Document Generated: 06/19/2026

Learning Style: Virtual Classroom

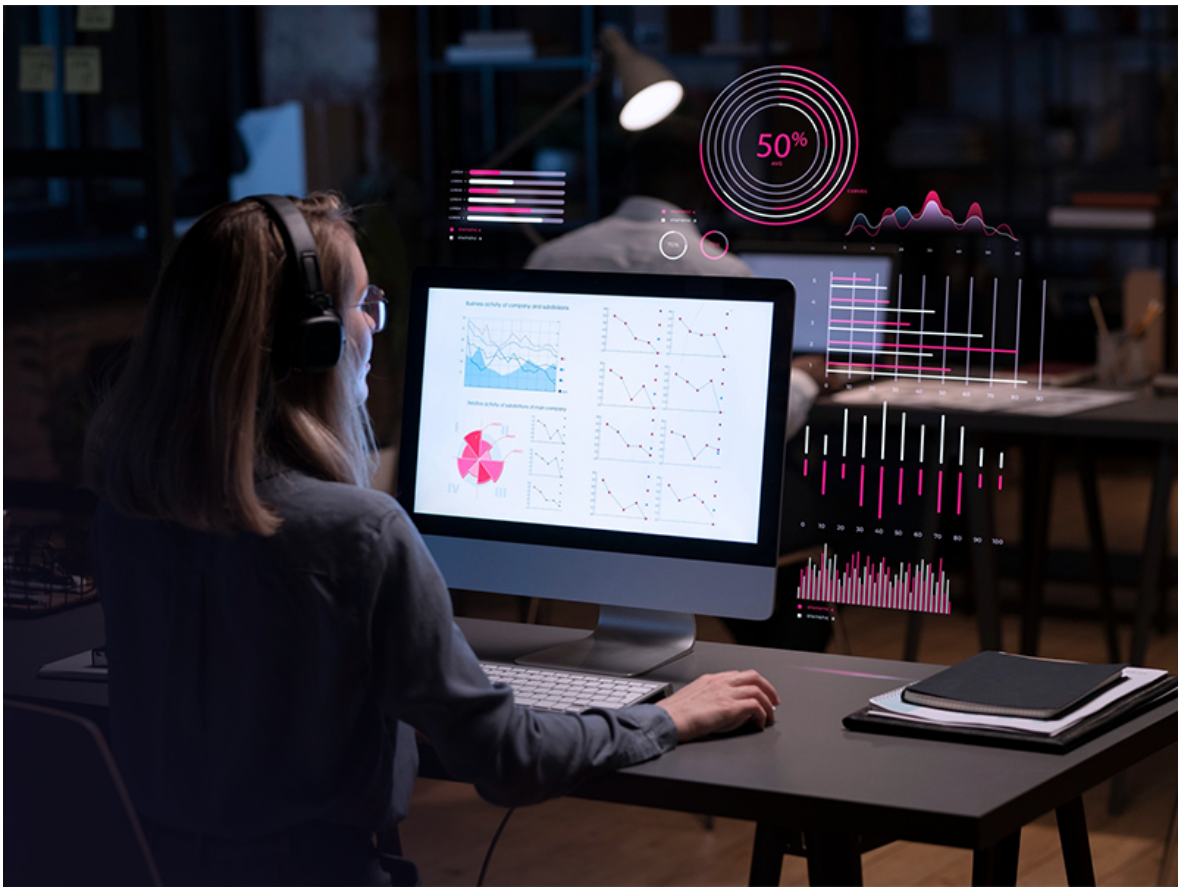
Technology:

Difficulty: Beginner

Course Duration: 1 Day

Next Course Date: September 21, 2026

Data Science Overview | Technologies, Tools & Modern Roles in the Data-Driven Enterprise (TTDS6000)



About This Course:

This course serves as an ideal primer, offering a valuable kickstart for individuals new to data science, whether they aim to apply foundational concepts in their current role, engage in informed discussions, or pursue advanced training to launch their data science career. You'll exit the class with a solid understanding of these technologies to a conversant level, able to participate in strategic decisions surrounding data science skills. A highlight of the course will be our demo of a custom Retrieval Augmented Generation (RAG) based GPT solution, demonstrating how advanced AI techniques align with various data-oriented business roles and processes, providing insights into the latest technologies driving modern data strategies.

Course Objectives:

- The essentials of data collection and cleansing, recognizing their role as the foundation for insightful analytics.
- The dynamics of data visualization, and how well-crafted visuals aid in decision-making and idea communication.
- A high-level overview of machine learning, exploring its ability to identify patterns and forecast trends for informed business strategies.
- The fundamentals of big data technologies, understanding their capacity to manage and analyze extensive information for business leverage.
- The significance of data-driven insights in steering strategic, informed actions and nurturing a data-aware business culture.
- The framework of data teams, appreciating the collaborative synergy among data scientists, analysts, and engineers in driving data initiatives.
- Key programming languages and tools used in data science, acknowledging their role in effective project execution and team communication.

Audience:

- This introductory-level course is geared for tech professionals who wish to integrate data-driven strategies into their business operations. Ideal roles include business analysts, project managers, and department heads who aim to understand the impact of data science in decision-making and strategy formulation. The course is also suited to IT professionals and aspiring data analysts looking to familiarize themselves with the foundational concepts and tools of data science, setting the stage for further specialized training.

Prerequisites:

- Basic Understanding of Data Concepts: Participants should have a basic understanding of data and its importance in business contexts, including familiarity with common data types and simple data manipulation.

- Fundamental Analytical Skills: A basic proficiency in analytical thinking and problem-solving, enabling participants to follow along with data analysis concepts and techniques presented during the course.

- Familiarity with Business Operations: An understanding of general business operations and processes, as this will help in relating data science concepts to practical business applications and decision-making scenarios.

Course Outline:

1.Understanding Data Science in Business

- Overview of Data Science and its Evolution
- Importance of Data Science in Business
- Key Terminologies in Data Science
- Data Science vs. Traditional Business Intelligence
- Demo

2. Data Collection and Preparation

- Learn about the sources of data and methods to collect and prepare data for analysis.
- Sources of Data in Business
- Data Collection Techniques
- Data Cleaning and Pre-processing
- Demo

3. Introduction to Analytics and Statistical Methods

- Explore basics of analytics and statistical methods used in data science.
- Descriptive vs. Inferential Statistics
- Common Statistical Methods and Their Business Applications
- Basics of Data Visualization
- Demo

4. Introduction to Machine Learning for Business

- Understand the fundamentals of machine learning and its application in business decisions.
- Overview of Machine Learning
- Supervised vs. Unsupervised Learning

- Common Machine Learning Algorithms in Business
- Demo

5. Data Visualization and Interpretation

- Learn how to visualize and interpret data to derive actionable business insights.
- Importance of Data Visualization
- Common Data Visualization Tools (Tableau, PowerBI, Qlik, Looker etc.)
- Demo

6. Big Data, Hadoop, and Business Decisions

- Understand the concept of big data, the Hadoop ecosystem, and how it can be leveraged for strategic business decisions.
- Introduction to Big Data
- Overview of the Hadoop Ecosystem and its Components
- Big Data Technologies and Tools (Hadoop, Spark, Hive, Cassandra, etc.)
- Integrating Big Data into Business Strategy
- Big Data for Predictive Analysis
- Challenges and Ethical Considerations in Big Data
- Demo

7. Common Tools, Languages & AI in Data Science

- Gain insights into the common tools and languages used in data science, the role of AI, and modern data science roles.
- Common Data Science Tools and Languages (Python, R, SQL, and Java)
- Introduction to AI in Data Science
- New AI Tools in Data Science
- Modern Roles in Data Science (Data Analyst, Data Engineer, Data Scientist)
- Demo

8. Implementing Data Science in Business

- Gain insights on how to successfully implement data science projects in a business environment.
- Building a Data-Driven Culture
- Roles and Responsibilities in a Data Science Team
- Project Management for Data Science

9. Data Science in Action

- Q&A session & Recap
- Group discussion on the application of data science in participants' respective businesses
- Additional resources and guides for further self-paced learning