



## Python for Data Science Primer | Hands-On Technical Overview

Explore Python Basics for Business and Data Analysis

[www.triveratech.com](http://www.triveratech.com)

### Course Snapshot

- **Course:** Python Primer for Data Science | Hands-on Technical Overview (TTPS4872)
- **Duration:** 2 days
- **Audience & Skill-Level:** This **introductory-level** course is for anyone in IT interested in some light hands-on basic exposure to leveraging Python for data science and analytics.
- **Hands-on Learning:** This course is approximately **40% hands-on to 60% lecture ratio**, combining expert lecture, real-world demonstrations and group discussions with machine-based practical labs and exercises. Student machines are required.
- **Delivery Options:** This course is available for **onsite private classroom presentation, live online virtual presentation**, or can be presented in a **flexible blended learning format** for combined onsite and remote attendees. Please also ask about our **Self-Paced / Video / QuickSkills or Mini-Camp Flex Hours / Short Course** options.
- **Public Schedule:** This course has active dates on our live-online open enrollment **Public Schedule**.
- **Customizable:** This course agenda, topics and labs can be further adjusted to target your specific training skills objectives, tools and learning goals. Please inquire for details.

### Overview

**Python for Data Science Primer** is a two-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 and Matplotlib. This class is hands-on and includes light programming labs that introduce students to basic Python syntax and concepts applicable to using Python to work with data.

NOTE: Students heading into real project work right after training might consider a more robust hands-on course with deeper topics and lab coverage for similar subjects, such as the TTPS4873 Introduction Python for Data Science

### Learning Objectives

This course is approximately **40% hands-on**, combining expert lecture, real-world demonstrations and group discussions with machine-based practical labs and exercises. Our engaging instructors and mentors are highly experienced practitioners who bring years of current "on-the-job" experience into every classroom. Throughout the hands-on course students will learn to leverage Python scripting for data science (to a basic level) using the most current and efficient skills and techniques.

Working in a hands-on learning environment, guided by our expert team, attendees will learn about and explore (to a basic level):

- 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

**Need different skills or topics?** If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional python, data science, AI / machine learning and other related topics that may be blended with this course for a track that best suits your needs. Our team will collaborate with you to understand your needs and will target the course to focus on your specific learning objectives and goals.

### Audience & Pre-Requisites

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.

**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

**Take Instead:**

- Students who want a quicker overview session without the hands-on might consider the **TTPS4871 Python Primer for Data Science Overview** one day lecture / demo only course as an alternative.
- Students faced with real project work who want a more robust introduction to these topics should consider the three-day **TTPS4873 JumpStart to Python Programming for Data Science** with extended topics labs.

**Follow On Courses:** Our core Python, data science and machine learning training courses provide students with a solid foundation for continued learning based on role, goals, or their areas of specialty. Our learning paths offer a wide variety of related follow-on courses such as:

- TTML6802 Machine Learning Essentials with Python (3 days)
- TTPS4876 Next Level Python in Data Science (Intermediate) (5 days)
- Please see the attached **Python Training Suite** or **Machine Learning Series** list for additional topics and titles.

**Enhanced Learning Services:** Please also ask about our **Pre-Training Class OnRamp & Prep / Primer** offerings, **Skills Gap Assessment Services, Case Studies, Knowledge Check Quizzes, Skills Immersion Programs & Camps, Collaborative Mentoring Services** and **Extended Learning Support & Post Training** services.

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## Course Topics / Agenda

*Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We'll work with you to tune this course and level of coverage to target the skills you need most. Topics, agenda and labs are subject to change, and may adjust during live delivery based on audience interest and skill-level.*

### 1. An Overview of Python

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

### 2. Getting Started

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

### 3. Flow Control

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

- Alternate loop exits

### 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

### 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

### 6. Functions

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

### 7. Essential Demos

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

### 8. The standard library

- Math functions
- The string module

### 9. Dates and times

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

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

**10. Python and Data Science**

- Data Science Essentials

**Student Materials:** Each student will receive a **Student Guide** with course notes, code samples, software tutorials, diagrams and related reference materials and links (as applicable). Our courses also include step by step hands-on lab instructions and solutions, clearly illustrated for users to complete hands-on work in class, and to revisit to review or refresh skills at any time. Students will also receive related (as applicable) project files, code files, data sets and solutions required for the hands-on work.

**Classroom Setup Made Simple:** Our dedicated tech team will work with you to **ensure your classroom and lab environment is setup, tested and ready to go** well in advance of the course delivery date, ensuring a smooth start to class and seamless hands-on experience for your students. We offer several flexible student machine setup options including **guided manual set up** for simple installation directly on student machines, or **cloud based / remote hosted lab solutions** where students can log in to a complete separate lab environment minus any installations, or we can supply **complete turn-key, pre-loaded equipment** to bring ready-to-go student machines to your facility. Please inquire for details, options and pricing.

**For More Information**

All courses can be presented **onsite** or **online**, or in a **combined / flex / blended learning format**, tailored to target your specific audience, needs and learning goals. We also offer focused, flexible **short courses, self-paced learning** options, **recorded sessions** and more. We train beginner to advanced skills in all areas we cover, and offer **New Hire / Cohort Training, Boot Camps, Skills Immersion Programs, Reskilling Programs, Skills Migration & Transition Programs**, and more. We collaborate with you to ensure all courses are truly targeted to meet your specific needs and learning skills, maximizing your valuable training time, as well as your important budget.

Please also visit our extensive **Public Training Schedule** for training for smaller groups or individuals. Please contact us for course details, **Corporate Rates** and **Special Discount Offers**.

**For more information** about our dedicated training services, collaborative coaching services, courseware licensing and development services, public course schedule, training management services, partner programs, or to see our complete list of course offerings and special offers please visit us at [www.triveratech.com](http://www.triveratech.com), email [Info@triveratech.com](mailto:Info@triveratech.com) or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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