

Big Data Engineering for Analytics: Architecting Solutions

IT & IT Engineering
Barcelona (Spain)
15 - 19 Sep 2025

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Big Data Engineering for Analytics: Architecting Solutions

Ref: 3289_127477 **Date:** 15 - 19 Sep 2025 **Location:** Barcelona (Spain) **Fees:** 4400 **Euro**

Course Description

This comprehensive 5-day course equips data professionals with the skills to design, implement, and manage big data solutions for analytics. Participants will learn to architect data lakes, build fault-tolerant distributed systems, and develop scalable data processing pipelines. The course covers essential big data technologies, best practices, and real-world applications.

Learning Objectives

- Design and implement scalable big data architectures for analytics
- Build and manage data lakes using various storage technologies
- Develop efficient data processing pipelines using distributed computing frameworks
- Apply best practices for data governance, security, and quality in big data environments
- Integrate big data solutions with analytics and machine learning workflows

Course Modules

Day 1: Introduction to Big Data Engineering

- Big data concepts and ecosystem overview
- Data engineering fundamentals and best practices
- Introduction to distributed systems and parallel processing
- Big data architecture patterns and use cases

Day 2: Data Storage and Management

- Data lake design and implementation
- Distributed file systems HDFS, S3
- NoSQL databases for big data MongoDB, Cassandra
- Data modeling and schema design for big data

Day 3: Data Processing and Analytics

- Batch processing with MapReduce and Hadoop
- Stream processing with Apache Kafka and Spark Streaming
- SQL on big data with Hive and Presto
- Machine learning at scale with Spark MLlib

Day 4: Data Pipelines and Workflow Management

A graphic featuring a chessboard with several chess pieces (king, queen, rook, knight, and pawns) in gold and silver. The text 'UK Training' is in a small font above the word 'PARTNER' in a large, bold, black font.

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- ETL and data integration for big data
- Workflow orchestration with Apache Airflow
- Data quality and validation techniques
- Monitoring and optimization of data pipelines

Day 5: Advanced Topics and Best Practices

- Data governance and security in big data environments
- Performance tuning and optimization techniques
- Real-time analytics and dashboarding
- Case studies and practical applications

Practical Wins for Participants

- Design and implement a scalable data lake architecture
- Build an end-to-end data processing pipeline using distributed frameworks
- Develop a real-time analytics solution for streaming data
- Create a data governance strategy for a big data environment

A graphic of a chessboard with several chess pieces. A large gold king piece is in the foreground, with a silver pawn and a silver knight behind it. In the background, there are concentric circles emanating from a point on the board.

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