

## B8136: INTRODUCTION TO PROGRAMMING USING PYTHON SUMMER 2020 (A Term)

### KRISTE KRSTOVSKI

Office Location:

475 Riverside Drive, Office 320-M

Office Phone: 646-745-8480

E-mail: [kriste.krstovski@columbia.edu](mailto:kriste.krstovski@columbia.edu)

Office Hours: Available upon request

**Tuesdays and Thursdays, 5:45pm – 7:15pm**

### TEACHING ASSISTANTS

1. **Ian Ho**, [ian.ho@columbia.edu](mailto:ian.ho@columbia.edu)

Office Hours: TBD

2. **Harsh Mehta**, [hsm2148@columbia.edu](mailto:hsm2148@columbia.edu)

Office Hours: TBD

3. **TBA**

Office Hours: TBD

Communications from professor and teaching assistants about the course will take place through Canvas. Students should make sure they regularly check for announcements and messaging notifications.

---

### COURSE DESCRIPTION

This course is an introduction to programming using Python for total beginners. Python is a very popular programming language used by numerous technology companies including Google, Facebook, Dropbox, Instagram, Reddit, etc. It's used for all sorts of things like building websites, web scraping, data analysis, machine learning, natural language processing, robotics, etc. Python is designed to be easy to read and use, while still being very powerful, which makes it a great language for beginners to learn.

In this course, we'll be learning the basics of programming including programming statements, variables, strings, lists, functions, and all that stuff – but we'll be doing it with a focus on business use cases. You'll learn how to write scripts that automate tedious tasks, read other people's code, parse and interpret data, interact with Application Programming Interfaces (APIs), and build web scrapers.

This might be one of the most useful classes you ever take.

### REQUIRED PREREQUISITES

This course assumes no previous knowledge of programming or code.

### REQUIRED COURSE MATERIALS

- This course does not use a textbook.
- Any required readings will be provided via Canvas.
- Students must have a laptop that they can bring to class – Mac or PC is fine, as long as your operating system is up to date (at least Windows 7 and Mac OS 10.8).
- Slides and files will be uploaded to Canvas after class.

**CLASSROOM NORMS AND EXPECTATIONS**

Students are expected to adhere to CBS Core Culture in this class by being Present, Prepared, and Participating.

**COURSE ROADMAP/SCHEDULE**

Session	Topic	Assignment Due
<b>Week 1</b>	<b>Python Bootcamp:</b> <ul style="list-style-type: none"> <li>• Overview of the course</li> <li>• What is Python?</li> <li>• Installing Python</li> <li>• Command line basics</li> <li>• Running Python scripts</li> <li>• Reading code</li> <li>• Printing</li> <li>• Errors and debugging</li> <li>• Comments</li> </ul>	Pre-work for Class 1 (Individual)
<b>Week 2</b>	<b>Python Bootcamp:</b> <ul style="list-style-type: none"> <li>• Variables and naming</li> <li>• Numbers and math</li> <li>• Strings and text</li> <li>• Getting user input</li> <li>• If/Else statements</li> <li>• Logic in Python</li> <li>• Lists</li> <li>• Loops</li> <li>• Dictionaries</li> </ul>	Assignment 1 Due
<b>Week 3</b>	<b>Python Bootcamp pt. 2:</b> <ul style="list-style-type: none"> <li>• Functions</li> <li>• Importing</li> <li>• The Python Standard Library</li> <li>• Third-party libraries</li> </ul>	Assignment 2 Due
<b>Week 4</b>	<b>APIs with Python:</b> <ul style="list-style-type: none"> <li>• Understanding APIs</li> <li>• Installing packages to interact with APIs in Python</li> </ul>	Assignment 3 Due
<b>Week 5</b>	<b>Web Scraping in Python:</b> <ul style="list-style-type: none"> <li>• Intro to HTML</li> <li>• Web scraping using Python</li> <li>• Saving data to CSV</li> </ul>	Assignment 4 Due
<b>Week 6</b>	<b>Data Analysis in Python</b> <ul style="list-style-type: none"> <li>• Running Jupyter Notebook</li> <li>• Importing data</li> <li>• Selecting data</li> </ul>	Assignment 5 Due

	<ul style="list-style-type: none"> <li>• Cleaning data</li> <li>• Plotting</li> <li>• Linear Regression</li> </ul>	
<b>Due:</b> <b>Monday, July 6th</b>	<b>Final Project Proposal</b>	Assignment 6 Due Python WOW Proposal Due
<b>Due:</b> <b>Monday, July 13th</b>	<b>Final Project</b>	Python WOW Due

### METHOD OF EVALUATION

Apart from class participation (30% of the total grade), the other course deliverables consist of a set of homework assignments (30%) and a take-home final project (40%).

- Class participation: We will ask that you prepare problems or questions prior to coming to class that we will use in our class discussions. Your class contributions will contribute to the corresponding part of your grade.
- There will be six homework assignments that should be completed individually.
- There is a take-home final project that will cover many topics in the course. The take-home final can be completed individually or with a partner.

### ASSIGNMENTS

There will be 6 homework assignments (one for each week). All of your assignment submissions are subject to the [CBS Honor Code](#). Violations of the CBS Honor Code may lead to failing the assignment, failing the course, suspension, and/or dismissal. In order to avoid ambiguity that may lead to unintentional violations of the Honor Code, assignment description types will be standardized and specified.

### ATTENDANCE POLICY

Students are required to attend each class. Students should reach out to the [Office of Student Affairs \(OSA\)](#) by using Core Absence Form on this course's Canvas page regarding excused absences (for religious observances; personal, medical, and family emergencies; military service; court appearances such as jury duty). Unexcused absences will affect your course grade as follows:

- Students that miss more than **33%** of their classes (unexcused absences) will at most receive a **P for the course grade**
- Students that miss more than **50%** of their classes (unexcused absences) will receive a **F for the course grade**

In addition to the effect on your final course grade, absences may also affect your final exam grades as follows:

- Students that miss the exam for an **excused** reason but are unable to take the exam within the stated make-up period will receive a **zero for the final exam grade**
- Students that miss the exam without notifying OSA (**unexcused**), will receive an **F for the course grade**

This course may use PollEverywhere as a tool to increase in-class student engagement. PollEverywhere may also be used to confirm student attendance and participation records.

If a student is absent from class and is allowed to attend a different cluster's class meeting, it is at the discretion of the faculty member to count responses to any polls presented during this time as attendance or participation.

Responding to a poll when not present in the classroom is a violation of the Honor Code.

### **INCLUSION, ACCOMMODATIONS, AND SUPPORT FOR STUDENTS**

At Columbia Business School, we believe that diversity strengthens any community or business model and brings it greater success. Columbia Business School is committed to providing all students with the equal opportunity to thrive in the classroom by providing a learning, living, and working environment free from discrimination, harassment, and bias on the basis of gender, sexual orientation, race, ethnicity, socioeconomic status, or ability.

Columbia Business School will make reasonable accommodations for persons with documented disabilities. Students are encouraged to contact the Columbia University's Office of Disability Services for information about registration. Students seeking accommodation in the classroom may obtain information on the services offered by Columbia University's Office of Disability Services online at [www.health.columbia.edu/docs/services/ods/index.html](http://www.health.columbia.edu/docs/services/ods/index.html) or by contacting (212) 854-2388.

Columbia Business School is committed to maintaining a safe environment for students, staff and faculty. Because of this commitment and because of federal and state regulations, we must advise you that if you tell any of your instructors about sexual harassment or gender-based misconduct involving a member of the campus community, your instructor is required to report this information to a Title IX Coordinator. They will treat this information as private, but will need to follow up with you and possibly look into the matter. Counseling and Psychological Services, the Office of the University Chaplain, and the Ombuds Office for Gender-Based Misconduct are confidential resources available for students, staff and faculty. "Gender-based misconduct" includes sexual assault, stalking, sexual harassment, dating violence, domestic violence, sexual exploitation, and gender-based harassment. For more information, see <http://sexualrespect.columbia.edu/gender-based-misconduct-policy-students>.