PARVATHANENI BRAHMAYYA SIDDHARTHA COLLEGE OF ARTS & SCIENCE
(An Autonomous College in the jurisdiction of Krishna University)

22OE304: POWER BI

Course Name	Power BI		L	T	P	C	CIA	SEE	TM
Course Code	22OE304		0	0	6	3	30	70	100
Year of Introduction: 2023	Year of Offering: 2023	Year of Revision: 2023			Percentage of Revision: 100				
L-Lecture, T-Tutorial, **P**-Practical, **C**-Credits, **CIA**-Internal Marks, **SEE**-External Marks, **TM**-Total Marks									

Course Description and Purpose: The course is intended to cover, Introduction Power Pivot, Data Operations, Power Pivot & Data Operations, Power Pivot Model, and Power BI Environment.

Course Objective: The course aims to provide a comprehensive understanding of Power Pivot and Data Operations, enabling students to proficiently create, manipulate, and optimize Power Pivot models within the Power BI environment, fostering advanced data analysis and visualization skills.

Specific Objectives include:
- To understand Power Pivot.
- To know Data Operations.
- To implement Power Pivot & Data Operations.
- To use Power Pivot Model.
- To use Power BI Environment.

Course Outcome:

CO1: Upon completing this course, participants will gain expertise the utilization of Power Pivot and the xVelocity in-memory Analytics Engine for effective data exploration, model management, and advanced analysis through pivot tables.
CO2: Upon completing this course, students develop expertise in data operations by mastering the techniques to import data from relational databases, text files, data feeds, and OLAP cubes, enabling seamless integration and analysis of diverse data sources.
CO3: The Power Pivot & Data Operations course enables participants to proficiently discover, import, cleanse, merge, shape, filter, aggregate data from diverse sources, and insert calculated columns using Power Pivot, empowering them to efficiently analyze and manipulate data for strategic decision-making.
CO4: The Power Pivot Model course empowers participants to create sophisticated data models, establish relationships, implement star schemas, optimize data denormalization, and effectively utilize linked tables, enabling them to design advanced, efficient, and comprehensive data structures for enhanced analytical insights and reporting capabilities.
CO5: The Power BI course equips participants with the skills to navigate the Power BI environment, proficiently acquire, clean, and shape data, establish meaningful table relationships, integrate calculations and measures, and perform advanced time-based analysis, enabling them to create powerful, insightful, and visually compelling business intelligence solutions.

UNIT-I (12 Hours)

Introduction Power Pivot: Introduction of Pivot - Use Power Pivot - xVelocity in-memory Analytics Engine - Exploring the Data Model Management Interface - Analyzing Data using a Pivot Table.

UNIT-II (12 Hours)

Data Operations: Working with Data - Import data from Relational Databases - Import Data from Text Files - Import Data from a Data Feed - Import Data from an OLAP Cube.

UNIT-III (12 Hours)

Power Pivot & Data Operations: Data Munging - Discover and Import Data from Various Sources - Cleanse Data - Merge, Shape, and Filter Data - Group and Aggregate Data - Insert Calculated Columns.

UNIT-IV (12 Hours)

Power Pivot Model: Creating Data Model - Explain what a Data Model is - Create relationships between Tables in the Model - Create and use a Star Schema - Understand when and how to Denormalize the Data - Create and Use Linked Tables.

UNIT-V (12 Hours)

Power BI: Power BI Environment - Getting, Cleaning, and Shaping Data - Creating Table Relationships - Adding Calculations and Measures - Incorporating Time-Based Analysis.

Prescribed Text Books			
S.No	**Author**	**Title**	**Publisher**
1	Powell Brett	Power BI 2021 - Volume 3 (English, Paperback, F Silva Roger)	ISBN: 9798711316824
2	F Silva Roger	Mastering Microsoft Power BI	Publisher: Packt Publishing Limited ISBN: 9781788297233, 9781788297233
3	Hutchinson Jeff	Microsoft Power BI Desktop - Creating Visual Reports	ISBN: 9781081588908 Independently Published

Reference Text Book			
S.No	**Author**	**Title**	**Publisher**
1	Dan Clark	Beginning Power BI: A Practical Guide to Self-Service Data Analytics with Excel 2016 and Power BI Desktop Second Edition	A Press

Course Delivery method: Face-to-face
Course has focus on: Foundation
Websites of Interest:

1. https://books.google.co.in/books?id=Da8-DgAAQBAJ&newbks=0&printsec=frontcover&hl=en&source=newbks_fb&redir_esc=y#v=onepage&q&f=false

Co-curricular Activities: (Case Studies)

List of Experiments

1.Write the Procedure for preparing a Pivot in Excel and prepare a Dashboard using sample marketing data.
(a) Offline Data and Online Data. (CO1,L1)
(b) Online to Online using Google Forms. (CO1,L1)

2. Installation of Power BI and its procedure. (CO3, L1)

3. Explain the procedure in importing various format files in Power BI, write its observations. (CO3, L5)

4. Demonstrate Power BI Data Models (Schemas in Power BI). (CO2,L3)

5. How to edit data in Power BI when data is exported use few Data Cleaning Techniques (Munging). (CO3,L1)

6. Advance Data Cleaning Techniques, Data Munging and Data Collection and Collaboration Techniques. (CO5,L3)

7. Write the procedure in building an association (Power Query) identify various schemas in Power BI. (CO1,L4)

8. Create Data Visualization (Charts for a Sample Data) Constructions and Analysis.(CO4,L6)

9. Step in preparing a Dashboard for the organization. (CO5,L3)

10. Constructing Quick Measures and Dax Formulas.(CO5,L3)

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Course Name: *Power BI*

Course Code: 22OE304

Course Type: Open Elective (Laboratory)

(w.e.f admitted batch 2022-23)

Time: 3 Hours **Max Marks: 70**

Answer any Two of the following questions **(2×35=70 Marks)**

1. Write the Procedure for preparing a Pivot in Excel and prepare a Dashboard using sample marketing data.
   (a) Offline Data and Online Data. (CO1,L1)
   (b) Online to Online using Google Forms. (CO1,L1)

2. (a) Create Data Visualization (Charts for a Sample Data) Constructions and Analysis.(CO4,L6)
   (b) Explain the procedure in importing various format files in Power BI, write its observations. (CO2, L5)

3.(a) How to edit data in Power BI when data is exported use few Data Cleaning Techniques (Munging). (CO3,L1)
   (b) Write the procedure in building an association (Power Query) identify various schemas in Power BI. (CO1,L4)

Evaluation criteria for Laboratory										
Record	Exercise 1(a)		Exercise 1(b)		Exercise 2(a)		Exercise 2(b)		VivaVoce	Total
10 Marks	Written Procedure 10 Marks	Execution 10 Marks	Written Procedure 10 Marks	Execution 10 Marks	Written Procedure 10 Marks	Execution 10 Marks	Written Procudure 10 Marks	Execution 10 Marks	10 Marks	70 Marks