UCONN
UNIVERSITY OF CONNECTICUT

Math 1071Q
Calculus for Business and Economics

Syllabus – Summer Session 1, 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 at https://huskyct.uconn.edu.

Course and Instructor Information

Course Title: Calculus for Business and Economics
Credits: 3
Format: Distance Learning (Synchronous Lectures offered through HuskyCT on Webex)
Lecture Times: M/Tu/W/Th 4:45 PM-7:00 PM
Webex: Access through HuskyCT.
Prerequisites: Recommended preparation: MATH 1011 or the equivalent, and MATH 1070

Instructor: Ningwei Jiang
Pronouns: He/him;
Email: ningwei.jiang@uconn.edu
Office Hours/Availability (Week 1-5): TBD

Course Materials

Textbook: *OpenStax Calculus Volume 1: UConn Custom Business Calculus Edition. Available here: https://www2.math.uconn.edu/ClassHomePages/Math1071/Textbook2*

Calculators: In general, calculators, including graphing calculators, are allowed on exams. Models that can perform symbolic manipulation (e.g. take derivatives) are not allowed.

Graphing calculators: TI 82, 83, 84, 84 plus, 85 or 86 may be used. Models TI-89 and above (including TI-Nspire) are not permitted on the exams. A graphing calculator is recommended but not required. You will need (at the least) a basic calculator that can do powers, exponentials and logarithms for exams.

HuskyCT: Additional course materials, notes, videos, online homework, online quizzes, worksheets, exams will be under our course at https://huskyct.uconn.edu.

Course Description

Derivatives and integrals of algebraic, exponential and logarithmic functions. Applications to business and economics.

Course Objectives

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

1. Use mathematical models to represent various business and economics related functions, including cost, revenue, profit, and demand.
2. Understand and work with exponential and logarithmic expressions, especially as related to interest and other exponential growth problems.
3. Understand the idea of a limits and limits at infinity. Evaluate various types of limits and define concepts like asymptotes, continuity and derivatives in terms of limits.

4. Understand the derivative as the instantaneous rate of change and also the slope of the tangent line to a curve. Use the tangent line to approximate functions.
5. Evaluate the derivative of functions using standard derivative rules.
6. Understand elasticity of demand.
7. Use the first and second derivative of a function, as well as its properties like domain, asymptotes and symmetry, to understand the overall shape of a function and draw its graph.
8. Setup and solve optimization and related rates problems in various contexts, using derivatives.
9. Evaluate both indefinite and definite integrals, using basic antiderivative rules, including substitution. This includes developing an understanding of the Fundamental Theorem of Calculus.
10. Use integrals/antiderivatives to solve problems, like finding cost from marginal cost, net change from a rate of change, or the area under or between curves.

Course outline

Module 1: Intro and Sections 1.1-1.8 (Chapter 1)
Module 2: Sections 2.1-2.4 (Chapter 2)
Module 3: Sections 3.1-3.4, 3.6 and 3.9 (Chapter 3)
Module 4: Sections 4.1-4.3, 4.5-4.8 (Chapter 4)
Module 5: Sections 5.1-5.2, 5.3 and 5.5 (Chapter 5)

Schedule (Tentative)

Week	Sections	Assessments
1	**1.1-1.8**	**Syllabus Quiz, Online Homework, Online Quizzes**
2	**2.1-2.4, 3.1-3.4**	**Worksheet 1, Online Homework, Online Quizzes, Exam 1**
3	**3.6, 3.9, 4.1-4.3**	**Worksheet 2, Online Homework, Online Quizzes**
4	**4.5-4.8, 5.1, 5.2**	**Worksheet 3, Online Homework, Online Quizzes, Exam 2**
5	**5.3, 5.5**	**Worksheet 4, Online Homework, Online Quizzes, Final Exam**

Course Grading and Requirements

Course Components	Weight
Online Homework	25%
Worksheets	15%
Online Quizzes	15%
Midterm Exams	30% (15%*2)
Final Exam	15%

I will post all grades on HuskyCT.

Online homework: There will be an online homework component of the course. Students will have unlimited attempts at questions and get feedback on their answers before getting another chance. Access to online homework will be through HuskyCT.

Online Quizzes: There will be six 50-minute closed-book quizzes. Each consists of 8 to 10 problems taken from the online homework and allows **two attempts**. Your highest score will count, but you will be given slightly different problems for each attempt. In addition, all quizzes require the use of Lockdown Browser with Respondus Monitor (Webcam Required). The use of scientific calculator is allowed.

Worksheets: There are 4 worksheets due the following Monday from week 1 to week 4 covering materials from the previous week. These worksheets are available on HuskyCT and should be submitted by the beginning of class on Monday. You are encouraged to work together on these worksheets but each student needs to submit their own work and understand what they are submitting. You may be asked to explain what you've written on any assignment and should be able to fully explain any work submitted as your own. Worksheets will be graded for correctness, completeness and clarity. No late worksheets will be accepted, except in extenuating circumstances. Please discuss these circumstances with your instructor by Sunday.

Midterm Exams: We will have two closed-book midterm exams during week 2 and 4, and each will cover approximately one and a half week's work of materials and is not cumulative. Exams will be proctored using Lockdown Browser with Respondus Monitor (WebCam Required). Each exam will have two parts:

1. Multiple Choice: This portion can be completed at ANYTIME on Thursday and Friday. All questions are similar to (or taken directly from) online homework problems and quizzes. You will have **60 mins** to answer these problems.
2. Free Response: This portion can be completed at ANYTIME on Thursday and Friday. There will be **3** questions and the topics of the questions on the Free Response portion will be shared prior to the exam.

What you may use: The scientific calculator and the formula sheet provided.

Final Exam: We will have one closed-book, cumulative final at the end of week 5 and it will cover all sections. The exam will be proctored using Lockdown Browser with Respondus Monitor (Webcam Required). Students who score higher on the final than their lowest midterm will automatically have their final exam grade replace their lowest midterm grade. The final exam will also have two parts:

1. Multiple Choice: This portion can be completed at ANYTIME on Thursday and Friday. All questions are similar to (or taken directly from) online homework problems and quizzes. You will have **90 mins** to answer these problems.
2. Free Response: This portion can be completed at ANYTIME on Thursday and Friday. There will be **4** questions and the topics of the questions on the Free Response portion will be shared prior to the exam.

What you may use: The scientific calculator and the formula sheet provided.

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	Letter Grade
93-100	A
90-92.99	A-
87-89.99	B+
83-86.99	B
80-82.99	B-
77-79.99	C+
73-76.99	C
70-72.99	C-
67-69.99	D+
63-66.99	D
60-62.99	D-
<60	F

Course Policies

Communication: I will make frequent use of the Announcements tab on HuskyCT to keep you updated during the session. It is your responsibility to check your email regularly so that you know when an announcement has been posted.

Late Work: If you need to submit work late, please contact your instructor. I will generally expect students to meet the deadline (updated later) and 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. **Do not wait until the last day of the course** to discuss grade issues! The sooner I am aware of issues, the more able I will be able to help you. The secret password is "Derivative".

Exceptions to this policy will only be made under extenuating circumstances, and on a case-by-case basis.

Extra Credit: There will be a few opportunities to earn bonus points in this course (Please discover them on HuskyCT). All bonus point opportunities will be given to ALL students in the class. Extra Credit is NOT given to individual students. Individual requests for extra credit will not be granted.

Quiz/Exam Makeup Policy: Since this is an online course and you are given the flexibility to decide when to start the test, no quiz/exam make up will be granted.

Feedback and Grades: Homework and Quiz are graded automatically on HuskyCT. Worksheets and exams will be returned with comments no later than one week after the original due date.

All work must be submitted by 11:59 PM on the date of the final exam (updated later). Any missing assignments after this will receive a 0 with no exceptions.

Copyright: My videos, notes, handouts, and displays are protected by state common law and federal copyright law. They are my own original expression and I've recorded them prior or during session in order to ensure that I obtain copyright protection. Students are authorized to take notes; however, this authorization extends only to making one set of notes for your own personal use and no other use.

Classroom/Virtual Classroom Guidelines

This course will be held synchronously which means that I will teach live every M/T/W/Th and you will be able to attend the meeting on HuskyCT. During lecture, I will cover all required course materials and give you time to work on problems on your own and ask your questions.

Various studies have shown that students retain information better if they have time to think about it and work on their own example immediately after seeing it be taught. Since my goal is for you to retain the information as easily as possible, I will be using this technique. Often during class, you will be asked to work on examples on your own and with your classmates. In addition, class time is most successful when you are there to let me know how things are going. So, please tell me when to slow down, when to explain something another way, etc.

I understand that summer could be busy for a lot of you and you might not be able to attend class every time. For this reason, I will be recording the lectures and you will be able to access the recordings on HuskyCT. However, it is your responsibility to learn the materials from the missed class period. Before I answer questions or review materials from the date of your absence, I will require that you demonstrate to me that you have made significant progress in trying to learn the material on your own by, for example, watching the recordings.

How to Succeed in this Course

All students can succeed in this course and I am here to help you along the way. Please do not hesitate to ask questions during class or attend office hours.

Success in this course program depends heavily on your personal health and well-being. Recognize that stress is an expected part of the college experience, and it often can be compounded by unexpected setbacks or life changes outside the classroom. We strongly encourage you to reframe challenges as an unavoidable pathway to success. Reflect on your role in taking care of yourself throughout the semester, before the demands of exams and projects reach their peak. Please feel free to reach out to us about any difficulty you may be having that may impact your performance in your courses or campus life as soon as it occurs and before it becomes too overwhelming. In addition to your academic advisor, we strongly encourage you to contact the many other support services on campus that stand ready to assist you.

Here are some helpful links: 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

*This statement was adapted from one prepared by CLAS. I feel it very much represents our thoughts and feelings, and so are including it in a largely unedited way. (With this citation!)

Importance of Inclusivity

Throughout this course, you might 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**.**

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.

Academic Honesty

The University of Connecticut has issued the following policy regarding Academic Honesty: *This course expects all students to act in accordance with the Guidelines for Academic Integrity at the University of Connecticut. Because questions of intellectual property are important to the field of this course, we will discuss academic honesty as a topic and not just a policy. If you have questions about academic integrity or intellectual property, you should consult with your instructor. Additionally, consult UConn's guidelines for academic integrity.*

Note that cheating or plagiarizing on an assignment may result in a zero for that assignment and/or failure in the course. If you have any questions regarding a particular assignment, please see your instructor before the deadline.

Observance of Religious Holidays

After reviewing the syllabus carefully, students must notify the instructor if they foresee a conflict between the due date for an assignment and their religious observations.

Policy Against Discrimination, Harassment and Related Interpersonal Violence

The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community – students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate amorous relationships can undermine the University's mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate amorous relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Additionally, to protect the campus community, all non-confidential University employees (including faculty) are required to report sexual assaults, intimate partner violence, and/or stalking involving a student that they witness or are

told about to the Office of Institutional Equity. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with the University officials who can help. More information is available at equity.uconn.edu and titleix.uconn.edu.