COURSE SYLLABUS: Calculus I (MATH 2413) - Fall Semester 2023

Course Details:

- **Department:** Mathematics (MATH)

- **Course Number:** 2413 – 16407

- **Instructor:** Beatrice Constante

- **Online Office Hours:** Online via MS Teams, TBA

- **Email:** beatrice@central.uh.edu

Syllabus Flexibility and Policy Updates: This syllabus is subject to changes, which will be communicated via CANVAS or in class. Students must remain informed about additional course policies introduced by the instructor throughout the course.

Prerequisites: Successful completion of MATH 2312 (Pre-Calculus) or a satisfactory score on a placement exam is required for enrollment in this course.

Mental Health and Wellness Resources: The University of Houston offers various resources to support students' mental health and overall well-being. These include CoogsCARE, the UH Go App, and UH Counseling and Psychological Services (CAPS). CAPS provides 24/7 mental health support, offering counseling, group therapy, workshops, and connections to other support services. For assistance, visit uh.edu/caps, call 713-743-5454, or engage with Let's Talk in-person or virtually. Let's Talk offers daily, informal, confidential consultations with CAPS therapists without the need for an appointment or paperwork.

Student Health Center: The Student Health Center offers a Psychiatry Clinic for UH students. To schedule an appointment, call 713-743-5149 during clinic hours (Monday - Friday, 8:00 AM - 4:30 PM).

Religious Center: The A.D. Bruce Religion Center offers spiritual support and various well-being programs to students.

Need Support Now?

If you or someone you know is struggling or in crisis, help is available. Call CAPS crisis support 24/7 at 713-743-5454, or the National Suicide and Crisis Lifeline: call or text 988, or chat 988lifeline.org.

Academic Honesty Policy: UH upholds high ethical standards, and all members of the community are expected to maintain the highest level of integrity. Instances of academic dishonesty are addressed according to the UH Academic Honesty Policy, which is designed to ensure fairness for all parties involved.

Honor Code Reminder: For submitted work like projects, quizzes, and exams, students might need to endorse the honor code statement:

"I comprehend and commit to uphold the University of Houston Undergraduate Academic Honesty Policy. I am aware of the gravity of academic honesty, and breaches could result in severe actions, such as suspension or expulsion from the University of Houston."

Respecting Copyright: Materials shared by the instructor are solely for enrolled students. Sharing copyrighted content without permission, including with platforms like Course Hero or Chegg, is prohibited. Creating derived materials from instructor content is also not allowed.

Title IX/Sexual Misconduct: The instructor is a "responsible employee" under Title IX regulations and state law. Incidents of sexual misconduct must be reported to the Title IX office. Confidential reporting options are available on campus. For more information, visit the Title IX website: https://uh.edu/equal-opportunity/title-ix-sexual-misconduct/resources/.

Reasonable Academic Adjustments/Auxiliary Aids: Students with disabilities should contact the Justin Dart, Jr. Student Accessibility Center (Dart Center) to explore available academic accommodations and support. Timely registration with the Dart Center is advised for the implementation of approved accommodations. Contact the Dart Center via the website: https://uh.edu/accessibility/, by calling (713) 743-5400, or emailing jdcenter@Central.UH.EDU.

Excused Absence Policy: Regular class attendance, participation, and engagement in coursework play pivotal roles in student achievement. Per the University of Houston Excused Absence Policy and Graduate Excused Absence Policy, certain absences are permitted. These include situations such as the student's or a close relative's medical illness, the passing of a close family member, mandatory legal or governmental proceedings, recognized professional or educational obligations where the student is a presenter, and University-sanctioned activities or athletic events. According to these policies, students with legitimate excused absences will be granted the opportunity to make up any missed quizzes, exams, or other graded assignments contributing to the course grade, or to arrange for a satisfactory alternative. Please consult the complete policy for comprehensive details regarding acceptable reasons for excused absences, the approval process, and provisions for extended absences. Additional policies address absences related to military service, religious holy days, pregnancy, related conditions, and disabilities.

Recording of Class: Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the Justin Dart, Jr. Student Accessibility Center. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with anyone without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

Resources for Online Learning: The University of Houston is committed to student success, and provides information to optimize the online learning experience through our Power-On website. Please visit this website for a comprehensive set of resources, tools, and tips including: obtaining access to the internet, AccessUH, Blackboard, and Canvas; using your smartphone as a webcam; and downloading Microsoft Office 365 at no cost. For questions or assistance contact UHOnline@uh.edu.

UH Email: Cougarnet email is essential for course communications. Faculty respond to course-related queries through Cougarnet email. Access your Cougarnet email via Microsoft 365 using your credentials. Instructions for connecting your Cougarnet email on a mobile device can be found on the University Information Technology (UIT) website.

Security Escorts and Cougar Ride: UHPD continually works with the University community to make the campus a safe place to learn, work, and live. The security escort service is designed for the community members who have safety concerns and would like to have a Security Officer walk with them, for their safety, as they make their way across campus. Based on availability either a UHPD Security Officer or Police Officer will escort students, faculty, and staff to locations beginning and ending on campus. If you feel that you need a Security Officer to walk with you for your safety, please call **713-743-3333**. Arrangements may be made for special needs.

Parking and Transportation Services also offers a late-night, on-demand shuttle service called "Cougar Ride" that provides rides to and from all on-campus shuttle stops, as well as the MD Anderson Library, Cougar Village/Moody Towers and the UH Technology Bridge. Rides can be requested through the UH Go app. Days and hours of operation can be found at https://uh.edu/af-university-services/parking/cougar-ride/.

Technology Requirements: For successful participation in this course, students need access to the following:

- A functional and updated computer (including microphone and speakers or earphones)
- Reliable internet connection
- PDF viewer
- Capability to log in to CCS and CANVAS for online assignments
- Ability to watch MP4 files
- Access to Microsoft TEAMS and CANVAS platforms. Please note that all UH students have access to MS Teams and CANVAS using their cougarnet ID.

Course Overview (Course Description): Welcome to the world of Calculus! This subject revolves around the concept of change, and since numerous phenomena in various fields involve dynamic transformations, the language and tools you'll acquire in this course will undoubtedly prove beneficial across different disciplines. Moreover, this class serves as an excellent introduction to Mathematics as a whole, offering students insights into the way mathematicians perceive the world and even worlds beyond our own.

By the end of this course, you will:

- Grasp and apply tools to solve a range of problems involving:
    - Instantaneous rates of change
    - Properties of curves
    - Areas of regions bounded by curves
    - Motions of accelerated bodies
- Cultivate proficiency in calculation-based skills, including:
    - Differentiating various function combinations
    - Integrating / anti-differentiating elementary functions
- Master and apply essential theorems, such as:
    - The Intermediate Value Theorem
    - The Mean Value Theorem
    - The Sandwich/Squeeze/Pinching Theorem
    - The Fundamental Theorem(s) of Calculus

- Develop the ability to utilize graphical data and symbolic expressions when tackling mathematical challenges
- Hone effective problem-solving strategies that encompass:
  - Translating questions from ordinary language into mathematical expressions
  - Deriving solutions using rigorous mathematical methods
  - Interpreting and articulating your findings

Note (TCCNS Course Code): If you encounter any references to "Math 1431" in your textbook, instructor's notes, website, or other course materials, be aware that Math 1431 was the former code for Calculus 1. Starting Fall 2021, we will be utilizing the code "Math 2413."

Course Format and Logistics: This course adopts a face-to-face format with scheduled live lectures. Assignment due dates are outlined on the CANVAS calendar, and students are expected to adhere to them. Class meetings occur according to the class schedule, requiring students to be available during these times.

Starting Summer 2023, all UH courses will use the CANVAS learning system. Access CANVAS and find more information here: STUDENT HELP FOR CANVAS. Keep track of updates on the CANVAS calendar.

From Summer 2023 onwards, Math courses will also utilize CCS (new CASA courseware system). Your instructor will provide guidance on taking quizzes through CCS in class.

Communication: If you require a private discussion with your instructor, arrange a meeting through email. Note that your instructor will primarily communicate via email. Chat messages on MS TEAMS won't be addressed, and calls via MS TEAMS require prior arrangement. Voicemail messages on the office phone may not be received; thus, email is the preferred communication method. Include your course and section number in your email.

Textbook and Access Code: The textbook, online quizzes, and additional materials will be accessible online. CASA (CCS) access is included in your fee bill via CTAP. Opting out of CTAP means purchasing an access code at the UH Bookstore. If not entered by the CASA (CCS) deadline, access is lost, with no make-up assignments during the no-access period. For more details on the Cougar Textbook Access Program (CTAP), visit:

CTAP Information

CTAP FAQs

Course Components and Grading Breakdown: This course includes 3 Regular Exams, a Final Exam, Online Quizzes, Homework, and Attendance/Participation.

Grading:

- Test 1: 16%
- Test 2: 16%
- Test 3: 16%
- Final Exam: 22%
- Online Quizzes: 15%
- Lab Quizzes: 5%

- Homework: 5%
- Attendance/Participation: 5%
  Total: 100%

Final Exam Policy: The final exam is mandatory and contributes 22% to your overall average. If your final exam score surpasses your lowest test score, it can replace that test. If this occurs, the final exam will be worth 38% of your overall average (16% + 22%).

Grading Scale: If your average, denoted as "x," falls within the ranges below, corresponding letter grades will be assigned:

A	$93 \leq x$	B-	$80 \leq x < 83$	D+	$67 \leq x < 70$
A-	$90 \leq x < 93$	C+	$77 \leq x < 80$	D	$63 \leq x < 67$
B+	$87 \leq x < 90$	C	$73 \leq x < 77$	D-	$60 \leq x < 63$
B	$83 \leq x < 87$	C-	$70 \leq x < 73$	F	below 60

Please note that the grade calculator does NOT round grades.

Exams: This course includes a series of assessments to gauge your understanding:

- **Tests:** There will be 3 tests, each focusing on specific chapters:
  - Test 1: Chapters 1 and 2 (Sep 28 – Sep 30, 2023)
  - Test 2: Chapter 3 (Oct 19 - Oct 21, 2023)
  - Test 3: Chapters 4 and 5 (Nov 16 - Nov 18, 2023)
- **Final Exam:** A comprehensive final covering all chapters (Dec 9 - Dec 12, 2023)

Exam Details:

- All exams will be administered at the CASA Testing Center through reservations. Exams are proctored.
- Important: Make a reservation before the testing window starts. Seats are on a first-come, first-served basis.
- Missing a reserved time? Check for available slots online and make a new reservation.
- One attempt allowed per test; no calculators permitted.

Final Exam:

- Compulsory for all students; no exemptions.
- Reserve a seat online at CASA when the reservation period begins.
- Your final's raw score can replace the lowest test score if higher, offsetting zero scores due to emergencies.
- Ensure you're available during the testing period.

Grade Appeals: Appeal any assignment grade within five business days of posting.

Extra Credit:

- Practice tests and a practice final available on CCS.
- Taking practice tests gives extra credit (5% of highest score) on the corresponding exam.
- Multiple attempts allowed; only the best score is considered.
- Practice tests usually end before the exam starts; no reopens.

Note:

- "Practice Test # (NC)" assignments are for practice only, not for credit.
- Bonus points count if practice tests are taken before the original due date.

Online Quizzes:

Note: QUIZ 00 and Pre-requisite Material

- **QUIZ 00:** Covers pre-requisite material (PreCalculus). Access it under the "online assignments" tab at CASA.
- Objective: Evaluate your foundational background and skills for success in this course.
- Prepare: Review basic algebra and precalculus topics. Helpful videos: https://online.math.uh.edu/courses/placement/Modules.html
- Important: Scoring low (below 60) on QUIZ 00's first attempt? Consider Math 2312 or an SEP Workshop. SEP Workshop details: https://www.uh.edu/nsm/scholar-enrichment/workshops/sep-workshop-schedule.pdf

Online Quizzes Overview:

- Regular quizzes available on CCS; due dates and instructions on CANVAS.
- Quizzes close at 11:59 pm on CCS due dates; no re-opening after closure. Submit by 11:59 pm.
- **Drop Policy:** Lowest 4 quizzes dropped to mitigate low scores due to emergencies.
- 10 attempts per quiz allowed.
- Most quizzes have a 60-minute time limit, varying occasionally.
- Watch for multiple quizzes due weekly; review due dates closely.

Important Points:

- Quizzes are final once closed for the semester.
- Timely access recommended due to potential CCS slowness.
- No amnesty period; quizzes won't reopen at semester end.
- For technical difficulties, contact CCS tech support directly. Neither I nor the Math Department can address access issues.

Contact Information: For quiz access issues, reach out to CCS tech support.

Homework:

- Weekly assignments will be posted on CANVAS with associated due dates.
- Follow cover page instructions for Written Homework (WHW), submitted online on CANVAS.

- Adherence to cover page instructions is crucial. Grading depends on submitting a single PDF file as instructed. Ensure file clarity to prevent grading issues.
- Late homework submissions won't be considered.
- Offsetting emergencies' impact: Lowest homework assignment score dropped.
- Stay informed: Regularly check the CANVAS calendar for homework deadlines. Plan and complete assignments promptly.

Attendance:

• Attendance plays a vital role in your learning journey. Strive to attend all lectures and labs to maximize your learning experience. Refer to the "presence in class" section within this document.

• Your instructor will provide clarity on attendance procedures.

• Bring a smart device (smartphone, tablet, laptop) to class. This allows you to actively participate in answering questions posed by your instructor on CCS during class.

• Attendance questions can be given at any point during the lecture. It's important to be on time as latecomers may miss the opportunity to respond to earlier questions.

• Some questions may become inaccessible as the lecture progresses. Make sure to submit your answers before the end of the lecture.

• Sharing attendance answers with absent students breaches Academic Honesty policies and may lead to consequences outlined in this syllabus.

• Attendance is designed for in-class participation; no make-up opportunities will be provided.

• In cases of emergencies or medical issues, your instructor might excuse some missed lectures by reducing the count of attendance items.

Labs (Recitations):

• This course carries a **4-credit** weight due to its lab component.

• Attendance in your registered lab sessions is mandatory for all students.

• Every student enrolled in the course should also be enrolled in a corresponding lab section.

• Grading does not involve a separate lab grade; the lab sessions are guided by Teaching Assistants from the Mathematics department.

• Record your TA's contact information for future reference.

• Labs kick off on the first day of school, regardless of lecture timings.

• Labs encompass various activities such as: class work assignments and written quizzes. Your TA will offer assistance for queries.

• Be aware that your lab TA might take attendance without prior notice.

• Three lab absences are excused.

• Ensure attendance in the specific lab section registered in PeopleSoft, as grades might not be recorded otherwise. Verify lab time and location details in PeopleSoft.

Lab Quizzes:

• Weekly lab quizzes are held during recitations. Consult the CANVAS calendar for quiz dates.

• Lab attendance is essential for taking these quizzes, as no other format is available.

• Lab quizzes generally encompass material from the previous 3-4 lectures.

• Maximize success by studying after each lecture, bringing questions to labs, and seeking assistance as needed.

• Graded lab quizzes are typically returned within a week.

• To accommodate emergencies or unforeseen events, one lab quiz grade will be dropped.

Late Assignments and Make-Up Policy:

• This course is cumulative, requiring consistent engagement with readings, quizzes, homework, and exams.

• Regularly check the Canvas calendar for assignments to avoid missing deadlines.

• Some assignments are dropped to counter the impact of emergencies on grades.

• Missing assignments might not allow for make-up opportunities, except in cases of excused absence (refer to Excused Absence Policy).

• In case of a missed test, rescheduling might be possible during the testing period based on availability. Online scheduling is essential.

• Your final exam score might replace the lowest midterm exam score if it's higher.

• One missed test results in a score of zero. If you miss multiple exams, only **one** replacement score will be applied.

• For make-up work requests due to an excused absence, contact the instructor in writing before the next class meeting, or as soon as possible afterward with an explanation.

• Refer to the Undergraduate Excused Absence Policy for documentation requirements and guidelines.

• The instructor will communicate the decision via email.

• Note: Loss of Canvas/CCS access due to access code issues or temporary course drops for non-payment places responsibility on students for missed assignment deadlines.

Your Path to Academic Success:

• Understand that this course carries 4 credits; attending lectures and labs is expected.

• Set aside at least 12 weekly hours (3 hours per credit) for focused study.

Getting Help:

• Options for assistance:

- o Attend labs
- o Visit TA and instructor during office hours
- o [CASA tutoring center](#)
- o [LAUNCH tutoring center](#)
- o Knack Tutoring: https://www.joinknack.com/school/university-of-houston
- o SEP Tutoring: https://uh.edu/nsm/scholar-enrichment/tutoring/

Effective Strategies for Success:

- Engage in class, ask questions.
- Review after lectures.
- Come prepared and grasp earlier content.
- Utilize labs for queries.
- Start assignments early, use online quizzes for assistance.
- Practice by redoing quizzes.

Be Ready for Exams:

- Study consistently
- Consult instructor or TAs if you have questions
- Utilize review materials and practice tests
- Link homework and upcoming tests
- Access labs and tutoring for extra guidance

Balanced Well-being: Remember to nourish your body with good food and ample sleep for your overall health.

List of Topics

Functions and Their Limits (Chapter 1)

- Concept and definition of a limit

- Visualizing and computing limits

- Continuity and types of discontinuities

- The Intermediate Value Theorem

- Squeeze Theorem and Special Limits

Differentiation (Chapter 2)

- The limit definition of the derivative

- Derivatives of Polynomials and Trig Functions

- Differentiation Rules (Product, Quotient, Chain)

- Implicit Differentiation

Applications (Chapters 3 and 5)

- Related Rates

- One-dimensional motion

- The Mean-Value Theorem

- Local and absolute extrema

- Concavity and Points of Inflection

- Curve Sketching

- Optimization

- Differentials / Tangent Line Equations

- L'Hospital's Rule

Transcendental Functions (Chapter 4)

- Inverse Functions

- Exponential Functions

- Logarithmic Functions

- Inverse Trigonometric Functions

- Hyperbolic Functions

Integration (Chapter 6)

- The Definite Integral

- The Fundamental Theorems of Calculus

- Rules of Integration

- Integration by Substitution