



MIS & Data Analysis

6 Months Certification Program

MS Advanced Excel + SQL Analytics + MS Power BI

SYLLABUS/ COURSE CONTENT

TIME DURATION: 6 MONTHS

SECTION: 1 CORE EXCEL (16 Hrs.)

❖ EXCEL INTRODUCTION & ADVANCED PASTE SPECIAL TECHNIQUES

- Excel Interface
- Shortcut Keys
- Customizing Excel
- Paste Formats, Values, Formulas, Comment, Validations
- Operation – Sum, Multiple, Subtract, Divide
- Transpose Table

❖ FORMULA REFERENCE

- Relative
- Absolute
- Mixed

❖ FORMATTING BASIC

- Custom Formatting
- Conditional Formatting-Readymade

❖ FORMATTING ADVANCED

- Customized Conditional Formatting

❖ EXCEL BUILT IN FUNCTIONS

- Logical Functions
- Math Functions
- Text Functions
- Date and Time Functions
- Statistical Functions
- Database Functions
- Information Functions

ASSIGNMENT | INTERVIEW QUESTIONS | DOUBT SESSION

SECTION: 2 INTERMEDIATE EXCEL (12 Hrs.)

❖ WORKGROUP COLLABORATIONS

- o Protecting, Sharing
- o Formula Auditing
- o Ctrl+G
- o Naming Range

❖ SORTING AND FILTERING

- o Advanced Sorting on 15-20 different criteria(s)
- o Advanced Filters on 15-20 different criteria(s)

❖ SUMMARIZING DATA

- o Adding subtotals to a list
- o Nesting subtotals
- o Text to column
- o Flash Fill

❖ DATA VALIDATION

- o Number, Date & Time Validation
- o Text and List Validation
- o Custom validations based on formula for a cell
- o Dynamic Dropdown List Creation using Data Validation

❖ WORKING WITH EXTERNAL DATA & DATA ANALYSIS TOOL

- o Importing Data from multiple data sources
- o Hyperlink
- o Data Consolidation
- o Goal Seek
- o Solver Tool
- o Financial Function
- o Scenario Manager
- o Data Tables

❖ USING MACROS

- o Macro options
- o Creating Macros
- o Editing and Deleting Macros
- o Use Relative References

SECTION: 3 EXPERT EXCEL (20 Hrs.)

❖ ADVANCED ARRAY FUNCTIONS

- Basic Examples of Arrays (Using ctrl+shift+enter).
- Advanced Use of formulas with Array
- Sumproduct & Aggregate Function

❖ LOOKUP MAHARAJ FUNCTIONS

- Vlookup , HLookup ,Lookup , ZZZ Lookup
- Match , Index & Match
- Reverse Lookup using Choose Function
- Worksheet linking using Indirect
- 1D, 2D, 3D Lookups
- Duplicate Vlookup
- V Partial & Case Sensitive & Duplicate Vlookups
- Dynamic Lists
- Address
- Offset
- Mastering Vlookup – 50+ Examples Rehearsal

❖ PIVOT TABLES

- Introduction to PivotTables
- Classic Pivot Table
- How to automatically update PivotTables
- Text Filters-how text filters are used to filter a PivotTable based on text.
- Grouping and Pivot Charts
- Value Field Settings and Show Values As
- Creating Calculated Fields and CalculatedItems
- Using Slicers, Filters, and Timelines to quickly analyse data
- GETPIVOTDATA Function
- Creating Pivot Tables from Multiple Ranges
- Multiple Pivot Tables -how to create many PivotTables based on aFilter.
- Data Model
- Using Multiple Slicers with Pivot Tables
- Conditional Formatting and PivotTables

❖ INTRODUCTION TO POWER QUERY & POWER PIVOT

- Power Query
- Power Pivot

❖ CHARTS AND SLICERS

- Creating a chart with the 2D or 3D
- Various Charts
- Create Doughnut Charts, speed – o- meter chart ,
- Create Progress , Bullet Chart

❖ EXCEL DASHBOARD

- Planning a Dashboard
- Adding Tables and Charts to Dashboard
- Link with one sheet to another worksheets and workbook
- Interactive Dashboard with Form Controls
- Form Controls for reports automation

❖ NEW FUNCTION IN EXCEL OFFICE 365

- New Charts-Tree Map, Waterfall, Sunburst, ForecastSheet
- Sparklines- - Line, Column & Win/Loss
- Using 3-D Map
- XLOOKUP, XMATCH, SORT, SORTBY, SEQUENCE, FILTER, RANDARRAY, UNIQUE, LET,LAMBDA etc

ADVANCED GOOGLE SHEETS

MOCK INTERVIEW DRILL (EVERY WEDNESDAY @9PM ON ZOOM)

For More Details: Visit our website at: <https://www.innozant.com/>

Call / WhatsApp: 7065069985

You can also visit our institute at the following address.

B-1363, First floor, office no. 7, Sarpanch Complex, New Ashok Nagar, Delhi-96.

Module 2: SQL ANALYTICS

❖ INTRODUCTION TO DATABASE AND SQL

- Features of database
- Log on to the database using SQL Developer environment

❖ RETRIEVE DATA USING THE SQL SELECT STATEMENT

- List the capabilities of SQL SELECT statements
- Generate a report of data from the output of a basic SELECT statement
- Select All / Specific Columns
- Use Column Heading Defaults
- Use Arithmetic Operators
- Understand Operator Precedence
- Learn the DESCRIBE command to display the table structure

❖ LEARN TO RESTRICT AND SORT DATA

- Write queries that contain a WHERE clause
- List the comparison operators and logical operators
- Describe the rules of precedence for comparison and logical operators
- Use character string literals in the WHERE clause
- Write queries that contain an ORDER BY clause
- Sort output in descending and ascending order

❖ USES OF SINGLE ROW FUNCTIONS TO CUSTOMIZE OUTPUT

- Describe the diff. between single row and multiple row functions
- Manipulate strings with character function
- Manipulate numbers with the ROUND, TRUNC, and MOD functions
- Perform arithmetic with date data
- Manipulate dates with the DATE functions

❖ INVOKE CONVERSION FUNCTIONS AND CONDITIONAL EXPRESSIONS

- Describe implicit and explicit data type conversion
- Use the TO_CHAR, TO_NUMBER, conversion functions
- Nest multiple functions
- Apply the NVL, NULLIF, and COALESCE functions to data
- Use conditional IF THEN ELSE logic in a SELECT statement

❖ **AGGREGATE DATA USING GROUP FUNCTIONS**

- Use the aggregation functions to produce meaningful reports
- Divide the retrieved data in groups by using the GROUP BY clause
- Exclude groups of data by using the HAVING clause

❖ **DISPLAY DATA FROM MULTIPLE TABLES USING JOINS**

- Write SELECT statements to access data from more than one table
- View data that generally does not meet a join condition
- Join a table to itself by using a self-join

❖ **USE SUB-QUERIES TO SOLVE QUERIES**

- Describe the types of problem that sub-queries can solve
- Define sub-queries
- List the types of sub-queries
- Write single-row and multiple-row sub-queries

❖ **THE SET OPERATORS**

- Describe the SET operators
- Use a SET operator to combine multiple queries into a single query
- Control the order of rows returned

❖ **DATA MANIPULATION STATEMENTS**

- Describe each DML statement
- Insert rows into a table
- Change rows in a table by the UPDATE statement
- Delete rows from a table with the DELETE statement
- Save and discard changes with the COMMIT and ROLLBACK
- Explain read consistency

❖ **USE THE DDL STATEMENTS TO CREATE AND MANAGE THE TABLES**

- Categorize the main database objects
- Review the table structure
- List the data types available for columns
- Create a simple table
- Decipher how constraints can be created at table creation
- Describe how schema objects work

❖ **OTHER SCHEMA OBJECTS**

- Create a simple and complex view
- Retrieve data from views
- Create, maintain, and use sequences
- Create and maintain indexes
- Create private and public synonyms

❖ **CONTROL USE ACCESS**

- Differentiate system privileges from object privileges
- Create Users
- Grant System Privileges
- Create and Grant Privileges to a Role
- Change Your Password
- Grant Object Privileges
- How to pass on privileges?
- Revoke Object Privileges

❖ **MANAGEMENT OF SCHEMA OBJECTS**

- Add, Modify, and Drop a Column
- Add, Drop, and Defer a Constraint
- How to enable and Disable a Constraint?
- Create and Remove Indexes
- Create a Function-Based Index
- Perform Flashback Operations
- Create an External Table
- Query External Tables

❖ **MANAGE OBJECTS WITH DATA DICTIONARY VIEWS**

- Explain the data dictionary
- Use the Dictionary Views
- USER_OBJECTS and ALL_OBJECTS Views
- Table and Column Information
- Query the dictionary views for constraint information
- Query the dictionary views for view, sequence, index
- Add a comment to a table
- Query the dictionary views for comment information

❖ **MANIPULATE LARGE DATA SETS**

- Use Subqueries to Manipulate Data
- Retrieve Data Using a Subquery as Source
- Insert Using a Subquery as a Target
- Usage of the WITH CHECK OPTION Keyword on DML Statements
- List the types of Multitable INSERT Statements
- Use Multitable INSERT Statements
- Merge rows in a table
- Track Changes in Data over a period of time

❖ **DATA MANAGEMENT IN DIFFERENT TIME ZONES**

- Time Zones
- CURRENT_DATE, CURRENT_TIMESTAMP
- Compare Date and Time in a Session's Time

Zone

- DBTIMEZONE and SESSIONTIMEZONE
- Difference between DATE and TIMESTAMP
- INTERVAL Data Types
- Use EXTRACT, TZ_OFFSET and FROM_TZ
- Invoke TO_TIMESTAMP, Difference between DATE and TIMESTAMP INTERVAL Data Types Use EXTRACT, TZ_OFFSET and FROM_TZ and TO_DSINTERVAL

❖ RETRIEVE DATA USING SUB-QUERIES

- Multiple-Column Subqueries
- Pairwise and Non-pairwise Comparison
- Scalar Subquery Expressions
- Solve problems with Correlated Subqueries
- Update and Delete Rows Using Correlated Subqueries
- The EXISTS and NOT EXISTS operators
- Invoke the WITH clause
- The Recursive WITH clause

❖ REGULAR EXPRESSION SUPPORT

- Use the Regular Expressions Functions and Conditions in SQL
- Use Meta Characters with Regular Expressions
- Perform a Basic Search using the REGEXP_LIKE function
- Find patterns using the REGEXP_INSTR function
- Extract Substrings using the REGEXP_SUBSTR function
- Replace Patterns Using the REGEXP_REPLACE function
- Usage of Sub-Expressions with Regular Expression Support
- Implement the REGEXP_COUNT function

Module 3: MS POWER BI

❖ Introduction to Power BI

- An Overview of the Workflow in Power BI Desktop
- Download and Installing Power BI Desktop
- Getting to know the Interface
- Power BI Free Vs. Pro Vs. Premium
- Power BI Key Components
- Introducing the Different Views of the Data Model
- Taking a Closer Look at the Query Editor Interface

❖ Power BI Vs Excel Reporting

- When we use which reports

❖ Power BI overview Concept

- Dataset
- Reports
- Dashboard
- Workspace
- Tile

❖ Connecting Power BI Desktop to our Data Sources

- Excel
- CSV
- Web
- PDF
- MS Access
- SQL Developer
- XML
- Connecting to a folder
- Others

❖ Power Query

- When to Use Power Query
- Import and analysis millions of Rows
- Best things to happen in Power BI
- Type of Connection
- Automate your data processing
- Query Editor Tool

- Pivoting and Un pivoting Columns
- Duplicating Vs Referencing Queries
- Transformations

❖ Editing Rows

- First Header Row
- Remove Top Rows
- Filtering- Remove-Replace
- Techniques

❖ Editing columns

- Remove or Keep Columns
- Navigation to the Columns
- Change Columns Header Name

❖ Understanding Append Queries

- Append Queries as existing (With two or multiple tables)
- Append Queries as New
- Formatting Data
 - Change data Type
 - Detect Data type for multiple columns
- Remove error while loading
- Remove null values
- Splitting Columns
- Delimiters
- Delimiters positions
- Creating a New Group for our Queries
- Others
 - Sorting
 - Performing Basic Mathematical Operations in Query Editor
 - Improving Performance and Loading Data into the Data Model
 - Columns distribution, Quality, Profile

❖ Introducing the Star Schema

- Fact Table Vs dim Table
- Star Schema | Dim Vs Fact Table

❖ Joins

- Outer Join
- Left, Right, Full, Anti
- Inner join

❖ **Data Table Vs Lookup Table**

- Primary key Vs, Foreign Key
- Relationship Vs. Merged Table
- Connecting Lookup to Lookups
- Relationship Cardinality
- Introducing and Understanding Relationships
- One to One Relationship
- One to Many Relationship
- Many to Many Relationship
 - Bad Cardinality Many to Many
 - Bad Cardinality One to One
 - Importance for Filter Direction
 - Editing Relationships
 - Data Model Best Practice

❖ **Working on our Data Model Data Relationship View**

- Query Editor vs. Data Model
 - Feature of Query Editor (Structure + Prepare Data)
 - Data Model – Add Relationship, Add Measures (Analysis Data)
- Active properties
- Understanding the differences between the M-Language and DAX
- DAX – Basic information
- Calculated Columns vs. Measures
- Introducing DAX-Measures
- DAX-Measures

❖ **DAX (Data Analysis Expression)**

- Math & Stats Functions
 - Sum, Average, Max/Min, Divide, Count/Counta, Countrows, Distinctcount
- Interactor Functions:
 - SUMX, AVERAGEX, MAXX/MINX, RANKX, COUNTX
- Logical Function
 - IF, IFERROR, AND, OR, NOT, SWITCH

- Text Function
 - Concatenate, Format, Left/Mid/Right,
 - Upper/Lower, Proper, Len, Search/Find,
 - Replace, Rept, Substitute, Trim
- Filter Function
 - Calculate, Filter, All, Allexcept, Related, Distinct, Values
- Date Function
 - Datediff, Yearfrace, Year/Month/Day, Hour/Minute/Second,
 - Today/Now, Weekday/Weeknum

❖ **Working in the Report View to Visualize our Results**

- Understanding the Interface of the Report View
- Creating our First Visualizations
- Editing Interactions and Adding Tooltips
- Adding Color Saturation
- Understanding Hierarchies and Adding Drill-Down
- Formatting charts and Sorting
- Essential Formatting setting: Color, Data Labels, Axis, Placement, Legends, Value
- Table View vs. Matrix View
- Conditional Formatting in Table View
- Basic Charts: Line, Bar Chart, Column Chart, Tree map, Pie, Doughnut, Area
- Tooltips – On hover Text
- Color Saturation in Column Chart
- Slicers: Vertical list Vs. Horizontal tiles
- Text Cards
- Adding Tree maps and Tables
- Applying different Filter Types
- Creating Multi-Row Cards
- Understanding Combined Visualizations and Waterfalls

❖ **Conditional columns and Data Segmentation:**

- Conditional Columns: Writing multi-layered If Conditions
- Segmentation: Use “Group By” to calculate aggregated calculation based on clusters
- Segmentation: Use “Binning” to categorize values into equally sized groups

❖ **Advance Visualization:**

- KPI & Gauge Chart
- Forecast, Trend-line
- Map Visuals
- Custom Visuals – Downloadable Charts
- Use Drill down/up feature to specify chart behavior – granular view
- Show/Expand next level
- Filter level: Report level vs Page level vs Visual level

❖ **Power BI Service**

- Introducing Power BI Service
- Connecting to Data
- Gateway Refresh and Data Flow
- Understanding Gateways
- Gateway Types
- Reports & Dashboard
- Sharing & Collaboration Tool
- Power BI Mobile
- My Workspace Vs. App Workspace
- Creation App Workspace
- Report Reading tool in Power BI Service
- Pining tiles to Dashboard
- Pining Entire report to Dashboard
- Dashboard interface
- Manage Alerts
- Generate Quick insight
- Adding personal Bookmarks
- Web Vs. Mobile Layout

For More Details: Visit our website at: <https://www.innozant.com/>

Call / WhatsApp: 7065069985

You can also visit our institute at the following address.

**B-1363, First floor, office no. 7, Sarpanch Complex, Near Wine & Beer Shop,
New Ashok Nagar, Delhi-96.**