**B8136: Intro to Programming Using Python**

**Fall 2019 (A Term)**

**MATTAN GRIFFEL**

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Office Hours: Available upon request

Thursdays 5:45PM – 7:15PM @ URI 142

***NOTE: This is a hybrid online/offline course consisting of one and a half (1.5) hours of online video and one and a half (1.5) hours of in-person class time per week. Watching the online videos is mandatory and must be completed before the in-person class each week.***

**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, and Reddit. 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 – 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 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 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.

**Online Video**

Each week, students will be expected to watch approximately one and a half hours of additional online video content before attending class. Material in the class will build on the content covered online, and students should be prepared to answer questions related to online material.

Video content will be provided via Canvas.

**Course Roadmap/Schedule**

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| **Session** | **Topic** | **Assignment Due** |
| **Class 1**  Tuesday, Sep 3  5:45pm – 7:15pm | **Python Bootcamp**:   * Intro to Python * Command line basics * Running Python scripts * Reading code * Printing * Errors and debugging * Comments * Variables and naming * Numbers and math * Strings and text * Getting user input | Pre-work for Class 1 Due |
| **Class 2**  Tuesday, Sep 10  5:45pm – 7:15pm | **Python Bootcamp pt. 2**:   * If/Else statements * Logic in Python * Lists * Loops | Pre-work for Class 2 Due  Assignment 1 Due |
| **Class 3**  Tuesday, Sep 17  5:45pm – 7:15pm | **Python Bootcamp pt. 2**:   * Dictionaries * Functions * Importing | Pre-work for Class 3 Due  Assignment 2 Due |
| **Class 4**  Tuesday, Sep 24  5:45pm – 7:15pm | **APIs with Python**:   * Understanding APIs * Installing packages to interact with APIs in Python | Pre-work for Class 4 Due  Assignment 3 Due |
| **Class 5**  Tuesday, Oct 1  5:45pm – 7:15pm | **Web Scraping in Python**:   * Writing a web scraper in Python * Saving data to CSV | Pre-work for Class 5 Due  Assignment 4 Due |
| **Class 6**  Tuesday, Oct 8  5:45pm – 7:15pm | **Data Analysis in Python**   * Running Jupyter notebook * Importing data from Excel/CSV * Selecting data * Linear regressions with Matplotlib * Pair plotting with Seaborn * Cleaning data | Pre-work for Class 6 Due |
| **Due**  Sunday, Oct 14  Midnight | **Final Project Proposal** | Python WOW Proposal Due |
| **Due**  Sunday, Oct 21  Midnight | **Final Project** | Python WOW Due |

**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 (40%): There will be four homework assignments that should be completed individually.
* Final Project (30%): 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.