

Microsoft Certified: SQL AI Developer Associate Certification Exam

(DP-800)

COURSE CONTENT

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About Multisoft

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About Course

Microsoft Certified: SQL AI Developer Associate Certification (Exam DP-800) Training is designed for developers who want to build intelligent data-driven applications using SQL technologies and Artificial Intelligence. The course covers Azure SQL, SQL Server, Azure OpenAI integration, vector search, semantic search, Retrieval-Augmented Generation (RAG), AI-assisted querying, database optimization, security, and modern AI application development. Participants will gain practical experience in developing enterprise AI-enabled database solutions while preparing for the DP-800 certification.

Module 1: Introduction to SQL AI Development

- ✓ DP-800 Certification Overview
- ✓ SQL AI Development Fundamentals
- ✓ AI-Powered Database Applications
- ✓ Azure SQL Ecosystem
- ✓ Enterprise AI Use Cases
- ✓ Modern Database Architectures

Module 2: Azure SQL Database and SQL Server

- ✓ Azure SQL Database
- ✓ SQL Server Architecture
- ✓ Database Design
- ✓ Tables and Relationships
- ✓ Data Types
- ✓ Constraints
- ✓ Views
- ✓ Stored Procedures
- ✓ Functions
- ✓ Triggers

Module 3: Advanced SQL Programming

- ✓ Complex SQL Queries
- ✓ Common Table Expressions (CTEs)
- ✓ Window Functions

- ✓ JSON Processing
- ✓ XML Processing
- ✓ Dynamic SQL
- ✓ Transactions
- ✓ Exception Handling
- ✓ Query Optimization

Module 4: Azure OpenAI Integration

- ✓ Azure OpenAI Service
- ✓ Large Language Models
- ✓ Prompt Engineering
- ✓ Function Calling
- ✓ AI Integration Patterns
- ✓ Chat Completion APIs
- ✓ Embeddings
- ✓ Token Management

Module 5: Vector Search and RAG

- ✓ Embedding Models
- ✓ Vector Databases
- ✓ Vector Search
- ✓ Semantic Search
- ✓ Retrieval-Augmented Generation (RAG)
- ✓ Context Management
- ✓ Knowledge Retrieval

- ✓ Search Optimization
- ✓ Hybrid Search

Module 6: AI-Powered SQL Applications

- ✓ Natural Language to SQL
- ✓ AI-Assisted Query Generation
- ✓ Conversational Data Access
- ✓ Intelligent Reporting
- ✓ AI Recommendations
- ✓ AI Search Applications
- ✓ Enterprise AI Integration
- ✓ User Experience Design

Module 7: API Development and Integration

- ✓ REST API Development
- ✓ SQL API Integration
- ✓ Azure Functions
- ✓ Secure Database APIs
- ✓ External Service Integration
- ✓ Authentication
- ✓ Authorization
- ✓ API Performance

Module 8: Database Performance Optimization

- ✓ Indexing Strategies
- ✓ Query Execution Plans
- ✓ Performance Tuning
- ✓ Database Optimization
- ✓ Partitioning
- ✓ Caching
- ✓ Resource Optimization
- ✓ Monitoring
- ✓ Troubleshooting

Module 9: Security and Governance

- ✓ SQL Security
- ✓ Microsoft Entra ID Integration
- ✓ Row-Level Security
- ✓ Dynamic Data Masking
- ✓ Transparent Data Encryption
- ✓ Auditing
- ✓ Compliance
- ✓ Responsible AI
- ✓ Data Governance

Module 10: Deployment and Operations

- ✓ Database Deployment

- ✓ Azure DevOps
- ✓ CI/CD
- ✓ Backup and Recovery
- ✓ Monitoring
- ✓ Logging
- ✓ High Availability
- ✓ Disaster Recovery

Module 11: Enterprise AI Database Solutions

- ✓ AI Search Solutions
- ✓ Recommendation Systems
- ✓ Enterprise Knowledge Base
- ✓ Intelligent Analytics
- ✓ AI Data Pipelines
- ✓ Real-Time AI Applications
- ✓ Best Practices
- ✓ Enterprise Architecture

Module 12: Capstone Project and Certification Preparation

- ✓ End-to-End SQL AI Project
- ✓ Azure SQL AI Solution
- ✓ RAG Implementation Project
- ✓ Performance Optimization
- ✓ Security Implementation
- ✓ Enterprise Deployment

- ✓ DP-800 Certification Practice Labs
- ✓ Final Capstone Project