# STUDY PLAN

| Module 1 : Excel ( 27 Hr) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Week** | | **Session Type** | **Session** | **Duration (hrs)** | **Session Title** | **Session Topics** | **Self Paced Links** | **Agenda** | **Notes** | **Quiz** | **Weekly Assignment** | **Mini Project** | **Content received** | **Content Released** | **Raw Videos** |
| | | Recorded Sessions | Rec- Session 1 | 1.5 | Prerequisite | **Video 1: Intro to MS Excel**<br>**Topics :**<br>Role of Excel in Data Analytics<br>Excel interface and navigation<br>**Video 2: Data types**<br>**Topics:**<br>Text, Number, Date, Boolean<br>**Video 3: Excel Formatting basics**<br>**Topics:**<br>cell styles, number formats<br>**Video 4: Introduction to tables**<br>**Video 5: Rule-based formatting**<br>**Topics:**<br>greater than, top 10%, duplicates<br>Color scales, data bars, icon sets<br>Custom formula-based formatting<br>**Video 6: Basic Charts**<br>**Topics:**<br>Column, Bar, Line, Pie<br>Combination charts and formatting options<br>Choosing the right chart for data type | Video Link | Self Paced Agenda for Excel | Notes 1 | Quiz 1 | W-1 Assignment | | | | |
| **Week 1** | **20-June-2026** | Live Session | Session 1 | 3 | Introduction to Data Analysis with Excel<br>Excel Functions (Basic to Intermediate) | Text: LEFT, RIGHT, MID, LEN, TRIM, UPPER, LOWER, CONCAT, TEXTJOIN<br>Sorting & Filtering data<br>Logical: IF, IFS, AND, OR, NOT<br>Date: TODAY, NOW, DATE, EDATE, DATEDIF, NETWORKDAYS<br>Math/Stat: SUM, AVERAGE, COUNT, COUNTA, ROUND, INT, MOD | | Agenda 1 - Doc link<br>Live Session 1 – Trainer Delivery Guide | Notes 2 | Quiz 2 | | Week 01 Mini Project | Y | Y | |
| | **21-June-2026** | Live Session | Session 2 | 3 | Lookups and Pivot Tables | VLOOKUP, HLOOKUP, Xlookup - their comparisons<br>Creating Pivot Tables from structured data | | Agenda 2 - Doc Link<br>Live Session 2 – Trainer | | Quiz 3 | | | Y | Y | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Row, Column, Filter, Values fields<br>Summarization techniques (Sum, Count, Average)<br>Grouping (dates, numbers)<br>Sorting and filtering in Pivots<br>Drill-down features | | Delivery Guide | | | | | | | | |
| | **24-June-2026** | DC + Focus | Practice Set/assignment for supporting Mini Project | 3 | | Lab | | | | | | | | | | |
| | | Recorded Session | Rec- Session 2 | 2.5 | Prerequisite | **Video 1: Handling errors with IFERROR**<br>**Video 2: Approximate match and wildcard match**<br>**Video 3: Comparison with VLOOKUP, INDEX-MATCH**<br>**Video 4 : Two-way lookup use cases**<br>**Topics:**<br>Use cases: sales, employee performance, stock movement<br>Advanced summarization using nested formulas with Pivots<br>**Video 5: Introduction to Power Query** (basic transformations)<br>**Video 6: Creating dynamic ranges with Excel Tables**<br>**Video 7: Layout, color schemes, interactivity**<br>**Video 8: Dashboard design do's and don'ts**<br>**Video 9: Recap of key functions and features** | | | | | | | | | |
| **Week 2** | **27-June-2026** | Live Session | Session 3 | 3 | Corss Sheet Lookups - Data Cleaning Techniques | Combining XLOOKUP with Pivot Table summaries<br>Building cross-sheet dynamic reports<br>Using XLOOKUP inside calculated fields<br><br>Identifying and removing duplicates<br>Detecting and handling blanks, nulls<br>TRIM, CLEAN, SUBSTITUTE for cleanup<br>Data validation for drop-downs and checks<br>Text to Columns, Flash Fill | | Agenda 3 - Doc Link Live Session 3 – Trainer Delivery Guide | | | | Week 02 Mini Project | Y | Y | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **28-June-2026** | Live Session | Session 4 | 3 | End To End Excel Project - Dashboard Building | End to End Excel Project - End-to-end project:<br>Clean raw data<br>Apply transformations<br>Use lookups<br>Summarize using Pivots<br>Linking Pivot Charts to Pivot Tables<br>Using Slicers and Timelines, KPI Cards<br>Present with dashboard | | Agenda 4 - Session Link Live Session 4 – Trainer Delivery Guide | | | | Week 03 Mini Project | Y | Y | | | |
| | **1-July-2026** | DC + Focus | Practice Set/assignment for supporting Mini Project | 3 | | Lab | | | | | | | | | | | |
| **Week 3** | | Recorded Session | Rec- Session 3 | 2 | **Google Sheet for Data Analysis** | Transitioning from Excel<br>Reference Logic & Operations<br>Data Cleaning & Text Wrangling<br>Summary Stats & Conditional Logic<br>Advanced Lookups & Power Tools | | Google Sheets for Data Analysis | | | | | | | | | |
| | | **Generative AI Masterclass** | **MC 1** | **3** | **Prompt Engineering for Analytics** | **The Art of Prompting**<br>**Business questions formulation**<br>**Using AI in Excel work**<br>**Checking and improving AI answers**<br>**Explaining insights clearly** | | Generative AI Masterclass (MC-1) | | | | | | | | | |
| | **4-July-2026** | Live Session | Mini Project Discussion | 3 | | Lab | | | | | | | | | | | |
| | **8-July-2026** | DC + Focus | *Doubt Clarification about Prompt Exercises, One small project Hands on with trainer on Gen AI + Excel (Ideally GPT/Copilot)" + Mini Project Submission* | 3 | | | | | | | | | | | | | |

| Module 2 : SQL ( 33 Hr) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Week** | | **Session Type** | **Session** | **Duration(hrs)** | **Session Title** | **Session Topics** | **Self Paced Links** | **Agenda** | **Notes** | **Quiz** | **Weekly Assignment** | **Mini Project** | **Content received** | **Content Released** | Raw Videos | |
| **Week 4** | | Recorded Sessions | Rec- Session 3 | 1 | Prerequisite | **Video 1: Installing MySQL or SQLite**<br>**Topics:**<br>INT, FLOAT, CHAR, VARCHAR, DATE<br>**Video 2: Intro to DBMS**<br>**Topics:**<br>What is a DBMS and how it differs from a file system<br>RDBMS vs NoSQL (brief mention for contrast)<br>**Video 3: Codd's 12 Rules**<br>**Topics:**<br>Codd's 12 Rules and their significance<br>**Video 4: Relational Models and Normalization**<br>**Topics:**<br>Real-world examples of relational models<br>Importance of normalization principles<br>**Video 5 : Concept of Keys**<br>Primary Key, Composite Key, Foreign Key, Candidate Key<br>Surrogate Key, Natural Key | | | | | | | | | | |
| | **11-July-2026** | Live Session | Session 1 | 3 | DBMS Concepts | Introduction to SQL for Data Analytics<br>SQL Language Categories: DDL, DML, DCL, TCL<br>Common SQL syntax and structure<br>Creating a database<br>Creating tables with CREATE TABLE<br>Altering tables using ALTER TABLE<br>Dropping and renaming columns | | | | | | | | Y | Y | | |
| | **12-July-2026** | Live Session | Session 2 | 3 | Constraints in SQL<br>Dropping, Truncating & Modifying Tables | NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, CHECK<br>Default values and AUTO_INCREMENT<br>Column-level vs table-level constraint declaration<br>Modifying constraints<br>Difference between DROP, TRUNCATE, DELETE | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Impact on storage, rollback, and auto-increment counters<br>Modifying column names, data types<br>Adding/removing columns using ALTER TABLE<br>Renaming tables<br>INSERT single and multiple records | | | | | | | | | | | |
| | **15-July-2026** | DC + Focus | | 3 | | SQL Lab/Excel Lab | | | | | | | | | | |
| **Week 5** | **18-July-2026** | Live Session | Session 3 | 3 | Aggregation and Group by | SELECT basics with column filtering<br>WHERE clause and logical operators<br>UPDATE and DELETE commands<br>Using DISTINCT, ORDER BY, LIMIT, Group by<br>Aggregate functions: COUNT, SUM, AVG, MIN, MAX<br>GROUP BY and HAVING | | | | | | | | | | | |
| | **19-July-2026** | Live Session | Session 4 | 3 | SQL Joins | INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL OUTER JOIN<br>Self JOIN, CROSS JOIN<br>Understanding primary-foreign key relationships<br>Joining more than two tables<br>NULL handling in joins<br>Windows Functions - row_number(), rank(), dense_rank(), lag(), lead() | | | | | | | | | | | |
| | **22-July-2026** | DC + Focus | | 3 | | Lab | | | | | | | Y | Y | | |
| **Week 6** | **25-July-2026** | Live Session | Session 5 | 3 | Windows Functions, Views and Import/Export of Data | Windows Functions - row_number(), rank(), dense_rank(), lag(), lead()<br>Views: creation, use cases, and limitations<br>Connecting SQL databases to Excel / Python / Power BI<br>Running SQL queries from external tools<br>Exporting and importing data via CSV | | | | | | | | | | | |
| | **26-July-2026** | Live Session | Session 6 | 3 | Subqueries,CTEs and EDA | Nested queries and subqueries<br>CASE statements<br>Common Table Expressions(CTEs)<br>Using simple dashboards to display query results | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Use case: exploratory data analysis with SQL | | | | | | | | | | |
| | **29-July-2026** | DC + Focus | DC + SQL Scriptwriting Practice | 3 | | SQL Script Writing Practice Session | | | | | | | | | | |
| **Week 7** | | **Gen AI Masterclass** | **MC 2** | **3** | **MC-2: NL-to-SQL + Query Optimization with AI** | **Industry context and SQL interview expectations**<br><br>**Natural language to structured SQL translation**<br><br>**Identifying joins, filters, aggregations from business questions**<br><br>**Query optimization fundamentals and performance improvement**<br><br>**AI-assisted SQL drafting, refactoring, and validation** | | | | | | | | | | |
| | **1-August-2026** | Live Session | Mini Project Discussion | 3 | | MINI PROJECT DISCUSSION | | | | | | | | | | |
| | **5-August-2026** | DC + Focus | Gen AI Practice + Doubt + Project submission | 3 | | | | | | | | | | | | |

## Module 3 : Statistics - 1 (9 Hr)

| Week | | Session Type | Session | Duration(hrs) | Session Title | Session Topics | Self Paced Links | Agenda | Notes | Quiz | Weekly Assignment | Mini Project | Content received | Content Released | Raw Videos | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Week 8** | | Recorded Sessions | Rec- Session 4 | 1.5 | Prerequisite | **Video 1: Introduction to Statistics**<br>What is statistics<br>Business Case study of use of Statistics<br>Type of Statistics<br><br>**Video 2: Descriptive vs Inferential Statistics**<br>Descriptive statistics: mean, median, charts<br>Inferential statistics: predictions from samples<br>"What data shows" vs "What we conclude"<br><br>**Video 3: Types of Data and Scales** | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Types of data: Qualitative vs Quantitative<br>Scales of measurement: Nominal, Ordinal, Interval, Ratio<br><br>**Video 4: Population and Sample**<br>Population vs Sample<br>Sampling methods: Random, Stratified, Cluster, Systematic<br>Data sources: Surveys, Experiments, Observational studies<br>Biases in data collection<br><br>**Video 5: Probability**<br>Probability concepts<br>Likelihood 0 to 1<br>Basic formula: favorable ÷ total outcomes | | | | | | | | | | | |
| | **8-August-2026** | Live Session | Session 1 | 3 | Measures of Central Tendency and Measures of Dispersion (using Excel ideally with business problems) | Mean (Arithmetic, Weighted)<br>Median<br>Mode<br>When to use which measure<br>Impact of outliers on central tendency<br>Practice with real datasets (e.g., salary, sales)<br><br>Range<br>Variance & Standard Deviation (sample vs population)<br>Mean Absolute Deviation<br>Coefficient of Variation<br>Use of dispersion in comparing datasets | | | | | | | | | | | |
| | **9-August-2026** | Live Session | Session 2 | 3 | Descriptive Statistics & Forecasting in Excel (Analysis ToolPak Applications) | Using Analysis ToolPak for summary statistics & regression output<br><br>Data distribution analysis (Histogram & normality check)<br><br>Time series forecasting using Excel Forecast tools<br><br>Business interpretation of statistical outputs | | | | | | | | | | |
| | **12-August-2026** | DC + Focus | | 3 | | Lab | | | | | | | | | | |
| **ET 1 (After DC Class From the coming Sat to next Friday ET window is open)** | | | | | | | | | | | | | | | | |

| (Week 9) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Module 4 : PowerBI ( 24 hr) + Tableau (Pre Recorded)** | | | | | | | | | | | | | | | |
| **Week** | | **Session Type** | **Session** | **Duration(hrs)** | **Session Title** | **Session Topics** | **Self Paced Links** | **Agenda** | **Notes** | **Quiz** | **Weekly Assignment** | **Mini Project** | **Content received** | **Content Released** | Raw Videos |
| **Week 10** | | Recorded Sessions | Rec- Session 5 | 1.5 | Prerequisite | **Video 1: Definition of Business Intelligence**<br>**Topics:**<br>Definition of Business Intelligence and its industry applications<br>**Video 2: Types of BI tools**<br>**Topics:**<br>Types of BI tools and landscape overview<br>**Video 3: Installing Power BI Desktop**<br>**Video 4: Overview of Power BI interface**<br>**Topics:**<br>Overview of Power BI interface: ribbons, panes, canvas<br>**Video 5: Power BI Workflow Overview**<br>**Topics:**<br>Workflow overview: data, model, report views<br>**Video 6: Power BI Dashboard Design Fundamentals**<br>Creating KPI Visuals and Business Reports<br>Dashboard Interactivity and Insights | | | | | | | | | |
| | **15-August-2026** | Live Session | Session 1 | 3 | Power Query Editor | Navigating the Power Query Editor<br>Transforming data types, trimming, replacing, splitting<br>Steps applied, query folding and refresh<br>Understanding measures vs dimensions<br>Discrete vs continuous fields<br>Data shaping: renaming, removing, pivoting, unpivoting columns<br>Transforming data types, trimming, replacing, splitting<br>Creating relationships, understanding cardinality and cross-filter direction | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **16-August-2026** | Live Session | Session 2 | 3 | DAX Fundamentals, DAX modelling and DAX Operations | Star vs Snowflake schema<br>Role of fact and dimension tables<br>Introduction to DAX: syntax and use cases<br>Calculated columns vs measures<br>Basic DAX functions: SUM, AVERAGE, COUNT, DISTINCTCOUNT<br>Working with filters in DAX: CALCULATE, FILTER, ALL<br>Logical and text functions in DAX<br>Conditional expressions using IF and SWITCH | | | | | | | | | | |
| | **19-August-2026** | DC + Focus | | 3 | | Lab | | | | | | | | | | |
| **Week 11** | **22-August-2026** | Live Session | Session 3 | 3 | DAX Operations Visualizations & Interactions | Row context vs filter context explained<br>Error handling and debugging DAX expressions<br>Using core visuals: bar, line, pie, scatter, table, matrix<br>Customizing visuals: formatting, themes, tooltips<br>Setting up slicers and filters<br>Drill-through and drill-down navigation<br>Cross-highlighting and interactivity between visuals | | | | | | Y | | | | |
| | **23-August-2026** | Live Session | Session 4 | 3 | Advanced Measures & Time Intelligence Reports, Bookmarks, Tooltips & Navigation, | Cumulative totals and running totals<br>YOY, MOM comparisons DATEADD, DATESYTD, SAMEPERIODLASTYEAR<br>Using CALCULATE with time intelligence<br>Date table creation and relationships<br>Creating multi-page reports<br>Adding bookmarks for storytelling and dynamic views<br>Using buttons and images for navigation. Custom tooltips and drill-through pages<br>Setting up page navigation and back buttons | | | | | | Y | | | | |
| | **19-August-2026** | DC + Focus | | 3 | | Lab | | | | | | | | | | |
| **Pre - Recorded Tableau** | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Recorded Sessions | Rec- Session 6 | 1 | Introduction to Tableau | Introduction to Tableau, Installation & Interface Navigation<br>Connecting to Data Sources<br>Building Basic Charts | | | | | | | | | | |
| | | Recorded Sessions | Rec- Session 7 | 1 | Basic & Advanced Charts & Highlighting | Building Basic Charts<br>Advanced Chart Types and Highlighting Techniques | | | | | | | | | | |
| | | Recorded Sessions | Rec - Session 8 | 1 | Maps, Time Series, Dashboards | Geospatial Charts and Time-Series Visuals<br>Dashboards, Filters and User Interactivity | | | | | | | | | | |
| | | Recorded Sessions | Rec - Session 9 | 1 | Filters, Joins, Blends, Calculations | Filtering Logic, Joins, Blends and Calculations | Need to give small dashboard as Assignment | **Two Dashboards in Class + One as Assignment (Non Graded)** | | | | | | | | |
| **Week 12** | **22-August-2026** | Live Session | Mini Project Discussion | 3 | Mini Project Discussion<br>Publishing, Sharing & Deployment | Publishing reports to Power BI Service<br>Creating and managing workspaces<br>Setting refresh schedules and gateway setup<br>Sharing reports with stakeholders<br>Row-level security and access control basics | Mini Project Lab | | | | | | | | | |
| | | **Gen AI Masterclass** | **MC 3** | **3** | **MC-3: AI-Enhanced Dashboarding + Automated Insights** | **Using AI to design KPI-driven dashboards**<br><br>**Generating DAX measures with AI support**<br><br>**Automating insight summaries from visuals**<br><br>**Identifying trends and anomalies using AI**<br><br>**Improving dashboard storytelling and clarity** | | | | | | | | | | |
| | **26-August-2026** | DC + Focus | Genai + Doubts | 3 | | | | | | | | | | | | |

| Module 5 : Python (42 hours) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Week** | | **Session Type** | **Session** | **Duration(hrs)** | **Session Title** | **Session Topics** | **Self Paced Links** | **Agenda** | **Notes** | **Quiz** | **Weekly Assignment** | **Mini Project** | **Content received** | **Content Released** | Raw Videos |
| | | Recorded Sessions | Rec- Session 5 | 1.5 | Prerequisite | **Video 1: Intro to Programming Languages and Python**<br>Topics:<br>Definition of Programming Languages<br>Why we need Programming Languages<br>Introduction to Python<br>Python Syntax<br>Data Types<br>Variables<br><br>**Video 2: Type Casting, Conversion and I/O Functions**<br>Topics:<br>How Python is different from other languages (Dynamically Typed)<br>Type Casting and Type Conversion<br>Implicit and Explicit Type Conversion<br>Input and Output Functions<br>Overview of Concatenation<br><br>**Video 3: F-Strings Method (Part 1 & Part 2)**<br>Topics:<br>Introduction to F-Strings<br>F-Strings Syntax and Examples<br>String Formatting using F-Strings<br><br>**Video 4: Deep Dive into F-Strings and Code Structure**<br>Topics:<br>Advanced F-String Usage<br>Creating a Calculator using Python<br>Indentation in Python<br>Block of Code Concept<br><br>**Video 5: Inbuilt Functions, Lists and List Functions**<br>Topics:<br>Common Inbuilt Functions (len, max, min, sum, sorted, round, abs)<br>Introduction to Lists | Video 1 - Intro to Python, Datatypes, Variables, Typecasting, input function<br>Video 2 - Fstring, Inbuilt Python Functions, List Functions | Videos to subvideos | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | List Functions (append, extend, insert, remove, pop) | | | | | | | | | | |
| **Week 13** | **29-August-2026** | Live Session | Session 1 | 3 | Python Intro & Control Structures | Intro to Python Coding Environment with Jupyter Notebooks<br>How to write effective code in Python<br>if, elif, else statements<br>Nested conditions | | | | | | | Y | Y | https://drive.google.com/drive/folders/1ri0tGwhfjDgX5NOu5Dd3Q6S5OHA2J9my?usp=drive_link | |
| | **30-August-2026** | Live Session | Session 2 | 3 | Python Intro & Control Structures Part 2 | for loops with range()<br>while loops and loop control: break, continue, pass<br>else clause with loops | | | | | | | | | | |
| | **2-September-2026** | DC + Focus | | 3 | | Lab 1 | | | | | | | | | | |
| | | Recorded Sessions | Rec- Session 5 | 1.5 | Prerequisite | **Video 1: File Handling & Types of Files in Python**<br>Topics:<br>Introduction to File Handling in Python<br>Types of Files (.txt, .csv, .json)<br>File Modes<br>Read Method<br>Write Method<br>Append Method<br><br>**Video 2: CSV & JSON File Handling**<br>Topics:<br>Working with CSV Files<br>CSV Functions (writer, writerow, reader)<br>Working with JSON Files<br>JSON Functions (dump, load, append)<br><br>**Video 3: Exception & Error Handling in Python**<br>Topics:<br>What is Exception Handling<br>Importance of Exception Handling<br>Try Block<br>Except Block<br>Else Block<br>Finally Block<br>Types of Errors and Exceptions<br>ValueError<br>FileNotFoundError | Video 3 - File Handling<br>Video 4 - Exception Handling<br>Video 5 - Inbuilt Modules in Python | Videos to subvideos | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Other Common Exceptions<br><br>**Video 4: Python Inbuilt Modules & Module Functions**<br>Topics:<br>Introduction to Python Modules<br>Math Module (sqrt, pow, pi, factorial)<br>Random Module (random, randint, uniform, sample, randrange)<br>Datetime Module (now, today, now().date, now().time)<br>Timezone Module Overview<br>Using dir() Function to Explore Module Functions | | | | | | | | | | |
| **Week 14** | **5-September-2026** | Live Session | Session 3 | 3 | Data Structures in Python | Creating, accessing, slicing lists<br>List comprehension<br>Tuples: declaration, immutability, use cases<br>Tuple unpacking and zip() basics<br>string methods and tuple methods<br>Creating sets, uniqueness in keyword and set membership<br>add(), remove(), discard()<br>Use cases in de-duplication | | | | | | | Y | Y | https://drive.google.com/drive/folders/17_XGed8sN6Atfguheg4WuHrRRfqGM-r6?usp=drive_link | |
| | **6-September-2026** | Live Session | Session 4 | 3 | Data Structures in Python Part 2 | Set operations: union(), intersection(), difference(), symmetric_difference()<br>Creating and accessing key-value pairs<br>get(), items(), keys(), values()<br>Updating and deleting entries<br>in operator, nested dictionaries<br>Dictionary comprehension (basic intro) | | | | | | | | | |
| | **9-September-2026** | DC + Focus | | 3 | | **Lab 2** | | | | | | | | | |
| **Week 15** | **12-September-2026** | Live Session | Session 5 | 3 | **Data Manipulation with Numpy Arrays** | What is NumPy & why use it<br>Creating arrays: array(), zeros(), ones(), arange(), linspace()<br>Array properties: shape, ndim, dtype<br>Basic element-wise operations: +, -, *, /<br><br>Aggregation: sum(), mean(), std()<br>Creating Series from lists, dictionaries | | | | | | | Y | Y | https://drive.google.com/drive/folders/1I_RB2p76mNwn2au5t16hXMc0l3Ee9axH?usp=drive_link | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Indexing, slicing, vector-style operations | | | | | | | | | | |
| | **13-September-2026** | Live Session | Session 6 | 3 | Creating and Accessing DataFrame using Pandas | Creating DataFrames from dict, list of dicts, CSV<br>head(), tail(), info(), describe()<br>Selecting data: loc[], iloc[]<br>Adding/removing columns<br>Filtering rows with conditions<br>Renaming columns, updating values<br>Sorting by column(s)<br>Handling missing data: isnull(), dropna(), fillna() | | | | | | | | | | |
| | **16-September-2026** | DC + Focus | | 3 | | Lab 3 | | | | | | | | | | |
| **Week 16** | **19-September-2026** | Live Session | Session 7 | 3 | Pandas Groupby and Sorting | groupby() with mean(), sum(), count()<br>Using agg() for multi-aggregation<br>Multi-index results<br>Pivot tables with pivot_table()<br>Merging/joining DataFrames<br><br>Load & explore dataset<br>Clean missing and inconsistent data<br>Derive new columns<br>Use groupby(), filtering, sorting<br>Visualize insights using Pandas .plot()<br>Save cleaned & visualized outputs | | | | | | | Y | Y | https://drive.google.com/drive/folders/1620z6vLArxOwr1Frv_Y1jQ4wFRabMmgg?usp=drive_link<br><br>https://drive.google.com/drive/folders/1pUQBOa2fNwj7enKLhbC7f4XH31VEkigs?usp=drive_link | |
| | **20-September-2026** | Live Session | Session 8 | 3 | **Plotting with Matplotlib** | Line plot, bar chart, histogram, pie chart using Pandas .plot()<br>Customizing plots: labels, titles, colors<br>Plotting directly from groupby results<br>Intro to matplotlib.pyplot: plot(), bar(), scatter()<br>Styling and subplot basics | | | | | | | | | | |
| | **23-September-2026** | DC + Focus | | 3 | | **Lab 4** | | | | | | | | | | |
| **Week 17** | **26-September-2026** | Live Session | Mini Project Discussion | 3 | **EDA with Pandas + Numpy +Seaborn** | Visualization using Seaborn library, variety of charts.<br>Lambda Functions<br>User Dedfined Functions<br>Reshaping Data | EDA project here is the main mini project here Mini Project Discussion | | | | | | Y | Y | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Date and Time Handling<br>Exporting Data<br>EDA Project | | | | | | | | | |
| | | **Gen AI Masterclass** | **MC 4** | **3** | **MC-4 : AI-Assisted Python Code Generation & Debugging** | **Writing Python scripts using AI assistance**<br><br>**Debugging errors with structured AI prompts**<br><br>**Optimizing data manipulation logic (Pandas/Numpy)**<br><br>**Improving code readability and documentation**<br><br>**Validating AI-generated code outputs** | **Using Google Collab and with Genai integration** | | | | | | | | |
| | **30-September-2026** | DC + Focus | | 3 | | | | | | | | | | | |

## Module 6 :Statistics and EDA - 2 (24 hr)

| Week | | Session Type | Session | Duration(hrs) | Session Title | Session Topics | Self Paced Links | Agenda | Notes | Quiz | Weekly Assignment | Mini Project | Content received | Content Released | Raw Videos |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Week 18** | **3-October-2026** | Live Session | Session 1 | 3 | Percentiles, Quartiles, and IQR<br>Univariate Analysis | Percentiles and interpretation (e.g., 90th percentile)<br>Quartiles: Q1, Q2 (median), Q3<br>Interquartile Range (IQR)<br>Box plot interpretation<br>Outlier detection using IQR<br>Histogram, Bar chart, Pie chart<br>Frequency distribution tables<br>KDE (Kernel Density Estimation) plot | | | | | | | | Y | Y | |
| | **4-October-2026** | Live Session | Session 2 | 3 | Understanding Patterns and Relationship using Univariate,Bivariate, Multivariate Analysis | Basic Bivariate analysis<br>Bivariate Analysis Implementation<br>Pearson's correlation & covariance<br>Rank Correlation<br>Correlation & Causation | | | | | | | | | |
| | **7-October-2026** | DC + Focus | | 3 | | Lab1+Lab2 | https://drive.google.com/drive/folders/1lzfBQGL3hryaSXQC_mvC-1bQn6yqDTxj?usp=drive_link<br>https://drive.google.com/drive/folders/1AKZIA2LFdvE5b53 | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 6sc CgWIK5VhT965 b?usp=drive link | | | | | | | | |
| Week 19 | 10-October-2026 | Live Session | Session 3 | 3 | Probability & Distributions | Basics of probability: Classical, Empirical<br>Complementary, Joint, and Conditional probability<br>Discrete distributions: Binomial<br>Continuous distributions: Normal distribution<br>Central Limit Theorem (basic concept) | | | | | | | | | |
| | 11-October-2026 | Live Session | Session 4 | 3 | Hypothesis Testing – Foundations | Population vs sample recap<br>Concept of hypothesis: Null vs Alternative<br>One-tailed vs Two-tailed test<br>Type I and Type II errors<br>p-value concept<br>Confidence Intervals (basic interpretation)<br>t-test: One-sample, Two-sample<br>Z-test basics<br>Chi-square test (intro) for independence<br>Hands-on: Interpret test results using Python/Excel output<br>Decision-making from statistical tests | | | | | | | Y | Y | | |
| | 14-October-2026 | DC + Focus | | 3 | | **Lab 3** | | | | | | Mini Project - Customer Insights Statistical Investigation | Y | Y | |
| Week 20 | | Gen AI Masterclass | MC 5 | 3 | AI-Powered EDA & Statistical Storytelling | **AI-assisted exploratory data analysis (EDA)**<br><br>**Generating summary statistics and visual insights**<br><br>**Identifying patterns, correlations, and anomalies**<br><br>**Automating statistical interpretation**<br><br>**Converting analysis into structured data stories** | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **17-October-2026** | Live Session | Mini Project Discussion | **3** | **Mini Project Discussion** | **EDA Project (EDA Assignment with GEN AI included)** | **Note : No DC session, rather ask learners to watch pre-recorded Tableau videos during weekdays** | | | | | | | | |
| | **21-October-2026** | DC + Focus | | **3** | | **EDA Assignment Review** | **Assignment** | | | | | | | | |
| **ET 2 (After the EDA Assignment Discussion class on Mid Week - ET will be annouced and no classes will happen that weekend, and the next weekend will be the next class) (Week 22)** | | | | | | | | | | | | | | | |
| **Module 7: Project Work** | | | | | | | | | | | | | | | |
| **Week** | | **Session Type** | **Session** | **Duration(hrs)** | **Session Title** | **Session Topics** | **Self Paced Links** | **Agenda** | **Notes** | **Quiz** | **Weekly Assignment** | **Mini Project** | **Content received** | **Content Released** | Raw Videos |
| | | | | | | | **Note: MC-6: GenAI for Career Readiness — Resume, LinkedIn, Portfolio is not planned here as these things are already covered in Soft skills section.** | | | | | | | | |
| **Week 22** | **24-October-2026** | Live Session | | 3 | | Capstone Project Building Session | | | | | | | | | |
| **Week 23** | **25-October-2026** | Live Session | | 1.5 | | Capstone Project Doubts | | | | | | | | | |
| **Week 24** | **28-October-2026** | Live Session | | 1.5 | | Capstone Project Doubts | | | | | | | | | |
| **Week** | | | **Session Type** | **Session** | **Duration(hrs)** | **Session Title** | **Session Topics** | **Self Paced Links** | | | | | | | |
| | | | | | | | | | | | | | | | |
| **Week 22** | **31-October-2026** | | Live Session | | 3 | | Capstone Project Building Session | | | | | | | | |
| **Week 23** | **1-November-2026** | | Live Session | | 1.5 | | Capstone Project Doubts | | | | | | | | |
| **Week 24** | **4-Novem** | | Live Session | | 1.5 | | Capstone Project Doubts | | | | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **ber-2026** | | | | | | | | | | | | | | | | |
| **Week 24** | **7-November-2026** | | Live Session | | 1.5 | | Capstone Project Doubts | | | | | | | | | | |