Hunter College (CUNY)
Department of Mathematics and Statistics
COURSE SYLLABUS
MATH 150 – Calculus I Section 10 Course Number 7643
4 Hours–4 Credits, Spring 2025
Time & Place : Mondays & Wednesdays[1], 7:00pm -8:50pm, 615 HW

Instructor: Prof. Barry Cherkas, Office 914A Hunter East
Email: barry.cherkas@hunter.cuny.edu, Phone: (212) 772-5741
Office Hours: Wednesdays 5:30pm-6:30pm in 914A HE; also on ZOOM by appointment.

Prerequisite:
A grade of B- or better in Math 12550, or a grade of C or better in either Math 124 or Math 12550 plus the corequisite or prerequisite of Math 140, or by placement testing with LEVEL 2 milestone.

Course Description:
This is the first semester of a typical calculus sequence, suitable for all students majoring in science or mathematics, or any other course of study requiring at least one semester of calculus.

Work Expectations:
It is expected that you spend a minimum of 8 hours each week outside of class (2 hours outside of class for each 1 hour in class), working on the homework and studying for this class. That is in addition to attending class…learning begins in class.

Required Textbook & Online Homework System:

At www.cengage.com, purchase "Webassign for Stewart's Essential Calculus: Early Transcendentals" for one semester or two semesters. If you will be taking MATH 155, Calculus II, you should purchase Webassign for the longer term. I believe the purchase price that includes both the ebook and the Webassign homework system is $116 for one semester.

I already registered all current registrants as of January 25 into this Section 10 of Math 150. If you previously used Webassign you already have a password it has not changed. Others have a default password based on their last name and student ID. That password is 6 characters long and consists of the first two characters of the last name plus the last 4 digits of their Student ID. It is case sensitive so that the first letter is upper case and the second letter is lower case. For example, if your name were Jane Doe and your Student ID was 12345678, your password would be "Do5678".

Brightspace:
This is where I'll post the syllabus (this document), and course information. When I email announcements to the class it will be through Brightspace, so make sure that your preferred email

[1] No classes on Wednesday January 29, Wednesday February 12 and Monday February 16, and Monday March 31; but we meet for **replacement classes on Tuesday, February 18 (follows Monday schedule) and Thursday, March 6 (follows Wednesday schedule)**.

address in the Brightspace database is one that you check regularly. If the only email address that you check regularly is not the one preferred in Brightspace, that will be a problem.

Tutoring and the Dolciani Mathematics Learning Center:
The DMLC, located on the 7th floor of the library, is an extremely valuable resource for calculus students. They offer a wide range of services, including ***in-person and online tutoring in Calculus***. Their web page is https://www.hunter.cuny.edu/dolciani or better yet, go check them out.

Exams and Grading:
There will be three midterm exams and a comprehensive final exam. The final exam will be after the last class meeting, on the date scheduled by Hunter College for this section. Here are the three midterm exam dates:

1. Monday, March 3 (9th class)
2. Wednesday, April 2 (18th class)
3. Monday, May 12 (27th class)
4. **Grading:** Homework will count for 10% of your course grade, the exams will count for 90%. The final exam will be worth twice as much as a midterm exam. Your lowest exam score will be dropped entirely, if it is a midterm exam. If your lowest exam score is the final exam, then it will be worth only one of the midterm exams.
5. If you stop attending the course and do not withdraw, you will receive a grade of WU.
6. **NOTE:** P/NC grading is not permitted for this course. Only letter grades (some with + or -) are allowed.
7. **Regular Attendance and Class Participation:** During class, you should be trying to make sense out of the concepts and techniques being introduced. Whether you do this silently or by asking and answering questions in class, sense-making is the best way to internalize your understanding. Consistent class participation can add 2-3 points to your overall course average. If you are willing to participate by having me call on you by name, please send me an email with your ok. I will always show respect for your answers and questions. I try my best to explain any misconceptions. I often recognize the basis for seeing things differently. Fluency in algebra—the language of mathematics—is essential but is often a basis for a misconception. If you find yourself consistently participating in class, please send me an email midway during the semester to have it formally recognized.

   One student (who earned an A), who was participating, wrote me:

   > I have found for myself that lecture participation has elevated my understanding of the material, as even when I get the wrong answer, consistently raising my hand and speaking has been an outlet for immediate feedback and deeper understanding of the concepts at hand.

Exam Ground Rules:

- No Scrap Paper (if necessary, use the last 2 pages which are blank)
- No Books
- No Graphing Calculators
- No Cell Phone
- Allowed: Scientific or Basic Calculator

- Allowed: Survival Card(s) (5”x8” Index Cards with Notes on Both Sides)
  1 card with exam 1, 2 with exam 2, and 3 with exams 3 and the final

Personal Survival Cards for Midterms and Final Exam:
For each of the three scheduled 2-hour exams, you may fill both sides of a single 5"×8" index card (personal survival card) with handwritten formulas, solutions, etc., for reference during the exam. (Write as small as you like.) Index cards for this purpose are available from Professor Cherkas, so please do not use alternative paper. As the semester progresses, thinking through what to include on your personal survival card is a smart way to prepare for each exam.

Examples of things you might want to include on your survival cards (things you have trouble remembering): formulas and rules (product, quotient, and chain rules) for computing derivatives and word problems, integral formulas, including samples of actual problems that you can use as a template to solve similar problems. In short, include anything you would like to have at your fingertips (i.e., on your personal survival card) for the exam. Consider including the solution to a problem type that you find difficult to follow—by creating a personal road map that you can follow.

Reusing Personal Survival Cards for Subsequent Exams, Including all 3 for the Final Exam:
Keep the survival cards for each of the three 2-hour exams. You should bring two to the second exam, and three survival cards to the third and final exam. The final exam is cumulative.

Make Up Exam Policy:
Exam dates are preset at the beginning of the semester. If you have a known conflict (such as a medical procedure or religious observance) please contact Prof. Cherkas at least 2 weeks prior to the exam date to schedule a make up, to be taken before the scheduled class exam. If you have an unexpected conflict that warrants an excused absence (such as an illness or family emergency), please contact instructor upon missing the exam with specifics to request an excused absence. Your final exam score will be used in the case of an excused absence. This latter option is limited to one midterm exam. Unexcused exam absences are recorded as zero. Missing a final exam requires an overall exam average of at least 70 with no midterm exam excused and a doctor’s note.

Technology Resources:

***Mathematica*:** We use *Mathematica* for plotting and computations. If you are interested, here are instructions to get your own copy:

1. Go to wolfram.com/siteinfo and enter your school email address.
2. Select the product you wish to use.
3. Sign in with a Wolfram ID. If you don't have one, create one using your school email address.
   The first time you create your Wolfram ID, check your email and click the included link to validate your Wolfram ID.
4. Complete the form and follow the instructions to access your product.

WolframAlpha: Feel free to use the online tool www.WolframAlpha.com to get answers.

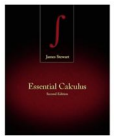
Expected Learning Outcomes:
Upon completion of this course you should be able to:

- Understand concepts of limits, continuity of functions, derivatives, and integrals.
- The student will be able to compute derivatives of various functions using the definition of the derivative, the power rule, the product and quotient rules, the chain rule, and implicit differentiation.
- The student will learn the Mean Value Theorem and the Intermediate Value Theorem.
- These concepts will be applied by the student to various problems involving related rates, curve sketching, optimization, and linear approximation.
- The student will learn about antidifferentiation and the Riemann integral and will be able to compute Riemann integrals of some simple functions using the Fundamental Theorem of Calculus.
- The student will apply these techniques to computing areas and volumes.

About the role of learning in your life, from the words of the logician, Kurt Gödel, touted as the greatest philosopher since Socrates:

> Only the human being can come into a better existence through learning, that is, give his life more meaning. One, and often the only, method to learn arises from doing something false the first time. And that occurs of course in this world truly in abundant quantity.

Kurt Gödel, author of the Incompleteness Theorem (1929), in a 1961 letter to his mother.



Topics Covered:

Chapter 1:

1.3 The Limit of a Function
1.4 Calculating Limits
1.5 Continuity
1.6 Limits Involving Infinity

Chapter 2:

2.1 Derivatives and Rates of Change
2.2. The Derivative as a Function
2.3 Basic Differentiation Formulas
2.4 The Product Rule and Quotient Rules
2.5 The Chain Rule
2.6 Implicit Differentiation
2.7 Related Rates
2.8 Linear Approximation and Differentials

Chapter 3: Inverse Functions: Exponential, Logarithmic, and Inverse Trigonometric Functions

3.1 Exponential Functions
3.2 Inverse Functions and Logarithms
3.3 Derivatives of logarithmic and Exponential Functions
3.4 Exponential Growth and Decay

Chapter 4: Applications of Differentiation

4.1 Maximum and Minimum Values
4.2 The Mean Value Theorem
4.3 Derivatives and the Shapes of Graphs
4.4 Curve Sketching
4.5 Optimization Problems
4.7 Antiderivatives

Chapter 5: Integrals

5.1 Areas and Distances
5.2 The Definite Integral
5.3 Evaluating Definite Integrals
5.4 The Fundamental Theorem of Calculus
5.5 The Substitution Rule

Hunter College Policy on Academic Integrity: Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The college is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

ADA Policy: In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230.

Hunter College Policy on Sexual Misconduct. In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).

b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the college's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

Changes:. Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.