Intro to Programming Using Python
Fall 2020 (B Term)

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Wednesdays 5:45PM – 9:00PM @

Course Description

This course is an introduction to programming with Python for total beginners. Python is a really popular programming language used by companies like Google, Facebook, Dropbox, Instagram, Reddit, and many startups. It’s used for all sorts of things like building websites, web scraping, data analysis, machine learning, and natural language processing. 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 – variables, strings, lists, functions, and all that stuff – and then we will 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, and how to put it all together in order to leverage data in the real world to drive value in business.

This might be one of the most useful classes you ever take – but you will get out of it what you put in.

Required Prerequisites

This course assumes no previous knowledge of programming or code.

Required Course Material

- 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.
## Course Roadmap/Schedule

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<tr>
<th>Session</th>
<th>Topic</th>
<th>Assignment Due</th>
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<tbody>
<tr>
<td>Class 1</td>
<td><strong>Python Bootcamp:</strong>&lt;br&gt;• Intro to Python&lt;br&gt;• Command line basics&lt;br&gt;• Running Python scripts&lt;br&gt;• Reading code&lt;br&gt;• Printing&lt;br&gt;• Errors and debugging&lt;br&gt;• Comments&lt;br&gt;• Variables and naming&lt;br&gt;• Numbers and math&lt;br&gt;• Strings and text&lt;br&gt;• Getting user input</td>
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<tr>
<td>Class 2</td>
<td><strong>Python Bootcamp pt. 2:</strong>&lt;br&gt;• If/Else statements&lt;br&gt;• Logic in Python&lt;br&gt;• Lists&lt;br&gt;• Loops</td>
<td>Assignment 1 Due</td>
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<td>Class 3</td>
<td><strong>Python Bootcamp pt. 2:</strong>&lt;br&gt;• Dictionaries&lt;br&gt;• Functions&lt;br&gt;• Importing</td>
<td>Assignment 2 Due</td>
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<td>Class 4</td>
<td><strong>Intro to Data:</strong>&lt;br&gt;• <strong>Jupyter Notebooks</strong>&lt;br&gt;• Intro to Pandas&lt;br&gt;• DataFrames&lt;br&gt;• Accessing Data&lt;br&gt;• Reading/Writing Data&lt;br&gt;• Data Types&lt;br&gt;• Manipulating DataFrames</td>
<td>Assignment 3 Due</td>
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<td>Class 5</td>
<td><strong>Data Analysis in Python pt. 1:</strong>&lt;br&gt;• Sorting&lt;br&gt;• Basic Plotting&lt;br&gt;• Data Exploration</td>
<td>Assignment 4 Due</td>
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<td>Class 6</td>
<td><strong>Data Analysis in Python pt. 2:</strong>&lt;br&gt;• Aggregations&lt;br&gt;• Operations&lt;br&gt;• Null values&lt;br&gt;• Dates&lt;br&gt;• Basics of Joins</td>
<td>Assignment 5 Due</td>
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METHOD OF EVALUATION

Final grades in the class will be calculated as follows:

- Participation (30%): Students will contribute in class by sharing solutions to challenges on Slack (an online instant messaging and chatroom tool).
- Assignments (50%): There will be four homework assignments that should be completed individually.
- Final Project (20%): There is a take-home final project that should be completed with a partner.

Late assignments will be accepted with a 20% penalty any time before the final class. No assignments will be accepted after the final class.