
International Certification Mapped:
MTA : Exam 98-364: Database Administration Fundamentals
MOS : 77-420 : MOS on MS Excel Module

Course: Data Visualization - Associate Program
Duration: 3 Months (Weekend)

MS Excel	MS SQL
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Introduction to Data Science - Advanced Analytics

- Relevance in industry & need of the hour
- Types of analytics – Marketing, Risk, Operations, etc
- Business & Technology drivers for analytics
- Future of analytics & critical requirement
- Types of problems and business objectives in various industries
- Different phases of Analytics Project

Excel - Basic

- Introduction to Excel
- Working with Formulas and functions
- Formatting & Conditional Formatting
- Filtering, sorting, paste special etc
- Functions (Logical & Text, Mathematical, Statistical etc)
- Data Manipulation & Data Aggregation
- Data Analysis using functions

Excel - Advanced

- Analyzing Data using Pivots
- Descriptive Statistics
- Creating Charts & Graphics
- Data analytics tool (What -if analysis, Goal seek, Data Table, Solver)
- Protecting Workbooks, worksheets and formulas

Excel - Dashboard

- Start by building bar charts, column charts, pie charts and line charts to display your data.
- Build more complex charts like scatter plots, combination charts and more to really tell your story.
- Add interactivity to your dashboard with the slicer and timelines.
- Leverage pivot tables within your dashboard to add even more interactivity.

Introduction to VBA

- Working with VBE (Visual Basic Editor)
- Introduction to Excel Object Model
- Understanding of Sub and Function Procedures
- Key Component of Programming Language
- Understanding of If, Select Case, With End With Statements
- Looping with VBA
- User Defined Function
- Some Commonly Used Macro Examples
- Error Handling
- Object and Memory Management in VBA
- User Form Controls
- ActiveX Controls
- Communicating with Database MS Access through ADO - Exporting/Importing Data

SQL Overview

- Outlining SQL as the cornerstone of database activity
- Applying the ANSI/ISO standards
- Describing the fundamental building blocks: tables, columns, primary keys and foreign keys

Building the Database Schema

- Creating tables and columns
- Building tables with CREATE TABLE
- Modifying table structure with ALTER TABLE
- Adding columns to an existing table
- Removing tables with DROP TABLE

Protecting data integrity with constraints

- Guaranteeing uniqueness with primary key constraints
- Enforcing integrity with foreign key constraints
- Imposing business rules with check constraints
- Enabling and disabling constraints
- Removing constraints with ALTER TABLE

Improving performance with indexes

- Expediting data retrieval with indexes
- Recommending guidelines for index creation

Manipulating Data

- Modifying table contents
- Adding table rows with INSERT
- Changing row content with UPDATE
- Removing rows with DELETE

Applying transactions

- Atomic Consistent Isolated Durable (ACID) rules
- Controlling transactions with COMMIT and ROLLBACK

Writing Single Table Queries

- Retrieving data with SELECT
- Restricting rows with the WHERE filter
- Sorting the result with ORDER BY
- Handling NULL values in expressions
- Avoiding NULL value pitfalls in filter conditions

Querying Multiple Tables

- Applying the ANSI/ISO standard join syntax
- Matching related rows with INNER JOIN
- Including nonmatched rows with OUTER JOIN
- Creating a Cartesian product with CROSS JOIN

Combining results with set operators

- Stacking results with UNION
- Identifying matching rows with INTERSECT
- Utilizing EXCEPT to find nonmatching rows

Employing Functions in Data Retrieval

- Processing data with row functions
- Conditional formatting with the CASE expression
- Utilizing the CASE expression to simulate IF tests
- Dealing with NULL values

Performing analysis with aggregate functions

- Summarizing data using SUM, AVG and COUNT
- Finding the highest/lowest values with MAX and MIN
- Defining the summary level with GROUP BY

- Applying filter conditions with HAVING

Constructing Nested Queries

- Applying subqueries in filter conditions
- Correlated vs. noncorrelated subqueries
- Testing the existence of rows

Including subqueries in expressions

- Placing subqueries in the column list
- Creating complex expressions containing subqueries
- Handling subqueries that return no rows