Data Analytics Course

Course Key Points:

- **Zero to Hero**: Start from scratch, end with advanced expertise.
- **100% Placement Assistance**: Resume building, mock interviews
- **Tools + Theory + Practice**: Real world projects for every module.
- **Flexible Learning**: Online/offline batches, lifetime access to resources.

Who Is This For?

- Freshers, career switchers, and professionals seeking a **lucrative data career**.
- Entrepreneurs wanting to leverage data for business growth.
- Students aiming to stand out in tech driven industries.

Enroll Now! Limited Seats –

Module 1 – Excel (Basics to Advanced)

Why Excel?

- Used by more than **99% of companies** for quick data tasks.

Chapter 1: Excel Basics

- **Interface Overview**: Ribbon, Quick Access Toolbar, Worksheets, Cell Rows, Columns.
- **Data Entry**: Typing, editing, and navigating data.
- **Formatting**: Font styles, borders, number formatting, conditional formatting.
- **Shortcuts**: Essential keyboard shortcuts for efficiency.

Chapter 2: Math Functions

- **SUM**: Adds numbers in a range.
- **AVERAGE**: Calculates the mean of numbers.
- **MIN/MAX**: Finds the smallest/largest value in a range.
- **ROUND**: Rounds numbers to specified digits.
- **SUMIF/SUMIFS**: Adds numbers based on single/multiple conditions.
- **SUBTOTAL**: Performs calculations on filtered data.

Chapter 3: Text Functions

- **CONCATENATE**: Combines text from multiple cells.
- **LEFT/RIGHT/MID**: Extracts substrings from text.
- **LEN**: Counts characters in a cell.
- **TRIM**: Removes extra spaces from text.

- **UPPER/LOWER/PROPER**: Changes text case.
- **FIND/SEARCH**: Locates a substring within text.
- **REPLACE/SUBSTITUTE**: Replaces text in a string.
- **TEXT**: Converts numbers to text with formatting.

Chapter 4: Statistical Functions

- **COUNT/COUNTA**: Counts numbers/nonempty cells.
- **COUNTIF/COUNTIFS**: Counts cells based on single/multiple conditions.
- **AVERAGEIF/AVERAGEIFS**: Averages cells based on conditions.
- **MEDIAN**: Finds the middle value in a range.
- **MODE**: Finds the most frequent value.

Chapter 5: Logical Functions

- **IF**: Performs conditional checks.
- **AND/OR**: Combines multiple conditions.
- **IFERROR**: Handles errors in formulas.
- **IFS**: Checks multiple conditions without nesting.
- **SWITCH**: Evaluates multiple conditions and returns a value.

Chapter 6: Lookup Functions

- **VLOOKUP**: Finds data in a table vertically.
- **HLOOKUP**: Finds data in a table horizontally.
- **INDEXMATCH**: Flexible alternative to VLOOKUP.
- **XLOOKUP**: Modern replacement for VLOOKUP and HLOOKUP.
- **CHOOSE**: Selects a value from a list based on an index.

Chapter 7: Financial Functions

- **PMT**: Calculates loan payments.
- **FV**: Calculates the future value of an investment.
- **NPV**: Calculates the net present value of cash flows.
- **IRR**: Calculates the internal rate of return.
- **RATE**: Calculates the interest rate for a loan or investment.
- **PV**: Calculates the present value of an investment.

Chapter 8: Date & Time Functions

- **TODAY/NOW**: Returns the current date/time.
- **DATE**: Creates a date from year, month, and day.
- **DATEDIF**: Calculates the difference between dates.
- **EOMONTH**: Returns the last day of the month.
- **NETWORKDAYS**: Calculates working days between dates.

Chapter 9: Advanced Tools

- **Pivot Tables**: Summarizes and Analyzes large datasets.
- **Power Query**: Cleans, transforms, and merges data.
- **Data Validation**: Restricts data entry to specific criteria.

- **WhatIf Analysis**: Scenario Manager, Goal Seek, Data Tables.
- **Solver**: Optimizes solutions for complex problems.
- **Macros**: Automates repetitive tasks.
- **Dynamic Arrays**: Spills results across multiple cells.

Module 2 – VBA (Automate Excel Like a Pro)

Why VBA?

- Automate repetitive tasks.

Chapter 1: Introduction to VBA

- **What is VBA?**: Overview of Visual Basic for Applications.
- **VBA Editor**: Navigating the interface, modules, and procedures.
- **Macro Recording**: Automating repetitive tasks using the Macro Recorder.
- **Security Settings**: Enabling and disabling macros.

Chapter 2: VBA Basics

- **Variables and Data Types**: Declaring and using variables (Integer, String, Bool, etc.).
- **Operators**: Arithmetic, comparison, and logical operators.
- **Procedures**: Subroutines and functions.
- **Comments**: Adding comments for code clarity.

Chapter 3: Control Structures

- **If...Then...Else**: Conditional statements.
- **Select Case**: Multiple conditional checks.
- **For...Next**: Looping through a range of values.
- **Do While/Do Until**: Looping based on conditions.
- **For Each**: Looping through collections (e.g., cells, worksheets).

Chapter 4: Working with Excel Objects

- **Workbook and Worksheet Objects**: Opening, closing, and navigating workbooks/worksheets.
- **Range Objects**: Selecting, formatting, and manipulating cells.
- **Cell Referencing**: Absolute and relative referencing.
- **Collections**: Working with groups of objects (e.g., all sheets in a workbook).

Chapter 5: UserDefined Functions (UDFs)

- **Creating Custom Functions**: Writing reusable formulas.
- **Passing Arguments**: Using parameters in functions.
- **Returning Values**: Setting function outputs.
- **Calling Functions**: Using UDFs in Excel sheets.

Chapter 6: Error Handling

- **On Error Statements**: On Error Resume Next, On Error GoTo.
- **Debugging Tools**: Breakpoints, Immediate Window, Watch Window.
- **Error Messages**: Customizing error prompts.

Chapter 7: User Forms and Controls

- **Designing User Forms**: Adding text boxes, buttons, and labels.
- **Event Handling**: Writing code for button clicks, form loads, etc.
- **Data Validation**: Ensuring user input meets criteria.
- **Linking Forms to Worksheets**: Transferring data between forms and Excel.

Chapter 8: Optimizing VBA Code

- **Code Efficiency**: Reducing runtime and memory usage.
- **Best Practices**: Writing clean, maintainable code.
- **Error Prevention**: Avoiding common mistakes.

Module 3 – Power BI (Data Visualization)

Why Power BI?

- **1 tool** for business intelligence (Gartner).

Chapter 1: Introduction to Power BI

- **What is Power BI?**: Overview of Power BI and its applications.
- **Power BI Ecosystem**: Power BI Desktop, Service, and Mobile.
- **Installing Power BI**: Setting up Power BI Desktop.
- **Interface Overview**: Ribbon, report view, data view, model view.

Chapter 2: Data Import and Transformation

- **Data Sources**: Importing data from Excel, CSV, SQL, and web sources.
- **Power Query Editor**: Cleaning and transforming data.
    - Removing duplicates, filtering rows, and splitting columns.
    - Merging and appending queries.
    - Pivoting and unpivoting data.
- **Data Types**: Setting correct data types (text, numbers, dates).

Chapter 3: Data Modeling

- **Relationships**: Creating and managing relationships between tables.
- **Star Schema**: Designing efficient data models.
- **Calculated Columns**: Adding new columns using DAX (Data Analysis Expressions).
- **Measures**: Creating aggregations (e.g., SUM, AVERAGE).
- **Hierarchies**: Building hierarchies for drilldown analysis.

Chapter 4: DAX (Data Analysis Expressions)

- **Basic DAX Functions**:
  - SUM, AVERAGE, COUNT, MIN, MAX.
  - CALCULATE: Modify filter context.
  - FILTER: Apply filters to calculations.
- **Logical Functions**:
  - IF, AND, OR, SWITCH.
- **Text Functions**:
  - CONCATENATE, LEFT, RIGHT, MID.
- **Date and Time Functions**:
  - DATE, YEAR, MONTH, DAY, DATEDIFF.
- **Time Intelligence Functions**:
  - TOTALYTD, SAMEPERIODLASTYEAR, DATEADD.

Chapter 5: Visualizations

- **Basic Charts**: Bar charts, line charts, pie charts, and tables.
- **Advanced Visuals**:
  - Maps: Filled maps, bubble maps.
  - Treemaps, waterfalls, and funnels.
  - Custom visuals from the marketplace.
- **Filters and Slicers**: Adding interactive filters to reports.
- **Drillthroughs**: Enabling detailed analysis on specific data points.
- **Tooltips**: Customizing tooltips for better insights.

Chapter 6: Report Design and Formatting

- **Themes**: Applying and customizing themes.
- **Layouts**: Organizing visuals for clarity and impact.
- **Buttons and Bookmarks**: Creating interactive navigation.
- **Conditional Formatting**: Highlighting key data points.
- **Mobile Layouts**: Optimizing reports for mobile devices.

Chapter 7: Power BI Service

- **Publishing Reports**: Uploading reports to Power BI Service.
- **Dashboards**: Creating and managing dashboards.
- **Sharing and Collaboration**: Sharing reports with stakeholders.
- **Data Refresh**: Setting up scheduled refreshes for live data.

Chapter 8: Advanced Power BI Features

- **Power BI Gateway**: Connecting to onpremises data sources.
- **Power BI Embedded**: Integrating Power BI reports into applications.

Chapter 9: Optimizing Power BI Reports

- **Performance Tuning**: Reducing report load times.
- **Best Practices**: Designing efficient data models and visuals.

Module 4 – Google Sheets (Collaborative Analytics)

Why Google Sheets?
- **Realtime collaboration** for remote teams.
- Free, Cloud Based alternative to Excel.

Chapter 1: Introduction to Google Sheets
- **What is Google Sheets?**: Overview of Google Sheets and its advantages.
- **Google Sheets vs. Excel**: Key differences and use cases.
- **Interface Overview**: Menu bar, toolbar, sheets, and cells.
- **Collaboration Features**: Realtime editing, sharing, and commenting.

Chapter 2: Basic Functions and Formulas
- **Basic Math Functions**:
  - SUM, AVERAGE, MIN, MAX, COUNT.
- **Text Functions**:
  - CONCATENATE, LEFT, RIGHT, MID, LEN, TRIM.
- **Logical Functions**:
  - IF, AND, OR, NOT, IFERROR.
- **Lookup Functions**:
  - VLOOKUP, HLOOKUP, INDEX, MATCH.
- **Date and Time Functions**:
  - TODAY, NOW, DATE, DATEDIF, NETWORKDAYS.

Chapter 3: Data Cleaning and Transformation
- **Data Validation**: Creating dropdown lists and restricting data entry.
- **Conditional Formatting**: Highlighting cells based on rules.
- **Filter and Sort**: Organizing data for better analysis.
- **Split Text to Columns**: Separating data into multiple columns.
- **Remove Duplicates**: Cleaning datasets by eliminating duplicates.

Chapter 4: Advanced Functions
- **Array Formulas**: Performing calculations on multiple rows/columns.
  - ARRAYFORMULA, FILTER, UNIQUE, SORT.
- **Query Function**: Writing SQLlike queries for data analysis.
  - Example: =QUERY(A1:D100, "SELECT A, B WHERE C > 100").
- **Import Functions**:
  - IMPORTRANGE: Import data from other sheets.
  - IMPORTDATA: Import data from CSV or TSV files.
  - IMPORTXML: Extract data from web pages.

Chapter 5: Data Visualization
- **Charts and Graphs**: Creating bar charts, line charts, pie charts, and scatter plots.

- **Sparklines**: Adding minicharts within cells.
- **Pivot Tables**: Summarizing and Analyzing large datasets.
- **Custom Formulas in Charts**: Using formulas to create dynamic visuals.

Chapter 6: Collaboration and Automation

- **Sharing and Permissions**: Setting view, comment, and edit access.
- **Version History**: Tracking changes and restoring previous versions.
- **Google Apps Script**: Automating tasks with JavaScriptbased scripts.
  - o Example: Automating email notifications or data updates.

Chapter 7: Integration with Other Tools

- **Google Data Studio**: Connecting Google Sheets to create interactive dashboards.
- **Google Forms**: Automatically populating sheets with form responses.
- **Google Drive**: Storing and organizing sheets in the cloud.

Module 5 – MySQL (Database Mastery)

Why MySQL?

- **Businesses** use SQL for data storage.

Chapter 1: Introduction to MySQL

- **What is MySQL?**: Overview of MySQL and its role in data management.
- **Relational Databases**: Understanding tables, rows, and columns.
- **MySQL Workbench**: Navigating the interface and tools.
- **Installing MySQL**: Setting up MySQL on your system.

Chapter 2: Database Design

- **Data Types**: Strings, numbers, dates, and blobs.
- **Primary Keys and Foreign Keys**: Ensuring data integrity.
- **Normalization**: Reducing redundancy through 1NF, 2NF, and 3NF.
- **EntityRelationship Diagrams (ERDs)**: Visualizing database structure.

Chapter 3: Basic SQL Queries

- **SELECT**: Retrieving data from tables.
- **WHERE**: Filtering data based on conditions.
- **ORDER BY**: Sorting query results.
- **LIMIT**: Restricting the number of rows returned.
- **DISTINCT**: Removing duplicate rows.

Chapter 4: Data Manipulation

- **INSERT**: Adding new records to a table.

- **UPDATE**: Modifying existing records.
- **DELETE**: Removing records from a table.
- **TRUNCATE**: Deleting all records from a table.

Chapter 5: Joins and Relationships

- **INNER JOIN**: Combining rows with matching values.
- **LEFT JOIN**: Returning all rows from the left table and matching rows from the right table.
- **RIGHT JOIN**: Returning all rows from the right table and matching rows from the left table.
- **FULL OUTER JOIN**: Returning all rows when there is a match in either table.
- **SelfJoin**: Joining a table to itself.

Chapter 6: Aggregation and Grouping

- **GROUP BY**: Grouping rows based on column values.
- **HAVING**: Filtering groups based on conditions.
- **Aggregate Functions**:

    o COUNT, SUM, AVG, MIN, MAX.
- **Subqueries**: Writing nested queries for complex analysis.

Chapter 7: Advanced SQL Techniques

- **Indexes**: Improving query performance with indexes.
- **Views**: Creating virtual tables for simplified querying.
- **Stored Procedures**: Writing reusable SQL code blocks.
- **Triggers**: Automating actions based on database events.
- **Transactions**: Ensuring data consistency with COMMIT and ROLLBACK.

Chapter 8: Data Import and Export

- **Importing Data**: Loading data from CSV, Excel, or other databases.
- **Exporting Data**: Saving query results to files.
- **Backup and Restore**: Creating and restoring database backups.

Module 6 – Python (Programming for Analytics)

Why Python?

- **1 language** for data science (IEEE).
- Automate tasks, analyze big data, and build ML models.

Chapter 1: Introduction to Python

- **What is Python?**: Overview of Python and its applications in data analytics.
- **Installing Python**: Setting up Python and Jupyter Notebook.
- **Python Basics**: Variables, data types, and operators.
- **Writing Your First Program**: Hello, World!

Chapter 2: Python Fundamentals

- **Control Structures**:
    - if, else, elif for decision-making.
    - for and while loops for iteration.
- **Functions**: Defining and calling functions.
- **Data Structures**:
    - Lists, tuples, sets, and dictionaries.
- **File Handling**: Reading from and writing to files.

Module 7: Python Programming- Working with Libraries Chapter 1: Python Libraries

- **NumPy**: o   Arrays and array operations.
    - Mathematical functions (e.g., np.sum, np.mean).
- **Pandas**:
    - DataFrames and Series.

    - Creating visualizations: line plots, bar charts, histograms, and heatmaps.
    - Customizing plots with labels, titles, and legends.

Chapter 2: Data Cleaning and Preparation

- **Handling Missing Data**: Filling, dropping, or interpolating missing values.
- **Data Transformation**:
    - Applying functions to data.
    - Merging and concatenating datasets.
- **Data Normalization**: Scaling data for analysis.
- **Outlier Detection**: Identifying and handling outliers.

Chapter 3: Data Analysis with Python

- **Descriptive Statistics**:
    - Mean, median, mode, standard deviation.
    - Correlation and covariance.
- **Grouping and Aggregation**:
    - groupby in Pandas.
    - Aggregating data with sum, mean, count, etc.
- **Time Series Analysis**:
    - Working with dates and times.
    - Resampling and rolling windows.

- o   Data manipulation: filtering, sorting, and grouping.
- o   Handling missing data.
- **Matplotlib and Seaborn**:

Chapter 4: Data Visualization

- **Matplotlib**:
  - o Line plots, scatter plots, bar charts, and histograms.
  - o Customizing plots with colors, markers, and annotations.
- **Seaborn**:
  - o Advanced visualizations: heatmaps, pair plots, and violin plots.
  - o Statistical plotting with sns.regplot and sns.boxplot.
- **Plotly**:
  - o Interactive visualizations: 3D plots, animations, and dashboards.

Chapter 5: Advanced Python Techniques

- **List Comprehensions**: Writing concise loops.
- **Lambda Functions**: Creating anonymous functions.
- **Error Handling**: Using try, except, and finally.
- **Working with APIs**: Fetching and parsing data from web APIs.

Module 8 – Trello (PMS)

Chapter 1: Introduction to Trello

- **What is Trello?**: Overview of Trello and its applications in project management.
- **Agile Workflows**: Understanding Agile and Scrum methodologies.
- **Trello Interface**: Boards, lists, and cards.

Chapter 2: Setting Up Trello

- **Creating Boards**: Organizing projects into boards.
- **Adding Lists and Cards**: Breaking down tasks into manageable units.
- **Labels and Tags**: Categorizing tasks for better organization.

Chapter 3: Collaboration and Workflow Management

- **Team Collaboration**: Adding members, assigning tasks, and setting deadlines.
- **Checklists and Attachments**: Adding subtasks and files to cards.

Chapter 4: Advanced Features

- **Trello Calendar**: Tracking deadlines and milestones.
- **Trello Dashboards**: Visualizing project progress with charts and metrics.

Chapter 5: Real-World Applications

- **Project Management**: Managing software development, marketing campaigns, or event planning.
- **Task Tracking**: Organizing personal or team tasks.

Module 9 – Soft Skills

Chapter 1: Communication Skills

- **Data Storytelling**: Presenting insights in a clear and compelling way.
- **Visual Aids**: Using charts, graphs, and dashboards to support your narrative.
- **Tailoring Messages**: Adapting your communication style for different audiences.

Chapter 2: Collaboration and Teamwork

- **Working in Teams**: Building trust and resolving conflicts.
- **Cross-Functional Collaboration**: Working with technical and non-technical teams.
- **Feedback**: Giving and receiving constructive feedback.

Module 10: Interview Preparation

- **Resume Building**: Highlighting your data analytics skills and projects.
- **Common Interview Questions**: Preparing for technical and behavioral questions.
- **Mock Interviews**: Practicing with peers or mentors.

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- **Free access to Practical Notes for Data Analytics.**

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