DATE	TOPICS
	Module 1: Excel (3 Weeks)
Week 1	Introduction - Understanding the Excel Interface, Essential Formulas in Excel, Basic Formula Operations, Mathematical Functions, Difference between RANK, RANK. AVG and RANK.EQ, Textual Functions, Logical Functions, Date-Time Functions, Lookup Functions (V Lookup, H Lookup, Index-Match) Introduction to Excel ... CONTD
Week 2	DATA TOOLS: Formatting Data and Tables||Exploring Data formatting tools (Understanding Data Types, Sorting and Filtering, Cell Formatting, Conditional Formatting, Data Validation)||Understanding data cleaning techniques (Remove Duplicates, Handling missing values, Dealing with outliers, Data Standardization) Understanding Data Visualization with Excel, Importance of Data Visualization, Elements of charts, The Easy way of creating charts, Bar and Column charts, Formatting Charts, Line Charts, Area Charts, Pie and Doughnut Charts, Scatter plot or XY chart, Waterfall Charts, Sparklines
Week 3	Dashboard Building in Excel, Analysis Using Pivot Table and Pivot Charts, Macros, Power Query and Data Modelling, Importing Data from External Sources Dashboard Building in Excel ... CONTD || Excel Data Analysis Project
	Module 2: Power BI (3 Weeks)
Week 4	Power BI Course Outline: • Getting Started ▪ An Introduction to Power BI ▪ What is Power BI? || Understanding Power BI and its components || DataSources || Power Query on PowerBI - Connecting and getting Data from different sources||Data Transformation using Power Query - Extract, Transform and Load Data Transformation CONT.d - Pivot and Unpivot Operations, Merge and Append Query Operations || Creating a Report with Visualizations ▪ Using the Visualizations Pane ▪ Using the Fields Pane ▪ Creating a Visualization ▪ Interacting with Visualizations ▪ Changing the Visualization Type ▪ Moving and Resizing Visualizations • Doing More with Visualizations ▪ Formatting Visualizations ▪ Viewing Visualization Data ▪ Using Focus Mode and Spotlight ▪ Removing a Visualization

Week 5	Data Modelling - Introduction to Data Modelling || Data Normalization || Importance of Data Normalization || Fact and Dimensions Model || Cardinality ||Key concepts: tables, relationships (Types of relationships: one-to-one, one-to-many, many-to-many), managing and editing relationships|| Filter direction - Single and double •What is DAX? Importance of Dax functions || Application of Data Analysis Xpression (Creating Measures, Columns, and Tables) || DAX Functions (Aggregate Functions, Text Functions, Logical Functions, Filter Functions, Date Functions, Related Functions)
Week 6	DAX functions for complex calculations || Perform indepth data analysis using DAX || Apply DAX functions to analyze a complete project || Create acomprehensive dashboard to visualize project analysis POWERBI CAPTONE PROJECT

Module 3: SQL (4 Weeks)

Week 7	• Introduction to SQL • Why Data Scientist should know MySQL • Understanding Databases: ▪ What is a Database ▪ Why uses Database ▪ Types of Databases: Relational and Non-Relational Databases • Understanding Database Management System (DBMS) ▪ What is DBMS? ▪ Types of DBMS • Understanding SQL ▪ What is SQL? ▪ Why Use SQL? ▪ Common Practice in Writing SQL Queries ▪ Types of SQL Commands
Week 8	• SQL Commands: ▪ SELECT, AS, ORDER BY, LIMIT,OFFSET, WHERE used alongside it's operators (Between, Not Between, Like, Not Like, Null, ETC.) || Functions (Arithmetic, Text, etc) on SQL || Aggregate Operations Using GROUP BY , HAVING Conditional Statement (IF, Nested IF, Case / When) || Joining Tables: ▪ Inner Join ▪ Left Join ▪ Right Join ▪ Full Outer Join ▪ Cross Join •
Week 9	• Data Manipulation and Analysis • SQL Sub Queries • SQL CTEs • SQL Views • SQL Window Functions

Week 9

• SQL Database Design and Implementation • SQL Keys • Inserting Data into Database Tables • Importing and Exporting Data in SQL • DDL Commands • Creating Database • Creating Tables • SQL Constraints

• Data Cleaning || Data Analysis with SQL || Exporting Analysis for Visualization on PowerBI

Week 10

GIT/GITHUB • Installation • Introduction to Git & Github • Getting started on GitHub • Local Repository Workflow • Creating a Git repository • Adding files to your Git repository

Module 4: Python & EDA (4 weeks)

Week 11

• Basics Python for Data Analysis • Why Python for Data Analysis • Installation (VSCode, Anaconda, Python) • Operators ▪ Variables ▪ Variables and data types ▪ Data Types and their methods || Indexing and Slicing || data types operation

Data Structures - List, Sets, Tuple and Dictionary Comprehensions•
CONTROL FLOW - Conditional Statements (If, Elif and Else Statements), Logical Operators, • Loops (While Loops • For Loops) • Nested Condition and Loops •

Week 12

• Functions • Function definition and invoking • return keyword • Variable Scope • Arguments: Positional and Keyword • Lambda Functions

• Working with Python Libraries ▪ Introduction ▪ Datetime ▪ json ▪ csv ▪ faker ▪Datetime

Week 13

3rd-Party Libraries • Introduction to Numpy, Pandas, Matplotlib. • Numerical Programming with Numpy•
Data Manipulation with Pandas • Data Visualization with Matplotlib and Seaborn

• What is Exploratory Data Analysis (EDA)? • Uni - Variate Analysis • Bi - Variate Analysis • Multi-Variate Analysis • More on Seaborn Based Plotting Including Pair Plots, Catplot, Heat Maps, Count plot along with matplotlib plots.

Week 14

EDA with Python ... CONTD + **TEST**

Week 14	• Portfolio Presentation • Introduction to the use of Power Point and other Platforms
Examination and Capstone Project	
Week 15	**Program Captsone Project and Examination**
	Program Captsone Project and Examination
Week 16	**Program Captsone Project and Examination**
	Program Captsone Project and Examination