Accelerated Python
Syllabus for Summer 2017

https://iotopia-solutions.com/training/AcceleratedPython

Course Objectives

This course will get you productive with Python in just three days. You'll learn not just the basic syntax and Python's take on object orientation but also special topics like database handling and server deployment. You'll also learn about Python's famous "batteries included" standard library.

Course Content

Python is one of the most in-demand languages today (#2 on Google Trends and #3 on GitHub[1]) and it's still gaining popularity. This course covers its syntax and a useful subset of its extensive standard library, plus looks at best practices for documentation and testing. Functions, variables, classes, objects, modules, lists, dictionaries, and tuples will all be discussed in detail, along with file handling, basic input and output, basic database use, decorators, regular expressions, JSON, and list comprehensions. We'll also look at the differences between Python 2 and Python 3, as both are in heavy use in industry. Finally, we'll look at real-world deployment situations including tools like virtualenv. Besides serving as a solid foundation for more advanced Python programming, the material in this course is by itself sufficient to enable you to take on many Python tasks immediately.

Student Background

Before attending this course you should have some familiarity with some other programming language. This course will be focusing on how to do typical programming things in Python, not on the typical programming things themselves.

Computer Requirements

Modern Python can be run on most hardware in use today. For the purposes of this class we'd recommend you use a reasonably new laptop running something like Mac OS X (10.6+), Microsoft Windows 7+, or any recent version of Linux.

Suggested Reading

Python has an excellent tutorial available online at: https://docs.python.org/3/tutorial/
Likewise all of its reference materials can be found at: https://docs.python.org/
If you like the feel of a book in your hand, *Core Python Programming* by Wesley Chun is a good start.

[1] As of this writing.

Class Schedule

This class will run for three eight-hour days. Each day will be broken up with a break in the morning, afternoon, and at lunch time. Work periods will consist of a lecture on a topic followed by exercises to reinforce it.

Day 1: The Basics

Variables: types, booleans, numbers, strings, nulls, undefineds, symbols, and scope. Conditionals. Loops and ranges. List comprehensions. Exceptions. Functions. Lambdas. Decorators. Basic introspection.

Day 2: More on the Client Side

Classes and objects. Modules. File input and output. The basics of iterators and generators. Overview tour of the Standard Library. Regular expressions. Dates and times. JSON. Basic database handling. Docstrings.

Day 3: More on the Server Side

Logging. Unit testing. Data Structures. Compression. Binary data formats. HTTP clients. XML-RPC clients. Multiple processes. Virtualenv. Pip.