SILVER OAK UNIVERSITY

School of Technology, Design And Computer Application

Silver Oak College of Computer Application

Bachelor of Science Computer Science & Information Technology

Course Name: Fundamentals of Power BI

Course Code: 3040243206

Semester: 4th

Prerequisite: Basic Understanding of MS-EXCEL

Course Objective: The syllabus aims to provide a comprehensive understanding of Business Intelligence concepts, Power BI tools, data analysis techniques, visualization methods, and dashboard creation using Power BI Desktop.

Teaching Scheme:

Teaching Scheme				
L	T	P	Contact Hours	Credit
3	0	2	5	4

Contents:

Unit No.	Course Contents	Teaching Hours	% Weightage
1	**Introduction of BI and Power BI** Introduction to Business Intelligence, Introduction to Power BI, Traditional BI vs. Power BI, Power BI vs. Tableau vs. QlikView, Uses of Power BI, Basic Components of Power BI, Comparison of Power BI Version, Data Sources in Power BI Desktop, Introduction to Power BI Components: Power Query, Power Pivot, Power View, & Power Map.	10	24
2	**Power BI Desktop and Data Transformation** Data Cleaning using Power BI query editor, Creating Measures, Transform, Clean, Shape, and Model Data for further analysis, Skills You will Learn:, Data transformation using the query editor, Managing Data Relationships, Loading Data in Power BI Desktop, Views in Power BI Desktop, Query Editor In Power BI, Saving Work file.	10	24
3	**Data Analysis Expression (DAX)** Creating Calculated Measures and Columns, Introduction to DAX, Data Types in DAX, DAX Calculation Types, Steps to Create Calculated Columns, Measures in DAX, DAX Syntax, DAX Functions, DAX Operators, DAX Tables and Filtering.	10	24

4	**Data Visualization** Creating different visuals, Visualization Charts in Power BI, Matrixes and Tables, Slicers and Map Visualizations, Modifying Colors in Charts And Visuals, Shapes, Text Boxes, and Images, Custom Visuals, Page Layout and Formatting, Grouping and Binning, Power BI Service: Creating a Dashboard, Configuring a Dashboard, Import Power View and Power Pivot.	12	28

Course Outcome:

Sr. No.	CO-Statement	Unit No
CO-1	Understand the fundamentals of Business Intelligence and Power BI, including its components and comparison with other BI tools.	1
CO-2	Gain skills in data cleaning, transformation, and modeling using Power BI Desktop's query editor and data management features.	2
CO-3	Learn to create calculated measures and columns using DAX, including understanding its syntax, functions, and filtering capabilities.	3
CO-4	Develop the ability to create and customize various visualizations in Power BI, including dashboards and reports, while mastering layout and formatting techniques.	4

List of Practical **Total Hours : 28**

Sr. No.	Practical Name
1	Use Power BI Query Editor to import a CSV file containing sales data and perform the following transformations: Remove duplicates from the data. Convert date strings to proper date format. Split the product name into separate columns for category and subcategory.
2	Create a measure in Power BI to calculate the total sales amount by multiplying quantity and price.
3	Creating Different Visuals in Power BI: Create a bar chart to visualize sales performance by product category. Create a line chart to track sales trends over time.
4	Add a slicer to the dashboard to filter data by year or month. Create a map visualization to show sales distribution by region using geographical data.
5	Use Power BI Query Editor to clean and transform customer data, including removing null values and standardizing phone numbers.
6	Create relationships between the sales data table and customer data table based on common fields. Creating a Dashboard in Power BI: Combine the created visuals (bar chart, line chart, map) into a dashboard layout. Add a text box to the dashboard with a summary of key insights from the data.

7	Write a DAX formula to calculate the total revenue for each product category. Create a calculated column using DAX to categorize customers based on their total purchase amount (e.g., high, medium, low).
8	Modify the colors, font styles, and background of the visuals in the dashboard to align with company branding. Add images or logos to the dashboard for visual appeal. Loading Data from Multiple Sources in Power BI: Connect Power BI to a SQL database and import customer data. Merge the imported SQL data with the existing sales data from CSV using Power BI's data modeling features.
9	Publish the completed dashboard to Power BI Service and share it with team members for collaboration.

Major Equipment:

1. Computer System
2. LAN cable

Books Recommended:

1. Devin Knight Microsoft Power BI Quick Start Guide.
2. Brett Powell Microsoft Power BI Cookbook

List of Open-Source Software/learning website:

1. https://www.w3schools.com
2. https://dotnet.microsoft.com/

CO-PO-PSO Matrix:

Co. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO-1	3	1	1	1	1							1	1	2
CO-2	3		3	2									1	1
CO-3	3		2	2	3								1	2
CO-4	3			1	2							1	1	1