
Data Science for Senior Managers: Methods, Models and Business Use Training Course

11 – 15 January 2027
Cape town





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Ref: 335_21880 Date: 11 – 15 January 2027 Location: Cape town Fees: 4800 GBP

Programme Summary

Data science for senior managers is the subject of this five-day training course for managers who commission, sponsor or judge analytical work, ending in a data science project brief for one business problem. Organisations invest in data teams, yet sponsors often cannot test whether a claimed result will hold in operation. The programme moves from framing questions and preparing data, through learning methods and model evaluation, to ethics and deployment, then to a worked project brief. Mars Training Centre UK delivers this programme in data science for senior managers.

The Business Case

When sponsors cannot read a model result critically, projects stall after a pilot or reach operation with hidden bias and weak accuracy. Managers who frame the question, check the data and challenge the evaluation can stop weak projects early and back those that will perform.

- Project Failure Rate: Falls as business questions and success measures are agreed before modelling begins.
- Model Reliability: Improves as results are tested on unseen data and stated with their error.
- Ethical and Privacy Exposure: Becomes visible as bias and data use are reviewed before deployment.

Principles and Evidence Base

- CRISP-DM: Its six phases, from business understanding to deployment, structure the project path followed in Sessions 1 to 5.
- Supervised learning: Classification and regression from labelled examples shape the predictive work of Session 3.
- Unsupervised learning: Clustering of unlabelled data informs the pattern-finding work of Session 3.
- Holdout and cross-validation: These evaluation methods, with overfitting checks, organise the model testing in Session 4.

Intended Participants

- Managers who sponsor analytical projects and must decide what to fund, continue or stop.
- Operations and commercial leads who receive model outputs and act on them.
- Finance and risk managers who review the evidence behind data-driven proposals.
- Programme leads who coordinate data teams, business owners and technology suppliers.

The programme serves banking, retail, healthcare, logistics and public service organisations.



Learning Outcomes

1. Participants will be able to formulate a business problem as a question that data can answer, with a success measure.
2. Participants will be able to evaluate the quality and fitness of a dataset for modelling.
3. Participants will be able to distinguish classification, regression and clustering tasks and select the fitting one.
4. Participants will be able to critique a model evaluation, including overfitting and error measures.
5. Participants will be able to diagnose privacy and bias risks in a proposed data science use.
6. Participants will be able to justify a project brief to a steering committee with its evidence and limits.

Programme Structure

Day 1: Framing Business Questions for Data Science

How is a business problem turned into a question that data can answer?

- CRISP-DM Business Understanding Phase
- Question and Success Measure Statement
- Data Science Task Type Matrix
- Project Value and Feasibility Screen
- Data Science Team Roles Map

Day 2: Data Understanding and Preparation

Is the available data good enough to support a reliable model?

- Data Source and Lineage Inventory
- Data Quality Profile
- Missing Values and Outlier Treatment
- Feature Preparation Log
- Descriptive Statistics and Chart Review

Day 3: Learning Methods and Models

Which learning method fits the question and the data?

- Supervised Learning Classification Models
- Regression Models for Numeric Prediction
- Unsupervised Clustering Segments
- Decision Tree Reading Exercise
- Model Choice Comparison Grid



Day 4: Evaluating Models and Managing Ethics

How far can a model result be trusted, and what risks does its use create?

- Holdout and Cross-Validation Design
- Overfitting Check
- Sensitivity, Specificity and ROC Curve Reading
- Bias and Fairness Review
- Privacy and Data Use Assessment

Day 5: Applying Data Science to One Business Problem

Is the project brief ready for a steering committee to approve?

- Applying the Session 1 Question Statement to the Chosen Problem
- Testing the Session 2 Data Profile Against the Model Needs
- Matching the Session 3 Method Choice to the Data
- Checking the Session 4 Evaluation and Risk Review
- Completing the Data Science Project Brief

Methodology

The programme is built around data workshops. Participants work in small teams with anonymised datasets from banking, retail or healthcare settings and challenge model results as a sponsor would. No programming is required.

- Suggested activity: Profiling a dataset and listing the quality issues that would stop a project.
- Suggested activity: Choosing between two models using their evaluation results.
- Suggested activity: Reviewing a proposed use of customer data for bias and privacy risk.

Capstone Output

Each participant completes a data science project brief for one business problem. It holds a question, a data profile, a method choice, an evaluation plan and a bias and privacy review. The brief is used to seek approval from a steering committee.

Frequently Asked Questions

Is data science for senior managers suitable for people without a technical background?

Yes. Data science for senior managers is set at managerial level and assumes familiarity with business reports, not statistics or programming.



Which models and processes does data science for senior managers rest on in this training?

Data science for senior managers rests on the CRISP-DM process, supervised and unsupervised learning, and holdout and cross-validation for model evaluation.

How is the project brief from data science for senior managers used at work?

You use the project brief to seek approval from a steering committee, brief a data team and set the success measure and checks before work starts.

How does data science for senior managers differ from a business intelligence reporting programme?

Data science for senior managers centres on predicting and finding patterns with models and judging their reliability, while a business intelligence reporting programme centres on presenting existing figures in dashboards.