**Intro to Programming with Python – Fall 2016**

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**Class schedule:**

**Course description**

This course is an introduction to programming with Python for total beginners. Python is a really popular language used by companies like Google, Facebook, Dropbox, Instagram, and Reddit. Python is used for all sorts of things like building websites, web scraping, data analysis, machine learning, and natural language processing. The language is designed to be easy to read, 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.

**Textbook**

The course will be accompanied by online video lessons on OneMonth.com for you to complete in your own time (roughly 2-3 hours per week) to supplement the in-person classes.

**Prerequisites / Connections to the Core**

This course assumes no previous knowledge of programming or code. I will assume that you’re fairly comfortable using a computer and can navigate the internet using a web browser.

Students will need to own a laptop that they can bring to class. Both Macs and PCs are fine, as long as your operating system is relatively up to date (at least Windows 7 and Mac OS 10.8).

**Course deliverables**

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

* Class participation: I will ask that you be engaged and follow along with the demonstrations in class. Your contribution will contribute to the corresponding part of your grade.
* There will be four homework assignments that should be done individually.
* There is a final project that will cover many topics in the course. The final is a paired assignment that will be completed with a partner.

**Summary of the course:**

The course will consist of three full-day in-person classes accompanied by 2-3 hours per week of online video lessons for you to complete in your own time.

* Class 1 (Oct 14): Setup & Introduction to Python
* Class 2 (Oct 28): APIs & Web Scraping
* Class 3 (Dec 9): Web Apps & Data Analysis

**Detailed syllabus**

**Class 1**

**Setup & Introduction to Python**

Overview of the course. Setting up your development environment. Python 2 vs 3; Command Line basics; errors and debugging; printing; comments; numbers and math; variables and names; strings and text; capturing user input.

Functions; if statements; logic in Python; lists; loops; dictionaries.

**Class 2**

**APIs**

Accessing APIs; Reading Documentation; Hiding API keys in environment variables; import.

**Web Scraping**

HTML and CSS; Web Scraping; Exporting Data to CSV; Exporting Data to Google Spreadsheets; Auto-scheduling with Heroku.

**Class 3**

**Web Apps**

Web app development with Flask; Git and Github; Heroku.

**Data Analysis**

Pandas; Jupyter Notebook; Matplotlib; linear regressions.