

Python Primer for Data Scientists | Quickstart to Python Basics (TTPS4871)

Modality: Virtual Classroom

Duration: 1 Day

SUBSCRIPTION: No

About this course:

Python Primer for Data Scientists – A Technical Overview is a one-day course that introduces data analysts and business analysts (as well as anyone interested in Data Science) to the Python programming language, as it's often used in Data Science in web notebooks. This goal of this course is to provide students with a baseline understanding of core concepts that can serve as a platform of knowledge to follow up with more in-depth training and real-world practice.

The course begins with quick overview of Python, with demonstrations of both script-based and web notebook-based Python, and then dives into the essentials of Python necessary to a data scientist. The tail end of the course explores a quick integration of these skills with key Data Science libraries including NumPy, Pandas, SciKit, and Matplotlib.

The average salary of a Python programmer is **\$128,750** per year.

Course Objective:

Throughout the course students will be led through a series of progressively advanced topics, where each topic consists of lecture, demo, hands-on lab exercises, and lab review. This course is “skills-centric”, designed to train attendees in core Python data science skills at an introductory level, coupling the most current, effective techniques with best practices.

Working within in an engaging, hands-on learning environment, guided by our expert, students will explore:

- How to work with Python interactively in web notebooks
- The essentials of Python scripting
- Key concepts necessary to enter the world of Data Science via Python

Audience:

- This **introductory-level** course is intended for Business Analysts and Data Analysts (or anyone else in the data science realm) who are already comfortable working with numerical data in Excel or other spreadsheet environments. No prior programming experience is required, and a browser is the only tool necessary for the course.

Prerequisite:

Take Before: Students should have skills at least equivalent to the following course(s) or should have attended as a pre-requisite:

- Understanding Data Science | A Technical Overview – 1 day (helpful but not required)
- Working with Excel

Course Outline:

Module 1: An Overview of Python

- Why Python?
- Python in the Shell
- Python in Web Notebooks (iPython, Jupyter, Zeppelin)
- Demo: Python, Notebooks, and Data Science

Module 2: Getting Started

- Using variables
- Builtin functions
- Strings
- Numbers
- Converting among types
- Writing to the screen
- Command line parameters

Module 3: Flow Control

- About flow control
- White space
- Conditional expressions
- Relational and Boolean operators
- While loops
- Alternate loop exits

Module 4: Sequences, Arrays, Dictionaries and Sets

- About sequences
- Lists and list methods
- Tuples
- Indexing and slicing
- Iterating through a sequence
- Sequence functions, keywords, and operators
- List comprehensions
- Generator Expressions
- Nested sequences
- Working with Dictionaries
- Working with Sets

Module 5: Working with files

- File overview
- Opening a text file
- Reading a text file
- Writing to a text file
- Reading and writing raw (binary) data

Module 6: Functions

- Defining functions
- Parameters
- Global and local scope
- Nested functions
- Returning values

Module 7: Essential Demos

- Sorting
- Exceptions
- Importing Modules
- Classes
- Regular Expressions

Module 8: The standard library

- Math functions
- The string module

Module 9: Dates and times

- Working with dates and times
- Translating timestamps
- Parsing dates from text
- Formatting dates
- Calendar data

Module 10: Python and Data Science

- Data Science Essentials
- Pandas Overview
- NumPy Overview
- SciKit Overview
- Matplotlib Overview
- Working with Python in Data Science