
Data Mining Training Course for Executives: CRISP-DM, Customer Segmentation and Predictive Models

7 – 18 June 2027

Dubai - Marriott Hotel Al Jaddaf, Dubai





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Programme Summary

Data mining training course for executives, running over ten days at strategic level and ending in a data mining project charter for one business question. Organisations hold more records than they can read, and leaders are asked to approve segmentation, prediction and pattern projects whose results they cannot easily test. The programme moves from principles to data diagnosis, model design, evaluation and application, using Power BI to explore and present findings. Mars Training Centre UK delivers this data mining programme for senior decision makers.

The Business Case

When data mining projects are sponsored without a clear question, teams produce segments nobody uses, predictions that fail on new data and rules that repeat what the business already knows. Leaders who can frame the question, check data quality, read evaluation results and ask what happens after deployment can fund projects that change decisions, stop weak models early and keep sensitive customer data under control.

- Project Yield: Improves as sponsors fund only questions with a clear decision attached.
- Forecast Reliability: Rises as models are judged on unseen data before they are trusted.
- Customer Retention: Strengthens as segments and churn signals guide targeted action.

Principles and Evidence Base

- CRISP-DM process: It sequences business understanding, data understanding, data preparation, modelling, evaluation and deployment across Sessions 1 to 9.
- Clustering and classification methods: They frame the segmentation and churn work in Sessions 4 and 5.
- Association rules with support, confidence and lift: They guide the pattern review in Session 6.
- Model evaluation on training and test data: It structures the challenge of results in Session 8.

Intended Participants

- Executives who sponsor analytics projects and must decide which ones to fund and stop.
- Heads of function who own customer, risk or operational outcomes that mining results will change.
- Leaders of data and analytics teams who brief senior colleagues on method, limits and results.
- Strategy and transformation leads who connect big data investments to business decisions.
- Risk and privacy leaders who set rules for the data that mining projects use.

The programme serves retail, banking, telecommunications, healthcare and public sector bodies where senior leaders depend on analytical findings they did not produce themselves.



Learning Outcomes

1. Participants will be able to frame a business question as a data mining task with a stated decision and success measure.
2. Participants will be able to diagnose data quality, sampling and leakage problems that would weaken a mining result.
3. Participants will be able to evaluate customer segments for size, stability and commercial value.
4. Participants will be able to compare classification and prediction results using appropriate error measures.
5. Participants will be able to challenge a model on unseen data, bias and overfitting before approval.
6. Participants will be able to justify a deployment, monitoring and governance plan for one mining project.

Programme Structure

Day 1: Data Mining Principles for Executives

What can data mining answer, and what must a sponsor decide first?

- CRISP-DM Process Walkthrough
- Business Question Framing Sheet
- Data Mining Task Types
- Big Data Source Inventory
- Project Value Hypothesis

Day 2: Understanding Data and Its Quality

Can the available data support the question being asked?

- Data Profiling Summary
- Missing Value and Outlier Review
- Sampling and Bias Checks
- Data Dictionary Template
- Power BI Data Exploration Views

Day 3: Preparing Data for Mining

Which preparation choices change the result, and who approves them?

- Feature Selection Logic
- Transformation and Scaling Choices
- Joining Big Data Sources
- Training and Test Split Design
- Data Leakage Checklist



Day 4: Customer Segmentation with Clustering

How are customers grouped, and are the groups worth acting on?

- Clustering Method Selection
- Segment Profile Cards
- Segment Stability Test
- Segment Size and Value Table
- Segment Report in Power BI

Day 5: Classification and Churn Signals

Which customers or cases fall into which class, and how reliable is that call?

- Decision Tree Reading Guide
- Classification Outcome Matrix
- Precision and Recall Trade-Offs
- Threshold Setting Rule
- Churn Classification Review

Day 6: Association Rules and Pattern Discovery

Which patterns are genuine, and which merely repeat the obvious?

- Support, Confidence and Lift Measures
- Market Basket Rule Review
- Sequence Pattern Examples
- Anomaly Detection Cases
- Rule Pruning Criteria

Day 7: Predictive Models and Forecasts

How far can a predicted value be trusted for planning?

- Regression Model Interpretation
- Demand Forecast Comparison
- Prediction Interval Reading
- Variable Importance Review
- Scenario Input Testing

Day 8: Evaluating and Challenging Models

What evidence is enough to approve or reject a model?



- Model Evaluation Scorecard
- Cross-Validation Review
- Overfitting Warning Signs
- Bias and Fairness Questions
- Analyst and Vendor Challenge List

Day 9: Deployment, Monitoring and Governance

How does a model move into daily operations and stay under control?

- Deployment Path Options
- Model Monitoring Dashboard
- Model Drift Triggers
- Data Privacy and Access Rules
- Mining Project Governance Roles

Day 10: Applying Data Mining to One Business Question

Is the project ready for a sponsor to approve?

- Applying the Session 2 Quality Checks to the Case Data
- Reviewing the Session 4 Segments Against the Session 5 Classes
- Testing the Session 8 Scorecard on the Chosen Model
- Rehearsing the Sponsor Briefing
- Completing the Data Mining Project Charter

Methodology

The programme uses a data workshop built on anonymised customer, transaction and operations extracts. Participants act as sponsor, analyst and model reviewer, carry one business question through each stage of the CRISP-DM process, and record which evidence would change their approval. Software is used to read and present results, so attention stays on decisions rather than on coding.

- Suggested activity: Turning a vague request into a data mining question with a decision attached.
- Suggested activity: Reading a segment profile and deciding which segment deserves action first.
- Suggested activity: Cross-examining a model result as a review panel before approval.

Capstone Output

Each participant completes a data mining project charter for one business question. It holds the framed question, a data quality assessment, the chosen method with its evaluation results, a deployment and monitoring plan, and the governance roles. The charter is used to brief a sponsoring committee, direct the analytics team and set review points once the model is in use.



Frequently Asked Questions

Is this data mining course suitable for executives without a statistics background?

Yes. The data mining content is pitched at strategic level for leaders who sponsor and review projects. It assumes familiarity with business reports but no programming or statistical training.

Which process does data mining in this programme rest on?

Data mining here rests on the CRISP-DM process, supported by clustering and classification methods, association rules measured by support, confidence and lift, and model evaluation on training and test data.

How is the data mining project charter used at work?

You use the data mining project charter to brief a sponsoring committee, direct the analytics team on method and evaluation, and set review points once the model is running.

How does data mining for executives differ from a big data engineering programme?

Data mining for executives centres on framing questions, judging results and governing deployment. A big data engineering programme centres on building storage, pipelines and processing platforms.