MATH 1131Q – Calculus I

Fall 2026 Course Information

University of Connecticut

Course Communication

Much of the communication for this course will occur online via HuskyCT, email, and the course website. Students should monitor the course website, HuskyCT announcements, and UConn email regularly for updates related to MATH 1131Q. Students are also expected to attend class regularly so that they receive important announcements and course information. If a class is missed, students should contact a classmate, the instructor, or the TA to determine what was missed.

Contact Information

Instructor (Sec 160): Michael Biro

Email: michael.biro@uconn.edu

Office: MONT 403

Student Hours: Tuesday/Thursday 12:45-1:45pm

Time Zone

All due dates, class meetings, office hours, and other course times are given in U.S. Eastern Time.

Course Description

MATH 1131Q is an introduction to differential and integral calculus, the mathematical language used in sciences and other disciplines concerned with dynamically changing quantities. Major topics include limits, derivatives, integrals, the Fundamental Theorem of Calculus, and basic applications of these ideas.

Prerequisites

A qualifying score of 22 on the UConn Mathematics Placement Exam (MPE) is required. Students who do not achieve this minimum score are expected to complete the appropriate preparatory and learning modules before retaking the MPE or registering for a lower-level mathematics course. The course is not open for credit to students who have passed MATH 1132Q or MATH 1152Q.

Course Materials

Because lecture notes will be provided in HuskyCT (see below), there is no *required* textbook for this course. However, there are many good, and cheap, calculus textbook options. The lectures will follow *Calculus Early Transcendentals, Single Variable* by James Stewart (9th Edition), which is almost identical to any recent edition of Stewart's textbook. I **strongly recommend** that you read some calculus book in order to see additional examples and explanations. Here are two great options.

- Any recent edition of *Calculus Early Transcendentals, Single Variable* by James Stewart. The sections we will cover are the same for the 7th, 8th, and 9th editions, so any used copy will do.
- *OpenStax Calculus* found at https://openstax.org/details/books/calculus-volume-1 is a free online textbook covering the same topics.

Note: Calculators are not allowed on course assessments (quizzes and exams).

Course Objectives

Successful completion of MATH 1131Q will require students to be able to:

1. Apply fundamental algebra skills to calculus problems.
2. Use standard techniques to evaluate limits and connect limits to derivatives.
3. Interpret derivatives as rates of change.
4. Combine algebra, trigonometry, limits, and derivatives to identify features of graphs of functions.
5. Use derivatives to describe functions and their graphs, including maximum and minimum values and where they occur.
6. Identify applications of differential and integral calculus and explain how calculus is used in those applications.
7. Apply the Fundamental Theorem of Calculus and the substitution rule to evaluate definite and indefinite integrals.
8. Explain how definite integrals are related to accumulated change and area under a graph.

Fall 2026 Calendar at a Glance

Instruction begins	Week of August 31, 2026
Labor Day	Monday, September 7, 2026; no Monday discussion section
Exam 1	Monday, October 5, 2026 (Week 6)
Exam 2	Monday, November 16, 2026 (Week 12)
Thanksgiving Break	Week of November 23, 2026; no instruction
Final week of instruction	Week of December 7, 2026
Final examinations	Week of December 14, 2026

Communication with Students

Announcements and important course information will be sent out via official University (UConn) email or through HuskyCT. It is the student's responsibility to check for messages and announcements regularly. Please use my UConn email to communicate with me.

Course Content and Assessment Units

The semester is organized into three major content Units. The first two conclude with mid-semester examinations; the third leads into the cumulative Final Examination. Section numbers below are the section numbers in Stewart's *Calculus Early Transcendentals*.

Unit 1 – Limits and Foundations of Differentiation (Exam 1)

- **2.1** The Tangent and Velocity Problems
- **2.2** The Limit of a Function
- **2.3** Calculating Limits Using the Limit Laws
- **2.5** Continuity
- **2.6** Limits at Infinity; Horizontal Asymptotes
- **2.7** Derivatives and Rates of Change
- **2.8** The Derivative as a Function
- **2.4** The Precise Definition of a Limit
- **3.1** Derivatives of Polynomials and Exponential Functions
- **3.2** The Product and Quotient Rules
- **3.3** Derivatives of Trigonometric Functions
- **3.4** The Chain Rule

Unit 2 – Applications of Derivatives and Foundations of Integration (Exam 2)

- **3.5** Implicit Differentiation
- **3.6** Derivatives of Logarithmic and Inverse Trigonometric Functions
- **3.8** Exponential Growth and Decay
- **3.9** Related Rates
- **3.10** Linear Approximations and Differentials
- **4.1** Maximum and Minimum Values
- **4.2** Mean Value Theorem
- **4.3** What Derivatives Tell Us About the Shape of a Graph
- **4.4** Indeterminate Forms and l'Hospital's Rule
- **4.7** Optimization Problems
- **4.8** Newton's Method
- **4.9** Antiderivatives

Unit 3 – Fundamental Theorem and Applications of Integration (Final Exam)

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

The Final Examination is cumulative and therefore also assesses core concepts and skills from Units 1 and 2.

Discussion Sections

Discussion sessions take place during the scheduled discussion-section time. Active participation is intended to strengthen understanding of course material through worksheets, problem solving, and homework support. Quizzes and the two semester exams are administered in discussion sections, so regular attendance and participation are essential. Students who are ill or face an emergency should contact the TA and lecture instructor as soon as possible.

Lecture Participation

After Tuesday lecture each week, a Lecture Reflection Survey will become available in HuskyCT. You shoud complete it by that Friday at 11:59pm.

Examinations

There will be **two in-class examinations** and a **cumulative Final Examination**. The two semester examinations will be administered during the scheduled Monday discussion section.

- **Exam 1: Monday, October 5, 2026.** Coverage: Unit 1 (Sections 2.1–2.8 as listed above and Sections 3.1–3.4).
- **Exam 2: Monday, November 16, 2026.** Coverage: Unit 2 (Sections 3.5–3.6, 3.8–3.10, 4.1–4.4, and 4.7–4.9).
- **Final Examination:** During the University-scheduled final examination period in the week of December 14, 2026. The Final Examination is cumulative, with particular emphasis on Unit 3 (Sections 5.1–5.5 and 6.1–6.2). Exact date, time, and location will be announced when available.

Exams consist of multiple choice, fill-in, true/false, and short answer style questions and are administered in-person during discussion.

Note: There is a *Exam Replacement Policy* that provides an opportunity to improve Exam 1 and Exam 2 scores. See "Course Policies" below.

Quizzes

Every Monday when there is not an exam, there will be a quiz administered in discussion. Quizzes are 10-15 minutes long and will be the same format as exams. The content of each quiz is noted on the course schedule and the problems will be similar to the homework problems for that week.

There are a total of 11 quizzes throughout the semester. Your quiz category score will consist of your best 8 scores (i.e. 3 will be dropped). This flexibility is to allow for missed quizzes due to illness and personal matters. As such, there are **no make-ups allowed** for missed quizzes.

Homework

A homework set for each textbook section will be assigned in HuskyCT and must be completed by the last day of classes. I highly recommend you complete them in tandem with the lectures, or as a unit before each exam. Leaving them all to the last minute is strongly discouraged.

Grading

Component	Weight
Lecture Participation	5%
Homework	10%
Quizzes	20%
Exam 1	20%
Exam 2	20%
Final Examination	25%
Total available	100%

Grading Scale

92.5–100	A	76.5–79.49	C+
89.5–92.49	A-	72.5–76.49	C
86.5–89.49	B+	69.5–72.49	C-
82.5–86.49	B	66.5–69.49	D+
79.5–82.49	B-	62.5–66.49	D
		59.5–62.49	D-
		Below 59.5	F

Academic Integrity and Misconduct

Students are expected to comply with the University of Connecticut's academic integrity policies. Work submitted for credit should represent the student's own understanding and should be prepared independently unless collaboration is explicitly authorized. On quizzes and examinations, students may not use calculators, notes, books, electronic devices, outside resources, or unauthorized assistance. Violations are subject to the University's academic misconduct procedures and may result in substantial academic penalties.

Note: There is a *Exam Replacement Policy* that provides an opportunity to improve Exam 1 and Exam 2 scores. See "Course Policies" below.

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.

How to Succeed in This Course

1. Participate regularly with the goal of understanding the mathematics, not simply earning participation credit.
2. Schedule substantial study time each week. A four-credit quantitative course requires consistent work outside class.

3. Follow all instructions and announcements posted in HuskyCT.
4. Read relevant textbook explanations and examples before and after class.
5. Complete WebAssign homework, quizzes, and other assigned practice on time.
6. Use the Q Center and other academic support resources regularly rather than waiting until difficulties accumulate.
7. Attend instructor and TA office hours and seek assistance early when concepts are unclear.

Course Policies

Exam Replacement Policy

In this course, Exam 1 covers Unit 1, Exam 2 covers Unit 2, and the final exam covers Units 1, 2, and 3. If you perform poorly on Exam 1 or 2 we have a policy in place to allow you to improve your score if you show improvement on the Final Exam. When computing final course grades, your score for Exam 1 (and similarly for Exam 2) will be recorded as the *higher* of (i) your actual Exam 1 score and (ii) the **average** of your Exam 1 score and the Unit 1 portion of your Final Exam. Thus, if you improve your score on Unit 1 material on the Final compared to Exam 1, your recorded Exam 1 score will increase. This will be implemented *automatically* for all students if it is favorable for their overall grade.

Make-Up/Late Policy

Quizzes: The are no make-up quizzes provided. Instead we will count your best 8 quizzes out of the 11 total. This allows you flexibility to miss several quizzes on account of illness or personal obligations.

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 of the exam* 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 "Calculus Proctoring Center". Failure to contact the instructor as stated above will result in a grade of zero on the exam.

AI Policy

It is in your best interests not to use AI tools to get answers to problems in this class. The process of arriving at an answer and understanding the structure and technique of solving problems is critical for doing well. You may use AI tools to enhance your learning of the material and generate new problems for practice purposes, but may not use them on homework, worksheets, quizzes, exams, or other assessments.

Academic Integrity

It is in your best interest to maintain 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.

Getting Help

Students have several options for academic support outside class, including instructor office hours, TA office hours, the UConn Q Center for free quantitative tutoring, Supplemental Instruction sessions when offered, and other course-specific support opportunities announced during the semester.

Students with Disabilities

The University of Connecticut is committed to providing an accessible learning environment. Students who anticipate or experience barriers based on disability or pregnancy should contact the instructor and the Center for Students with Disabilities to discuss appropriate accommodations. Current University procedures and contact information are available through https://csd.uconn.edu/.

Student Well-Being and Support

Students who would benefit from mental-health or wellness support are encouraged to use University resources, including Student Health and Wellness–Mental Health. Current services and contact information are available at https://studenthealth.uconn.edu/.