Course: Data Analysis Power BI									Course Code: PB313		
Teaching Scheme (Hrs/Week)				Continuous Internal Assessment (CIA)					End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2A	CIA-2B	CIA-3	T/P	Theory	T/P	
4	1	0	4	10	10	10	10	10	50	00	100
Max. Time, End Semester Exam (Theory) -3Hrs.											

Course Objectives	
1	To know and understand the concept of data visualization and business intelligence.
2	Students will be able to do use the power query and data transformation
3	To understand the data modeling and functions of it.
4	To know application s of DAX
5	To understand how to create Dash board

Course Content			
Unit No.	Module No.	Content	Hours
1	I	**Power BI Introduction:** Data Visualization, Reporting, Business Intelligence (BI), Traditional BI, Self-Serviced BI Cloud Based BI, On Premise BI Power BI Products , Power BI Desktop (Power Query, Power Pivot, Power View), Flow of Work in Power BI Desktop, Power BI Report Server, Power BI Service, Power BI Mobile Flow of Work in Power BI / Power BI Architecture , A Brief History of Power BI	12
2	II	**Power Query:** Data Transformation, Benefits of Data Transformation , Shape or Transform Data using Power Query , Overview of Power Query / Query Editor, Query Editor , User Interface, The Ribbon (Home, Transform, Add Column, View Tabs) , The Queries Pane, The Data View / Results Pane, The Query Settings Pane, Formula Bar, Saving the Work, Data types, Changing the Data type of a Column Filter in Power Query, Auto Filter / Basic Filtering , Filter a Column using Text Filters , Filter a Column using Number Filters , Filter a Column using Date Filters, Filter Multiple Columns, Remove Columns / Remove Other Columns, Name / Rename a Column, Reorder Columns or Sort Columns, Add Column / Custom Column Split, Columns, Merge Columns, PIVOT, UNPIVOT Columns ϖ Transpose Columns.	12
3	III	**Data Modeling**: Data Modeling Introduction, Relationship, Need of Relationship, Relationship Types / Cardinality in General, One-to-One, One-to-Many (or Many-to-One), Many-to-Many, AutoDetect the relationship, Create a new relationship, Edit existing relationships, Make Relationship Active or Inactive, Delete a relationship	12
4	IV	**DAX**: What is DAX, Calculated Column, Measures, DAX Table and Column Name Syntax, Creating Calculated Columns, Creating Measures Calculated, Columns Vs Measures, DAX Syntax & Operators, DAX Operators, Types of Operators, Arithmetic Operators, Comparison Operators, Text Concatenation Operator, Logical, Operators **DAX Functions:** Types, Date and Time Functions, Text Functions , Logical Functions , Math & Statistical Functions , Filter Functions	12
5	V	**Visualizations**: Visualizing Data, Why Visualizations ϖ Visualization types, Create and Format Bar and Column Charts, Create and Format Stacked Bar Chart Stacked Column Chart Create, and Format Clustered Bar Chart,	12

		Clustered Column Chart, Create and Format 100% Stacked Bar Chart, 100% Stacked Column Chart Create and, Format Pie and Donut Charts , Create and Format Scatter Charts, Create and Format Table Visual, Matrix Visualization, Line and Area Charts , Create and Format Line Chart, Area Chart, Stacked Area Chart, Combo Charts , Create and Format Line and Stacked Column Chart, Line and Clustered Column Chart , Create and Format Ribbon Chart, Waterfall Chart, Funnel Chart **Creating Dashboards:** Advantages of Dashboards , Interacting with Dashboards, Formatting Dashboard, Sharing Dashboard	
		Total No. of Hrs	60

Course Outcome

Students should able to	
CO1	Select appropriate menus and functions of Power BI.
CO2	Show how to do basic troubleshooting and fix mistakes most people make when working with Power BI.
CO3	Use various functions of DAX, Execute pivot table analysis, common and powerful functions.
CO4	Illustrate the use of the most commonly used data-manipulation commands in Power BI
CO5	Insert files from various sources and attractive dashboards

RecommendedResources

Text Books	1. Mastering Microsoft Power Bi: Expert techniques for effective data analytics and business intelligence by Brett Powerll. 2. Analyzing Data With Microsoft Power BI and Power Pivot for Excel by Alberto Ferrari and Marco Russo
Reference Books	1 Microsoft Power BI Quick Start Guide by Dervin Knight, Mitchell Pearson, Bradley Schact and Erin Ostrowsky