Azure Data Engineering • Snowflake • Microsoft Fabric • Power BI • AI • DevOps

A comprehensive, project-driven program designed to build practical skills across modern cloud data platforms and prepare experienced professionals for architecture-oriented roles.

1. Program Overview

The Cloud Solution Architect Training Program is designed for professionals who want to progress beyond individual database, data engineering, analytics, or cloud tools and learn how to design complete enterprise data solutions. The program combines SQL, performance engineering, Azure Data Engineering, Snowflake, Microsoft Fabric, Power BI, AI capabilities, DevOps integration, cloud security, governance, and end-to-end architecture projects.

The emphasis is not only on learning products. Participants learn how different technologies fit together, how to select an appropriate architecture for a business requirement, and how to balance scalability, security, governance, performance, maintainability, and cost.

2. Why This Program?

Modern enterprises use multiple data platforms rather than a single database or cloud service.

Senior professionals are increasingly expected to understand the complete journey from source systems to ingestion, transformation, storage, governance, analytics, AI, and deployment.

A Solution Architect must be able to translate business requirements into a practical technical architecture and explain the technology choices.

The program bridges the gap between hands-on engineering skills and architecture-level decision making.

Participants gain exposure to Azure, Snowflake, Microsoft Fabric, Power BI, AI and DevOps as parts of one connected solution landscape.

3. Who Is This Program For?

- ✓ SQL Developers and Senior SQL Developers
- ✓ SQL Server DBAs and Database Administrators
- ✓ ETL / Data Warehouse Developers and Administrators
- ✓ Azure Data Engineers
- ✓ Snowflake Data Engineers
- ✓ Microsoft Fabric Engineers
- ✓ BI Developers and Power BI professionals
- ✓ Cloud Engineers and Data Platform Engineers
- ✓ Technical Leads, Team Leads and Consultants
- ✓ Experienced IT professionals planning to move into Cloud Data Architect, Data Solution Architect or Solution Architect responsibilities

4. Who Can Enroll?

Professionals with database, SQL, ETL, BI, analytics, cloud, software development, administration, or data engineering experience can enroll. Strong prior knowledge of every platform is not required because the program builds the learning path from SQL foundations toward advanced cloud architecture.

Recommended background: Basic database/IT knowledge and a willingness to work on hands-on labs and projects. Experienced professionals will benefit most from the architecture and cross-platform sections.

5. How This Program Helps

Current Skill / Challenge	How the Program Helps
Database / SQL background	**Extends skills into cloud data engineering, analytics and architecture.**
Single-cloud experience	**Builds cross-platform understanding across Azure, Snowflake and Fabric.**
Data Engineer	**Develops architecture, governance, security, integration and design-decision skills.**
BI / Power BI professional	**Adds upstream engineering, cloud platforms, governance and DevOps understanding.**
Senior technical professional	**Provides a structured path toward architecture and technical leadership responsibilities.**

6. Cloud Data Solution Architect: Training Curriculum

Module 1: MSSQL & TSQL
Module 2: SQL Query Tuning
Module 3: Azure Data Engineering, AI
Module 4: Snowflake Engineering, DBT, Cortex AI
Module 5: Fabric Data Engineering
Module 6: Power BI with AI, Co-Pilot
Module 7: DevOps Integrations
Module 8: Cloud Architecture, Security & Governance
Module 9: End to End Projects

Total Duration: 8 Months

DETAILED COURSE CONTENT

Module 1: MSSQL & T-SQL

- ✓ Build the database and SQL foundation required to understand transactional systems, data models, data extraction and downstream data platforms.
- ✓ Key topics
- ✓ SQL Server architecture and database fundamentals
- ✓ Tables, constraints, keys and relationships
- ✓ SELECT queries, filtering, sorting and aggregations
- ✓ Joins, subqueries, CTEs and set operators
- ✓ Views, stored procedures and functions
- ✓ Transactions and error handling
- ✓ Window functions and advanced T-SQL
- ✓ Data modeling fundamentals and OLTP vs analytical workloads
- ✓ Module outcome
- ✓ Participants can work confidently with SQL Server and create reliable SQL logic for operational and analytical data workloads.

Module 2: SQL Query & Database Performance Tuning

- ✓ Develop the performance mindset required of architects when designing scalable database and analytics solutions.
- ✓ Key topics
- ✓ Query execution plans
- ✓ Indexes and indexing strategies
- ✓ Statistics and cardinality concepts
- ✓ SARGability and query rewrites
- ✓ Blocking, locking and concurrency fundamentals
- ✓ Waits and performance troubleshooting
- ✓ Stored procedure performance
- ✓ Identifying expensive queries
- ✓ Database performance baselining and optimization approaches
- ✓ Module outcome
- ✓ Participants can identify common SQL performance problems and incorporate performance considerations into solution design.

Module 3: Azure Data Engineering with AI

- ✓ Design and implement modern data engineering solutions using the Microsoft Azure data ecosystem.
- ✓ Key topics
- ✓ Azure data platform architecture
- ✓ Azure SQL Database and related data services
- ✓ Azure Data Lake Storage Gen2
- ✓ Azure Data Factory pipelines and orchestration
- ✓ Azure Databricks, Spark and PySpark
- ✓ Delta Lake and Medallion Architecture
- ✓ Data warehouse and lakehouse patterns
- ✓ Batch and streaming concepts
- ✓ Monitoring, error handling and operationalization
- ✓ AI-assisted engineering and productivity scenarios
- ✓ End-to-end Azure data pipelines
- ✓ Module outcome
- ✓ Participants can build and explain an Azure-based data platform from ingestion through transformation, storage and consumption.

Module 4: Snowflake Data Engineering, DBT & Cortex AI

- ✓ Learn how to engineer and architect scalable cloud data warehouse and transformation solutions on Snowflake.
- ✓ Key topics
- ✓ Snowflake architecture and core objects
- ✓ Databases, schemas, tables and virtual warehouses
- ✓ Stages and data loading
- ✓ Snowpipe and automated ingestion
- ✓ Streams, Tasks and Dynamic Tables
- ✓ Semi-structured data handling
- ✓ Secure data sharing concepts
- ✓ Performance and warehouse optimization
- ✓ DBT models, tests, documentation and transformations
- ✓ DBT deployment workflow concepts
- ✓ Snowflake Cortex AI capabilities and use cases
- ✓ Snowflake security, governance and cost considerations
- ✓ Module outcome
- ✓ Participants can design modern Snowflake data pipelines, transformation workflows and AI-enabled analytics patterns.

Module 5: Microsoft Fabric Data Engineering

- ✓ Build unified analytics solutions using Microsoft Fabric and OneLake.
- ✓ Key topics
- ✓ Microsoft Fabric architecture
- ✓ OneLake and workspaces
- ✓ Lakehouse and Warehouse
- ✓ Data Factory pipelines
- ✓ Dataflow Gen2
- ✓ Notebooks, Spark and data engineering
- ✓ Delta tables and Medallion Architecture
- ✓ Shortcuts and data virtualization concepts
- ✓ Mirroring concepts

- ✓ Real-time analytics concepts
- ✓ Semantic model integration
- ✓ Security, governance and monitoring
- ✓ Fabric capacity and performance considerations
- ✓ Module outcome
- ✓ Participants can design and implement a Fabric-based data engineering platform and integrate it with enterprise analytics.

Module 6: Power BI with AI & Copilot

- ✓ Connect engineered data platforms to business analytics and decision-making experiences.
- ✓ Key topics
- ✓ Power BI architecture and ecosystem
- ✓ Data modeling and star schema
- ✓ Power Query transformation concepts
- ✓ DAX fundamentals and measures
- ✓ Reports, dashboards and visualization design
- ✓ Import, DirectQuery and Direct Lake concepts
- ✓ Power BI with Microsoft Fabric
- ✓ Row-level security and governance
- ✓ Performance optimization fundamentals
- ✓ AI features and Copilot-assisted analytics
- ✓ Enterprise deployment and sharing concepts
- ✓ Module outcome
- ✓ Participants understand how architecture decisions upstream affect semantic models, reporting performance, governance and business consumption.

Module 7: DevOps & CI/CD Integrations

- ✓ Introduce repeatable development, version control, testing and deployment practices for enterprise data solutions.
- ✓ Key topics
- ✓ Git and source-control fundamentals
- ✓ Branching and collaboration strategies
- ✓ Azure DevOps / GitHub integration concepts
- ✓ CI/CD for database and data engineering workloads
- ✓ Environment separation: development, test and production
- ✓ Deployment pipelines
- ✓ Configuration and secrets management
- ✓ Automated testing concepts
- ✓ Infrastructure-as-Code awareness
- ✓ Release, rollback and operational practices
- ✓ Module outcome
- ✓ Participants can incorporate DevOps principles into cloud data platform delivery and architecture.

Module 8: Cloud Architecture, Security & Governance

- ✓ Develop the architecture-level skills that connect the individual technologies into secure, scalable and governable enterprise solutions.
- ✓ Key topics

- ✓ Business and technical requirement analysis
- ✓ High-Level Design (HLD) and Low-Level Design (LLD)
- ✓ OLTP, Data Warehouse, Data Lake and Lakehouse architecture
- ✓ Medallion Architecture and data platform design patterns
- ✓ Batch vs streaming architecture
- ✓ Azure identity, Microsoft Entra ID and RBAC concepts
- ✓ Managed identities and secrets management
- ✓ Azure Key Vault
- ✓ Networking, private connectivity and security concepts
- ✓ Microsoft Purview and data governance
- ✓ Data lineage, cataloging and access control
- ✓ Snowflake and Fabric security/governance patterns
- ✓ High availability and disaster recovery concepts
- ✓ RTO and RPO
- ✓ Monitoring and observability
- ✓ Scalability and performance design
- ✓ Cost optimization and FinOps fundamentals
- ✓ Technology evaluation: when to use Azure, Snowflake or Fabric
- ✓ Architecture documentation and stakeholder presentation
- ✓ Module outcome
- ✓ Participants can convert a business requirement into an architecture proposal and defend their choices across security, governance, performance, scalability and cost.

Module 9: End-to-End Enterprise Projects

- ✓ Apply the complete curriculum through architect-level projects where participants design, build, document and present solutions.
- ✓ Key topics
- ✓ Requirement analysis and architecture selection
- ✓ Source-to-target design
- ✓ Data ingestion and orchestration
- ✓ Transformation and data quality
- ✓ Lake / Lakehouse / Warehouse implementation
- ✓ Security and governance design
- ✓ BI and analytics integration
- ✓ DevOps and deployment approach
- ✓ Monitoring and performance considerations
- ✓ Architecture diagrams and project documentation
- ✓ Solution presentation and design justification
- ✓ Module outcome
- ✓ Participants graduate with practical projects they can explain from both an engineering and solution-architecture perspective.

7. Recommended End-to-End Projects

Project 1 - Azure Enterprise Data Platform

Design an enterprise platform that ingests data from operational sources into Azure, transforms it using ADF/Databricks, stores curated data in a Lakehouse or warehouse layer, and serves Power BI. Include security, monitoring, governance and deployment considerations.

Project 2 - Snowflake Modern Data Platform

Build a Snowflake solution with automated ingestion, transformation using DBT, curated analytical models, performance/cost optimization and Cortex AI use cases. Include architecture, security and DevOps considerations.

Project 3 - Microsoft Fabric Unified Analytics Platform

Create a Fabric solution using OneLake, Lakehouse/Warehouse, pipelines, notebooks/Dataflow Gen2 and Power BI. Include Direct Lake concepts, governance, deployment and capacity considerations.

Project 4 - Multi-Platform Solution Architecture Capstone

Given a realistic business requirement, evaluate Azure Data Engineering, Snowflake and Microsoft Fabric; select the appropriate services; produce HLD/LLD diagrams; define security, governance, HA/DR, DevOps and cost strategy; and present the final architecture with technology-selection rationale.

8. Key Learning Outcomes

- ✓ Design end-to-end cloud data and analytics architectures.
- ✓ Build strong SQL and query-performance foundations.
- ✓ Implement Azure data engineering pipelines and Lakehouse patterns.
- ✓ Engineer Snowflake solutions with DBT and understand Cortex AI use cases.
- ✓ Build Microsoft Fabric data engineering and analytics solutions.
- ✓ Integrate Power BI with modern enterprise data platforms.
- ✓ Apply DevOps and CI/CD principles to data solutions.
- ✓ Design for identity, security, governance, lineage, scalability and resiliency.
- ✓ Evaluate technology choices based on business requirements, performance, cost and maintainability.
- ✓ Create HLD/LLD architecture documentation and communicate designs to technical and business stakeholders.
- ✓ Explain complete real-time projects confidently in interviews and architecture discussions.

9. Target Roles After the Program

- ✓ Cloud Data Solution Architect
- ✓ Data Solution Architect
- ✓ Azure Data Architect
- ✓ Cloud Data Architect
- ✓ Senior / Lead Data Engineer
- ✓ Microsoft Fabric Data Engineer / Architect
- ✓ Snowflake Data Engineer / Architect
- ✓ Data Platform Consultant
- ✓ Analytics Solution Architect
- ✓ Technical Lead - Data & Analytics

- ✓ 10. What Participants Will Build
- ✓ The portfolio should demonstrate more than tool knowledge. Each participant should be able to show architecture diagrams, data flows, implementation artifacts, security/governance decisions, deployment strategy, performance considerations, and a clear explanation of why each technology was selected.

11. Suggested Training Methodology

Learning Component	Approach
Concept Sessions	Architecture concepts explained with practical enterprise scenarios.
Hands-on Labs	Guided implementation across SQL Server, Azure, Snowflake, Fabric and Power BI.
Assignments	Scenario-based exercises to reinforce engineering and architecture decisions.
Projects	Platform-specific projects plus a cross-platform architecture capstone.
Architecture Reviews	Students explain design decisions, trade-offs, security and cost considerations.
Interview Preparation	Scenario-based technical and solution-architecture discussions.

12. Program Differentiators

One learning path connecting database, engineering, analytics, AI, DevOps and architecture.
Cross-platform exposure instead of dependence on a single cloud data technology.
Architecture-focused learning: not only how to build, but why a particular design should be chosen.
Project-driven approach with enterprise architecture documentation.
Coverage of current AI capabilities across Azure, Snowflake, Fabric and Power BI.
Career progression focus for experienced database, BI and data professionals.

13. Suggested Program Positioning

Cloud Solution Architect Training
Azure Data Engineering • Snowflake • Microsoft Fabric • Power BI • AI • DevOps
A practical, end-to-end learning program for professionals who want to design modern cloud data platforms and progress toward solution architecture responsibilities.
14. Recommended Certification Alignment
Where appropriate, the curriculum can be mapped to relevant Microsoft, Snowflake and platform certifications. Certification alignment should support the learning journey, while the primary focus remains practical implementation, architecture thinking and project experience.

15. Conclusion

A successful Cloud Solution Architect needs more than knowledge of individual services. The role requires the ability to understand business needs, design the complete data journey, select appropriate technologies, integrate platforms, protect

and govern data, optimize performance and cost, and communicate the solution clearly.

This program is designed to build that progression: from SQL and engineering fundamentals to Azure, Snowflake, Fabric, analytics, AI, DevOps and enterprise solution architecture.