POWER BI FOR BUSINESS ANALYSIS PROGRAM

Professional Certificate in Power BI for Business Analysis

Course Code: M051/25

Duration: 6 Days

Delivery Format: Hybrid

Target Audience:

- All level department
- Employees that used Power BI

Program Outcomes:

Upon completion of this program, participants will be able to:

- Gain a clear understanding of what Power BI is, when to use it, and how to use it effectively for business analysis.
- Equip themselves with technical skills in Power BI relevant to their business context and enable hands-on practice.
- Apply learning from previous phases to a real-world business scenario, creating a project based on their business needs.

Detailed Syllabus

Module 1: Introduction to Power BI

Outcome: Participants will gain a foundational understanding of what Power BI is, its history, how it differs from other BI tools, and the key components of its ecosystem.

Topics:

- History and evolution of Power BI
- Differences between Power BI and other BI tools
- Key components of the Power BI ecosystem

Activities:

- Lectures and discussions on the evolution of Power BI.
- Comparative analysis of Power BI with tools like Excel, Tableau, etc.

Assessments:

- Quiz on basic Power BI terminology and components.
- Identifying the key differences between Power BI and another BI tool.

Module 2: Why Power BI? Business Impact and Use Cases

Outcome: Participants will understand the tangible benefits of using Power BI for business analysis and explore real-world applications across different industries, recognizing the importance of data-driven decisions.

Topics:

- Benefits of Power BI for business analysis
- Real-world examples of Power BI applications in various industries
- Importance of data-driven decision-making

Activities:

- Case study presentations showcasing the business impact of Power BI.
- Brainstorming sessions on potential Power BI use cases relevant to participants.

Assessments:

- Identifying the benefits of Power BI in a given business scenario.
- Providing examples of Power BI applications relevant to their industry.

Module 3: Overview of Power BI Features and Workflow

Outcome: Participants will be able to identify specific business scenarios where Power BI can be effectively applied and understand how Power BI compares to and complements tools like Excel for various analytical tasks.

Topics:

- Identifying business scenarios for using Power BI

- Comparing Power BI with Excel and other tools for specific tasks

Activities:

- Scenario-based discussions on when to choose Power BI over other tools.
- Comparative exercises highlighting the strengths of Power BI for specific analytical tasks.

Assessments:

- Choosing the appropriate tool (Power BI or Excel) for a given analytical task.
- Describing the basic workflow in Power BI.

Module 4: When to Use Power BI: Scenarios and Decision-Making

Outcome: Participants will learn to identify situations where Power BI can significantly save time and resources, develop strategies for consistent efficiency gains, and understand how Power BI can aid in identifying and preparing for financial risks.

Topics:

- How much time save for personal and business emergencies
- Strategies for consistent saving despite irregular income
- Identifying financial risks and preparing for them

Activities:

- Time-saving calculation exercises using Power BI for common tasks.
- Discussions on strategies for sustained efficiency improvements.

Assessments:

- Quantifying the potential time savings using Power BI in a specific scenario.
- Identifying Power BI features relevant to financial risk analysis.

Module 5: Key Components of Power BI

Outcome: Participants will be able to identify and understand the key components of the Power BI ecosystem, differentiate between reports and dashboards, and have an overview of the various data sources Power BI supports.

Topics:

- Difference between reports and dashboards
- Overview of supported data sources

Activities:

- Comparison exercises highlighting the differences between reports and dashboards.
- Presentation of the types of data sources Power BI can connect to.

Assessments:

- Matching key features to the correct Power BI component.
- Explaining the difference between a report and a dashboard in Power BI.

Module 6: How to Use Power BI: Basic Steps and Framework

Outcome: Participants will understand the basic steps involved in creating a Power BI report, from data import to publishing, and grasp the fundamental ETL workflow within Power BI.

Topics:

- Steps to create report from importing data to publishing
- Understanding the Power BI workflow: Extract, Transform, Load (ETL)

Activities:

- High-level demonstration of the report creation process in Power BI.
- Explanation of the Extract, Transform, Load (ETL) process in the context of Power BI.

Assessments:

- Sequencing the basic steps of creating a Power BI report.
- Explaining the ETL process in Power BI.

Module 7: Connecting Power BI to Data Sources

Outcome: Participants will be able to connect Power BI to various data sources and troubleshoot common data connection problems.

Topics:

- Overview of connectors: Excel, databases (SQL, Access), and cloud services (Azure, SharePoint)
- Resolving common connection issues

Activities:

- Hands-on exercises connecting to different types of data sources (e.g., CSV, Excel).
- Troubleshooting scenarios for common data connection errors.

Assessments:

- Successfully connecting Power BI to a specified data source.

Module 8: Data Transformation with Power Query

Outcome: Participants will gain proficiency in using Power Query to clean, reshape, and transform data from various sources to prepare it for analysis and visualization in Power BI.

Topics:

- Cleaning and reshaping data (removing duplicates, splitting columns)
- Adding calculated columns and creating custom columns
- Using Power Query editor for advanced transformations

Activities:

- Hands-on labs using the Power Query editor to perform data cleaning and transformation tasks.
- Exercises in creating calculated and custom columns.

Assessments:

- Transforming a messy dataset into a clean and structured format using Power Query.
- Creating calculated columns based on specific business logic.

Module 9: DAX Basics for Calculations

Outcome: Participants will understand the fundamentals of DAX and be able to write basic DAX expressions to create calculated columns and measures for insightful analysis.

Topics:

- Overview of Data Analysis Expressions (DAX)
- Creating calculated columns and measures
- Key DAX functions: SUM, AVERAGE, COUNT, IF, and CALCULATE

Activities:

- Introduction to DAX syntax and concepts.
- Step-by-step exercises in creating calculated columns and measures using basic DAX functions.

Assessments:

- Writing DAX expressions to calculate specific metrics.
- Explaining the purpose and syntax of basic DAX functions.

Module 10: Creating Visualizations and Dashboards

Outcome: Participants will be able to create a variety of visualizations in Power BI, select appropriate visuals for different data types and analytical goals, customize visuals for clarity, and design informative and interactive dashboards.

Topics:

- Types of visuals: bar charts, line graphs, pie charts, and maps
- Customizing visuals (themes, filters, and drill-through)

Activities:

- Hands-on labs creating different types of visuals.
- Exercises in customizing visual elements.

Assessments:

- Creating appropriate visuals to represent given datasets.
- Designing a dashboard that effectively communicates key insights.

Module 11: Optimizing Reports for Insights

Outcome: Participants will learn best practices for designing visually appealing and effective Power BI reports, and how to use interactive elements like bookmarks, slicers, and hierarchies to enhance user exploration and insight discovery.

Topics:

- Best practices for report design (color usage, layout)
- Using bookmarks, slicers, and hierarchies for interactivity

Activities:

- Design critique sessions on existing reports.
- Hands-on exercises implementing bookmarks, slicers, and hierarchies.

Assessments:

- Redesigning a basic report following best practices.
- Implementing interactive elements to enhance report usability.

Module 12: Solving Real-World Problems with Power BI

Outcome: Participants will learn how Power BI can be applied to solve real-world business problems through the analysis of case studies in areas like sales, inventory, and performance tracking.

Topics:

- Case studies on sales analysis, inventory management, and performance tracking

Activities:

- In-depth analysis of provided case studies.
- Group discussions on how Power BI features were used to solve specific business challenges in the case studies.

Assessments:

- Identifying the Power BI features and techniques used in a case study.
- Proposing a Power BI solution for a given real-world business problem.

Module 13: Introduction to the Project

Outcome: Participants will be able to define clear and business-aligned objectives for their Power BI project and identify the relevant datasets required for analysis.

Topics:

- Defining project objectives aligned with business goals
- Identifying and acquiring necessary datasets

Activities:

- Brainstorming and refining project ideas based on their business needs.
- Developing a project charter outlining objectives and scope.

Assessments:

- A well-defined project charter with clear objectives.
- A documented plan for identifying and acquiring necessary datasets.

Module 14: Guidance on Setting Objectives and Scope

Outcome: Participants will be able to define a focused scope for their Power BI project, identify key performance indicators (KPIs), establish a relevant timeframe, and prioritize project deliverables based on their potential business impact.

Topics:

- Determining the scope of analysis (KPIs, timeframe, and focus areas)
- Prioritizing deliverables based on business impact

Activities:

- Workshops on defining project scope and KPIs.
- Exercises in prioritizing project deliverables based on impact assessment.

Assessments:

- A clearly defined project scope with identified KPIs and timeframe.
- A prioritized list of project deliverables with justification based on business impact.

Module 15: Dataset Creation and Analysis Planning

Outcome: Participants will be able to prepare and clean their acquired datasets for analysis and develop a plan outlining the steps involved in creating their Power BI reports and dashboards.

Topics:

- Preparing and cleaning datasets for analysis
- Outlining steps for report and dashboard creation

Activities:

- Applying data cleaning and transformation techniques to their datasets.
- Planning the structure and content of their Power BI reports and dashboards.

Assessments:

- A prepared and cleaned dataset ready for analysis in Power BI.
- A documented plan or storyboard for the final Power BI report and dashboard.

Module 16: Building the Solution in Power BI

Outcome: Participants will be able to build interactive Power BI reports and dashboards that address their project objectives, effectively utilizing a range of visualizations to communicate insights.

Topics:

- Designing interactive reports and dashboards based on project objectives
- Using advanced visualizations (matrix, scatter plots, and maps)

Activities:

- Hands-on development of Power BI reports and dashboards using their prepared datasets.
- Applying different visualization techniques (matrix, scatter plots, maps, etc.).

Assessments:

- A functional and interactive Power BI report and dashboard that meets the defined project objectives.