Data Mining and Business Analytics Training Course

Professional Development Training Course Outline

Category	Business	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s data-driven world, Data Mining and Business Analytics have become the backbone of intelligent decision-making and competitive advantage. Data Mining and Business Analytics Training Course equips professionals with advanced tools, techniques, and strategies to transform raw data into actionable insights. Using predictive modeling, statistical analysis, and machine learning algorithms, participants will master the art of uncovering hidden patterns, identifying opportunities, and optimizing business processes for growth.

Through practical data analytics projects, case studies, and hands-on exercises, learners will develop the skills to leverage big data for business transformation. This program emphasizes real-world applications in diverse sectors including finance, healthcare, retail, supply chain, and marketing. With a blend of theory, data mining tools (Python, R, SQL), and modern data visualization techniques, participants will be prepared to implement data-driven solutions that increase operational efficiency and maximize profitability.

Programme Curriculum

Data Mining and Business Analytics Training Course

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healthcare, retail, supply chain, and marketing. With a blend of theory, data mining tools (Python, R, SQL), and modern data visualization techniques, participants will be prepared to implement data-driven solutions that increase operational efficiency and maximize profitability.

Course Objectives

1. Apply data mining techniques to extract meaningful business insights.
2. Use predictive analytics models to forecast business trends.
3. Implement machine learning algorithms for classification and clustering.
4. Conduct exploratory data analysis (EDA) for decision support.
5. Leverage big data analytics for large-scale business solutions.
6. Build data visualization dashboards for effective communication.
7. Apply statistical models for business forecasting.
8. Integrate data mining tools like Python, R, and SQL into workflows.
9. Design business intelligence systems for strategic planning.
10. Identify patterns and anomalies in customer and market data.
11. Optimize marketing campaigns using customer segmentation.
12. Apply text mining for sentiment analysis and opinion mining.
13. Develop a data-driven decision-making culture in organizations.

Target Audience

1. Business Analysts
2. Data Scientists
3. Marketing Analysts
4. IT Professionals
5. Operations Managers
6. Financial Analysts
7. Entrepreneurs
8. Research Professionals

Course Duration: 10 days

Course Modules

Module 1: Introduction to Data Mining & Business Analytics

- Definition and scope of data mining.
- Importance in business decision-making.
- Key components of business analytics.
- Data mining vs data analytics vs big data.
- Industry applications overview.
- **Case Study:** How Netflix uses data mining for recommendations.

Module 2: Data Collection & Preparation

- Data sources: internal & external.
- Data cleaning and transformation.
- Handling missing values and outliers.
- Data normalization and standardization.
- Feature engineering basics.
- **Case Study:** Data preparation for a retail sales dataset.

Module 3: Exploratory Data Analysis (EDA)

- Descriptive statistics.

- Data visualization techniques.
- Identifying trends and anomalies.
- Correlation analysis.
- Dimensionality reduction basics.
- **Case Study:** EDA for customer churn prediction.

Module 4: Predictive Analytics

- Regression analysis.
- Time series forecasting.
- Classification models.
- Model evaluation metrics.
- Overfitting and underfitting.
- **Case Study:** Predicting loan defaults in banking.

Module 5: Machine Learning for Business

- Supervised vs unsupervised learning.
- Clustering techniques.
- Decision trees and random forests.
- Neural networks basics.
- Model deployment in business.
- **Case Study:** Customer segmentation in e-commerce.

Module 6: Big Data Analytics

- Introduction to big data platforms (Hadoop, Spark).
- Processing large datasets.
- Real-time analytics.
- Distributed computing concepts.
- Integration with BI tools.
- **Case Study:** Analyzing social media big data for brand sentiment.

Module 7: Data Visualization & Communication

- Importance of storytelling in analytics.
- Visualization tools (Tableau, Power BI).
- Interactive dashboards.
- KPI tracking and reporting.
- Best practices for data presentation.
- **Case Study:** Building a sales performance dashboard.

Module 8: Business Intelligence (BI) Systems

- BI architecture.
- ETL (Extract, Transform, Load) process.
- Data warehousing.
- OLAP and reporting.
- Integrating BI with decision-making.
- **Case Study:** BI implementation in supply chain management.

Module 9: Customer Analytics & Segmentation

- Understanding customer lifetime value.
- Segmentation methods.
- Targeted marketing strategies.

- Churn prediction.
- Cross-selling and upselling.
- **Case Study:** Customer segmentation for a telecom company.

Module 10: Text Mining & Sentiment Analysis

- Introduction to text analytics.
- Natural Language Processing (NLP) basics.
- Sentiment classification.
- Opinion mining.
- Social media monitoring.
- **Case Study:** Sentiment analysis for political campaigns.

Module 11: Statistical Models for Business Forecasting

- Probability distributions.
- Hypothesis testing.
- ARIMA models.
- Exponential smoothing.
- Confidence intervals.
- **Case Study:** Forecasting product demand in manufacturing.

Module 12: Data Ethics & Privacy

- Ethical considerations in analytics.
- Data governance.
- Compliance with GDPR and CCPA.
- Bias detection and mitigation.
- Responsible AI practices.
- **Case Study:** Ethical challenges in predictive policing.

Module 13: Industry-Specific Applications

- Analytics in healthcare.
- Retail analytics.
- Financial services analytics.
- Manufacturing analytics.
- Marketing analytics.
- **Case Study:** Data mining for fraud detection in banking.

Module 14: Implementing Analytics in Organizations

- Building a data-driven culture.
- Change management in analytics adoption.
- Upskilling teams.
- Aligning analytics with business goals.
- ROI measurement.
- **Case Study:** Analytics transformation in a logistics company.

Module 15: Capstone Project

- End-to-end analytics workflow.
- Real-world problem selection.
- Data collection and preparation.
- Model building and evaluation.
- Insights presentation to stakeholders.

- **Case Study:** Complete project on market basket analysis.

Training Methodology

- Interactive lectures with real-life business examples.
- Hands-on practice using Python, R, SQL, and visualization tools.
- Group activities for collaborative problem-solving.
- Analysis of live datasets for practical exposure.
- Capstone project for skill consolidation.

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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

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