MERCURY

Data Engineering Training Course

9 – 13 May 2027
Istanbul (Turkey)



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Ref: 15815_329095 **Date:** 9 – 13 May 2027 **Location:** Istanbul (Turkey) **Fees:** 5500 Euro

Introduction:

Data Engineering is crucial in transforming raw data into meaningful insights that drive business decisions, innovations, and technological advancements. This Data Engineering training course provides a foundation for designing, building, and managing data architectures that facilitate efficient data processing, storage, and retrieval. Participants will explore key concepts, tools, and methodologies, including data warehousing, ETL Extract, Transform, Load pipelines, data lake management, and cloud-based data solutions.

This Data Engineering training focuses on practical application, prepares learners to handle complex data engineering challenges, streamline data workflows, and support scalable, high-performance data ecosystems. It provides an understanding of data engineering, covering its fundamentals, definition, and essential concepts. Participants will gain expertise in data engineering skills, such as mastering SQL for data engineering, exploring modern data engineering tools, and implementing effective data engineering solutions.

The Data Engineering training course dives into data engineering architecture, best practices, and advanced techniques in cloud data engineering to meet modern business needs. Ideal for aspiring professionals, this data engineering program includes guidance on pursuing a certification, equipping attendees with the knowledge to excel as a data engineering manager. This data engineering course prepares individuals for real-world challenges and innovative solutions.

Targeted Groups:

- Aspiring Data Engineers.
- Data Analysts are seeking advanced skills.
- IT and Database Administrators.
- Software Developers are transitioning to data roles.
- Business Intelligence BI Professionals.
- Data Architects and Solutions Architects.
- Technical Project Managers in data-driven fields.
- Recent graduates in Computer Science or Data Science.

Course Objectives:

At the end of this Data Engineering course, the participants will be able to:

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- Understand foundational concepts in data engineering.
- Develop efficient ETL workflows for data processing.
- Design and implement robust data architectures and pipelines.
- Gain proficiency in data storage solutions, including data lakes and warehouses.
- Automate data workflows to improve processing efficiency.
- Master SQL for data manipulation and database management.
- Leverage cloud platforms for scalable data engineering.
- Ensure data quality, governance, and security across systems.
- Apply big data tools like Hadoop and Spark in real-world scenarios.

Targeted Competencies:

By the end of this Data Engineering training, the participants will be able to:

- Data Architecture Design.
- ETL Extract, Transform, Load Process Development.
- Data Warehousing and Storage Optimization.
- Data Pipeline Automation and Orchestration.
- Proficiency in SQL and Database Management.
- Cloud Data Engineering AWS, Azure, GCP.
- Data Quality and Governance Practices.
- Big Data Processing Hadoop, Spark.
- Data Security and Compliance.

Course Content:

Unit 1: Introduction to Data Engineering Fundamentals:

- Explore the role and importance of data engineering in modern businesses.
- Understand data engineering vs. data science vs. data analytics.
- Learn key concepts such as data modeling, pipelines, and architecture.
- Examine the data lifecycle from raw data acquisition to insight generation.
- Discuss industry applications and case studies in data engineering.

Unit 2: Building ETL Pipelines:

- Learn the basics of Extract, Transform, and Load ETL processes.
- Design and implement ETL pipelines for data cleaning and transformation.
- Automate data pipelines to streamline workflows.
- Address data integration challenges from multiple sources.
- Explore tools and frameworks for ETL processes, including Apache NiFi and Talend.

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Unit 3: Data Warehousing and Data Lake Design:

- Understand the concepts and differences between data warehouses and data lakes.
- Design storage systems that optimize data retrieval and processing.
- Explore schema design, indexing, and partitioning for efficient querying.
- Implement cloud-based data warehousing using Amazon Redshift, Google BigQuery, and Snowflake.
- Discuss best practices in data storage for scalability and flexibility.

Unit 4: Big Data Processing and Distributed Systems:

- Introduction to big data concepts and processing frameworks.
- Work with distributed computing tools like Hadoop and Apache Spark.
- Implement scalable data pipelines for handling large datasets.
- Optimize data processing using parallelism and in-memory computing.
- Understand data partitioning, sharding, and cluster management.

Unit 5: Data Governance, Quality, and Security:

- Learn the principles of data governance and data stewardship.
- Implement data quality frameworks to ensure reliable data outputs.
- Apply data security best practices, including encryption and access controls.
- Explore compliance requirements GDPR, HIPAA for data handling.
- Establish data lineage and auditing practices to track data flow and changes.