Course Name: Data Analytics using Power BI

ABOUT THE COURSE

TOTAL DURATION:	45HRS
MODE OF DELIVERY	Virtual Instructor Led
TRAINER TO STUDENT RATIO:	1:50
TOTAL MARKS:	75

TABLE 1	
OVERALL COURSE OBJECTIVE:	The broad range of essential skills encompassing programming, statistics, data analytics, data wrangling, data visualization, communication, business foundations, and ethics will enhance students' competitiveness in the dynamic field of Data Analytics with Power BI in the industry. Equipped with a practical understanding of sought-after technical skills and the interpersonal abilities valued by employers, students will graduate ready to apply their expertise in data analytics across various industries.
LEARNING OUTCOME:	● Develop meaningful lines of inquiry that might be explored through the collection, organization, visualization, and analysis of data in a context associated with their primary field of study using (as appropriate) numerical, textual, spatial, and/or visual data. ● Application of Data: what data are, how they are collected, the role of metadata in understanding a given set of data, and how to assess the quality/reliability of data. ● Proficiency (Intermediary)in the acquisition and organization of data. ● Demonstrate intermediate proficiency in the visualization of data to communicate information and patterns that exist in the data. ● Using the tools of statistics and machine learning to ask questions of and explore patterns in data.

| | | | ● Exploration of data, communicate both in writing and verbally the limitations of data, the methods of acquisition, the interpretation of visualized data, and the results of statistical analysis.

● Summarize ethics of the questions asked of data, the methods of acquiring the data, the mode of data analysis/visualization, and the rhetoric used in communicating findings with data. | |

TABLE 2: MODULE WISE COURSE CONTENT AND OUTCOME				
SL.N O	**MODULE NAME**	**MODULE CONTENT**	**MODULE LEARNING OUTCOME**	**DURATIO N (HRS)**
1	**Data Analytics Managed Services**	**Overview:** ● Definition of Data Analytics Managed Services ● Importance of Data Analytics in today's world ● Key Components of Data Analytics Managed Services ● Implementati on process of Data Analytics Managed Services ● Benefits of Data Analytics Managed Services **Use Cases:** ● In Financial Services ● In Healthcare	**Understanding Python** ● Introduction to Python Programmin g Language ● Python Set-Up - Getting started with Python ● Python Variables & Datatypes ● Operators in Python ● Conditional Statements, Loops & Expressions ● Functions & Methods ● Sequence Data Types ● Exception Handling ● Introduction to OOPs Concepts in Python	8

			Getting Started with Power BI ● Why Power BI? ● Data Analytics & Microsoft Power BI ● Types of Analytics ● Overview of Data Roles	
2	**Python for Data Analysis**	**Exploratory Data Analytics** ● Basic information about data ● Data Exploration ● Data Cleaning and Preprocessing ● Reporting & Visualization ● Case Study on EDA	**Python Package – NumPy for working N Dimensional data** ● Introduction to NumPy ● Indexing & Broadcasting ● Structured Array ● Understanding Statistical Functions ● Create NumPy Array & Implementing NumPy Indexing & Selection ● Working with NumPy Operations **Python Package – Pandas for handling data** ● Getting started with Pandas	22

| | | | | ● Overview of Pandas Objects
● Dealing with Text Data
● Understanding Statistical Functions
● Indexing & Selecting Data
● Working with Pandas Series & Data Frame
● Handling missing data with Pandas
● Merging & Concatenation with Pandas
● Working with Data Input & Output in Pandas

Python Package – Matplotlib for Data Visualization

● Data Visualization Using Matplotlib
● Understanding Plotting and Visualization
● Figures and subplots
● Colors, Markers and line styles
● Plotting Line Chart, Bar & Scatter Chart using Matplotlib | |

3			● Putting Ticks, Labels and Legends, subplots in Matplotlib ● Create Histograms and Binning using Matplotlib	
3	**Data Visualization with Power BI**	**Power BI Desktop & Its Components** ● Introduction to Power Query, Power Pivot, Power View ● Get Data from different sources ● Clean, Transform and Load data	**Creating Interactive Visualizations and Report** ● Creating Reports ● Creating Dashboards ● Enhance Report for usability and storytelling ● Identifying Patterns ● Hands-On Exercise on Data Visualization **Data Modelling and Relationships in Power BI** ● Design and Develop Data Model ● Understanding cardinality with multiple tables	15

TABLE 3: LIST OF FINAL PROJECTS

SL.NO	FINAL PROJECT
1	Real Time Analysis of Bank Customer (Data Analytics with Power BI)
2	Profit Analysis of Global Superstores (using power BI)
3	Analysis of Crypto Currency Growth in last 5 year (Data Analytics with Power BI)
4	Power BI enabled Crop Production Analysis (Data Analytics with Power BI)
5	Analysis of Commercial Electricity Consumption in Indian State (Data Analytics with Data from Cloud/Web)
6	360-degree Business Analysis of Online Delivery Apps using Power BI
7	Inventory and sales analysis of Departmental Store
8	Global Olympics Dataset Diagnosis using Power BI (Data Analytics with Power BI)
9	IPL Analysis using Power BI
10	Power BI Powered Global Terrorism Dataset Analysis (Data Analytics with Power BI)
11	Supply Chain Analysis of Inventories (Data Analytics with Power BI)
12	An Analysis of Unemployment in Republic of India (Data Analytics with Power BI)

TABLE 4: COURSE ASSESSMENT RUBRICS (TOTAL MARKS: 75)			
S. No.	Assessment Component	Evaluation Parameters	Maximum Marks
1	Trainer Led Session Attendance (Minimum 70 percent Attendance)	VIA LMS	25 Marks
2.	End-Term Assessment	VIA LMS	40 Marks
3.	Case study Submission	VIA LMS	10 Marks
Total		75 Marks	