Data Visualization with Python Advanced 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, effective data visualization is critical for discovering insights, communicating findings, and driving business decisions. Data Visualization with Python (Seaborn, Matplotlib) Advanced Training Course empowers data analysts, scientists, and developers with cutting-edge tools and techniques to create meaningful, interactive, and aesthetically pleasing visualizations using Python's most powerful libraries—Seaborn and Matplotlib. This training emphasizes real-world applications, advanced plotting capabilities, customization techniques, and storytelling with data.

Whether you're working with large datasets, conducting statistical analysis, or building reports and dashboards, mastering data visualization in Python enhances clarity and boosts stakeholder engagement. With hands-on exercises, case studies, and project-based learning, this course transforms learners into visualization experts who can make data speak visually and persuasively.

Programme Curriculum

Data Visualization with Python Advanced Training Course

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Course Objectives

1. Master advanced data visualization techniques using Python.
2. Explore in-depth capabilities of Seaborn and Matplotlib.
3. Create interactive and dynamic charts for exploratory data analysis.
4. Customize plots for enhanced storytelling and presentation.
5. Visualize multivariate data and statistical relationships.
6. Integrate data visualization in Jupyter Notebooks and dashboards.
7. Apply color theory and accessibility principles in visualizations.
8. Build publication-quality graphs and visual reports.
9. Analyze real-world datasets using advanced plotting methods.
10. Implement data cleaning and transformation for accurate visuals.
11. Combine Seaborn and Matplotlib with Pandas and NumPy.
12. Understand visualization ethics and responsible communication.
13. Build and present a capstone project on a real-life dataset.

Target Audiences

1. Data Analysts
2. Data Scientists
3. Business Intelligence Professionals
4. Python Developers
5. Machine Learning Engineers
6. Academics & Researchers
7. Visualization Designers
8. Decision-makers interested in Data-Driven Insights

Course Duration: 5 days

Course Modules

Module 1: Introduction to Advanced Data Visualization

- Review of basic visualizations with Python
- Introduction to Matplotlib and Seaborn architecture
- When to use which library
- Setting up your Python environment
- Hands-on with sample datasets
- **Case Study**: Visualizing COVID-19 trends across continents

Module 2: Mastering Matplotlib Essentials

- Figure and axes objects
- Plotting line, bar, and scatter charts
- Customizing labels, titles, ticks
- Working with subplots and multiple charts
- Saving and exporting figures
- **Case Study**: Building a market sales trend dashboard

Module 3: Seaborn for Statistical Visualization

- Introduction to Seaborn’s aesthetics

- Plotting distributions and categorical data
- Statistical relationships with regression plots
- Visualizing confidence intervals
- Seaborn themes and styles
- **Case Study**: Analyzing customer behavior in retail data

Module 4: Multivariate and Time Series Visualization

- Heatmaps, pair plots, and joint plots
- Working with time-indexed data
- Handling missing values in time series
- Rolling averages and trends
- Calendar heatmaps and annotations
- **Case Study**: Visualizing energy consumption over a decade

Module 5: Enhancing Plot Customization and Aesthetics

- Fine-tuning plots with Matplotlib styles
- Custom legends, grids, and annotations
- Using color palettes and colormaps
- Responsive and adaptive visuals
- Embedding logos and branding
- **Case Study**: Creating a financial performance report

Module 6: Data Preparation for Visualization

- Data cleaning using Pandas
- Handling outliers and normalization
- Feature selection and transformation
- Reshaping data using melt/pivot
- Best practices in preprocessing
- **Case Study**: Preparing survey data for effective storytelling

Module 7: Visual Storytelling and Dashboard Integration

- Visual narrative principles
- Combining visualizations into dashboards
- Using Plotly or Dash with Seaborn/Matplotlib
- Exporting to HTML and PDF formats
- Presenting data insights effectively
- **Case Study**: Building a dashboard for HR analytics

Module 8: Capstone Project and Evaluation

- Define a real-world problem
- Perform EDA with Seaborn and Matplotlib
- Build compelling visualizations
- Present insights and actionable outcomes
- Peer reviews and instructor feedback
- **Case Study**: Capstone – Analyze a publicly available dataset

Training Methodology

- Instructor-led live sessions
- Hands-on coding with guided labs
- Peer-to-peer learning & group critiques

- Real-world case study analysis
- Capstone project presentation

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:

Register Online Now

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