
- Ch 3.9: Related Rates
- Ch 3.10: Linear Approximations and Differentials (*Not examinable)

Module 3: Applications of Derivatives

- Ch 4.1: Maximum and Minimum Values
- Ch 4.2: Mean Value Theorem
- Ch 4.3: How Derivatives Affect Shape of a Graph
- Ch 4.4: Indeterminate Forms and L'Hospital's Rule
- Ch 4.7: Optimization
- Ch 4.8: Newton's Method
- Ch 4.9: Antiderivatives

Module 4: Integrals w/ Applications

- Ch 5.1: Areas and Distances
- Ch 5.2: The Definite Integral
- Ch 5.3: Fundamental Theorem of Calculus
- Ch 5.4: Indefinite Integrals and the Net Change Theorem
- Ch 5.5: Integration by Substitution
- Ch 6.1: Areas Between Curves
- Ch 6.2: Volumes

MATH 1131 Spring 2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		January 21	22	23	24	25
		Ch 2.1		Ch 2.2		
26	27	28	29	30	31	Feb 1
	Quiz 1 in Disc. **HW Due @ 11:59p** Ch 2.1, 2.2	Ch 2.3		Ch 2.5 & Ch 2.6		
2	3	4	5	6	7	8
	Quiz 2 in Disc. **HW Due @ 11:59p** Ch 2.3, 2.5, 2.6	Ch 2.7		Ch 2.8		
9	10	11	12	13	14	15
	Exam 1 in Disc. Ch 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8 **HW Due @ 11:59p** Ch 2.7, 2.8	Ch 3.1		Ch 3.2		
16	17	18	19	20	21	22
	Quiz 3 in Disc. **HW Due @ 11:59p** Ch 3.1, 3.2	Ch 3.3		Ch 3.4, 3.5		
23	24	25	26	27	28	Mar 1
	Quiz 4 in Disc. **HW Due @ 11:59p** Ch 3.3, 3.4, 3.5	Ch 3.6		Ch 3.8		
2	3	4	5	6	7	8
	Quiz 5 in Disc. **HW Due @ 11:59p** Ch 3.6, 3.8	Ch 3.9		Ch 3.10		
9	10	11	12	13	14	15
	Exam 2 in Disc. Ch 3.1, 3.2, 3.3, 3.4, 3.5 3.6, 3.8, 3.9 **HW Due @ 11:59p** Ch 3.9, 3.10	Ch 4.1		Ch 4.2		
16	17	18	19	20	21	22
Spring Break						
23	24	25	26	27	28	29
	Quiz 6 in Disc. **HW Due @ 11:59p** Ch 4.1, 4.2	Ch 4.3		Ch 4.4		
30	31	Apr 1	2	3	4	5
	Quiz 7 in Disc. **HW Due @ 11:59p** Ch 4.3, 4.4	Ch 4.7		Ch 4.8		
6	7	8	9	10	11	12
	Quiz 8 in Disc. **HW Due @ 11:59p** Ch 4.7, 4.8	Ch 4.9		Ch 5.1, 5.2		
13	14	15	16	17	18	19
	Exam 3 in Disc. Ch 4.1, 4.2, 4.3, 4.4, 4.7 4.8, 4.9 **HW Due @ 11:59p** Ch 4.9	Ch 5.3		Ch 5.4		
20	21	22	23	24	25	26
	Quiz 9 in Disc. **HW Due @ 11:59p** Ch 5.1-5.4	Ch 5.5		Ch 6.1		
27	28	29	30	May 1	2	3
	Quiz 10 in Disc. **HW Due @ 11:59p** Ch 5.5, 6.1	Ch 6.2		**Exam Review**		
4	5	6	7	8	9	10
Final Exam Week						

IV How to Approach the Course

Participation

Attendance and participation during lecture and discussion sections are vital to success in this course. If you miss a session, please consult your instructor, TA, or a classmate to catch up on what was missed.

Lecture Notes

Completed lecture notes will be posted each week on HuskyCT for you to refer to in case you missed any details in lecture. Additional resources and videos may also be posted on HuskyCT within the respective Module folder. This is not meant to replace active note-taking during lectures. You should strive to actively participate in class, take your own notes, and solve practice problems to best learn the material. We highly recommend reviewing and consolidating your notes on a weekly basis.

Homework

The homework problems are meant to help you practice using the procedures and skills covered in lecture. This is where learning actually takes place! You will not be able to memorize every type of problem, but rather should focus on understanding the methods and know why you are completing each step in the process. Taking the time to write out your solutions and thoughtfully solve problems will better prepare you to solve quiz and exam questions.

The Calculus Corner

Throughout the week Monday-Friday, we will offer in person Q&A sessions led by Teaching Assistants from the course. You are free to drop-in and receive assistance on any questions that you might have related to course content, HW, or assessments. We would love to help! The schedule is available on HuskyCT.

Instructor Office Hours

Your instructor will hold weekly office hours dedicated to MATH 1131Q. You are welcome to swing by with questions or concerns.

The Q-Center

UConn offers an extensive tutoring center with experienced tutors ready to assist you with Calculus. You can find out more information by following this link: https://qcenter.uconn.edu/

V Course Policies

Make-Up/Late Policy

Quizzes: In the event of an illness or other approved absence, you must notify your TA 24 hours before the start of the quiz. A make-up will be scheduled in our department's "Calculus Proctoring Center" and must be completed during the week that the original quiz was administered.

WebAssign HW: If you miss a HW assignment, there is an automatic one-week extension (with a 50% grade deduction) that can be requested on WebAssign until the last day of class. Note that one HW score will be dropped at the end of the semester.

Exams: If there is an approved reason for you to not take an exam at its designated times, you must notify the TA and instructor in advance to make arrangements. Arrangements for a make-up test will be considered on a case by case basis. Make-up exams will be administered at the department's *proctoring center*. Failure to contact the instructor as stated above will result in a grade of zero on the exam. This policy applies to the first missed exam only. Repeated offenses will be dealt with on a case-by-case basis, but generally will not be allowed to be made up.

Academic Integrity

It is in your best interest to maintain your academic integrity. Any form of academic dishonesty undermines the goals of our course and devalues the learning process. Academic dishonesty is a serious offense at UConn and can result in a zero grade on an assessment and/or failure in the course.

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/..

Changes to the Course Syllabus

The information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.

VI Online Technical Requirements

Software Requirements

The software/technical requirements for this course include:

- HuskyCT/Blackboard (HuskyCT Accessibility Statement, HuskyCT Privacy Policy)
- Google Apps (Google Apps at UCONN Accessibility, Google for Education Privacy Policy)
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).
- Webcam (through computer, tablet, or phone).

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 and videos.

Technical Help

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

This course is completely facilitated online using 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.