MERCURY

Data Analysis Professional

15 – 19 March 2027
Rome (Italy)



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Ref: 121226_1084044 **Date:** 15 – 19 March 2027 **Location:** Rome (Italy) **Fees:** 6200 Euro

Introduction:

The Data Analysis Professional course equips participants with in-depth theoretical knowledge and practical analytical skills. The training covers the systematic process of collecting, cleaning, interpreting, visualizing, and drawing actionable insights from data. You will learn to use statistical tools, understand data quality, and apply both exploratory and predictive models.

The Data Analysis Professional program emphasizes decision-making based on data-driven evidence, thereby improving both operational and strategic outcomes. Through rigorous scenario-based learning, learners will gain a strong foundation in data analysis frameworks. Participants will develop confident, analytical thinkers who can translate raw data into meaningful business intelligence.

Targeted Groups:

This Data Analysis Professional training targets professionals seeking specialized knowledge and skills:

- Business analysts who want to deepen their statistical analysis capabilities.
- Project managers aiming to drive data-based decision making.
- Performance management officers in corporates or NGOs.
- Financial professionals who need to interpret quantitative trends.
- Aspiring data analysts or data scientists need a structured theoretical foundation.
- Middle and senior managers who rely on KPIs and key metrics to guide strategy.

Course Objectives:

Participants will achieve the following objectives by completing the Data Analysis Professional course:

- Master the core phases of the data analysis lifecycle from data collection to interpretation.
- Develop strong data-cleaning and preprocessing techniques for real-world datasets.
- Understand and apply descriptive statistics, hypothesis testing, regression, and multivariate analyses.
- Build proficiency in data visualization principles to present findings persuasively.
- Learn how to convert theoretical insights into strategic recommendations.
- Formulate predictive models that help forecast trends and support planning.
- Apply a logical and rigorous framework to evaluate data quality and reliability.

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Targeted Competencies:

Participants will gain the following competencies during the Data Analysis Professional program:

- Ability to assess and improve data quality, ensuring accuracy, completeness, and integrity.
- Proficiency in applying statistical tools such as mean, variance, standard deviation, and hypothesis testing.
- Skills to perform multivariate analysis, including correlation, regression, and dimensionality reduction.
- Competency in data visualization, using charts, dashboards, and storytelling to deliver insights.
- Capability to develop predictive models, bridging exploratory analysis and forecasting.
- Critical thinking in interpreting results and making data-driven business decisions.
- Skill in communicating complex analytical findings to non-technical stakeholders in a clear, structured way.

Studying Scenarios:

In this Data Analysis Professional training, participants will develop their skills through the analysis of the following scenarios:

- The business manager examines sales and customer data to decide where to allocate the budget this quarter.
- A performance officer evaluates key performance indicators to assess operational efficiency.
- A risk analyst models future trends in financial metrics to predict potential threats.
- The product team uses customer feedback data to identify patterns and suggest improvements.
- A strategy consultant applies hypothesis testing to validate assumptions about market behavior.
- A sustainability team forecasts resource consumption to guide long-term planning.

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Course Content:

Unit 1: Foundations of Data Analysis:

- Definition, scope, and value of data analysis in business and strategy.
- The data analysis lifecycle - collection, preparation, exploration, modeling, interpretation.
- Types and formats of data: quantitative vs qualitative, structured vs unstructured.
- Ensuring data quality: completeness, consistency, accuracy, and sampling error.
- Data governance and ethical considerations: privacy, bias, and compliance.
- Establishing a logical framework for analysis: setting questions, hypotheses, and goals.

Unit 2: Exploratory and Descriptive Statistics:

- Summary statistics: mean, median, mode, variance, and standard deviation.
- Frequency distributions and cross-tabulations.
- Handling missing data and outliers.
- Data aggregation and synthesis: grouping, normalizing, and standardizing.
- Visualizing descriptive statistics: histograms, bar charts, box plots, Pareto charts.
- Interpreting patterns in data and drawing meaningful summaries.

Unit 3: Inferential Statistics and Hypothesis Testing:

- Probability theory and distributions standard, t, chi-squared.
- Sampling theory and the central limit theorem.
- Confidence intervals and estimation.
- Formulating and testing hypotheses.
- Type I and Type II errors, p-values, and statistical significance.
- Contingency tables, ANOVA, and cross-variable testing.

Unit 4: Multivariate Analysis and Predictive Modelling:

- Correlation analysis: Pearson, Spearman, and rank-based methods.
- Linear regression multiple and straightforward: assumptions, coefficients, and diagnostics.
- Logistic regression and categorical predictors.
- Feature engineering and dimensionality reduction.
- Introduction to predictive modeling: train-test split, overfitting, validation.
- Model evaluation: R-squared, confusion matrix, ROC, and error metrics.

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Unit 5: Data Visualization, Interpretation & Strategy:

- Principles of visual storytelling: clarity, context, and audience insight.
- Creating dashboards and reports: tools and best practices.
- Translating analysis into strategic recommendations.
- Communicating findings to stakeholders effectively.
- Scenario planning and forecasting based on model outputs.
- Building a continuous improvement loop: feedback, iteration, and decision-making.

Final Insights & Key Takeaways:

Participants will turn raw data into rigorous, strategic business insights. They will be confident in applying advanced statistical methods, building predictive models, and presenting analysis in a way that drives data-informed decision making.