Course Name: Certificate Course in Data Analysis using Microsoft Power BI

Course Objective

This Power BI course aims to empower participants with a comprehensive understanding of business intelligence. By covering foundational concepts, data transformation, DAX, visualization techniques, Power BI services, connectivity models, Power BI Report Server, and advanced analytics, participants will gain practical skills for effective data analysis and visualization, culminating in a hands-on project to apply their knowledge.

Course Prerequisite

Education: Any Engineering, Bachler Degree Science, Statistics, Economics Graduate (10+2+3/ 10+2+4) OR higher qualification

Experience: This Power BI course is suitable for individuals with a basic understanding of data concepts and Microsoft Excel. Whether you're a beginner or an experienced professional, the course accommodates various experience levels.

Course Outcome

Upon completion, participants will master Power BI, proficiently handling data transformation, DAX, and advanced visualization. They will navigate Power BI services adeptly, customizing dashboards, and apply advanced analytics in real-world scenarios, showcasing expertise in anomaly detection, sensitivity labels, and deployment pipelines through practical projects.

Course Duration: 80 Hrs (8 hours/ day for 2 Weeks)

Course Outline:

S. No.	Course Modules	Duration (Hrs)
1	Introduction to Power BI	06
2	Power BI Desktop and Data Transformation	06
3	Data Analysis Expression (DAX)	10
4	Data Visualization	10
5	Power BI Services	10
6	Connectivity Models	10
7	Power BI Report Server	10
8	Advanced Analytics in Power BI	10
9	Projects	08
	Total	**80**

Detailed Course Content

1. **Introduction to Power BI**
   - Exploring Business Intelligence Landscape
   - Empowering Users with Self-Service Business Intelligence (SSBI)
   - Navigating the Power of Power BI
   - Contrasting Traditional BI with Power BI
   - Comparing Power BI, Tableau, and QlikView
   - Harnessing the Capabilities of Power BI

- o Unravelling the Workflow in Power BI
- o Mastering the Dynamics of Power BI
- o Essential Elements of Power BI Unveiled
- o Scrutinizing Power BI Versions
- o Unveiling the Foundations of Power BI: Building Blocks
- o Decoding the Significance of Data Modelling in Power BI

2. **Power BI Desktop and Data Transformation**
- o Power BI Desktop Data Origins
- o Importing Data into Power BI Desktop
- o Perspectives in Power BI Desktop
- o Data Editing Tools in Power BI
- o Refining, Purifying, Crafting, and Designing Data
- o Controlling Data Connections
- o Modifying Relationship Links
- o Bidirectional Filtering
- o Preserving Project Progress
- o Calculations and Metrics in Power BI

3. **Data Analysis Expression (DAX)**
- o DAX Overview
- o Significance of DAX in Data Analysis
- o Understanding Data Types in DAX
- o Varieties of DAX Calculations
- o Crafting Calculated Columns in DAX: A Step-by-Step Guide
- o Exploring Measures in DAX for Enhanced Analytics
- o Navigating DAX Syntax for Effective Formulas
- o Harnessing the Power of DAX Functions
- o Operating with DAX: An Insight into Operators
- o DAX Tables and Filtering Techniques

4. **Data Visualization**
- o Unlocking the Power of Charts in Power BI
- o Organizing Data with Matrixes and Tables
- o Navigating Insights with Slicers and Map Visuals
- o Tracking Metrics with Gauges and Single Number Cards
- o Enhancing Aesthetics: Color Modifications in Charts and Visuals
- o Creative Elements: Shapes, Text Boxes, and Images
- o Personalized Insights: Custom Visuals in Power BI
- o Crafting a Visually Appealing Story: Page Layout and Formatting
- o Efficient Navigation: Bookmarks and Selection Pane in Power BI
- o Key Performance Indicators (KPIs) in Action
- o Mastering Visual Hierarchy: Z-order in Power BI

- o   Optimizing Data Representation: Grouping and Binning Techniques

5. **Power BI Services**

- o   Power BI Service Overview
- o   Building Dashboards in Power BI
- o   Instant Data Insights with Quick Insights
- o   Customizing Dashboards in Power BI
- o   Interactive Data Exploration with Power BI Q&A
- o   Inquiry-Based Data Analysis
- o   Integration of Power BI Embedded
- o   Utilizing Bookmarks and Buttons in Power BI

6. **Connectivity Models**

- o   Power BI's Versatile Data Source Integration
- o   Discovering Dynamic Links to Data Sources
- o   Establishing Direct Connections to SQL Azure
- o   Establishing Direct Connections to SQL Server Analysis Services and MySQL
- o   Importing Power View and Power Pivot Capabilities
- o   Harnessing Data Gateways
- o   Comparing Direct Query and Import Connectivity Modes
- o   Integrating Power BI with Excel

7. **Power BI Report Server**

- o   Exploring Power BI Report Server
- o   Report Server's Notable Features
- o   Unveiling the Framework of the Report Server
- o   Report Server's Constraints and Boundaries
- o   Contrasting Power BI Report Server with Power BI Service
- o   Procuring and Setting Up Power BI Report Server
- o   Understanding the Concept of a Web Portal
- o   Safeguarding Data with Row Level Security

8. **Advanced Analytics in Power BI**

- o   Define Parameters
- o   Establish a Data Flow
- o   An Overview of Anomaly Detection
- o   Exploring Smart Narrative
- o   Implementing a Deployment Pipeline

9. **Project**

- o   Power BI Service
- o   Row Level Security
- o   Visuals and Charts
- o   Power BI Desktop
- o   Handling Workspaces