Python SkillJourney Series

Mastering Python Programming Boot Camp (TTPS4820)

Hands-on, Complete Python: Core Python Skills, Regular Expressions, Classes, OO, Binary Data, Network Services & More

Course Snapshot

- **Course: Mastering Python Programming Boot Camp (TTPS4820)**
- **Duration**: 5 days
- **Audience & Skill-Level**: This **introductory-level course** provides an excellent kick start for technical users new to Python. Students should have some prior hands-on experience with scripting or programming. You don't need to be an expert in either, but you should have had some exposure and should be coming from a technical background.
- **Format / Hands-on:** This course combines engaging instructor-led presentations and practical demonstrations with hands-on programming exercises, challenge labs, use case exploration and engaging group activities. Student machines are required.
- **Flexible Delivery Options**: This course can be delivered for your team or organization **online-live (virtual)**, **onsite in-person, self-paced** or across our immersive **blended learning experience platform (LXP).**
- **Public Schedule**: This course is currently available on our Public Open Enrollment Schedule.
- **Customizable**: We're flexible! This course agenda, topics, labs, hours and delivery modalities can be adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

Description

As a cornerstone of our **Python SkillJourney** series, our **Mastering Python Programming Boot Camp** stands as a top-tier training experience, acclaimed for transforming Python novices into capable developers. Whether you aim to streamline routine tasks through automated Python scripts or venture into the world of web development, this course serves as both a launchpad and a compass, guiding you toward exciting horizons in analytics, data science, machine learning, and beyond.

Working in a hands-on learning environment, you'll be guided through an immersive journey from Python's foundational elements, like script writing and running, all the way to its more sophisticated capabilities—think file operations, regular expressions, and binary data manipulation. We place particular emphasis on Python-exclusive features, such as tuples, array slices, and nuanced output formatting, ensuring that you not only know Python but know it well. The curriculum is designed for practicality, immersing you into Python's extensive module functionality and ensuring that your learning translates directly into real-world task execution.

The course is rich with hands-on activities, challenge labs, knowledge checks, valuable discussions and focused projects that can be done individually or in groups. Guided by our engaging, highly-experienced instructor, you'll work within our user-friendly **Learning Experience Platform (LXP)** online environment, that combines the best aspects of in-person live training with our robust hands-on online environment. Our LXP is rich with robust content, immersive real-world hands-on labs and activities, projects, case studies, and also integrated with our unique CodeCoach.AI anytime support assistant. You'll have extensive opportunities for live engagement, practice and review. You'll exit this program equipped with the knowledge, skills and confidence needed to put your new Python skills right to work.

Learning Objectives

This course combines engaging instructor-led presentations and useful demonstrations with valuable hands-on labs and engaging group activities. Throughout the course you'll learn how to:

- Create working Python scripts following best practices
- Use python data types appropriately
- Read and write files with both text and binary data
- Search and replace text with regular expressions
- Get familiar with the standard library and its work-saving modules

- Use lesser known but powerful Python data types
- Create real-world, professional Python applications
- Work with dates, times, and calendars
- Know when to use collections such as lists, tuples, dictionaries, and sets
- Understand Pythonic features such as list comprehensions and generators
- Write robust code using exception handling
- Create and use virtual environments

If your team requires different topics, additional skills or a custom approach, our team will collaborate with you to adjust the course to focus on your specific learning objectives and goals.

Audience

This course is geared for technical users who are new to Python. Roles might include developers, software engineers, data analysts who want to enhance data processing, system administrators and web site administrators who want to use Python to support their server installations, developers who want more efficient web solutions, as well as anyone else who wants to automate or simplify common tasks with the use of Python scripts.

If you are coming from a non-technical background, you might consider the TTPS4803: Python for Everyone: Getting Started with Python Basics for Non-Developers (4 days) as an alternative to this course.

Pre-Requisites

To ensure a smooth learning experience and maximize the benefits of attending this course, you should have the following prerequisite skills:

- At least some prior hands-on experience with scripting or programming. You don't need to be an expert in either, but you should have had some exposure and should be coming from a technical background.
- Working with Unix or Linux, and familiarity with using the command line interface for simple tasks, such as file navigation and executing commands.
- Basic familiarity working with text editors like Notepad, or IDEs, would be helpful as the course includes hands-on lab sessions requiring code editing.

Take After/ Follow On: We offer a wide variety of follow-on courses and learning paths for leveraging Python for next-level development, data science and analytics, AI and machine learning, automation, testing, networking, security and more. The following course(s) might serve as good next steps in your learning journey. Please see our site for a complete list.

- TTPS4850 Advanced Python Programming (4 days)
- TTPS4876 Intermediate Python for Data Science & Machine Learning (5 days)
- TTPS4878 Hands-on Data Analysis using Pandas (3 days)
- TTPS4879 Hands-on Predictive Analysis with Python (3 days)
- TTPS4876 Intermediate / Next-Level Python for Data Science & Machine Learning (5 days)
- TTPS4880 Hands-On Practical Python for Data Wrangling & Transformation (3 days)
- TTPS4883 Forecasting, Behavioral Analysis, and What-If Scenarios with Python (3 days)

Related Intro Level Courses

The following is a small subset of related courses. See the online catalog for a complete list of courses and learning paths.

- TTPS4803 Python for Everyone: Getting Started with Python Basics for Non-Developers (4 days)
- TTPS4800 Introduction to Python Programming Basics (3 days)
- TTPS4820 Python Boot Camp / Mastering Python Programming (5 days)
- TTPS4872 Python Primer for Data Science (Light-Hands-on) (2 days)
- TTPS4873 Quick Start to Python for Data Science and Machine Learning (3 days)
- TTPS4874 Applied Python for Data Science & Engineering (4 days)
- TTPS4894 Introduction to Python for Security Pros (4 days)

Next -Steps / Follow On Courses: Please see our **Python Pro Training Suite & Learning Paths** or our **AI & Machine Learning Courses, Learning Journeys & Skills Roadmaps** or inquire for recommendations based on your specific role and goals.

Enhanced Learning Services: Please also ask about our robust Learning Experience Platform (LXP), Skills Assessment & Skills Prep Services, Skills Immersion Programs & Camps, Coaching and Mentoring Services and Extended Learning Support programs.

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 skill level, interests and participation.

1. The Python Environment
- Starting Python
- Using the interpreter
- Running a Python script
- Editors and IDEs

2. Variables and Values
- Using variables
- Builtin functions
- String data
- Numeric data
- Converting types

3. Basic input and output
- Writing to the screen
- String formatting
- Command line arguments
- Reading the keyboard

4. Flow Control
- About flow control
- The **if** statement
- Relational and Boolean values
- **while** loops
- Exiting from loops

5. Array types
- Sequence types in general
- Lists and list methods
- Tuples
- Indexing and slicing
- Iterating through a sequence
- Sequence functions, keywords, and operators
- List comprehensions and generators

6. Working with files
- File I/O overview
- Opening a text file
- Reading a text file
- Writing to a text file

7. Dictionaries and Sets
- About dictionaries
- Creating dictionaries
- Getting values
- Iterating through a dictionary
- About sets
- Creating sets
- Working with sets

8. Functions
- Defining functions
- Returning values
- Parameters and arguments
- Variable scope

9. Sorting
- The `sorted()` function
- Custom sort keys
- Lambda functions
- Sorting in reverse
- Using `min()` and `max()`

10. Exception handling and logging
- Exceptions
- Using try/catch/else/finally
- Handling multiple exceptions
- Logging setup
- Basic logging

11. Modules and Packages
- Creating Modules
- The `import` statement
- Module search path
- Using packages
- Function and Module aliases

12. Introduction to Classes
- About object-oriented programming
- Defining classes
- Constructors
- Understanding `self`
- Properties
- Instance Methods and data
- Class methods and data
- Inheritance

13. Regular Expressions
- RE syntax overview
- RE objects
- Searching and matching
- Compilation flags
- Groups and special groups
- Search-and-replace
- Splitting strings

14. Dates and times
- Date and time representations
- Parsing dates from text
- Formatting as text
- Converting representations
- Calendar data
- Time zones

15. Working with the file system
- Paths, directories, and filenames
- Checking for existence
- Permissions and other file attributes
- Walking directory trees
- Using shutil for file operations

16. Advanced data handling
- Defaultdict and Counter

- Pretty-printing data structures
- Compressed archives (zip, gzip, tar, etc.)
- Persistent data

17. Network programming

- Using requests
- Grabbing web content
- Sending email
- Using SSH for remote access
- Using FTP

18. Effective Scripts

- Reading input files a la Unix
- Parsing command-line options
- Detecting the current platform
- Implementing logging

19. Virtual Environments

- Why are virtual environments needed
- Creating a virtual env
- Replicating an environment
- Virtual environment issues

Addendum & Resources

Setup Made Simple! Learning Experience Platform (LXP)

All applicable course software, digital courseware files or course notes, labs, data sets and solutions, live coaching support channels, CodeCoach.AI anytime tutor access, and rich extended learning and post training resources are provided for you in our "easy access, single source, no install required" online **Learning Experience Platform (LXP),** remote lab and content environment. Access periods vary by course. We'll collaborate with you to ensure your team is set up and ready to go well in advance of the class. Please inquire about set up details and options for your specific course of interest.

For More Information

For more information about our training services (instructor-led, self-paced or blended), collaborative coaching services, robust Learning Experience Platform (LXP), Career Experiences, public course schedule, partner programs, courseware licensing options or to see our complete list of course offerings, solutions and special offers, please visit us at **www.triveratech.com**, email **Info@triveratech.com** or call us toll free at **844-475-4559.** Our pricing and services are always satisfaction guaranteed.

TRIVERA TECHNOLOGIES • Collaborative IT Training, Coaching & Skills Development Solutions
www.triveratech.com • toll free +1-844-475-4559 • Info@triveratech.com • Twitter TriveraTech

ONSITE, ONLINE & BLENDED TRAINING SOLUTIONS • PUBLIC / OPEN ENROLLMENT COURSES
LEARNING EXPERIENCE PLATFORM (LXP) • COACHING / MENTORING • ASSESSMENTS • CONTENT LICENSING & DEVELOPMENT
LEARNING PLAN DEVELOPMENT • SKILLS IMMERSION PROGRAMS / RESKILLING / NEW HIRE / BOOT CAMPS
PARTNER & RESELLER PROGRAMS • CORPORATE TRAINING MANAGEMENT • VENDOR MANAGEMENT SERVICES

Trivera Technologies is a Woman-Owned Small-Business Firm