Applied Python for Data Science & Engineering (TTPS4874)

Category: AI, Data & Analytics | **Vendor:** Trivera Tech

Duration: 32.00 hours (4 days) **26.0 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

Applied Python for Data Science & Engineering®is a hands-on introductory-level course that provides you with a ramp-up to using Python for scientific and mathematical computing. Working in a hands-on learning environment, you'll learn basic Python scripting skills and concepts, as well as the most important Python modules for working with data, from arrays, to statistics, to plotting results.

About This Course

Geared for scientists and engineers with limited practical programming background or experience, Applied Python for Data Science & Engineering is a hands-on introductory-level course that provides you with a ramp-up to using Python for scientific and mathematical computing. Working in a hands-on learning environment, you'll learn basic Python scripting skills and concepts, as well as the most important Python modules for working with data, from arrays, to statistics, to plotting results.

Throughout the course, guided by our expert instructor, you'll gain a robust skill set that will equip you to make data-driven

decisions and elevate operational efficiencies within your organization. You'll explore data manipulation with Pandas,

advanced data visualization using Matplotlib, and numerical analysis with NumPy. You'll also delve into best practices for error and exception handling, modular programming techniques, and automated workflow development, equipping you with the skill set to enhance both the effectiveness and efficiency of your data-driven projects.

Who Should Attend

This introductory-level course is geared for technical professionals new to Python. Roles include data analysts, developers, engineers or anyone tasked with utilizing Python for data analytics tasks. Familiarity with basic

scripting skills is recommended, as this course does not teach general scripting basics.

Prerequisites & Entry Requirements

General Prerequisites:

This introductory-level course is geared for technical professionals new to Python. Roles include data analysts, developers,

engineers or anyone tasked with utilizing Python for data analytics tasks. Familiarity with basic scripting skills is recommended, as this course does not teach general scripting basics.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

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

- Core Python Proficiency: By the close of the course, participants will have a firm grasp on the foundational elements of Python, such as variables, data types, and flow control, empowering them to write scripts and build simple programs with confidence.
- Analytical Problem-Solving: Utilizing libraries such as NumPy and SciPy, students will develop the ability to perform
complex mathematical operations and statistical analyses, significantly amplifying their analytical capabilities for tasks such as data modeling or optimization problems.
- Data Manipulation Mastery: By the end of the course, participants will be proficient in employing Pandas to clean,
transform, and analyze data sets, enabling them to make data-driven decisions effectively.
- Automated Workflow Development: Students will acquire the ability to construct automated scripts using Python's
Standard Library, optimizing repetitive tasks and thereby enhancing operational efficiency in their organizations.
- Advanced Data Visualization: Upon course completion, learners will be equipped to utilize Matplotlib and other Python libraries to craft intricate visual representations of data, facilitating clearer and more impactful reporting and
presentations.
- Error-Resilient Coding: Attendees will learn best practices for implementing robust error and exception handling
techniques, leading to the creation of more stable and secure Python applications.
- Modular Programming Proficiency: By mastering Python functions, modules, and packages, students will be adept at developing modular and maintainable code, a key skill for scalability and collaborative programming projects.

Detailed Course Outline

The Python Environment

About Python

Starting Python

Using the interpreter

Running a Python script

Python scripts on Unix/Windows

Using the Spyder editor

Getting Started

Using variables

Builtin functions

Strings

Numbers

Converting among types

Writing to the screen

String formatting

Command line parameters

Flow Control

About flow control

White space

Conditional expressions (if,else)

Relational and Boolean operators

While loops

Alternate loop exits

Array Types

About sequences

Lists

Tuples

Indexing and slicing

Iterating through a sequence

Using enumerate()

Functions for all sequences

Keywords and operators for all sequences

The range() function

Nested sequences

List comprehensions

Generator expressions

Working with files

File overview

Opening a text file

Reading a text file

Writing to a text file

Raw (binary) data

Dictionaries and Sets

Creating dictionaries

Iterating through a dictionary

Creating sets

Working with sets

Functions, modules, and packages

Four types of function parameters

Four levels of name scoping

Single/multi dispatch

Relative imports

Using __init__ effectively

Documentation best practices

Errors and Exception Handling

Syntax errors

Exceptions

Using try/catch/else/finally

Handling multiple exceptions

Ignoring exceptions

Using the Standard Library

The sys module

Launching external programs

Walking directory trees

Grabbing web pages

Sending e-mail

Paths, directories, and filenames

Dates and times

Zipped archives

Pythonic Programming

The Zen of Python

Common idioms

Named tuples

Useful types from collections

Sorting

Lambda functions

List comprehensions

Generator expressions

String formatting

Introduction to Python Classes

Defining classes

Constructors

Instance methods and data

Attributes

Inheritance

Multiple inheritance

Developer tools

Program development

Comments

pylint

Customizing pylint

Using pyreverse

The unittest module

Fixtures

Skipping tests

Making a suite of tests

Automated test discovery

The Python debugger

Starting debug mode

Stepping through a program

Setting breakpoints

Profiling

Benchmarking

Excel spreadsheets

The openpyxl module

Reading an existing spreadsheet

Creating a spreadsheet from scratch

Modifying an existing spreadsheet

Setting Styles

Serializing Data

Using ElementTree

Creating a new XML document

Parsing XML

Finding by tags and XPath

Parsing JSON into Python

Parsing Python into JSON

Working with CSV

iPython and Jupyter

iPython features

Using Jupyter notebooks

Benchmarking

External Commands

Cells

Sharing Notebooks

Introduction to NumPy

NumPy basics

Creating arrays

Shapes

Stacking

Indexing and slicing

Array creation shortcuts

Matrices

Data Types

Brief intro to SciPy

What is SciPy

The Python science ecosystem

How to use SciPy

Getting Help

SciPy subpackages

Intro to Pandas

Pandas overview & architecture

Series

Dataframes

Reading and writing data

Data alignment and reshaping

Basic indexing

Broadcasting

Removing Entries

Timeseries

Reading Data

Introduction to Matplotlib

Overal architecture

Plot terminology

Kinds of plots

Creating plots

Exporting plots

Using Matplotlib in Jupyter

What else can you do

Upcoming Schedule

Available training dates for Applied Python for Data Science & Engineering (TTPS4874):

Start Date	End Date	Location	Delivery	Price
16 Dec 2026	18 Dec 2026	Online	Virtual	€1,795.00

Additional Course Details

Nexus Humans Applied Python for Data Science & Engineering (TTPS4874) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Applied Python for Data Science & Engineering (TTPS4874) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Applied Python for Data Science & Engineering (TTPS4874)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 4-day Applied Python for Data Science & Engineering (TTPS4874) course provides up to 26.0 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Applied Python for Data Science & Engineering (TTPS4874) training?

The training takes place over 4 day(s), with each day lasting approximately 32.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Applied Python for Data Science & Engineering (TTPS4874)?

Yes, we provide corporate training, dedicated training, and closed classes for Applied Python for Data Science & Engineering (TTPS4874). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Python; Data Science; Data Anlaysis; Machine Learning

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Q: Why choose Nexus Human for Applied Python for Data Science & Engineering (TTPS4874)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Applied Python for Data Science & Engineering (TTPS4874) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

Professional Training & Development

Email: info@nexushuman.com

Website: www.nexushuman.com

Phone: +353 1 889 8700 (Ireland) | +44 20 8142 8961 (UK)

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