MERCURY

AI Data Science for Business Analytics,
Forecasting & Decision-Making

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

MERCURY

AI Data Science for Business Analytics, Forecasting & Decision-Making

Introduction

This AI Data Science for Business Analytics, Forecasting & Decision-Making course builds a strong foundation in AI-driven data science for modern business environments. It focuses on transforming raw data into actionable business insights for strategic growth. Participants learn how predictive analytics improves forecasting accuracy and operational planning. The program explains how machine learning supports business intelligence and performance tracking. It emphasizes data-driven decision-making to gain a competitive advantage in dynamic markets. It develops an understanding of AI tools used in business analytics and forecasting systems.

Targeted Groups

This AI Data Science for Business Analytics, Forecasting & Decision-Making training targets professionals seeking knowledge and skills:

- Business analysts improve data interpretation and reporting accuracy.
- Managers use analytics for strategic planning decisions.
- Finance professionals focusing on forecasting and risk evaluation.
- Marketing teams apply customer behavior analytics.
- Data professionals transitioning into AI-driven analytics roles.
- Decision-makers seeking data-driven business optimization.

Course Objectives

Participants will achieve the following objectives by completing the AI Data Science for Business Analytics, Forecasting & Decision-Making course:

- Understand core concepts of AI in business analytics and forecasting systems.
- Apply data science methods to extract meaningful business insights from datasets.
- Develop skills in predictive analytics for accurate business forecasting models.
- Interpret key performance indicators using data-driven decision-making approaches.
- Use machine learning concepts to improve business intelligence processes.
- Analyze both structured and unstructured data to generate strategic business insights.
- Design analytical frameworks for solving real business problems efficiently.
- Evaluate forecasting models for financial and operational planning accuracy.
- Strengthen the ability to support executive decisions with data-backed evidence.
- Integrate AI tools into business analytics workflows for improved outcomes.

Targeted Competencies

Participants will gain the following competencies during the AI Data Science for Business Analytics, Forecasting & Decision-Making program:

- Ability to analyze business datasets using AI and statistical methods effectively.
- Competence in building predictive models for business forecasting scenarios.
- Skills in interpreting analytical reports for informed decision-making processes.
- Proficiency in using data visualization for business performance insights.

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

- Understand machine learning applications in business environments.
- Ability to evaluate data quality for accurate analytical results.
- Competence in identifying trends and patterns in business data streams.

Studying Scenarios

In this AI Data Science for Business Analytics, Forecasting & Decision-Making training, participants develop skills through the following scenarios:

- Analyzing sales data to accurately predict future market demand trends.
- Using customer behavior data to improve marketing campaign effectiveness.
- Applying forecasting models to support financial budgeting decisions.
- Evaluating operational data to enhance business efficiency and performance.

Course Content

Unit 1: Foundations of AI Data Science in Business

- Understanding AI fundamentals in business analytics environments clearly.
- Exploring the data science lifecycle from the collection to the interpretation stages.
- Learning core principles of structured and unstructured business data.
- Identifying the role of AI in modern decision-making systems.
- Understanding business intelligence systems and their applications.
- Reviewing data-driven business transformation strategies in organizations.
- Studying the importance of data governance and quality management principles.
- Exploring real-world use cases of AI in business analytics.
- Understanding ethical considerations in business data usage and AI.

Unit 2: Business Analytics and Data Interpretation

- Learning methods of analyzing business performance indicators effectively.
- Applying statistical techniques for business data interpretation and reporting.
- Understanding dashboards and visualization tools for decision support.
- Identifying trends and patterns in complex business datasets.
- Using descriptive analytics for understanding historical business performance.
- Exploring diagnostic analytics for identifying business performance issues.
- Developing structured reporting methods for business stakeholders.
- Interpreting customer data for improved engagement strategies.
- Applying KPI frameworks for business evaluation and control systems.

Unit 3: Predictive Analytics and Forecasting Models

- Understanding predictive analytics concepts for business forecasting systems.
- Building forecasting models using historical business data trends.
- Applying regression analysis for demand prediction and planning.
- Learning time-series forecasting techniques for market analysis.
- Evaluating model accuracy using performance metrics and validation methods.
- Understanding probability models for business risk forecasting.
- Applying AI algorithms for predictive business insights generation.
- Developing forecasting strategies for financial planning and budgeting.
- Using machine learning techniques for advanced predictive analytics.

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

Unit 4: Machine Learning Applications in Business Decision-Making

- Understanding supervised and unsupervised learning in business contexts.
- Applying classification models for customer segmentation analysis.
- Using clustering techniques for market segmentation and insights.
- Exploring recommendation systems for customer behavior optimization.
- Evaluating model performance in business decision environments.
- Applying AI algorithms for fraud detection and risk management.
- Using neural networks for complex business pattern recognition.
- Integrating machine learning outputs into decision-making workflows.
- Understanding limitations and risks of AI-driven decisions.

Unit 5: Data-Driven Decision-Making and Business Strategy

- Understanding principles of data-driven decision-making in organizations.
- Integrating AI insights into strategic business planning processes.
- Using analytics for performance optimization and resource allocation.
- Developing decision frameworks supported by predictive insights.
- Applying scenario analysis for strategic business forecasting.
- Evaluating business risks using quantitative data models.
- Aligning analytics outputs with organizational goals and KPIs.
- Supporting executive decisions with AI-powered dashboards.
- Implementing continuous improvement through data feedback loops.

Final Insights & Key Takeaways

This course equips learners with advanced AI data science skills for modern business analytics and forecasting. It strengthens strategic decision-making through predictive insights, machine learning, and data-driven business intelligence systems.