Antrix Academy of Data Science

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

Course: Business Analytics - Master Program
Duration: 6 Months (Weekend)

MS Excel	Tableau	PowerBi	MS SQL

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
- Formating & Conditional Formating
- 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

Introduction to Tableau Desktop

- Overview of Business Intelligence
- Introduction to Tableau Desktop
- Use and benefits of Tableau Desktop
- Tableau's Offerings

Tableau Desktop Interface

- Data Source Page
- Worksheet Interface
- Creating a Basic View

Connecting Data Sources

- Data Types
- Data Roles
- Visual Cues for Fields
- Data Preparation
- Data Source optimization
- Joins

- Cross Database Joins
- Data Blending
- Joining vs. Blending
- Union
- Creating Data Extracts
- Writing Custom SQL

Organizing Data

- Filtering Data
- Sorting Data
- Creating Combined Fields
- Creating Groups and Defining Aliases
- Working with Sets and Combined Sets
- Drilling and Hierarchy
- Adding Grand Totals and Subtotals
- Changing Aggregation Functions
- Creating Bins
- Cross Data Source Filter

Formatting Data

- Effectively use Titles, Captions, and Tooltips
- Format Results with the Edit Axes
- Formatting your View
- Formatting results with Labels and Annotations
- Enabling Legends per Measure
- Calculations
- Use Strings, Date, Logical, and Arithmetic Calculations
- Create Table Calculations
- Discover Ad-hoc Analytics
- Perform LOD Calculations

Visualizations

- Creating Basic Charts such as Heat Map, Tree Map, Bullet Chart, and so on
- Creating Advanced Chart as Waterfall, Pareto, Gantt, Market Basket

Create Dashboards and Stories

- Dashboard Interface
- Build Interactive Dashboards
- Explore Dashboard Actions
- Best Practices for Creating Effective Dashboards
- Story Interface

- Creating Stories

Introducing the Power BI Ecosystem

- Desktop, Service and Mobile
- Installing and setting up Power BI
- Setting up a MS Power BI account

Getting started with Power BI Desktop

- Visualisation and Fields Panes
- Create visualisations with Report View
- Sort and format data with Data View

Power BI Desktop and Data sources

- How to import from various data sources
- Connectivity with MS Office apps - Excel, Access
- Using other data sources such as databases and CSV Files

Power BI Desktop to create Data Models

- Getting to grips with the Data Model
- Using the Relationship View
- Many-to-one relationships
- Filter propagation

Power BI Desktop for Visualisation Workshop

- Adding visualisations to Report Canvas
- Managing visualisation relationships
- Drill Down and Drill through techniques
- Use of Hierarchies
- Importing and using custom visualisations

Power BI Desktop and DAX

- Custom calculation and the Data Model
- Calculated Columns and Measures
- Evaluation Context
- CountRows and DistinctCount Functions

Power BI Desktop and Advanced DAX functions

- SUMX and CALCULATE
- Time Intelligence functions

Power BI Desktop and Queries

- Data import and the role of Queries
- ETL: Extract, Transform and Load
- Data transformations
- Using Applied Steps
- Query Parameters

Power BI Service and Excel PowerPivot

- Creating a PowerPivot Data Model
- Import data from PowerPivot to Power BI Service
- Using PowerPivot data to create visualisations in Power BI Service

Sharing Data with Power BI

- Share interactive Power BI dashboards
- Share through Power BI, PowerPoint, the web and other mediums

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