

DATA ANALYSIS COURSE

Course Duration:

50 Hours

Course Curriculum:

- Module 1: Basic & Advanced Excel
- Module 2: Tableau
- Module 3: SQL Server

Basic & Advanced Excel:

Overview of the Basics of Excel

- ~ Customizing common options in Excel
- ~ Absolute and relative cells
- ~ Protecting and un-protecting worksheets and cells

Advanced Excel Course - Working with Functions

- ~ Writing conditional expressions (using IF)
- ~ Using logical functions (AND, OR, NOT)
- ~ Using lookup and reference functions (VLOOKUP, HLOOKUP, MATCH, INDEX)
- ~ VlookUP with Exact Match, Approximate Match
- ~ Nested VlookUP with Exact Match
- ~ VlookUP with Tables, Dynamic Ranges
- ~ Nested VlookUP with Exact Match
- ~ Using VLookUP to consolidate Data from Multiple Sheets

Advanced Excel Course - Data Validations

- ~ Specifying a valid range of values for a cell
- ~ Specifying a list of valid values for a cell
- ~ Specifying custom validations based on formula for a cell

Advanced Excel Course - Working with Templates

- ~ Designing the structure of a template
- ~ Using templates for standardization of worksheets

Advanced Excel Course - Sorting and Filtering Data

- ~ Sorting tables
- ~ Using multiple-level sorting

- ~ Using custom sorting
- ~ Filtering data for selected view (AutoFilter)
- ~ Using advanced filter options

Advanced Excel Course - Working with Reports

- ~ Creating subtotals
- ~ Multiple-level subtotals
- ~ Creating Pivot tables
- ~ Formatting and customizing Pivot tables
- ~ Using advanced options of Pivot tables
- ~ Pivot charts
- ~ Consolidating data from multiple sheets and files using Pivot tables
- ~ Using external data sources
- ~ Using data consolidation feature to consolidate data
- ~ Show Value As (% of Row, % of Column, Running Total, Compare with Specific Field)
- ~ Viewing Subtotal under Pivot
- ~ Creating Slicers (Version 2010 & Above)

Advanced Excel Course - More Functions

- ~ Date and time functions
- ~ Text functions
- ~ Database functions
- ~ Power Functions (CountIf, CountIFS, SumIF, SumIFS)

Advanced Excel Course - Formatting

- ~ Using auto formatting option for worksheets
- ~ Using conditional formatting option for rows, columns and cells

Advanced Excel Course - Macros

- ~ Relative & Absolute Macros
- ~ Editing Macro's

Advanced Excel Course - WhatIf Analysis

- ~ Goal Seek
- ~ Data Tables
- ~ Scenario Manager

Advanced Excel Course - Charts

- ~ Using Charts
- ~ Formatting Charts
- ~ Using 3D Graphs
- ~ Using Bar and Line Chart together
- ~ Using Secondary Axis in Graphs
- ~ Sharing Charts with PowerPoint / MS Word, Dynamically
- ~ (Data Modified in Excel, Chart would automatically get updated)

Advanced Excel Course - New Features Of Excel

~ Sparklines, Inline Charts, data Charts

~ Overview of all the new features

TABLEAU SYLLABUS

1. **Introduction**
 - Components Overview
 - Tableau Architecture
 - Server Management
 - Data Flow
2. **Getting Started**
 - Getting Started
 - The Tableau Interface
 - Distributing and Publishing
3. **Connecting to Data**
 - Getting Started with Data
 - Connecting to Databases and Advanced Features
 - Data Prep with Text and Excel Files
 - Editing Data Connections and Data Sources
 - Editing Metadata and Saving Data Sources
 - Using and Refreshing Extracts
 - Join Types
 - Additional Data Blending Topics
 - Data Blending
 - Connecting to Google Analytics
4. **Visual Analytics**
 - Getting Started with Visual Analytics
 - Drill Down and Hierarchies
 - Sorting
 - Grouping
 - Additional Ways to Group
 - Creating Sets
 - Working with Sets
 - Ways to Filter
 - Using the Filter Shelf
 - Quick Filters
 - Where Tableau Filters
 - Filtering for Top and Top N
 - Additional Filtering Topics
 - Parameters
 - Formatting
 - The Formatting Pane
 - Trend Lines
 - Reference Lines
 - Forecasting
5. **Mapping**
 - Getting Started with Mapping
 - Maps in Tableau
 - Editing Unrecognized Locations
 - Expanding Tableau's Mapping Capabilities
 - Custom Geocoding
 - Polygon Maps
 - WMS: Web Mapping Services
 - Background Images
6. **Calculations**
 - Getting Started with Calculations
 - Calculation Syntax
 - Introduction to LOD Expressions
 - Intro to Table Calculations
 - Modifying Table Calculations
 - Aggregate Calculations

- Date Calculations
 - Logic Calculations
 - Number Calculations
 - String Calculations
 - Type Calculations
 - Parameters
 - Conceptual Topics with LOD Expressions
 - Aggregation and Replication with LOD Expressions
 - Nested LOD Expressions
7. **Dashboards and Stories**
- Getting Started with Dashboards and Stories
 - Building a Dashboard
 - Dashboard Layouts and Formatting
 - Dashboard Interactivity using Actions
 - Dashboard Best Practices
 - Story Points
8. **Tableau Server**
9. **Tableau Online**
10. **How To & Best Practice**
- Cleaning Data by Bulk Re-aliasing
 - Bollinger Bands
 - Waterfall Charts
 - Bump Charts
 - Benford's Law
 - Funnel Charts
 - Box Plots
 - Pareto Charts
 - Control Charts
 - Treemaps, Word Clouds and Bubble Charts
 - Histograms
 - Using a Parameter to Change Fields

SQL SERVER SYLLABUS

Introduction To DBMS

- File Management System And Its Drawbacks
- Database Management System (DBMS) and Data Models
- Physical Data Models
- Logical Data Models
- Hierarchical Data Model (HDBMS)
- Network Data Model (NDBMS)
- Relational Data Model (RDBMS)
- Object Data Model (ODBMS)
- Object Relational Data Model (ORDBMS)
- Conceptual Data Models
- Entity – Relationship (E-R) Model

Introduction To SQL Server

- Advantages and Drawbacks Of SQL Server Compared To Oracle And DB2
- Connecting To Server
- Server Type
- Server Name
- Authentication Modes
- Sql Server Authentication Mode
- Windows Authentication Mode
- Login and Password
- Sql Server Management Studio and Tools In Management Studio
- Object Explorer
- Object Explorer Details
- Query Editor

TSQL (Transact-Structured Query Language)

Introduction To TSQL

- History and Features of TSQL
- Types Of TSQL Commands
- Data Definition Language (DDL)
- Data Manipulation Language (DML)
- Data Query Language (DQL)
- Data Control Language (DCL)
- Transaction Control Language (TCL)
- Database
- Creating Database
- Altering Database
- Deleting Database
- Constrains
- Procedural Integrity Constraints
- Declarative Integrity Constraints

- Not Null, Unique, Default and Check constraints
- Primary Key and Referential Integrity or foreign key constraints
- Data Types In TSQL
- Table
- Creating Table
- Altering Table
- Deleting Table

Data Manipulation Language

- Insert
- Identity
- Creating A Table From Another Table
- Inserting Rows From One Table To Another
- Update
- Computed Columns
- Delete
- Truncate
- Differences Between Delete and Truncate

Data Query Language (DQL)

- Select
- Where clause
- Order By Clause
- Distinct Keyword
- Isnull() function
- Column aliases
- Predicates
- Between ... And
- In
- Like
- Is Null

Built In Functions

- Scalar Functions
- Numeric Functions
- Character Functions
- Conversion Functions
- Date Functions
- Aggregate Functions
- Convenient Aggregate Functions
- Statistical Aggregate Functions
- Group By and Having Clauses
- Super Aggregates
- Over(partition by ...) Clause
- Ranking Functions
- Common Table Expressions (CTE)

Top n Clause

Set Operators

- Union
- Intersect
- Except

Joins

- Inner Join
- Equi Join
- Natural Join
- Non-Equi Join
- Self Join
- Outer Join
- Left Outer Join
- Right Outer Join
- Full Outer Join
- Cross Join

Sub Queries

- Single Row Sub Queries
- Multi Row Sub Queries
- Any or Some
- ALL
- Nested Sub Queries
- Co-Related Sub Queries
- Exists and Not Exists

Indexes

- Clustered Index
- NonClustered Index
- Create , Alter and Drop Indexes
- Using Indexes

Security

- Login Creation
- SQL Server Authenticated Login
- Windows Authenticated Login
- User Creation
- Granting Permissions
- Revoking Permissions
- Roles

Views

- Purpose Of Views
- Creating , Altering and Dropping Indexes
- Simple and Complex Views

- Encryption and Schema Binding Options in creating views

Transaction Management

- Introduction
- Begin Transaction
- Commit Transaction
- Rollback Transaction
- Save Transaction
- Role Of Log File In Transaction Management
- Implicit Transactions

TSQL Programming

- Drawbacks Of TSQL that leads to TSQL Programming
- Introduction To TSQL Programming
- Control statements In TSQL Programming
- Conditional Control Statements
- If
- Case
- Looping Control Statements
- While

Cursors

- Working With Cursors
- Types Of Cursors
- Forward_Only and Scroll Cursors
- Static, Dynamic and Keyset Cursors
- Local and Global Cursors

Stored Sub Programs

- Advantages Of Stored Sub Programs compared to Independent SQL Statements
- Stored Procedures
- Creating , Altering and Dropping
- Optional Parameters
- Input and Output Parameters
- Permissions on Stored Procedures
- User Defined Functions
- Creating, Altering and Dropping
- Types Of User Defined Functions
- Scalar Functions
- Table Valued Functions
- Inline Table Valued Functions
- Multi Statement Table Valued Functions
- Permissions On User Defined Functions
- Triggers
- Purpose of Triggers
- Differences Between Stored Procedures and User Defined Functions and Triggers
- Creating, Altering and Dropping Triggers
- Magic Tables
- Instead Of Triggers

- Exception Handling
- Implementing Exception Handling
- Adding and removing User Defined Error Messages To And From SQL Server Error Messages List
- Raising Exceptions Manual

CLR Integration

- What is CLR Integration and The Steps For Implementing It
- A Simple Example With CLR Integration

Working With XML Data Type

Backup and Restore Of Database

Attach and Detach of Database

Normalization