

Winter, 2026

Calculus

**Saturdays, December 19th, December 26th, and January 2nd
5:15 PM to 6:15 PM ET**

An Online Group Class

**Offered by Eric Anthony Comstock, M.S. Aerospace Engineering '24
Georgia Tech PhD candidate,
and Davidson Young Scholar alumnus
and Milena Bringman, B.S. Mechanical Engineering '27**

Supervising Instructor: Eric A. Comstock

I have a BS in aerospace engineering (*magna cum laude*) with engineering honors and minors in math and chemistry from Texas A&M University in College Station. I recently graduated with an M.S. in Aerospace Engineering in December of 2024 from Georgia Tech. I am currently a PhD candidate at Georgia Tech in aerospace engineering. I created this class for Davidson Young Scholars, and have been teaching classes for the past three years. I can be reached at: eric.comstock@gatech.edu

Instructor: Milena Bringman

I am a mechanical engineering student at the Georgia Institute of Technology with a 4.0 GPA and a strong commitment to academic excellence and student support. As a member of Tau Beta Pi (Engineering Honor Society) and initiate of Pi Tau Sigma (Mechanical Engineering Honor Society) and Pi Delta Phi (French Honor Society), I have a commitment not only to scholarship and achievement, but also a dedication to strong character, integrity, and service. I have experience working with K–12 students through hands-on project-based STEM programs. There, I help create engaging and structured learning environments that build curiosity and confidence. Through my work as a Program Assistant with Georgia Tech CEISMC, I have experience in creating and delivering STEM-focused lessons and have developed the ability to explain complex concepts clearly and to adapt my approach to different learning styles. I also bring a global perspective to my work. I have studied abroad in Metz, France where I participated in a French immersion program centered on sustainable energy and urban infrastructure.

I am passionate about helping students build strong study habits, improve problem-solving skills, and gain confidence in challenging subjects. I strive to create a supportive, professional, and personalized learning environment that meets each student's individual needs and goals.

Course Overview

Calculus is the foundation of modern mathematics and nearly all concepts in science, engineering, and technology. While it is typically taught at the end of high school, I have found a method, inspired by the work of Gottfried Wilhelm Leibniz, one of the inventors of calculus, to teach the fundamental principles of the subject with much less necessary background. If you are intellectually curious about the subject, and if you have a firm background in basic algebra and equation manipulation, the Pythagorean theorem, the ability to catch on to concepts quickly, and the willingness to participate in class and complete homework, then this class is for you!

From these building block prerequisites, we will cover differential calculus, integral calculus, the definitions and rules for derivatives, integrals, and Riemann sums, and the theorems involved in proving the rules' applicability from definitions. Proofs will be common during lectures, but are primarily for explanation and not expected to be repeated by students. Most homework will take the form of a few varied concept-focused example problems.

There is no age requirement for this class. Having grown up as an academically accelerated Davidson student, I realize that age has no bearing on intellectual merit.

I. Topics covered

1. Basic differential calculus (with proofs)

- a. Definition of the derivative
 - i. Slopes
 - ii. Infinitesimals
 - iii. Derivatives
- b. Properties of the derivative
 - i. Intro to proofs
 - ii. Sum and difference rule
 - iii. Product rule
 - iv. Chain rule
- c. Derivatives of functions
 - i. Derivatives of polynomials
 - ii. Derivatives of rational functions

2. Integral calculus (with proofs)

- a. Riemann sums and integrals
 - i. Physical intuition of the integral
 - ii. Definition of the Riemann sum
 - iii. Evaluating Riemann sums
- b. Integration methods
 - i. Basic operations

- ii. Integration by parts
- iii. u-substitution
- c. Integrals of functions
 - i. Integrals of polynomials
 - ii. Integrals of rational functions

II. Homework and Grading

Homework will be on all three weeks, and will be assigned one class and generally due at 11:59 PM ET on Mondays, nine days after assignment on Saturday. Homework will typically consist of 3-4 questions per homework. Every week that the homework is late will deduct from the student's grade, as follows:

0 to 1 days late	-3% reduction
1 day to 1 week late	-15% reduction
1 week to 2 weeks late	-30% reduction
2 weeks to 3 weeks late	-45% reduction
Greater than 3 weeks late	-60% reduction

Homework that is incomplete may be submitted, and questions that are answered later will have their grades deducted individually based on the above rubric. My fundamental goal is helping these students learn and not punishing them for turning in homework late. While some standards are necessary for any learning environment, I want my learning environment to be sensitive to the needs of young learners in order to encourage and foster a love of math and science.

I generally expect to give short but thought-provoking homework, designed to test understanding of as much of the material as possible as quickly as possible. Students are thus highly encouraged to come to office hours or reach out to me via email to ask questions about the homework – I will be happy to help them through the solution to a similar problem. Extra credit will be available on some homework, but its inclusion is up to my discretion. If included, it will usually involve some kind of proof or generalization.

The student's total grade will be determined as follows:

Homework weighted average	90%
Attendance	10%

III. Prerequisites

Students are recommended to enter the course with knowledge of algebra I or equivalent, and the Pythagorean theorem. Enthusiasm for learning, as well as the ability to pick up math concepts quickly, will also enhance the experience

significantly, since much of the course is designed to be driven by individual curiosity.

Experience in trigonometry, algebra II, or physics will be useful, but is not required.

IV. Schedule

Classes will be held on Saturdays at 5:15 PM to 6:15 PM ET, beginning Saturday, December 19th according to the schedule below.

Schedule	
<i>Date</i>	<i>Class number</i>
December 19 th	1
December 26 th	2
January 2 nd	3

V. Tuition

Tuition will be \$40 per hour-long class, once per week. Since the class is only three weeks long, payment must be paid up-front for registration. Upon payment receipt, a link will be sent to join the online class.

This makes for a total tuition of \$120, **to be sent via check to Comstock Educational Services, LLC at 2170 Summit Mist Dr., Conroe, Texas, 77304.**

Please let me know if an alternate payment option is required.

VI. Textbook

There will be no textbook. Lectures will be based on lecture notes which will be provided.

VII. Online meeting platform

We will be using an application that I have access to that does not require any software for the student. It is very easy to use. All the student needs is an internet connection, a browser, microphone and camera. The student will merely click on a link sent via email and allow access to their microphone and camera, then they will join the meeting. Most browsers work with this platform.

Milena will be providing most of the course material, but I will be there to provide additional rigor and information where needed, to supervise, and to answer any additional questions the students have.

VIII. General Expectations

Given that this class is open to all ages, I must emphasize that students must behave in a manner that is appropriate to all ages during the class. That is, older students must refrain from speaking about any topics that are inappropriate for younger students. This rule will be strictly enforced.

I will not wait for tardy students, and will always start exactly on time. Please try to come to class on time.

I do take attendance, and while it is not a large component of your grade, it can make the difference between an A and a B. I will deduct points if you are not in class and do not have an excuse. Please let me know beforehand if you cannot make class.