

Syllabus

EN.800.140 Introduction to Python, Summer 2025

Contents

About the Course	1
Teaching Team	3
Access	3
Communication	3
Grading	4
Policies	6

About the Course

Description

In this 6-week, JHU one-credit course, you'll dive into Python programming with no prior development experience needed. You'll explore key concepts like creating a Python environment, common data types, conditional statements, common data structures, iterators, file input and output, functions, and code formatting. The course concludes with an introduction to object-oriented programming. Each lesson features code samples, hands-on exercises, and readings from the free textbook Python for Everybody. By the end, you'll have a solid understanding of Python and be ready to solve small-scale programming challenges with confidence.

Prerequisites

Prerequisites for this course are the following:

- High school algebra II
- High school science course with lab
- As and Bs in high school math and science courses

Objectives

By the end of the course, you will be able to:

- Write, run, and debug Python programs using variables, conditionals, loops, and data structures to solve small-scale computational problems
- Use functions to organize code effectively and apply parameter handling and scope principles
- Design and implement object-oriented programs using classes, inheritance, and method overriding to model real-world systems
- Work with data by reading and writing files, accessing web APIs, and creating visualizations using Python libraries

- Apply programming skills to real-world scenarios such as cryptography, data analysis, and simulation

Modules

- Module 1: Introduction to Python and Variables
- Module 2: Strings and Conditional Execution
- Module 3: Lists, Dictionaries, Tuples, and Iteration
- Module 4: Functions and File I/O
- Module 5: Object Oriented Programming
- Module 6: Python in Practice and Next Steps

Schedule

While this course is largely self-paced, there are regular deadlines that you must meet. A calendar with exact dates for your course, including due dates, is available in Canvas. [The calendar](#) presents due dates, not the dates you are expected to work on an assignment. You are encouraged to start assignments at the beginning of the module, so they are complete by the deadline. Unless otherwise noted, all submissions are due by 11:59pm in the Eastern time zone of the United States. This is true for all students regardless of their local time zone.

You should plan to dedicate on average 7.5 hours per week to this course:

- 3.25 hours of reading and completing practice problems
- 1 hour watching of prerecorded lectures
- 2.75 hours of programming assignments
- 30 minutes for preparing and completing for the weekly quiz

If a module takes much more than the estimated 7.5 hours, contact your teachers. Some weeks may require extra effort—and developing problem-solving skills is a key part of this course—but you're not expected to do it alone.

Optional Study Sessions will be held on a regular basis. The study session schedule will be set during the first week of the course to best accommodate the schedules of participating students. See the Communication section below for more information.

Textbook

This course does not require a textbook and is based on readings that are freely available online, particularly (but not exclusively) from Python for Everybody.

Required Software

You will make use of a few free tools in this course that are available for online users:

- Python 3.10+
- REPL

There is one officially supported IDE for developing code in this course: REPL (replit.com). You can find instructions for setup at the beginning of Module 1.

Teaching Team

The course is taught by an instructor with support from teaching assistants (TA) and/or graders. Teacher biographies and contact information can be found in Canvas under the Getting Started module.

While your teachers will not be “on call” for the course, they will make every effort to respond to your questions and reply in a timely fashion. See the Communication section of this syllabus for more information.

Access

Johns Hopkins Online Account

The Johns Hopkins Enterprise Directory (JHED) system is an online, comprehensive source of contact information for Johns Hopkins University faculty, staff, and students that grants access to the following resources:

- [Canvas](#) – access the course materials (lecture videos, assignments, etc.)
- [Zoom](#) – communicate with the class and instructional team
- [Microsoft Office 365](#) – access Word, Excel, PowerPoint, OneDrive, etc.
- [myJHU](#) – view and update your student profile
- [SIS](#) – view your final grade at the end of the course
- [Library](#) – access online reference materials

Sign into these applications using JHEDID@jh.edu (NOT @jhu.edu) and your password.

New students should receive an email from the registrar containing their JHED ID shortly after enrollment. Instructions for activating the account are provided in the Online Account Activation Instructions Form during course enrollment. Contact webregistration@jhu.edu or call 410-516-8080 for assistance, if needed.

Canvas – Course Materials

All course materials will be provided through Canvas (<https://canvas.jhu.edu>). Sign into Canvas using your JHEDID@jh.edu username and password. If you have difficulty logging in or accessing the course on Canvas, please contact the Help Desk at cmtshelp@jhu.edu.

The course materials are divided into modules, which can be accessed by clicking Modules on the Canvas course menu. A module will have several sections including the overview, reading, lecture videos, practical exercises, and graded assignments. You will have access to the Canvas site for one month following the last day of class.

Communication

Course Announcements

Important announcements will be posted to Canvas. You should check for new announcements each day.

Canvas Inbox

Canvas Inbox (also called Conversations) can be used for communication outside of class. Inbox is a two-way messaging tool used instead of email to communicate with members of a course, a group, or an individual user. You can communicate with other people in your course at any time. Check out the [Canvas Inbox guide](#) for more information. When reaching out to the teaching team during the course, you should contact the 'Teachers' group instead of individual teachers by name. This will send a message to the instructor and all TAs.

You are encouraged to discuss the course content with your peers. Be respectful and reach out to a teacher if you believe someone is behaving inappropriately. Recall that you are bound by the Academic Integrity policy for the duration of this course.

Canvas Notifications

Ensure you don't miss any important notifications by [choosing your preferred email address](#) and customizing your Canvas notification settings to notify you of changes immediately or as part of a daily summary. See the [Canvas Notifications guide](#) for more information.

Study Sessions

Study sessions will be held twice weekly as Zoom Meetings. Study sessions are a good opportunity for you to interact live with the teaching team and with your peers. If there's content from the readings or video lectures that you don't understand, it's helpful to send your questions to the teachers ahead of time so they can prepare to cover that topic.

The links to the Zoom meetings will be posted on Canvas. If you need additional assistance, you can make an appointment with an instructor and/or TA.

Grading

End-of-Module Quizzes (20% of Final Grade)

There will be one graded Quiz at the end of each module. The quizzes will focus more on specific facts from Reading and Lectures (as opposed to the Coding Assignments which will give you more general experience with applying concepts). The questions will be multiple choice, True/False, fill-ins, matching, short answer, etc.

Coding Assignments (80% of Final Grade)

Software development is an active, hands-on process, and the best way to learn it is by practicing as a software developer. All Coding Assignments are designed to resemble real-world tasks—similar to what might be asked in a workplace setting. In this course, the instructor serves as the "Product Owner," providing a clear set of specifications. Your role is to act as the "Developer" and build a product that meets those specifications. Grades are based on how closely your code aligns with the product owner's expectations. Here's how those expectations map to grade percentages:

	Excellent	Good	Satisfactory	Unsatisfactory
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Program Correctness (60% weight)	Code compiles successfully and produces correct results for all inputs. The program does not produce any runtime issues and makes use of relevant concepts from the module	Code compiles successfully and produces mostly correct results for all inputs. The program does not produce any runtime issues. Borrows from concepts beyond the curriculum.	Code compiles successfully and produces some correct results for all inputs. Program may encounter a runtime error.	Code does not compile successfully, produces multiple incorrect results, and/or suffers from multiple runtime errors.
Code Quality/Style (15% weight)	Cleanly written and follows Course Style Guidelines. Nicely organized, makes good use of whitespace, and appropriately named variables, methods, and classes.	Generally, follows Course Style Guidelines. Mostly well-organized, slightly over- or under- used whitespace.	Misses most Course Style Guidelines. Excessive use of whitespace. Poorly chosen names for variables, methods, and classes.	Omits Course Style Guidelines. Significant misuse (or omission) of whitespace or comments. Arbitrarily named variables. Code is not easy to read/follow.
Documentation (15% weight)	All relevant code is commented in appropriate detail.	Most relevant code is commented in appropriate detail.	Multiple necessary comments are missing. Comments are routinely too long/too short.	Few to no comments are provided. Comments contain little to not useful information.
Assignment Specifications (10% weight)	All required files are submitted in the required format, named correctly, and program outputs are in the proper format. All Assignment instructions have been followed.	Minor errors in requirement files or files submitted in an incorrect format, named incorrectly, or small errors in the program outputs.	Major errors in required files or files submitted in an incorrect format, named incorrectly, or major errors in the program outputs.	Submission does not meet most of the submission requirements or formats. Outputs are unintelligible.

The Coding Assignments have been designed to help you translate what you learned in the readings and lectures into using those concepts to create solutions in Python. Therefore, please do your best not to stray too far away from the concepts and techniques taught during that Module. If you would like to try an approach that involves a skill we have not covered (list comprehension instead of a for loop to build a list, a new Python library, etc.) please consult with us first.

We will post our solutions on Canvas (Module X Assignment solution will be posted under Module X) each week for you to review once everyone has submitted the assignment. The solutions are provided to help you review and resolve any portions of your solution that did not quite work, but we ask that you please do not share these solutions publicly. Similarly, we see our Assignments pop-up on Chegg, CourseHero, and other similar sites each semester. Posting an Assignment, which is the IP of JHU, publicly is a violation of course policy. A take-down notice will be issued, and incidents will be referred to the University.

Final Grade Calculation

The final grade will be either Satisfactory (70% and above) or Unsatisfactory (less than 70%).

Final grades will be determined by the following weighting:

Item	% of Grade
Practical Exercises	0%
End-of-Module Quizzes	20%
Coding Assignments	80%

Late Policy

Because this course moves at a fast pace, submitting work late is problematic. Often, feedback received on an earlier assignment can be used to improve your work on later assignments, so receiving delayed feedback can have downstream effects. A 2% late penalty will be applied for every hour the assignment is late. Exceptions can be made for genuine hardships experienced during the course, so please contact your teaching team as soon as possible to let them know why an assignment is or will be late if you believe you should get an exception.

Grade Questions and Regrade Policy

You may submit work to be regraded if you feel there is an error in how it was graded. You must do this within 48 hours of the grade being posted in Canvas. Send a Canvas message to the teachers in which you clearly indicate what portion of the work you would like to have regraded and explain the rationale for your request. The new grade may be higher, the same, or lower than the original grade. Once work is regraded, it may not be submitted for another regrading analysis.

Policies

Academic Integrity

All students are required to read, know, and comply with the Procedures for Dealing with Issues of Academic Misconduct as detailed in the enrollment form you signed.

This policy prohibits academic misconduct, including but not limited to the following: cheating, plagiarism, submitting the same or substantially similar work to satisfy the requirements of more than one course without permission, submitting as one's own the same or substantially similar work of another, knowingly furnishing false information to any agent of the University for inclusion in academic record, falsification, forgery, alteration, destruction or misuse of official University documents or seal.

While we encourage you to collaborate with your fellow students, all work submitted must be fully your own. Assignments, quizzes, and projects must be done on your own. Direct copying of written work or computer code is considered cheating and will result in a grade of zero on the assignment and could result in failing the course.

Plagiarism is defined as taking the words, ideas, or thoughts of another and representing them as one's own. If you use the words of another, present the words in the correct quotation notation (indentation or enclosed in quotation marks, as appropriate) and include a complete citation to the source.

For the full Academic Misconduct policy, see the [Pre-Collegiate Programs Academic Ethics Policy and Procedures](#).

Generative Artificial Intelligence (AI) Tools

Use of generative artificial intelligence (AI) tools such as Bard and ChatGPT can augment learning experiences when used appropriately. You may use generative AI to brainstorm and refine ideas, find reliable sources, outline, check grammar, and format bibliographies. You should note, however, that the material generated by these programs may be inaccurate, incomplete, biased, or otherwise problematic. You are ultimately responsible for what you submit.

Use your interaction with AI as a learning experience. Then, let your submitted work reflect your improved understanding. All writing, calculations, and computer code you submit must be your own. Beyond bibliographies, you are not allowed to copy and paste material generated by AI and use it in your submitted work. Including AI-written content in any part of your submitted work will be considered academic misconduct.

Disability Services

Johns Hopkins University and the Engineering Innovation program are committed to making all courses, support services, and facilities accessible to students with disabilities. If you will need disability related accommodations, you will need to start the process of requesting accommodations with the [Student Disability Services \(SDS\)](#) and provide documentation of your disability as well as your need for accommodations. It is recommended that Engineering Innovation students complete this step as early as possible to ensure there is time to request and implement accommodations.

Learn about [how to get started with student disability services](#) and/or contact [Student Disability Services](#) for more information.

Discrimination and Harassment

JHU will not tolerate harassment, sexual harassment (including sexual violence), discrimination, or retaliation in the workplace or educational environment whether committed by managers, faculty, administrators, staff, students, or by visitors to our institution of higher learning. If you are a victim of any such situation, you are strongly encouraged to file a complaint through official university channels.

You may reach out to the Engineering Innovation office at ei@jhu.edu or submit a [Discrimination and Harassment Report Form](#) to the JHU Office of Institutional Equity.