

Introduction to Computer Programming in Python
University of Texas at Austin
Texas Summer Discovery Program 2024

Week 1: Monday 6/24 - Friday 6/28 (5 days)

Week 2: Monday 7/1 - Wednesday 7/3 (3 days)

Week 3: Monday 7/8 - Thursday 7/11 (4 days)

10:00 am - 12:00 pm lab session

1:00 pm - 3:00 pm lectures

Location: RLP 1.404

Instructors: Dr. William C. (Bill) Bulko (bulko@cs.utexas.edu)
Office: GDC 6.402
Phone: 512-471-7021. Preferred contact via email.
Office Hours: immediately after class ends at 3:00

Mr. Gregory K. Bulko (gkbulko@gmail.com)
Office Hours: by appointment only. Contact via email.

Course Website: <http://www.cs.utexas.edu/~bulko/2024summer/python.html>

Course Materials:

There are no materials or textbooks required for this course. Although computers will be available in the classroom, students are welcome to bring their own personal computer (either Windows or Mac), so they can download Python software (for free) and continue working on classwork outside of the classroom.

Course Prerequisites: Algebra II with at least a B letter grade.

Course Description:

Python is a high-level computer programming language that is used from microchip testing to running Instagram. Developed in the late 1980s, it was released in 1991, and has become one of the most widely-used programming languages worldwide. It is now taught by 80% of the top university computer science departments.

Students will be introduced to basic computer hardware, organization, and architecture to understand what software programs are and how they work. Python topics will include basic data types, simple I/O, decision structures, loops, and functions. By the end of the course, students will be able to write complete programs to perform mathematical and logical tasks.

Student Responsibilities:

Your performance in this class will be determined by you! It will require a strong dedication to learning the material, and may require a substantial time commitment to complete the programming assignments.

- You are expected to:
 - participate in class (show up, pay attention, do what the class is doing)
 - abide by the academic honor code described at the bottom of this syllabus
 - take advantage of helping resources available to you if and when you need them
 - behave politely and respectfully toward your classmates and your instructor.

- While you are free to discuss the course material with your classmates, and you are encouraged to form study groups for the exams, collaboration on assignments is **not** permitted. Helping a classmate understand the intent of an assignment specification is permitted.
- When in class, please silence your cell phone and keep it put away. Since this class is online, you are expected to use laptops or similar devices in class, but it should only be used for note-taking, performing exercises, and other class-related tasks, and you must resist the temptation to engage in off-task behavior (checking mail, surfing the Internet, chatting with friends, etc.)
- You may come and go as you wish (to use the restroom, for example) during class without asking to be excused. However, please do so as unobtrusively as possible, and be aware that you will still be responsible for any class material you may miss in your absence.

This will be a small, interactive class. You are encouraged to make comments, ask questions, and participate actively. I hope to make attending class a pleasant and engaging experience for you so that fulfilling these student responsibilities will be easy.

Course Topics:

Week 1:

- Introduction
- What is a Computer?
- Introduction to Python
- Variables and Operators
- Writing Simple Programs
- Built-in Functions
- Decision Structures

Week 2:

- Loops
- Functions
- Strings
- Lists

Week 3:

- Recursion
- Random Numbers
- File I/O
- Turtle Graphics
- Introduction to Object-Oriented Programming

Grading Procedures:

Your performance in this class will be evaluated using your scores for eight programming assignments and three exams.

In-class Exercises (40%):

There will be 8 programming assignments worth a total of 500 points. You will have to download and install software (Python and a graphical development environment called IDLE) to your laptop. The software is free from www.python.org. We will do this together on the first day of class.

The only way to learn programming is to program. Doing the programming assignments is crucial to performing well in class. Assignments will be given *almost* every lab section, and you will be given sufficient time to work on them during the lab section. Assignments start out easy, but get harder over time. If you find you have considerable difficulty with the first few assignments, please see the Instructor immediately.

Specific grading criteria vary on each assignment. However, in general, programs that do not even run will receive no more than 80% of the possible points. Other point deductions are given for such things as incorrect results, missing features, bad solution logic, no documentation, etc.

All assignments will be submitted by attaching your source code file to an Assignment in Canvas. The source code must be a text file that can be run through a Python interpreter. Word processing files (those created with Microsoft Word, for example, and ending with .doc extension) will not be accepted. **Remember to keep a copy of your source code (i.e. the .py file) somewhere, unedited after you submit it.** This will be useful in cases where your program gets lost or corrupted, and the timestamp on the file can be used to prove you completed the assignment on time.

Exams (60%):

There will be three exams, each worth 20% of your total grade. The three exams will take place on the last day of each week during the lab session.

Make-up tests will be given only for ill health or a family emergency. In all cases you must provide some form of documentation.

Final Grades:

A standard plus/minus system will be used to calculate final grades:

94.00+	A
90.00 - 93.99	A-
87.00 - 89.99	B+
84.00 - 86.99	B
80.00 - 83.99	B-
77.00 - 79.99	C+
74.00 - 76.99	C
70.00 - 73.99	C-
67.00 - 69.99	D+
64.00 - 66.99	D
60.00 - 63.99	D-
0 - 59.99	F

Academic Integrity:

University of Texas Honor Code: the core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community. Each student in this course is expected to abide by this code. Any work submitted by a student in this course for academic credit will be the student's own work.