Data Mining for Business Intelligence and Analytics Training Course

14 - 18 Dec 2026

Casablanca

4500 € (Per Person)

Ref: #BUI2057_270915

Course Introduction / Overview:

This comprehensive training course is designed to equip professionals with the essential knowledge and practical skills required to transform raw data into strategic business assets. In today's data-driven world, the ability to extract meaningful patterns and predictive insights is no longer a niche skill but a core competency for competitive advantage. This program delves deep into the methodologies of data mining and business intelligence, moving beyond theoretical concepts to focus on real-world application. As detailed by the renowned academic Jiawei Han in his seminal work, "Data Mining: Concepts and Techniques," the field is a blend of statistics, machine learning, and database systems. This course, offered by BIG BEN Training Center, bridges that gap by providing a structured learning path from data preprocessing and exploration to advanced predictive modeling and data visualization. Participants will learn to navigate the complete data mining lifecycle, including the CRISP-DM methodology, enabling them to tackle complex business problems, optimize operations, and drive informed decision-making with confidence and precision. The curriculum is meticulously crafted to empower attendees to build and interpret analytical models that deliver tangible business value.

Target Audience / This training course is suitable for:

- Business Analysts.
- Data Analysts.
- IT Professionals and Software Developers.
- Marketing Managers and Analysts.
- Financial Analysts and Controllers.
- Business Intelligence (BI) Developers.
- Project Managers overseeing analytics projects.
- Professionals seeking to transition into a data-focused role.

Target Sectors and Industries:

- Banking and Financial Services.
- Retail and E-commerce.
- Healthcare and Pharmaceuticals.
- Telecommunications.
- Insurance.
- Government and Public Sector Agencies.
- Manufacturing and Supply Chain Logistics.
- Marketing and Advertising.

Target Organizations Departments:

- Information Technology (IT).
- Business Intelligence and Analytics.
- Marketing and Sales.
- Finance and Accounting.
- Operations and Logistics.
- Customer Relationship Management (CRM).
- Strategic Planning.
- Human Resources.

Course Offerings:

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

- Master the fundamentals of data mining, business intelligence, and their role in modern organizations.
- Apply the Cross-Industry Standard Process for Data Mining (CRISP-DM) to structure analytics projects.
- Perform effective data preprocessing, including cleaning, integration, and transformation techniques.
- Implement key supervised learning algorithms for classification and regression.
- Utilize unsupervised learning techniques such as clustering and association rule mining.
- Develop and interpret predictive models to forecast trends and business outcomes.
- Create compelling data visualizations and dashboards to communicate insights to stakeholders.
- Understand the ethical considerations and challenges in data mining applications.
- Translate analytical findings into actionable business strategies and recommendations.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, practical, and engaging, ensuring that participants not only learn the theory but also gain hands-on experience. This course moves beyond traditional lectures by incorporating a blended learning approach. A significant portion of the training is dedicated to practical lab sessions and real-world case studies, allowing participants to apply data mining techniques to solve complex business problems. We foster a collaborative environment through group discussions and team-based projects, where attendees can share insights and learn from diverse perspectives. The instructor will facilitate interactive sessions, encouraging questions and open dialogue to deepen understanding of core concepts like predictive analytics and machine learning algorithms. Participants will receive continuous feedback throughout the course to reinforce learning and address individual challenges. This immersive approach ensures that by the end of the training, every participant has developed the confidence and competence to apply data mining and business intelligence principles effectively within their professional roles, transforming data into a strategic driver for their organization.

Course Agenda (Course Units):

Unit One: Foundations of Data Mining and Business Intelligence

- Introduction to Business Intelligence and Analytics.
- The Evolution of Data-Driven Decision Making.
- Core Concepts of Data Mining and Knowledge Discovery.
- Understanding the CRISP-DM Methodology.
- Data Warehousing and OLAP Concepts.
- Exploring the Roles of a Data Analyst and BI Developer.
- Ethical and Privacy Considerations in Data Mining.

Unit Two: Data Preprocessing and Exploratory Data Analysis

- Understanding Data Quality and Its Importance.
- Techniques for Data Cleaning and Handling Missing Values.
- Methods for Data Integration and Transformation.
- Data Reduction and Discretization Strategies.
- Introduction to Exploratory Data Analysis (EDA).
- Fundamentals of Data Visualization for Insight Discovery.
- Using Statistical Summaries to Understand Data Distributions.

Unit three: Supervised Learning for Predictive Analytics

- Introduction to Supervised Learning Concepts.
- Classification using Decision Trees and Rule-Based Models.
- Building and Evaluating Classification Models.
- Understanding Logistic and Linear Regression for Prediction.
- Introduction to Neural Networks and Support Vector Machines (SVM).
- Model Evaluation Metrics: Accuracy, Precision, Recall, and F1-Score.
- Techniques for Avoiding Overfitting in Models.

Unit Four: Unsupervised Learning and Advanced Mining Techniques

- Introduction to Unsupervised Learning.
- Clustering Algorithms: K-Means and Hierarchical Clustering.
- Evaluating the Quality of Clustering Results.
- Association Rule Mining with the Apriori Algorithm.
- Discovering Patterns in Transactional Data.
- Introduction to Text Mining and Sentiment Analysis.
- Anomaly Detection for Identifying Outliers and Fraud.

Unit Five: Implementing Business Intelligence and Delivering Insights

- Principles of Effective Data Visualization and Dashboard Design.
- Building Interactive BI Dashboards for Stakeholders.
- Deploying and Monitoring Data Mining Models.
- Translating Analytical Results into Actionable Business Strategies.
- Storytelling with Data to Influence Decision-Makers.
- Capstone Project: Applying Data Mining to a Business Case.
- Future Trends in Data Mining and Business Intelligence.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As predictive models become more integrated into business operations, what are the primary ethical considerations a data analyst must navigate to ensure fairness and prevent algorithmic bias?

What unique qualities does this course offer compared to other courses?

This training course distinguishes itself by focusing on the strategic application of data mining within a business context, rather than merely teaching the mechanics of software tools. Our curriculum is built around the industry-standard CRISP-DM methodology, providing participants with a robust, repeatable framework for any analytics project they undertake. This process-oriented approach ensures a deep understanding of the entire knowledge discovery lifecycle, from business understanding to model deployment. While many courses focus on a single algorithm or technology, we provide a comprehensive overview of supervised and unsupervised learning techniques, empowering participants to select the right tool for the right problem. The emphasis is placed on interpretation and storytelling with data, a critical skill for translating complex analytical findings into clear, actionable insights for non-technical stakeholders. Furthermore, the course integrates discussions on ethical considerations, preparing participants to be responsible data professionals. The hands-on case studies are derived from real-world business challenges, ensuring the skills learned are immediately applicable and relevant to driving tangible organizational value.