STELLA AND CHARLES GUTTMAN COMMUNITY COLLEGE

Math 210-001: Calculus Spring 1 2026

Guttman Community College

50 W 40th Street, New York, NY

Course Details

Course number/Section: Math 210-001– #19221
Instructor: Luis Zambrano
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Phone: 646-313-8282
Meeting: M, W, Th Rm 501
4:45 PM- 6:25 PM.
Course Website: Brightspace/ MyOpenMath

Office: 818F
Office Hours: Thursdays 3:30 pm – 4:30 pm
Fridays 2:00 pm – 3:00 pm

WELCOME!

These kinds of math course have a reputation! However, it may be best not to be too impressed or intimidated by what you hear. You are capable of doing just fine.

Yes, the course is challenging but so what? It helps you grow in your analytical and logical skills. The main challenge that students seem to experience in this class is not the pre-calculus or calculus but, instead, they find the main challenge is in previous basic algebra and math proficiency skills and confidence. I understand! This is normal. So, the course is designed with the need for review of prerequisite material in mind, stuff you may have forgotten about or never quite learned, and to include that review as needed throughout our learning.

What else can you do? Be open to new insights about your true abilities in math. Sometimes bad past experiences can be very discouraging—and they can deceive and make you think you can't do some things. But don't fall for that. It's not true. It is also not true that people are either born with math ability or not. The truth is that mathematical proficiency can be developed and strengthened with effort and good strategies, and by placing value in your own judgment. Trust your instincts about what makes sense and what does not make sense.

Your imagination is requested! Contrary to popular opinion, we aim for all students to believe and be confident in your own common sense—to use and trust your imaginative and creative instincts—it is really important in the learning of mathematics! It is not just accepting formulas from strangers! It is about investigating and persisting in the way that makes sense to you and that leads to real understanding. Then you won't have to memorize anything.

What about mistakes? Errors? Yes, Make them! Remember that making mistakes is an important part of learning, and most people don't think this is acceptable in the learning of math. But mistakes are often your greatest teacher. When mistakes are made, and we reflect upon them, then real learning is happening. Obviously, we want to move towards making less mistakes. But we only get there by making mistakes. It is the path of gaining true understanding and mastery. So I respect the making of mistakes, and make allowances for it—with reflection, revision and careful review of mistakes you can achieve real understanding.

Academic Support Center (ASC)

Guttman has one of the finest college tutoring services available for all subjects. In particular, we will have specific assigned tutors for our class who will be able available to you all days in the ASC center in the back of the library.

Math Drop-in Tutoring: In addition to private and group tutoring most days in the library, two tutors assigned to support you will hold open math tutoring drop-in sessions during common hour twice a week:
Tuesdays Rm 609 and Thursdays, Rm 007, from 1:15 pm- 3:00 pm.

Lastly, I hold office hours for those students each week. Come by to review any questions you may have, and get any additional guidance that you think you may need.

Guttman AcessABILITY--Disability Support Services

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Guttman Community 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 506 to secure necessary academic accommodations. For further information and assistance please call 646-313-8061 or speak to your Student Success Advocate or Career Strategist.

Catalogue Description and Overview

This course comprises a thorough treatment of the differential calculus, an overview of the integral calculus, and a study of the connections between them. Students will develop numerical, graphical, and analytic methods to solve problems concerning changing rates of change and measuring curvilinear figures; they will also study the calculus as an abstract symbol system with distinctive operations and rules. The historical development of the calculus will be incorporated as fitting and constructive. Topics include limits, continuity, velocity and acceleration, definitions of the derivative, differentiability, differentiation rules, using derivatives in graphing, derivatives of algebraic and transcendental functions, derivatives of inverse functions, linear approximation, approximating areas of curvilinear regions, the Riemann integral, and the First Fundamental Theorem of Calculus. Graphing calculators and software such as Microsoft Excel and Maple will be incorporated into selected aspects of the course. Students will design and carry out a semester-long project involving a calculus-based analysis of an issue of both historical and contemporary importance to New York City.

Credits/Hours: 5 Hours/4 Credits

Course Learning Outcomes:
Upon successful completion of this course, you will be able to do the following:

1. Students will articulate in precise terms the relationship among rates of change, slopes, and derivatives.
2. Using a definition of the derivative, students will (i) accurately calculate derivatives of specific algebraic and transcendental functions; and (ii) be able to derive general rules of differentiation.
3. Students will accurately calculate limits and address issues of continuity both graphically and analytically.
4. Students will correctly determine derivatives of inverse functions both graphically and analytically.
5. Students will be able to use derivatives to construct linear approximation of nonlinear functions.
6. Students will make proper use of calculus techniques to graph functions and obtain information about a function's behavior from its graph.
7. Students will be able to approximate the area inside certain curvilinear regions both graphically and analytically.
8. Students will articulate in precise terms the relationship between area and rates of change as codified in the First Fundamental Theorem of Calculus.
9. Students will correctly calculate areas using the First Fundamental Theorem of Calculus.

Prerequisites: Demonstration of Elementary Algebra Proficiency, MATH 103 or both MATH 103A and MATH 103B; MATH 120; MATH 201; or permission from instructor

Co-Requisites: N/A

Program of Study	Required	Elective	Not Applicable
A.A. Business Administration		X	
A.A. Human Services			X
A.A.S. Information Technology		X	
A.A. Liberal Arts – Social Science and Humanities Track		X	
A.A. Liberal Arts – Science and Mathematics Track		X	
A.A. Urban Studies			X

Required Materials

Notebook, or other bound organizer that works for you; Computer, access to the Internet for Brightspace and for text and homework assignments. We will avail ourselves of other, free online platform resources such as MS Excel, Desmos or GeoGebra.

Course Assignments and Assessment

Homework: MyOpenMath HW (linked to your Brightspace site): These assignments are available on-line, and are organized by due dates.

Short Quizzes: There will be short weekly quizzes, usually every Monday and/or Wednesday at the start of class.

Tests or Midterms: Three midterms and a final exam.

The tests will be given during class and will be completed individually. No make-up tests will be given unless prior arrangements are made and the reason for the absence was unavoidable. The form of any make-ups, if any, are at the sole discretion of the instructor.

Projects: A signature assignment(s) will allow students to research and develop understanding of a mathematical topic or application of interest to them, or the creation of a educational resource based on a topic in Pre-Calculus (i.e. a class activity, section of a textbook, worksheet, quiz, study guide, etc.)

Specifically, students will

- Demonstrate accurate use of mathematical vocabulary and notation.
- Demonstrate a connection between their topic and a real-world situation or their topic and another mathematical topic.
- Demonstrate their ability to explain this topic to others (by creating a presentation, handout, video, digital activity, etc.)
- Create original examples or tasks and provide accurate and detailed worked solutions.

Grading

Your final grade will be based on attendance, participation in class, MyOpenMath HW and other written homework, quizzes, three midterm exams, and a semester-long project(s), which are worth the following percentages of your grade.

- On-line Homework Assgnmts 15%
- Worksheet activities/ Projects 15%
- Weekly quizzes 10%
- Midterm Exams 40%
- Final Exam 20%

Overall grades will be based on the following scale (You can modify this to fit your expectations):

A	*93% and up*	*A-*	*Between 90% and 93%*	*B+*	*Between 87% and 90%*
B	*Between 83% and 87%*	*B-*	*Between 80% and 83%*	*C+*	*Between 77% and 80%*
C	*Between 74% and 77%*	*C-*	*Between 73% and 70%*	*D*	*Between 60% and 70%*
F	*Below 60%*				

Incompletes are rarely given and will only be considered under the following circumstances: The student has completed the majority of the work for the course, the student is passing the course based on the work completed at the time the incomplete is requested, and there are extenuating circumstances that prohibit the completion of a small portion of the course.

As learning from mistakes is one of the most productive ways to reflect and to learn, it is important to always carefully review all assessments handed back to you. Completing timely test (and quiz) corrections, regardless if assigned for credit by the instructor or not,

Please note: In general, there are no Make-up tests. If there are extenuating circumstances, justified by valid and approved documentation, then possible make-up work is resolved at the instructor's discretion.
NO EXCEPTIONS.

Topics Outline:

- Limits of functions and continuity
- Derivatives
    - Differentiability and the definition of the derivative
    - Interpreting derivatives (instantaneous rates of change, slopes of tangent lines)
    - Computing derivatives (power rule, product rule, quotient rule, chain rule, trigonometric functions, exponential functions, logarithmic functions, inverse functions, implicitly defined functions)
    - Higher derivatives
- Applications of derivatives
    - Linearization
    - Optimization
    - Curve sketching
    - Related rates
    - L'Hopital's rule
- Definite integrals
    - Riemann sums
    - Anti-derivatives
    - The Fundamental Theorem of Calculus

Required Texts/Readings:
Main Textual Resources

- Boelkins, Matthew, David Austin, and Steven Schlicker. *Active Calculus*. Self-published. August 2018.
- Boelkins, Matthew, David Austin, and Steven Schlicker. *Active Calculus: Activities Workbook – Chapters 1-4*. Self-published. 2016 edition.

The textbooks are free under a Creative Commons License. You can download the textbook at http://scholarworks.gvsu.edu/books/18/, and the activities workbook at https://www.dropbox.com/s/j1kh6wucolmmep9/0_AC_ch1-4%28activities%29.pdf?dl=0.

Supplemental Texts:

- Boelkins, Matt. *Active Prelude to Calculus (2019 edition).* Self-published. July 26, 2019. Retrieved from https://activecalculus.org/ ISBN 978-1085940856
- OpenStax College. *Calculus , Volume 1*. Houston, TX: OpenStax CNX. Retrieved from https://openstax.org/details/books/calculus-volume-1

Signature Assignment:

The signature assignment will require students to

1. use data to construct single-valued, single-variable functions modeling relationships between pairs of variables and
2. use calculus techniques to analyze their functions and interpret their analysis in the context of the pairs of variables being studied.

The data students use may be provided for them, or they may be required to find/generate their own data. Once in possession of enough data to construct meaningful models, students should make reasonable assumptions about the function families they think would fit their data, and then use technology to find the appropriate regression function (Desmos has a great regression tool – see http://support.desmos.com/hc/en-us/articles/202532159-Regressions for more information).

The calculus analysis should certainly involve computing and interpreting the derivative of a function. If appropriate and meaningful in context, the analysis could also call for finding and interpreting the limit of a function, the higher derivatives of a function, the extrema of a function, and/or the area underneath a function.

Course Learning Outcomes addressed by signature assignment

- Students will articulate in precise terms the relationship among rates of change, slopes, and derivatives.
- Students will correctly determine derivatives of inverse functions both graphically and analytically.

Note: Individual sections of a course may vary.

Expectations for Out-of-Class Time

For every one instructional credit hour in class, a Guttman student is expected to spend at least two hours out-of-class studying, reading, writing, researching and working on projects, and preparing for tests. E.g. for a 4 credit course that meets for 5 hours each week, a student is expected to spend at least 4-8 hours outside of class time each week related to course work.

Navigate 360—Yes, I take attendance.

Navigate 360 is a communication tool for students, faculty, advisors, and many academic support and student service areas at Guttman. Instructors and advisors will use Navigate 360 to provide you with feedback about your progress. Throughout the semester, you may receive emails or text messages regarding your academic performance and referrals to specific campus resources, such as peer mentors or tutors.

You can use Navigate 360 to "Raise Your Hand" and ask questions, and make appointments with me, your advisor or with other service areas. To access Navigate 360 log into my.guttman.cuny.edu and click the icon on the left side of the page.

Attendance Policy!!

Your success—attendance is the beginning and the end of success! Your attendance is probably the single most influential factor on your grade and success (here or anywhere). Success in this course cannot happen for most students without being present in class. Most students never believe this when they hear it, until it is too late. It is difficult if not impossible for a student to recover the learning that they miss from an absence. Many students learn this truth the hard way and they learn it too late.

Make the commitment now. Make the decision. Be present.
Disregard all those easy excuses people make to miss class. In the end, absences destroy learning. I know it is hard to believe, but many instructors, like me, notice when students are absent. because they know the learning that the student is losing and will never regain again.

You are an important part of a community of learners, and the best learning always happens in community. Your presence helps create and strengthen that learning community!

Technical Support

If you need access to a laptop, need support or have any technology, IT-related questions including about Brightspace, please contact the helpdesk and submit an online request at helpdesk@guttman.cuny.edu.

The Help Desk is open Monday – Friday from 8:00 AM – 6:00 PM. If you need Brightspace help outside of these hours, you can contact Brightspace support at: 646-664-2024 or go to helpdesk@guttman.cuny.edu

Other Very Important College Supports

Connect Center

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, or needs mental health support and believes this may affect their performance in this course is urged to visit the Guttman Essential Information for Personal Well Being website for support and to email the Dean of Students at Dean.OSE@guttman.cuny.edu. Please use these resources for support and let your instructor know if we can support in any other ways.

Wellness Center:

https://guttman.cuny.edu/news/coronavirus-updates/essential-information-for-personal-wellbeing/

College-wide Policies

Policy on Academic Honesty

Guttman Community College considers intellectual honesty to be the cornerstone of all academic and scholarly work. GCC views any form of academic dishonesty as a serious matter and requires all instructors to report every case of academic dishonesty to its Academic Integrity Officer, who keeps records of all cases. All work submitted or posted by students in this course must be their own. Submission of writing or ideas which are not the original work of the student, or which is not adequately referenced, is considered plagiarism. Unintentional plagiarism is still plagiarism, so if you have any question about whether or not to acknowledge a source, acknowledge it. And if you are still uncertain, be sure to ask. Refer to Article II of your Student Grievance Procedures for further details on academic honesty and Guttman's academic integrity procedures, at [Academic Policies url link] Penalties for academic dishonesty include academic sanctions, such as failing or otherwise reduced grades, and/or disciplinary sanctions, including suspension or expulsion.

Critical Incident Management

Guttman expects students to respect the rights, privileges and property of other people. Faculty are required to report disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment or inhibits students' ability to learn.