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FAST TRACK TO PYTHON IN DATA SCIENCE

Course Code: 100669

Gain Hands-on Experience using Python for Data Analytics | Intro to Python, Pandas, Numpy & More

Fast Track to Python for Data Science and/or Machine Learning is a three-day, hands-on course geared to equip you with the knowledge and skills necessary to handle various data science projects efficiently using Python, one of the most popular languages in the industry. Python's ease of use, extensive libraries, and robust community make it a fantastic choice for professionals seeking to enhance their data science capabilities. From automating small tasks to building complex data models, Python can enable you to streamline your work or provide significant insights for your organization.

Working in a hands-on learning environment led by our expert instructor, you'll also gain experience with Python's core topics like flow control, sequences, arrays, dictionaries, and handling files. You'll delve into functions, sorting, essential demos, the standard library, and even dates and times. You'll learn how to manage syntax errors and exceptions effectively, enhancing your code's resilience and your productivity. You'll delve into how Python it operates within web notebooks such as iPython, Jupyter, and Zeppelin, where you'll practice writing, testing, and debugging your Python code.

You'll also gain practical experience with Python and key data science libraries, enabling you to optimize data handling and create insightful visualizations. You'll explore working with large number sets and transforming data in numpy, reading, writing, and reshaping data with pandas, and creating data visualizations with matplotlib. You'll also gain experience optimizing data handling processes, creating insightful visualizations, or making data-driven decisions.

By the end of this journey, you'll have a solid understanding of Python for data science, including data analysis, manipulation, and visualization, ready to apply these new skills in your work. This course aims not just to teach Python but also to lay a strong foundation for you to continue building upon, enhancing your proficiency in Data Science and enabling you to contribute effectively to your team's data projects.

What You'll Learn

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

- Understand Python's Core Topics: Gain a firm grasp of fundamental Python concepts such as flow control, sequences, arrays, dictionaries, and file handling. This understanding forms the cornerstone of your Python programming journey.
- Navigate Key Python Libraries: Develop proficiency in leveraging the power of Python's primary libraries, numpy and pandas. By the end of the course, you'll be confidently transforming, reshaping data, and handling large number sets.
- Generate Insightful Visualizations: Learn how to create meaningful and visually appealing data visualizations using matplotlib. These skills will enable you to better communicate data-driven insights.
- Efficient Data Handling: Acquire techniques to optimize your data handling processes, enhancing productivity and making your workflow more efficient.
- Manage Errors Effectively: Become proficient in handling common challenges like syntax errors and exceptions, enhancing the reliability and robustness of your Python code.

Hands-on Experience with Web Notebooks: Gain practical experience using interactive web notebooks like iPython, Jupyter, and Zeppelin. These tools offer a dynamic platform for writing, testing, and debugging your Python code, enriching your learning experience.

Who Needs to Attend

This introductory-level technical course is geared for data analysts, developers, engineers or anyone new to Python, who are tasked with utilizing Python for data analytics tasks.

Prerequisites

This course is geared for technical users, so familiarity with basic scripting skills is recommended, as this course does not teach general scripting basics. Students should be comfortable working with files and folders as well as command line scripting.

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VIRTUAL CLASSROOM LIVE	$2,594 CAD	3 Day

Virtual Classroom Live Outline

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
   - Running standalone scripts under Unix and Windows
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. **Sorting**
   - The sorted() function
   - Alternate keys
   - Lambda functions
   - Sorting collections
   - Using operator.itemgetter()
   - Reverse sorting
8. **Errors and Exception Handling**
   - Syntax errors
   - Exceptions
   - Using try/catch/else/finally
   - Handling multiple exceptions
   - Ignoring exceptions
9. **Essential Demos**
   - Importing Modules
   - Classes
   - Regular Expressions
10. **The standard library**
    - Math functions
    - The string module
11. **Dates and times**
    - Working with dates and times
    - Translating timestamps
    - Parsing dates from text
    - Formatting dates
    - Calendar data
12. **Nnumpy**

- Numpy basics
- Creating arrays
- Indexing and slicing
- Large number sets
- Transforming data
- Advanced tricks

13. **Python and Data Science**
    - Data Science Essentials
    - Working with Python in Data Science
14. **Working with Pandas**
    - Pandas overview
    - Dataframes
    - Reading and writing data
    - Data alignment and reshaping
    - Fancy indexing and slicing
    - Merging and joining data sets
15. **Working with matplotlib**
    - Creating a basic plot
    - Commonly used plots
    - Ad hoc data visualization
    - Advanced usage
    - Exporting images

BONUS Day Four or Optional Topics

For Dedicated / Private Classes:

Leveraging AI for Python in Data Science

1. **Introduction to AI with Python for Data Analysis**
    - Overview of AI Libraries
    - Setting Up Your Environment:
    - Understanding AI Models
    - Creating Your First Model
    - Evaluating Model Performance
2. **Practical AI Projects in Python**
    - Set up a Python project for AI applications.
    - Data Handling
    - Model Development
    - Test and validate your AI model's effectiveness.
    - Applying Your Model
3. **Using GPT Tools for Record Analysis in Data Science**
    - Introduction to GPT
    - Setting Up GPT Tools
    - Analyzing Text Data
    - Generating Insights
    - Practical Applications

Virtual Classroom Live Labs

This course combines expert led instructor-led presentation with practical demonstrations with hands-on programming exercises, challenge labs, use case exploration and engaging activities. Students will build basic Python skills with an emphasis on data science and analytics, in preparation for roles revolving around AI, analytics or machine learning. Student machines are required.

Nov 12 - 14, 2025 | 10:00 AM - 6:00 PM EST

Dec 10 - 12, 2025 | 10:00 AM - 6:00 PM EST

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PRIVATE GROUP TRAINING	3 Day

Visit us at www.globalknowledge.com or call us at 1-866-716-6688.

Date created: 8/31/2025 4:15:08 PM