

Course No. 1256

Data Science Fundamentals Training Course

DATA SCIENCE & AI ANALYTICS
ARTIFICIAL INTELLIGENCE & APPLICATIONS

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Data Science Fundamentals Training Course is designed to provide professionals with a comprehensive understanding of the core principles, methodologies, and practical applications of data science in today's data-driven business environment. As organizations increasingly rely on data to support strategic planning, operational excellence, digital transformation, and innovation, professionals across industries need the ability to understand, analyze, and interpret data effectively. This course provides a structured foundation in data science concepts, enabling participants to transform raw data into meaningful business insights that support informed decision-making and organizational performance.

Data science combines statistics, mathematics, programming, data engineering, visualization, and machine learning to solve complex business challenges. Throughout the Data Science Fundamentals Training Course, participants will explore the complete data science lifecycle, including data collection, preparation, exploration, visualization, statistical analysis, predictive modeling, and communication of analytical findings. The course introduces essential concepts without requiring advanced programming experience, making it suitable for professionals seeking to build practical data literacy and analytical capabilities.

The course combines internationally recognized data science methodologies with practical business applications relevant to government entities, financial institutions, oil and gas organizations, healthcare providers, manufacturing companies, telecommunications providers, and large enterprises. Participants will learn how data science supports business intelligence, operational optimization, customer analytics, financial analysis, risk management, process improvement, forecasting, and evidence-based decision-making. In addition, the course addresses data governance, data quality, privacy, ethics, cybersecurity considerations, and regulatory compliance to ensure responsible data management practices.

Combining conceptual knowledge with practical exercises, the Data Science Fundamentals Training Course enables participants to understand how modern organizations use data science to improve efficiency, enhance competitiveness, identify opportunities, manage risks, and support innovation. Through interactive workshops, case studies, and hands-on exercises, participants will develop the confidence to work effectively with data, collaborate with analytics teams, and contribute to data-driven initiatives that create measurable organizational value.

Objectives

- Analyze organizational data requirements and identify opportunities for applying data science within business operations.
- Develop a foundational understanding of data science concepts, methodologies, and business applications.
- Evaluate different types of data, analytical techniques, and visualization methods to support business decisions.
- Apply statistical analysis and exploratory data analysis techniques to real-world business datasets.
- Design structured approaches for data collection, preparation, cleaning, and validation.
- Improve decision-making by interpreting analytical results and communicating business insights effectively.
- Strengthen understanding of machine learning fundamentals and predictive analytics within business contexts.
- Implement best practices for data governance, quality management, privacy, ethics, and regulatory compliance.
- Assess organizational readiness for adopting data-driven decision-making and analytics initiatives.
- Align data science practices with business strategy, digital transformation, operational excellence, and continuous improvement objectives.

Who Should Attend

The Data Science Fundamentals Training Course is designed for business managers, department managers, executives, project managers, digital transformation leaders, business analysts, operations managers, finance professionals, HR professionals, marketing specialists, IT managers, and decision-makers seeking to understand how data science can improve organizational performance and strategic decision-making.

The course is particularly valuable for professionals working in government entities, ministries, public sector organizations, banks, financial institutions, oil and gas organizations, healthcare providers, telecommunications companies, manufacturing organizations, logistics providers, utilities, educational institutions, and multinational corporations implementing data-driven transformation initiatives.

It is also suitable for data analysts, business intelligence professionals, reporting specialists, performance management teams, quality professionals, innovation managers, consultants, recent graduates, and professionals who want to build a strong foundation before progressing to advanced topics such as machine learning, artificial intelligence, predictive analytics, and big data.

Learning Outcomes

- By the end of the Data Science Fundamentals Training Course, participants will be able to:
- Explain the core principles, terminology, and business value of data science.
- Differentiate between structured, semi-structured, and unstructured data.
- Collect, clean, prepare, and organize data for analytical purposes.
- Perform exploratory data analysis using statistical techniques and visualization methods.
- Interpret analytical findings to support evidence-based business decisions.
- Understand the fundamentals of machine learning and predictive analytics.
- Apply best practices for data governance, data quality, privacy, ethics, and cybersecurity.
- Communicate analytical results effectively through dashboards, reports, and data visualizations.
- Identify opportunities for applying data science within organizational functions and business processes.
- Contribute effectively to enterprise data initiatives and collaborate with analytics and technology teams.

Course Outline

DAY 01

Foundations of Data Science

- Introduction to Data Science and digital transformation
- The data science lifecycle and business applications
- Types of data and data sources
- Roles, responsibilities, and careers in data science

DAY 01 — CONTINUED

PRACTICAL WORKSHOP

Identifying business opportunities for data science across organizational functions

DAY 02**Data Collection, Preparation, and Exploration**

- Data acquisition methods and data management fundamentals
- Data cleaning, transformation, and preparation techniques
- Exploratory Data Analysis (EDA)
- Descriptive statistics and data interpretation

PRACTICAL WORKSHOP

Preparing and exploring business datasets

DAY 03**Data Visualization and Analytical Techniques**

- Principles of effective data visualization
- Business dashboards and reporting
- Introduction to statistical analysis
- Fundamentals of predictive analytics and machine learning

PRACTICAL WORKSHOP

Building visualizations and interpreting analytical results

DAY 04**Business Applications of Data Science**

- Data science applications in finance, HR, marketing, operations, procurement, and customer service
- Business Intelligence and decision support systems

DAY 04 — CONTINUED

- Data governance, quality management, privacy, and ethics
- Cybersecurity considerations for data management

PRACTICAL WORKSHOP

Solving business challenges using data science methodologies

DAY 05

Building a Data-Driven Organization

- Developing organizational data strategies
- Establishing a data-driven culture and analytical mindset
- Future trends in data science, Artificial Intelligence, and advanced analytics
- Measuring the business value of data science initiatives

FINAL WORKSHOP

Developing a comprehensive data science implementation roadmap, including business objectives, governance framework, data quality strategy, KPI dashboard, analytics roadmap, stakeholder engagement plan, and organizational action plan to strengthen data-driven decision-making, operational excellence, digital transformation, and sustainable business performance.

Register or Request More Information

Course page: <https://quest-training.com/courses/data-science-fundamentals-training-course>

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