Summer, 2026

Python
Saturdays, 2:00 pm – 3:00 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 Alex Hunt, B.S. Computer 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: Alex Hunt

I am a current 4th year BS Computer Engineering Student at Georgia Institute of Technology. I have experience in the subject material as well as its real-world applications in physics, computing, and controls. I am experienced in tutoring and TA-ing multiple STEM subjects and helping individual students understand complex subjects. I also have full time experience in Professional Engineering and how the concepts in this course are used. I can be reached at: ahunt72@gatech.edu

Course Overview

Programming is an increasingly large part of both daily life and the economy. If you are intellectually curious about the subject, and if you have the background of basic algebra, the ability to catch on to concepts quickly, and the willingness to participate in class and complete homeworks, then this class is for you!

From these building block prerequisites, we will cover a series of Python topics ranging from begineer to advanced. Each segment of the class is paid for separately, so whether you have never touched Python or you are already an expert, this class is for you!

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

I expect to cover one to three of these topics per hour and a half long lecture, organized into blocks.

1. Introduction to programming
    a. Why it is useful and where it is used
2. Installing Python
    a. Anaconda vs direct install vs virtual environments vs jupyter notebooks
    b. Installing modules and managing environments
3. Basics of Python
    a. Basic operations (mathematical operators, printing)
    b. Variables
    c. Conditional statements – if, else, elif
    d. For and while loops, and break/pass commands
    e. Lists, tuples, and dictionaries
    f. Debugging techniques
4. Functions and Functional programming
    a. Defining functions
    b. Parameters/inputs, return statements, and default values
    c. Variable scope
    d. List/object comprehension
    e. Lambda functions
    f. Metafunctions and decorators
    g. Recursion
5. Basic module use
    a. Importing other files
    b. Importing standard modules
    c. Overview of numpy – vectorization, arrays, and optimization
    d. Overview of matplotlib – visualization, plots, and figures
    e. Advanced debugging (pdb, logging, environment-native debugging tools)
6. File editing
    a. Reading and writing text
    b. Pickle objects and namespace saving
    c. Tabular, csv, and json files
7. Classes and objects
    a. Object-oriented programming vs functional programming
    b. Class construction and object initialization
    c. Class methods and __init__
    d. Classes vs instances
    e. Nested classes

f. Class recursion
8. Advanced topics
   a. locals() and globals() dictionaries
   b. Magic methods
   c. Function and class equivalence and reassignment – everything in Python is an object
   d. Operator overloading
9. Special topics
   a. Parallel computing
   b. Sparse matrices
   c. Overview of sympy – symbolic computation and analytical calculus

II. Homework and Grading

Homework will be present in most of the weeks, and will be assigned one class and generally due at 11:59 PM ET on Mondays, 9 days after the class occurs. Homeworks 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

Homeworks that are 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 homeworks, 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 homeworks, 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. 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, geometry, algebra II, or physics will be useful, but is not required.

IV. Schedule

Classes will be held on Saturday afternoons from 2:00 – 3:00 pm ET, beginning Saturday, May 30th according to the schedule below. My office hours will be on weekday evenings (TBD – updates on my website's mentoring page) for questions related to the homework, a resource which students are strongly encouraged to use.

How fast the class goes depends upon how well the class goes. If most students are having trouble then I will likely slow down so that they are better able to understand the material. And, if the class is doing well, then I will likely speed up to present them a challenge. For these reasons, I do not have a specific end date, but I expect the class to last on the order of a school semester.

Preliminary Schedule (First three blocks)	
Date	***Class number***
First Block: $80	
May 30	1
Jun 6	2
Second Block: $200	
Jun 13	3
Jun 20	4
Jun 27	5
Jul 4	6
Jul 11	7
Third Block: $200	
Jul 18	8
Jul 25	9
Aug 1	10
Aug 8	11
Aug 15	12

Blocks are how tuition is billed. Please see the tuition section below for more information.

Students interested only in advanced topics are advised to join the class in a later block, since that maximizes their learning while minimizing the amount of review.

V. Tuition

Tuition will be $40 per hour-long class, once per week. Two weeks tuition will be due up front to secure your spot in the class with no ongoing obligation. Upon payment receipt, a link will be sent to join the online class.

Since the class is being produced in collaboration between myself (Eric Comstock) and Alex Hunt, tuition should be split evenly between the two of us.

$40 tuition to Eric Comstock may be paid via Zelle to
Eric Comstock, eric.comstock@gatech.edu.
Or via check to
2170 Summit Mist Dr., Conroe, Texas, 77304

$40 tuition to Alex Hunt may be paid via Zelle to
Alex Hunt, 678-813-0911.
Or via check to
3252 Hunterdon Way SE, Marietta, Georgia, 30067

Both payments are due immediately to secure your spot in the class.

After the first two weeks, if you decide to continue in the class, five weeks tuition will be due by 11:59 pm the day before the third class. An updated link for the third through eighth classes will be sent out the day of class upon tuition receipt. Since it is not yet known how many classes we will have, tuition payment will be managed in this manner until the end of the course.

$80 is due immediately for the first two weeks of the class, split as $40 to Eric Comstock and $40 to Alex Hunt.

VI. Textbook

There will be no textbook. Lectures will be based on my 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.

Alex 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 awnser 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.