SYLLABUS OF DATA ANALYTICS

Hour 1: Introduction to Data Analytics

- What is Data Analytics?
- Types: Descriptive, Diagnostic, Predictive, Prescriptive
- Roles and tools in data analytics
- **Activity**: Analyze 3 daily life examples where data analytics is used (e.g., Netflix, Swiggy, Google Maps)

Hour 2: Understanding Data Types & Variables

- Numerical, categorical, ordinal, nominal
- Structured vs unstructured data
- **Activity**: Categorize given values (age, name, temperature, reviews) into data types

Hour 3: Excel for Data Analysis – Part 1

- Basic functions: SUM, AVERAGE, COUNT, IF
- Sorting & filtering data
- **Activity**: Analyze student mark list using Excel functions

Hour 4: Excel for Data Analysis – Part 2

- Pivot Tables, VLOOKUP, Conditional Formatting

- **Activity**: Create a sales summary with pivot tables

Hour 5: Introduction to Python for Data Analytics

- Installing Anaconda/Jupyter
- Lists, dictionaries, loops & functions recap
- **Activity**: Create a program to store and summarize daily sales in Python

Hour 6: Using Pandas for Data Handling

- Series, DataFrames, reading CSV
- Descriptive stats: `.head()`, `.describe()`, `.info()`
- **Activity**: Load a CSV file and show top 5 rows and summary

Hour 7: Data Cleaning with Pandas

- Handling null values, duplicates, renaming columns
- Changing data types
- **Activity**: Clean a messy dataset (e.g., customer data with missing values)

Hour 8: Exploratory Data Analysis (EDA)

- Mean, median, mode, range, standard deviation
- Grouping & aggregation
- **Activity**: Analyze a dataset of product reviews and group by product category

Hour 9: Data Visualization with Matplotlib & Seaborn

- Line, bar, pie, histograms
- Heatmaps and correlation plots
- **Activity**: Plot sales trends over months using a CSV file

Hour 10: Introduction to SQL for Data Retrieval

- SELECT, WHERE, ORDER BY, GROUP BY
- Filtering and joining tables
- **Activity**: Practice SQL queries on an online playground (like W3Schools SQL)

Hour 11: Real-World Case Study – Sales Analysis

- Provide raw sales data
- Interns clean, summarize, and visualize it
- **Activity**: Find top-selling products and monthly revenue trend

Hour 12: Dashboarding in Excel

- Charts, slicers, interactivity
- Building a summary view
- **Activity**: Create a dashboard for employee attendance or monthly sales

Hour 13: Intro to Power BI or Tableau

- Basic UI, connecting to data
- Creating charts and dashboards
- **Activity**: Create a product-wise sales dashboard

Hour 14: Data Storytelling & Insight Writing

- How to convert data into insights
- Telling stories using visuals and text
- **Activity**: Write 3 insights from your dashboard created earlier

Hour 15: Introduction to Predictive Analytics

- Correlation, regression basics
- When and how to use simple prediction
- **Activity**: Predict marks from study hours using linear regression in Python

Hour 16: Mini Project Planning

- Choose domain: finance, HR, marketing, health
- Define problem statement and outcome
- **Activity**: Create a plan (dataset, goal, tools to be used)

Hour 17: Mini Project Development

- Hands-on work with guidance
- Trainer supports logic, tool use, and structure
- **Example**: Analyze customer churn, student performance, or sales trends

Hour 18: Final Data Visualization & Report Making

- Create final graphs, dashboards
- Prepare slides or PDF report with charts and conclusions
- **Activity**: Export insights as a PowerPoint or PDF file

Hour 19: Final Project Presentation

- Present to mentors/peers
- Cover tools used, insights, challenges, future scope
- Trainer gives feedback on quality, clarity, creativity

Hour 20: Career Path in Data Analytics + Certification

- How to grow in analytics
- Portfolios, GitHub, Kaggle, LinkedIn tips