**MATH 1131Q – Section 100**
**Calculus I**
**Fall 2024**

**Instructor:**
**Erin Rizzie, Ph.D.**
**erin.rizzie@uconn.edu**
**Office: MONT 411**

***Lecture Section Meetings:*** Tu/Th 12:30 pm - 1:45 pm in SCI1 G01
***Discussion Section Meetings:*** Mondays – see Student Admin for your section's time and location

## *Prof. Rizzie's Drop-In Help Hours – please stop by!*

Tues 9:30-10:30 am in MONT 411
Thurs 2:30-3:30 pm in MONT 411
Fri 9-10 am online via WebEx (link in HuskyCT)
or by appointment (i.e., email me if you cannot come at the above times and we'll figure something out)
Your TA will also have help hours – see your discussion section HuskyCT for times

***Course communication:*** Much of the communication for this course will occur online, via HuskyCT and/or email. Please monitor course HuskyCT announcements and your UConn email regularly for updates related to MATH 1131Q. However, you are also expected to be in class every day to receive important communications there, and to contact a classmate, or your instructor or TA, if you miss class to make sure you have not missed important course information. If you email me, I may not receive or be able to respond to your email right away. I will try to get back to you by the end of the following business day.

***Description:*** This course 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.

***Prerequisites:*** A qualifying score of 22 on the mathematics placement exam (MPE). Students who fail to achieve this minimum score are required to spend time on the preparatory and learning modules before re-taking the MPE, or to register for a lower level Mathematics course. Not open for credit to students who have passed MATH 1132Q or 1152Q.

***Face Coverings:*** To ensure a safe learning environment, masks/face coverings are always welcome in classrooms and indoor spaces, and masks are strongly recommended if you have any symptoms of respiratory illness. Please join us in welcoming your peers and instructors to wear face coverings properly in the classroom.

## *Course Materials:*

**Text:** The textbook for the course is *Calculus Early Transcendentals, Single Variable* by James Stewart (8th Edition), which is bundled with a *WebAssign* code for doing online homework.

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 and can be found in the Course Materials link in your Blackboard course. Please sign into Blackboard to access your course and course materials. 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:** If you opt out of the Husky Book Bundle, 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 $130, 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. This will also give you access for this term to any other Cengage-based materials.

**Calculators:** The use of calculators is NOT allowed on quizzes or exams.

## *Course Objectives:*

Upon successful completion of this course, you will be able 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.

## *Schedule of Topics:*

**Note:** This schedule is subject to change as needed according to content coverage and unforeseen events. You are expected to work through the course content for the sections listed below during the weeks listed.

| Week | Dates | Section | Topic |
|---|---|---|---|
| 1 | 8/26-30 | | **Monday: Quiz 1 (Precalculus) during Discussion** |
| | | | Course Orientation; Algebra/Precalculus Review |
| | | 2.1 | The Tangent and Velocity Problems |
| | | 2.2 | The Limit of a Function |
| 2 | 9/2-9 | | **Monday: Labor Day Holiday – No Discussion** |
| | | 2.3 | Calculating Limits Using the Limit Laws |
| | | 2.5 | Continuity |
| | | 2.6 | Limits at Infinity; Horizontal Asymptotes |
| 3 | 9/9-13 | | **Monday: Quiz 2 (2.3, 2.5-2.6) during Discussion** |
| | | 2.7 | Derivatives and Rates of Change |

| Week | Dates | Section | Topic |
|---|---|---|---|
| | | 2.8 | The Derivative as a Function |
| | | 2.4 | The Precise Definition of a Limit |
| 4 | 9/16-20 | | **Monday: Quiz 3 (2.7, 2.8) during Discussion** |
| | | 3.1 | Derivatives of Polynomials and Exponential Functions |
| | | 3.2 | The Product and Quotient Rules |
| 5 | 9/23-27 | **Exam 1** | **Monday, September 23 – Sections 2.1-2.3, 2.5-2.8** |
| | | 3.3 | Derivatives of Trigonometric Functions |
| | | 3.4 | The Chain Rule |
| | | 3.5 | Implicit Differentiation |
| 6 | 9/30-10/4 | | **Monday: Quiz 4 (3.3-3.5) during Discussion** |
| | | 3.6 | Derivatives of Logarithmic Functions |
| | | 3.8 | Exponential Growth and Decay |
| 7 | 10/7-11 | | **Monday: Quiz 5 (3.6, 3.8) during Discussion** |
| | | 3.9 | Related Rates |
| | | 3.10 | Linear Approximations and Differentials |
| 8 | 10/14-18 | | **Monday: Quiz 6 (3.9, 3.10) during Discussion** |
| | | 4.1 | Maximum and Minimum Values |
| | | 4.2 | Mean Value Theorem |
| 9 | 10/21-25 | **Exam 2** | **Monday, October 21 – Sections 3.1-3.6, 3.8-3.10** |
| | | 4.3 | How Derivatives Affect the Shape of a Graph |
| | | 4.4 | Indeterminate Forms and l'Hospital's Rule |
| 10 | 10/28-11/1 | | **Monday: Quiz 7 (4.3-4.4) during Discussion** |
| | | 4.7 | Optimization Problems |
| | | 4.8 | Newton's Method |

| Week | Dates | Section | Topic |
|---|---|---|---|
| 11 | 11/4-8 | | **Monday: Quiz 8 (4.7-4.8) during Discussion** |
| | | 4.9 | Antiderivatives |
| | | 5.1 | Areas and Distances |
| | | 5.2 | The Definite Integral |
| 12 | 11/11-15 | | **Monday: Quiz 9 (4.9-5.2) during Discussion** |
| | | 5.3 | The Fundamental Theorem of Calculus |
| | | 5.4 | Indefinite Integrals and the Net Change Theorem |
| 13 | 11/18-22 | **Exam 3** | **Monday, November 18 – Sections 4.1-4.4, 4.7-4.9, 5.1** |
| | | 5.5 | The Substitution Rule |
| | | 6.1 | Areas Between Curves |
| **Fall Break** | **11/23-12/1** | **No Class** | **Fall Break** |
| 14 | 12/2-6 | | **Monday: Quiz 10 (5.5, 6.1) during Discussion** |
| | | 6.2 | Volumes |
| **Finals Week** | **December 9-15** | **Final Exam** | **Final Exam during University-scheduled time (TBA) – cumulative** |

### *Online Learning Modules:*

Pre-recorded video lectures are provided through Learning Modules in HuskyCT. You will need to watch these each week before our Thursday class so that you will be prepared to complete activities.

### *Participation:*

During class on Tuesdays and Thursdays in SCI1 G01, you will work in groups to complete web-based activities, practicing your new calculus skills and the precalculus skills needed for them. During each class, you will complete an activity reflection including a short question related to the activity. These reflections will constitute your Participation grade. Your **lowest four activity reflections will be dropped** from your Participation grade.

### *Discussion:*

Discussion sessions will be offered during your scheduled Discussion Section time. These will be in person on the Storrs UConn campus. Active participation in these sessions is designed to help you with the course material, worksheets, and WebAssign homework. These sessions are also where you will take your Quizzes and Exams, so please plan to attend and participate regularly.

**NOTE:** It is important for you to stay home if you are feeling ill. Please contact your TA and instructor ASAP via email if you need to miss a discussion section due to illness or other personal reasons.

## *WebAssign Online Homework:*

**Homework:** 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.

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. If you are not able to get the correct answer after your first couple of attempts, we recommend that you seek help from your peers, your TA or instructor via office hours, the Q-Center, a tutor, or another student before attempting to answer the problem again.

**Automatic WebAssign Extensions**: For each assignment, you can request an automatic 24-hour extension without penalty, as long as you request within 48 hours after the original due date. WebAssign will allow you to do this *twice per assignment without penalty.* However, the latest that you will be able to extend the due date is 72 hours (3 days) after the assignment's original due date. To request an automatic extension, after the assignment due date, go to WebAssign > My Assignments > Past Assignments, and click the "Request Extension" button for the assignment you missed. Please note the new due date that WebAssign gives you when you do this.

**Note:** 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.

Your lowest WebAssign score will be dropped from your grade at the end of the semester.

## *Worksheets*

There will be a worksheet each week that provides an opportunity to reinforce your knowledge and understanding, and provide practice with writing coherent, well-reasoned answers to questions. You can access the worksheets via HuskyCT.

## *Quizzes*

- There will be a quiz each week, aside from Exam weeks, in your Monday discussion class. You will have 15 minutes for each quiz.
- The quiz in the first week is on precalculus. Each subsequent quiz will be in class and will test students on material that was taught in the previous week.
- The use of calculators is NOT allowed on quizzes.
- We will drop your lowest quiz score from your final grade.

## *Exams*

There will be three in-class Exams and a Final Exam. Exams 1-3 will be administered during your scheduled discussion section time on Monday of the 5th, 9th, and 13th weeks of the semester. Please put these dates in your calendar – you are expected to be in attendance.

The Final Exam will be during the week of December 9-12, during your scheduled Final Exam period; the exact date

and time will be scheduled by the University and will be shared in HuskyCT once it is known.

Each of Exams 1-3 will primarily cover material from the 3-4 weeks prior to the exam; the Final Exam will be cumulative.

## *Make-Up Policy*

It is important for you to stay home if you are feeling ill. Please contact your TA and instructor ASAP via email if you need to miss a discussion section due to illness or other personal reasons, and plan to attach to your email any work that is due that day. If you are missing a quiz or exam due to illness or other personal reasons, please include in your email when you expect to return to campus so that we can arrange a make-up quiz if approved.

A student is allowed to make up a Quiz or Exam only if there is a personal/family/medical emergency. You must contact your TA and lecture instructor ASAP if you know that you will miss a Quiz or Exam. **You will not be able to make up a missed Quiz or Exam if you do not contact your instructor within 24 hours after returning to classes at UConn following your illness or emergency.** Athletes who travel on behalf of the university must provide a letter/email from their athletic advisor in order to be allowed to take a make-up Quiz or Exam.

**In case of a missed assignment, quiz, or exam please make every effort to contact your instructor as soon as you know you will miss it, and no later than 24 hours after the missed assessment or due date.**

**Per University policy, all requests to reschedule or make up the Final Exam must be submitted to the Dean of Students for approval**. Please note that vacations, previously purchased tickets or reservations, social events, misreading the exam schedule and over-sleeping are not viable excuses for missing a final exam. If you think that your situation warrants permission to reschedule, please contact the Dean of Students Office with any questions. Thank you in advance for your cooperation.

## *Grading*

| | | |
|---|---|---|
| Online Homework | WebAssign | 10% |
| Participation | During Section 100 Tu/Th Large Classes | 10% |
| Quizzes | Take in Discussion on Mondays | 15% |
| Exam 1: Monday, Week 5 | Discussion | 15% |
| Exam 2: Monday, Week 9 | Discussion | 15% |
| Exam 3: Monday, Week 13 | Discussion | 15% |
| Final Exam: Week of December 9-15 | See Student Admin for date, time, and location information | 20% |

### *Grading Scale:*

| Final Percentage | Letter Grade |
|---|---|
| 93 -100 | A |
| 90.00-92.99 | A- |
| 87.00-89.99 | B+ |
| 83.00-86.99 | B |
| 80.00-82.99 | B- |
| 77.00-79.99 | C+ |
| 73.00-76.99 | C |
| 70.00-72.99 | C- |
| 67.00-69.99 | D+ |
| 63.00-66.99 | D |
| 60.00-62.99 | D- |
| <60 | F |

### *Academic Integrity/Misconduct*

This course expects all students to act in accordance with the Guidelines for Academic Integrity at the University of Connecticut. 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 in particular that this means you must not consult any sources or materials: neighbors' papers, calculators, and any notes, books, phones, or other 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.

**The use of calculators, other outside resources, or collaboration with others are NOT allowed on quizzes and exams.**

### *How to Succeed in this Course*

1. Participate regularly for understanding, not just for credit.
2. Schedule your study time each week! You are expected to spend a minimum of 16 hours total per week working for a 4-credit course.
3. Follow all the instructions provided in the learning modules on HuskyCT.
4. Complete the Learning Activities linked from the MATH 1131Q Learning Activities Page
5. Read the explanations and examples in the textbook.

6. Do online homework, quizzes, and worksheets on time. Remember to follow these tips! WebAssign Tips.pdf
7. Check your understanding via Section Concept Guides (in HuskyCT modules).

## *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/.

## *Software/Technical Requirements (with Accessibility and Privacy Information):*

The software/technical requirements for this course include:

- Computer with microphone, speaker, and camera for live video/audio interaction
- HuskyCT/Blackboard (HuskyCT/ Blackboard Accessibility Statement, HuskyCT/ Blackboard Privacy Policy)
- Adobe Acrobat Reader (Adobe Reader Accessibility Statement, Adobe Reader Privacy Policy)
- Google Apps ( Google for Education Privacy Policy)
- WebAssign (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).

NOTE: This course has NOT been designed for use with mobile devices.
Please see UConn's Keep Learning Page for more help using the online portions of your classes.

### 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.
- Create and upload a PDF or JPG file showing your handwritten work.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.

University students are expected to demonstrate competency in Computer Technology. Explore the Computer Technology Competencies page for more information.

## *Help:*

Technical and Academic Help provides a guide to technical and academic assistance.
This course is 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 24×7 Course Support including access to live chat, phone, and support documents.

## *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
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

**Copyright Notice:** All course content on this page and in HuskyCT is the intellectual property of UConn and/or its creator(s). These materials are only for the use of students enrolled in this course for purposes associated with this course and may not be retained or further disseminated.