Python Data Visualization with Matplotlib & Seaborn Training Course

Professional Development Training Course Outline

Category	Research and Data Analysis	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's data-driven world, mastering data visualization is no longer optional it is essential. Python, with its versatile libraries Matplotlib and Seaborn, empowers professionals to transform raw data into insightful, interactive, and visually compelling graphics. Python Data Visualization with Matplotlib & Seaborn Training Course provides a hands-on, practical approach to data exploration, analysis, and visualization, ensuring participants gain proficiency in crafting publication-ready charts, dashboards, and reports. Participants will also learn how to leverage advanced plotting techniques, statistical visualizations, and customization to make informed business and research decisions.

Designed for professionals, analysts, and developers, this course emphasizes real-world applications, industry case studies, and best practices. By the end of the program, learners will confidently analyze trends, uncover patterns, and communicate insights visually, using Python as a strategic tool for business intelligence, scientific research, and predictive analytics. This training ensures participants emerge with actionable skills that directly enhance data storytelling, decision-making, and technical expertise.

Programme Curriculum

Python Data Visualization with Matplotlib & Seaborn Training Course

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Course Objectives

By the end of this course, participants will be able to:

1. Master Matplotlib fundamentals for creating line, bar, and scatter plots.
2. Implement Seaborn for advanced statistical visualizations.
3. Customize charts with colors, themes, styles, and annotations.
4. Apply data cleaning and preprocessing for effective visualization.
5. Create interactive and dynamic plots for dashboards and presentations.
6. Visualize time series, categorical, and multivariate data effectively.
7. Develop insight-driven reports for business intelligence and research.
8. Integrate Python visualization with Jupyter Notebooks for reproducible workflows.
9. Leverage Seaborn's statistical functions to explore correlations and distributions.
10. Optimize visualizations for publication and stakeholder presentations.
11. Conduct comparative analysis using multi-layered plots.
12. Solve real-world case studies using Python data visualization techniques.
13. Stay updated with emerging trends in Python visualization and analytics.

Target Audience

- Data Analysts & Business Analysts
- Data Scientists & Machine Learning Engineers
- Python Developers & Programmers
- Researchers & Academicians
- Marketing & Sales Analysts
- Financial Analysts & Economists
- IT & Business Intelligence Professionals
- Anyone interested in **data storytelling and visualization**

Course Modules

Module 1: Introduction to Python Data Visualization

- Understanding the role of data visualization in decision-making
- Overview of Matplotlib and Seaborn libraries
- Setting up Python environments
- Plotting basic graphs
- Case Study: Visualizing sales trends using Matplotlib

Module 2: Matplotlib Fundamentals

- Creating line, bar, histogram, and scatter plots
- Customizing axes, labels, legends, and colors
- Working with subplots and figure sizing
- Introduction to plot aesthetics and themes
- Case Study: Analyzing monthly revenue data

Module 3: Advanced Matplotlib Techniques

- Plotting stacked, pie, and area charts
- Adding annotations, gridlines, and text highlights
- Using twin axes for multi-variable visualization
- Exporting charts for reports and dashboards
- Case Study: Visualizing product performance across regions

Module 4: Introduction to Seaborn

- Understanding Seaborn syntax and structure
- Plotting categorical, distribution, and regression plots
- Integrating Matplotlib for advanced customizations
- Exploring color palettes, themes, and styles
- Case Study: Customer segmentation analysis

Module 5: Statistical Visualizations with Seaborn

- Creating boxplots, violin plots, and pair plots
- Using heatmaps for correlation and matrix analysis
- Plotting joint and pair relationships
- Handling large datasets efficiently
- Case Study: Analyzing survey data for insights

Module 6: Time Series and Trend Analysis

- Visualizing time-based data with Matplotlib and Seaborn
- Detecting trends, seasonality, and anomalies
- Plotting rolling averages and trend lines
- Annotating significant events and patterns
- Case Study: Stock price and sales trend analysis

Module 7: Customization & Best Practices

- Choosing the right plot for the right data
- Customizing fonts, colors, markers, and themes
- Making plots publication-ready and dashboard-ready
- Enhancing storytelling through visualization
- Case Study: Marketing campaign effectiveness dashboard

Module 8: Project & Real-World Case Studies

- Hands-on end-to-end visualization project
- Combining Matplotlib and Seaborn for advanced insights

- Presenting findings with interactive notebooks
- Peer review and optimization techniques
- Case Study: Predictive analytics visualization for business growth

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com