Course Content: Data Analysis By Using MS Excel

Start With MS Excel and Excel Back-End Options:
• Introduction to Excel Worksheet, Row, Column, Cells etc.
• **Detailed discussion on Excel design, Back-End working structure and Excel Options.**
• Use of Basic Operators Like: + - / * ^ %.
• Introduction to the Data and Data Formats.
• Copy, Cut, Paste, Hide, Unhide, Link the Data in Rows, Columns and Sheet.
• Inserting, Deleting, Moving, and linking the data in between the multiple sheets.
• **Introduction to the Paste Special all Option.** (Formulas, Values, Formats, Comments, Validation, All using source themes, All except Borders, Column Widths, Formula and Number formats, Values and Number Formats, None, Add, Subtract, Multiply, Divide, Skip Blanks and Transpose)
• Format Cells, Rows, Columns and Sheets.
• Protection of Cells, Rows, Columns and Sheets.
• **Password protection to the Worksheet, Sheets, Rows, Columns, and Cells**.

Start-up With Formulas: Part-I AND Working With Name Ranges:
• **Text Functions:** Concatenate, Dollar, Left, Mid, Right, Lower, Upper, Proper, Replace, Rept, Find, Search, Substitute, Trim, Trunc, Convert.
• **Combine multiple formulas**
• **Writing of the Complex formulas for improvement in formulas writing skills.**
• **Date and Time Functions:** Date, Datevalue, Day, Day360, Minutes, Hours, Now, Today, Month, Year, Yearfrac, Time, Weekday, Workday, Networkdays, Networkdays.intl, Datedif, EOmonth, Edate, Datedif.

Logical Functions:
Basic If Formulas:
• If, If with OR, If with AND, If with AND &OR, If with OR&AND.
• If with Trim, If with Concatenation, If with Left, Mid, Right.
• If with Other formulas, Complex formulas writing in If.

Advanced Level Of If Formulas:
• Nested If (For Multiple Conditions), If condition used more than one time in the same formula.
• Production Store Management template with the help of Nested If. (Example)
• Nested if with left, Mid, Right
• Nested if with Multiple Text Functions in single formula.
• Other Complex Nested if to be discussed in Class.

Introduction To Name Manager Tool & Usage Of Name Manger With Formulas.
• **Introduction to Name Manager:** Discussion on Name Ranges and Apply the Name Ranges on Cell and the combination of Cells.
• Use of Name Manager: Creating, Editing, and Deleting of Names.
• Create Name Ranges Automatically.

Start-up With Formulas: Part-II And Use of Tool Find & Select, (Go To Special):
• **Math & Trig Functions:** ABS, Aggregate, Power, Product, Rand, Randbetween, Round, Rounddown, Roundup, Subtotal, Sum, Sumif, Sumifs, Sumproduct, Trunc.
• **Use of Sumproduct as lookup and in various activities.**
• **Statistical Functions:** Average, AverageA, Averageif, Averageifs, Count, CountA,

Countblack, Countif, Countifs, MAX, MAXA, MIN, MINA, Small, Large.
• Use of Sumif, Sumifs, Count if, Countifs, Averageif, Averaefis with the Name Ranges.
• **Informative AND Other Functions:** Cell, Info, ISBLANK, ISERROR, ISEVEN,
ISODD, DCOUNT, DSUM, DMAX, DMIN, DPRODUCT, Rank, Use of &.
• **Use of Tool Find & Select: Discussion on Excel's very important tool "Find & Select"
(Go To Special) including all options:** (Comments, Constants, Formulas, Blanks,
Current region, Current array, Objects, Row differences, Column differences, Precedents,
Dependents, Last cell, Visible cells only, Conditional formats, Data validation).

Start-up With Formulas: Part-III: Lookup Functions:
• **Lookup Functions:**
Basic Level Lookup Formulas:
• Discussion on Lookup Functions, Use of Lookup, Vlookup, Hlookup, Index, Indirect
Match, Offset, Choose, Rows, Columns.
• Vlookup with Name Range.
• Hlookup with Name Range.
Advanced Level Of Lookup Formulas:
• Vlookup with Match, Hlookup with Match.
• Lookup from the Left side of Data. (Lookup, Index and Match)
• Vlookup from multiple Data Ranges. (With the help of Logical and Lookup Functions).
• Vlookup with arrays, Hlookup with arrays.
• Index with other Multiple Lookup functions.
• Indirect with other Multiple Lookup functions.
• **New Xlookup, Reverse Lookup, Power Lookup for magical performance**
• Creation of Hyperlink.

Magic With Array Formulas:
Detailed Discussion on Arrays:
• What are the Array Formulas, How Array Formulas work and Use of the Array Formulas,
Acceptance of Array Formulas in today's scenario.
• Basic Array Formulas Example.
• Linking of Spread sheet with the help of Array
• Array in Multiple formulas.
• Array with Lookup functions.
• Advanced Use of formulas with Array.
• Use of Sumproduct in critical situations.
Structuring Of Data & What If Analysis:
• Use of Sorting to arrange the data in ascending and descending order. Addition
and deletion of levels to sort the data on multiple parameters.
• Use of Sorting to arrange the data in Left to Right Order. Addition and deletion
of levels to sort the data on multiple parameters.
• Use of Filter to extract the unique and desired data.
• Use of Custom Filter to fulfil the desired conditions.
• Use of Advance Filter to fulfil the multiple desired conditions.
• Import the data from the multiple applications to Excel.
• Use of Text to Columns for Rearrangement of Data.
• Remove Duplicates from Data.
• Use of Data Validation and Consolidation.
• Use of Data Validation as a magical tool.
• Data of Grouping, Ungrouping and Subtotal.
• **What if Analysis: Detailed Discussion On What if Analysis. Analysis of Data
 by using Scenario Manager and Data Table and Goad Seek.**

Conditional Formatting:
• **Conditional Formatting:** Detailed discussion on conditional formatting.
• Conditional Formatting with multiple cell rules and Top/Bottom Rules.
• Conditional Formatting with Data Bars. Colour Scales and Icon Sets.
• Conditional Formatting on Desired Output, Create New rules, Manage the rules.
• Apply any formula to Conditional formatting.
• Choose Formatting as Table and different Cell Style.

Working With Charts, Interactive Dashboards, Data Visualisation, Power View & Power Map:
• Working With Charts: Detailed discussion on graphically presentation of Data by using Charts.
• Presentation with different kind to Basic charts like Column Charts, Line Charts, Pie Charts, Bar Charts, Scatter Charts
• Preparation of Advanced Level of Charts: Gnatt Chart, Bubble Chart, Speedo Meter Chart. Pareto Chart, Waterfall Chart.
• Introduction to Multiple switches and buttons: Like Form Control, Combo Box, Check Box, Spin Box, List Box and Option Box.
• How To Use Switches with Offset function effectively in Charts.
• Preparation of the Interactive Charts.
• Preparation of the Dashboards: Different of Kind of Advanced level of Dashboards
• Use of Formulas Like Offset, Match, Sumif, Sumifs and many more to prepare the Dashboards.
• Use of Data Validation in Charting.
• Use of Sparkline to your Sheet, Interactive Sparklines
• Working with 2axis and 3axis charts.
• Using Power View and Power Maps.

Pivot Table and Pivot Charts with Slicer and Handling of Errors In Excel :
• Start With Pivot Table, Do the Multiple Field Setting in Pivot Table.
• Pivot form the Multiple Source of Data.
• Pivot from the Multiple Data Ranges.
• Pivot from the Name Range.
• Do the Juggling of Data in Pivot Table and Work on layout of Pivot Table.
• Creating Groups, Insert additional Calculated Field in Pivot Table.
• Perform the % calculation on the basis of multiple fields.
• Start-up with Pivot charts.
• Insert slicer in Pivot Table and Pivot charts.

• Use of Tool "Error Checking".
• Removing Duplicates.
• Trace Precedents, Trace Dependents.

Advanced Level Of Pivot Table Usage:
 • Consolidated Pivot Table On Running Data.
• Pivot Table From Multiple Data Base Like MS Access.
• Pivot Table From Multiple Worksheets Or Workbooks.
• Dynamic Pivot Table With Name Range.
• Grouping & Ungrouping in Pivot Table.

Power Pivot and Data Models:
• Introduction To Power Pivot.
• Concept to Data Model in Power Pivot.
• Setting Relationship In Between Different Data Models.

Type of Errors In Excel & Error Handling in Excel:
• Discussion on Errors and handling of multiple errors like. #DIV/0! , #N/A, # REF, #NAME, #VALUE, # NULL, #NUM and ########Error.
• What is Circular References error? How to rectify Circular Reference.
• Other Errors.

Power Query:
• Introduction To Power Query.
• Using Multiple Functions in Power Query (Text, Date, Numbers)
• Append Query and Merge Query.
• Adding Conditional Columns.

Basic Introduction & Start with VBA Macro Programming:
• **Introduction of VBA:** Detailed Introduction of VBA Macro Programming. Discussion on need of VBA Macros. Where to apply the VBA Macro. Benefit and limitation of VBA Macro.
• Type of VBA Macro.
• Display of Developers Tab and VB Editor.
• Macro Security.

• **Introduction to Macro Recordings:** Using the Excel Macro Recorder, Macro Security, Recording Macro, Naming Macro, Executing Macro, Saving and Editing Macro Various Key Board Short Cuts related to VBA Macros.
• Working on Various Examples of Macro recorder.
• Introduction to the writing of basic VBA codes.
• Working In the Visual Basic Editor: Project Explorer, Properties window, Object Browser, Standard Module and Sheet Module
• Saving Off Your Macro.