



AZURE DATA FUNDAMENTALS

Programming & development

Course Curriculum



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Module 1 : Introduction to Data Concepts

- Azure Core Data Related Services
- Types of cloud computing
- Azure data Related Roles
- Database Administrator Common tools
- Data Engineering Common tools
- Data Analyst Common tools

Module 2: Data Overview

- Introduction to Data
- Data documents
- Data Sets
- Data types
- Schema vs Schemaless
- Query and Querying
- Batch vs Stream Processing
- Relational data
- Relational data Relationships
- Row store vs Column store
- Database Index
- Data Integrity vs Data Corruption
- Normalized vs Denormalized data
- Pivot table
- Strongly consistent vs Eventually consistent
- Synchronous vs Asynchronous
- Non relational data
- Data source
- Database
- Data warehouse
- Data mart
- Data Lakes
- Data Lakehouse
- Data structures





- Unstructured data
- Semi structured
- Semi structured Data Structures
- Semi Structure JSON
- Semi Structure ORC
- Semi Structure AVRO
- Structured Data
- Data mining
- Data Mining Methods
- Data Wrangling
- Ddata modeling
- ETL vs ELT
- Data Analytics
- Key performance indicators KPI
- Data Analytic Techniques
- Microsoft One Drive
- Microsoft sharepoint

Module 3: Azure Synapse and Data Lake

- Azure Synapse Analytics
- Synapse SQL and pools
- Synapse key features
- Azure Data Lake Gen 2
- Polybase
- Synapse ELT
- Azure data lake analytics

Module 4: Account Storage

- Azure Blob storage
- Azure files

Module 5: Power BI

- Power BI Visualizations
- Power BI Interactive Reports



- Power BI Service and Dashboards
- Reports vs Dashboards

Module 6: Relational Databases

- Structured Query Language
- OLAP vs OLAP
- Open source relational databases
- Read Replicas
- Citus Postgres Hyperscale
- Azure SQL Family
- Elastic pools

Module 7: T SQL

- Data Definition Language
- Data Manipulation Language
- Data Query Language
- Data Control Language
- Transaction Control Language
- SQL Document Comparisons



Module 8: Database Security

- Connectivity Architecture
- Database Authentication
- Network Connectivity
- Azure Defender for SQL
- Azure Database Server Firewalls
- Always Encrypted
- Role Based Access Controls
- Transparent Data Encryption
- Dynamic Data Masking
- Private Links



Module 9: Azure Tables Cosmos DB

- Key Value Store
- Document Store
- Mongo DB
- Graph Database
- Apache Tinkerpop and Gremlin
- Azure Tables
- Azure Cosmos DB
- Azure Table Account Storage vs Cosmos DB

Module 10: Hadoop Systems

- Apache Hadoop
- Apache Kafka
- HDInsights

Module 11: Azure and Databricks

- Apache Spark
- Azure Databricks



Module 12: ELT and SQL Tools

- SQL Server Management Studio
- SQL Server Data Tools
- Azure Data Studio
- Azure Data Factory
- SQL Server Integration Services

Module 13: Follow Alongs

- Install and Use Power BI
- Launch Azure SQL and Use Data Studio
- Use Azure SQL as data source in Power BI
- Use SSMS to perform a query on Azure SQL
- Create Blob and File storage



- Explore CosmosDB various NoSQL engines
- Create a ELT job from Azure SQL to Blob Storage
- Explore Azure Databricks
- Explore Azure Synapse Analytics
- Cleanup

