

Power BI Detailed Course Syllabus

Module 1: Introduction to Power BI

1.1 Introduction and Overview

Objectives:

Understand what Power BI is and its key components.

Identify different use cases for Power BI.

Key Topics:

Overview of Power BI (Power BI Desktop, Power BI Service, Power BI Mobile)

Benefits and use cases

Introduction to Power BI Ecosystem

Activities:

Read Power BI overview documentation

Explore Power BI interface

1.2 Installing and Setting Up Power BI Desktop

Objectives:

Install and configure Power BI Desktop.

Familiarize yourself with the Power BI Desktop interface.

Key Topics:

Installation steps

Navigating the Power BI Desktop interface

Basic settings and configurations

Activities:

Install Power BI Desktop

Explore interface and settings

Complete installation checklist

1.3 Introduction to Power BI Service

Objectives:

Understand the functionality and features of Power BI Service.

Learn how to navigate and use the Power BI Service interface.

Key Topics:

Overview of Power BI Service

Key features (Dashboards, Reports, Datasets, Workspaces)

Navigating the interface

Activities:

Log into Power BI Service

Create a sample dashboard

Explore different views and features

Module 2: Data Loading and Transformation

2.1 Connecting to Data Sources

Objectives:

Learn how to connect to various data sources in Power BI.

Understand data import techniques.

Key Topics:

Connecting to Excel, SQL Server, Web data, and other sources

Import vs. DirectQuery

Data source settings

Activities:

Connect to an Excel file and SQL Server database

Import sample data

Explore connection settings and options

2.2 Transforming Data with Power Query Editor

Objectives:

Understand how to use Power Query Editor for data transformation.

Apply basic and advanced transformations.

Key Topics:

Introduction to Power Query Editor

Basic transformations (Filtering, Sorting, Grouping)

Advanced transformations (Merging, Appending, Custom Columns)

Activities:

Perform basic and advanced data transformations on sample datasets

Create and apply custom columns

Document transformation steps

2.3 Data Modeling Basics

Objectives:

Create and manage data models in Power BI.

Understand relationships and data modeling concepts.

Key Topics:

Creating and managing relationships between tables

Understanding primary and foreign keys

Introduction to star and snowflake schemas

Activities:

Build a simple data model

Create relationships between tables

Analyze the data model in Power BI Desktop

Module 3: Creating Reports and Visualizations

3.1 Building Basic Reports

Objectives:

Learn how to create and customize basic reports in Power BI.

Understand visualization options and techniques.

Key Topics:

Creating charts (Column, Bar, Line, Pie)

Adding tables and matrices

Customizing visualizations (Colors, Labels, Titles)

Activities:

Build basic reports using sample data

Customize charts and tables

Create a report with multiple visualizations

3.2 Advanced Visualizations

Objectives:

Utilize advanced visualization techniques and custom visuals.

Enhance interactivity and user experience in reports.

Key Topics:

Using slicers, filters, and drillthroughs

Implementing custom visuals from AppSource

Advanced chart types (Waterfall, Decomposition Tree)

Activities:

Implement slicers and filters in a report

Explore and add custom visuals

Create interactive dashboards with advanced visuals

3.3 Designing Interactive Dashboards

Objectives:

Design and create interactive dashboards.

Understand best practices for dashboard design.

Key Topics:

Pinning visuals to dashboards

Creating and managing dashboard tiles

Dashboard design best practices (Layout, Color schemes)

Activities:

Design and create a sample dashboard

Pin visuals and arrange tiles

Review and apply design best practices

3.4. Introduction to Bookmarks

What are Bookmarks?

Objectives:

Understand the concept and purpose of bookmarks in Power BI.

Learn how bookmarks can enhance report interactivity.

Key Topics:

Definition and uses of bookmarks

How bookmarks capture the current state of a report (filters, slicers, visual states)

3.4.2 Creating and Managing Bookmarks

Objectives:

Learn how to create, configure, and manage bookmarks.

Practice using bookmarks to capture and restore report states.

Key Topics:

Creating bookmarks (using the Bookmarks pane)

Configuring bookmark options (Data, Display, Current Page)

Managing bookmarks (renaming, deleting, reordering)

Activities:

Create a set of bookmarks for different report views

Configure bookmark options for a specific report page

Practice managing bookmarks in the Bookmarks pane

Module 4: Data Analysis Expressions (DAX)

4.1 Introduction to DAX

Objectives:

Understand the basics of DAX and its syntax.

Learn fundamental DAX functions and their usage.

Key Topics:

Overview of DAX

Basic DAX functions (SUM, AVERAGE, COUNT)

DAX syntax and structure

Activities:

Write basic DAX formulas

Use fundamental DAX functions in a report

Explore DAX syntax with sample data

4.2 Creating Calculated Columns and Measures

Objectives:

Create and use calculated columns and measures in Power BI.

Understand the difference and use cases for each.

Key Topics:

Creating calculated columns

Creating measures (SUM, AVERAGE, CALCULATE)

Using measures in visualizations

Activities:

Create calculated columns and measures with sample data

Use measures in various visualizations

Practice DAX calculations and formulas

4.3 Advanced DAX Formulas

Objectives:

Apply advanced DAX techniques and functions.

Optimize DAX formulas for performance.

Key Topics:

Time intelligence functions (YTD, MTD, QTD)

Advanced DAX calculations (FILTER, ALL, RELATED)

Performance optimization techniques

Activities:

Implement time intelligence functions in a report

Write advanced DAX formulas

Optimize DAX queries and measure performance

Module 5: Publishing and Sharing Reports

5.1 Publishing to Power BI Service

Objectives:

Learn how to publish reports and datasets to Power BI Service.

Understand the management of published content.

Key Topics:

Publishing reports from Power BI Desktop

Managing datasets and reports in Power BI Service

Refreshing data and setting up scheduled refresh

Activities:

Publish a report to Power BI Service

Manage datasets and reports

Set up data refresh schedules

5.2 Sharing and Collaboration

Objectives:

Share reports and collaborate with others using Power BI Service.

Understand sharing options and permissions.

Key Topics:

Sharing reports and dashboards

Setting up workspaces and apps

Managing permissions and data security

Activities:

Share a report with colleagues

Create and manage a workspace

Configure sharing settings and permissions

Module 6: Power BI Advanced Topics

6.1 Performance Optimization

Objectives:

Optimize Power BI reports and data models for better performance.

Understand best practices for performance tuning.

Key Topics:

Optimizing data models and queries

Best practices for report design and performance

Analyzing performance and troubleshooting

Activities:

Analyze and optimize a sample data model

Apply performance tuning techniques

Review performance optimization best practices

Additional Resources and WrapUp

Case Studies: Review realworld scenarios and solutions.

Practice Exercises: Hands-on exercises for each module.

Quizzes and Assessments: Knowledge checks to reinforce learning.

Forum or Community Access: For discussion and troubleshooting.

Certification Guidance: Information on obtaining Power BI certifications (optional).

This syllabus is designed to provide a structured learning path, ensuring that participants gain a comprehensive understanding of Power BI and its capabilities. Each module includes objectives, key topics, and activities to facilitate practical learning and application.