

COURSE: DATA ANALYTICS USING EXCEL

COURSE OBJECTIVE:

1. This course is designed for individuals who are new to data science and want to learn how to perform data analysis using Microsoft Excel.
2. The course covers fundamental data science concepts, techniques for data cleaning and manipulation, basic statistical analysis, and visualization using Excel's built-in features.
3. Participants will also learn how to apply these skills to real-world datasets and gain hands-on experience through practical exercises.

LEARNING OBJECTIVES:

1. Declare key concepts in data science such as data types, variables, and datasets.
2. collect, clean, and preprocess data for analysis.
3. Explore data using descriptive statistics and data visualization techniques.
4. Utilize basic Excel functions and formulas for data manipulation.
5. Clean and prepare data for analysis using Excel's built-in tools and functions.
6. Customize visualizations to effectively communicate insights from data.
7. Use of PivotTables and Pivot Charts in Excel using the given data.

Instructor Led Course Content Outline :

Week	Module	Topics	Minutes
Week-	Skills Build Orientation	Orientation on IBM Skills Build	60

1		Introduction to Gen AI	60
Week - 2	Data Science	1. Introduction to Data	30
		2. Difference between Data Science and Data Analytics	30
		3. Importance of Data Analytics in various industries.	60
Week- 3	Introduction to Excel	1. Introduction to Excel	30
		2. The data analytics process: Data collection, data cleaning, data exploration, and data visualization.	90
Milestone 1	Doing Hands on Excel Sheets.		
Week- 4	Data Manipulation and Formatting	1. Experiencing to Excel	30
		2. Data Manipulation	45
		3. Formatting Data	45
Week- 5	Data Analysis Techniques	1. Introduction to PivotTables and Slicers for summarizing data	80
		2. Sorting data for better organization	40
Milestone 2	Data Manipulation and Formatting using Excel Sheets		
Week- 6	Data Visualization	1. Charts (Bar, Line, Pie,Etc)	60
		Graphs & Sparklines, Data Bars and Icon Sets	60
Week- 7	Advanced Techniques in Excel	1. Statistical functions	40
		2. Array formulas	40
		3. Financial functions	40
Week- 8	Hands On Exercises	1. Importing sample dataset	30
		2. Performing advanced data	30

		manipulation	
		3. Utilizing advanced functions for analysis	20
		4. Creating complex visualizations	20
		5. Discussing insights	20
Milestone 3	Outcome of the Project with a Excel		

Industry Use Cases:

- **Retail Sales Analysis:** Analyzing monthly sales data to identify trends, top-selling products, and seasonal variations to optimize inventory and marketing strategies.
- **Financial Forecasting:** Creating budgets, financial statements, and cash flow projections to help businesses plan and make informed financial decisions.
- **Customer Segmentation:** Analyzing customer data to segment the customer base into different groups based on demographics, purchasing behavior, and preferences for targeted marketing campaigns.
- **Inventory Management:** Monitoring inventory levels, analyzing stock turnover rates, and identifying slow-moving or obsolete items to minimize holding costs and improve supply chain efficiency.
- **Marketing Campaign Analysis:** Evaluating the effectiveness of marketing campaigns by tracking key performance indicators (KPIs) such as conversion rates, customer acquisition costs, and return on investment (ROI).
- **Human Resources Analytics:** Analyzing employee data to identify patterns related to recruitment, retention, performance, and training needs to support strategic workforce planning and talent management.
- **Supply Chain Optimization:** Analyzing supply chain data to identify bottlenecks, optimize routing and scheduling, and improve overall operational efficiency.
- **Healthcare Data Analysis:** Analyzing patient data, treatment outcomes, and healthcare costs to identify opportunities for improving patient care, reducing costs, and optimizing resource allocation.
- **Real Estate Market Analysis:** Analyzing property sales data, market trends, and demographic information to identify investment opportunities.
- **Data Augmentation:** Generative AI can create synthetic data to augment existing datasets. This is particularly useful in training machine learning models when real-world data is limited or expensive to collect.
- **E-commerce Analytics:** Analyzing website traffic, user behavior, and sales data to optimize the online shopping experience, improve website design, and enhance product offerings based on customer preferences and trends.