

Module 1: Introduction to Data Analytics


1. Introduction to Course

This course will introduce you to the core tools and steps used in **Data Analytics**, including hands-on learning with:

-  **Microsoft Excel**
-  **SQL**
-  **Python**

You will learn how to analyze, visualize, and understand data to help in informed decision-making.

2. What is Data Analytics?

 **Data Analytics** is the process of examining raw data to uncover patterns, draw conclusions, and support decision-making.

Purpose:

- Gain meaningful **insights** from data.
 - Drive **informed business decisions**.
 - Identify **trends and patterns**.
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3. Why is Data Analytics Important?

 Helps in:




- Making **data-driven decisions**.
 - Understanding **customer behavior**.
 - Detecting **fraud** or anomalies.
 - Optimizing **business operations**.
 - Enhancing **marketing strategies**.
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4. Steps to Analyze Datasets






Each step plays a critical role in ensuring accurate and insightful analysis:

 Step	 Description
 1. Data Collection	Gathering raw data from different sources like surveys, sensors, logs, databases.
 2. Data Storage	Storing data securely in formats like CSV, databases, cloud, etc.
 3. Data Processing	Transforming raw data into usable formats (e.g., converting dates, parsing values).
 4. Data Cleansing	Removing errors, duplicates, and filling missing values.
 5. Data Analysis	Applying techniques to interpret the data (visuals, statistics, patterns).

5. Tools Used in This Course

Tool	Purpose
 Microsoft Excel	For quick analysis, charts, pivot tables, basic data cleaning.
 SQL (Structured Query Language)	To retrieve, filter, and manage data from relational databases.
 Python	For advanced analytics, automation, and visualizations using libraries like <code>pandas</code> , <code>matplotlib</code> .

Key Points to Remember

-  **Data is an asset** – Better data leads to better decisions
-  Clean data = Reliable results
-  Choose the right tool (Excel, SQL, Python) depending on the task
-  Always understand the **source and structure** of your data before analysis
-  Data analysis is an **iterative** process – refining and revisiting is normal