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PROFESSIONAL • PRACTICAL • JOB-ORIENTED TRAINING PROGRAM

PYTHON FOR DATA ANALYSIS & VISUALIZATION

LEARN → ANALYZE → VISUALIZE → BUILD DASHBOARDS

A structured learning path covering Core Python, Data Analytics, NumPy, SciPy, Pandas, Matplotlib, Seaborn, SQL, Power BI and Excel Dashboards.

CORE TOOLS

- Python
- NumPy
- SciPy
- Pandas
- Matplotlib
- Seaborn
- SQL
- Power BI
- Excel



SUJEET SIR

Course Trainer • IPT Excel School

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COURSE OVERVIEW

What this program is about

This program develops practical Python skills and applies them to data analytics and visualization. The course progresses step by step from Python fundamentals through analytics libraries, visualization, SQL, Power BI and Excel dashboards - so you learn, practice and build real, job-ready reports.

10	100	5	3
Modules	Example Programs	Analytics Libraries	SQL • Power BI • Excel

PROGRAM	**Python for Data Analysis & Visualization**
FOCUS	Programming • Data Analysis • Visualization • Business Intelligence
CORE TOOLS	Python • NumPy • SciPy • Pandas • Matplotlib • Seaborn
INTEGRATION	SQL • Power BI • Excel • Python-based dashboards
PRACTICE	100 Small & Basic Python Example Programs + applied analytics

COURSE OUTLINE

10 modules from Python basics to business dashboards

Python Foundation · Data Analytics · Visualization · Integration (SQL • BI • Excel)

01

MODULE 01

CORE PYTHON

- Introduction to Python
- Writing Our First Python Program
- Datatypes in Python
- Operators in Python
- Input and Output
- Control Statements
- Arrays in Python
- Strings and Characters
- Functions
- Lists and Tuples
- Dictionaries
- Date and Time
- Files in Python
- Regular Expressions in Python
- Data Structures in Python
- 100 Small and Basic Example Programs

02
MODULE 02
ADVANCED PYTHON PROGRAMMING

- Introduction to OOPs
- Classes and Objects
- Inheritance and Polymorphism
- Abstract Classes and Interfaces
- Exceptions
- Threads
- Graphical User Interface
- Networking in Python
- Python's Database Connectivity

03
MODULE 03
INTRODUCTION TO DATA ANALYTICS

- Introduction to Data Analytics
- Understanding the role of Python in Data Analytics
- Working with data for analysis and reporting

04
MODULE 04
PYTHON DATA ANALYTICS LIBRARIES

- Anaconda
- NumPy
- SciPy
- Pandas
- Matplotlib
- Seaborn

05
MODULE 05
NUMPY & SCIPY

- NumPy arrays and numerical operations
- Scientific computing with SciPy
- Mathematical equations and algorithms
- Working with efficient numerical structures

06
MODULE 06
PANDAS FOR DATA ANALYSIS

- DataFrame-based tabular data
- Data storage and manipulation
- Working with rows and columns
- Data analysis workflows

07
MODULE 07
DATA VISUALIZATION WITH PYTHON

- Matplotlib
- Line Graphs
- Scatter Plots
- Bar Charts
- 2D & 3D Graphs
- Live Graphs
- Multiple Plots in a Graph
- Seaborn statistical graphics
- Visualization with Pandas data structures

08
MODULE 08
PYTHON + SQL

- Python SQL Libraries
- SQL queries with Python
- SQLite
- Database connectivity and extracting data for analysis

09
MODULE 09
PYTHON + POWER BI

- Data Visualization with Python and Power BI
- Creating Power BI reports and visual charts with Python
- Power BI business intelligence
- Matplotlib and Seaborn visualizations

10
MODULE 10
PYTHON + EXCEL DASHBOARDS

- Excel Dashboards with Python
- Using Python code in Excel
- Python + Pandas for Excel analysis
- PyXLL-based Excel integration

LEARNING JOURNEY

Your path from beginner to dashboard builder

01 **Python Foundation**
Build programming fundamentals

02 **Advanced Python**
OOP, exceptions, threads & connectivity

03 **Data Analytics**
Understand the analytics workflow

04 **Analytics Libraries**
NumPy • SciPy • Pandas

05 **Visualization**
Matplotlib • Seaborn

06 **Database Analytics**
Python + SQL + SQLite

07 **Business Intelligence**
Python + Power BI

08 **Excel Analytics**
Python + Pandas + Excel Dashboards

TOOLS & TECHNOLOGIES

Industry-standard stack you will work with

Programming	**Python**
Data Analytics	**NumPy • SciPy • Pandas**
Visualization	**Matplotlib • Seaborn**
Database	**SQL • SQLite**
Business Intelligence	**Power BI**
Spreadsheet & Dashboard	**Microsoft Excel • Pandas • PyXLL**
Environment	**Anaconda**

KEY OUTCOMES

What you will be able to do after this course

- Write and understand Python programs from fundamentals to advanced concepts.
- Work with data using NumPy and Pandas.
- Create professional data visualizations using Matplotlib and Seaborn.
- Use Python with SQL/SQLite for database analysis.
- Create Power BI reports and visual charts using Python.
- Build Excel dashboards using Python, Pandas and PyXLL.
- Practice through 100 small and basic Python example programs.



READY TO START YOUR DATA JOURNEY?

Learn • Practice • Analyze • Visualize • Build

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