Course Code	PIT21S101J	Course Name	DATA VISUALIZATION TOOL	Course Category	S	Skill Enhancement Elective	L	T	P	C
							1	0	2	2

Pre-requisiteCourses	Nil	Co-requisiteCourses	Nil	Progressive Courses	Nil
Course Offering Department		Computer Science	Data Book / Codes/Standards		Nil

Course Learning Rationale (CLR):	*The purpose of learning this course is to:*	Learning			Program Learning Outcomes (PLO)														
CLR-1 :	Analyze and visualize data	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CLR-2 :	Navigate to data sources. Download data in proper format																		
CLR-3 :	Create visualizations that accurately represent the source dataset																		
CLR-4 :	Use Tableau to perform various types of analysis on data sets																		
CLR-5 :	Data visualizations that demonstrates an understanding of data																		
CLR-6 :	*Use various methods for data visualization*																		

Course Learning Outcomes (CLO):	*At the end of this course, learners will be able to:*	Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)	Fundamental Knowledge	Application of Concepts	Link with Related Disciplines	Procedural Knowledge	Skills in Specialization	Ability to Utilize Knowledge	Skills in Modeling	Analyze, Interpret Data	Investigative Skills	Problem Solving Skills	Communication Skills	Analytical Skills	ICT Skills	Professional Behavior	Life Long Learning
CLO-1 :	Design effective data visualizations in order to provide new insights	*3*	*80*	*70*	*L*	*H*	*-*	*H*	*L*	*-*	*-*	*-*	*L*	*L*	*-*	*H*	*-*	*-*	*-*
CLO-2 :	Find and select appropriate data visualization in order to create a better understanding of the data	*3*	*85*	*75*	*M*	*H*	*L*	*M*	*L*	*-*	*-*	*-*	*M*	*L*	*-*	*H*	*-*	*-*	*-*
CLO-3 :	Create Heat map, word cloud and different type of charts as visualization	*3*	*75*	*70*	*M*	*H*	*M*	*H*	*L*	*-*	*-*	*-*	*M*	*L*	*-*	*H*	*-*	*-*	*-*
CLO-4 :	Cite data from other sources in visualizations and documentation	*3*	*85*	*80*	*M*	*H*	*M*	*H*	*L*	*-*	*-*	*-*	*M*	*L*	*-*	*H*	*-*	*-*	*-*
CLO-5 :	Properly document and organize data and visualizations	*3*	*85*	*75*	*H*	*H*	*M*	*H*	*L*	*-*	*-*	*-*	*M*	*L*	*-*	*H*	*-*	*-*	*-*
CLO-6 :	*Create dashboard for data visualization*	*3*	*80*	*70*	*L*	*H*	*-*	*H*	*L*	*-*	*-*	*-*	*L*	*L*	*-*	*H*	*-*	*-*	*-*

Duration (hour)		09	09	09	09	09
S1	SLO-1	Introduction to Tableau What is Tableau	Data Connection Details – Connecting to various data source	Top 10 Chart Types – Bar chart	Tableau maps – Geocoded Fields – Geographic Hierarchies and Ambiguity	Creating Dashboards-Creating a simple Dashboards – Tiled Placement
	SLO-2	Tableau User Interface –The data window	Adding multiple tables from the same database	Line / Area chart – Tableau forecasting	Custom Geocoding	Floating Placement, Associated Dashboard elements
S2 - S3	SLO-1	Laboratory-1: Shelves & Cards	Laboratory-7 Joining multiple tables from the same database	Laboratory-13 Pie chart	Laboratory-19 Background Maps and Layers	Laboratory-25 Advanced Dashboard elements – Layout Container, Blank Text , Image ,
	SLO-2					
	SLO-1	Laboratory-2: Basic Visualization Design using show me	Laboratory-8 Modifying Tableaus	Laboratory-14 Bullet Group	Laboratory-20 Mapping and Mark types	Laboratory-26 Setting Dashboards and Element size
	SLO-2					
S4	SLO-1	Color,Size,Shapes and Label options – Choosing color options	Hiding, Renaming and Combining fields	Word cloud	Calculating fields, Table Calculations and Statistics – Creating Calculate fields	Distributing and Sharing your Visualization – Exporting worksheets and Dashboards-
	SLO-2	Setting Mark Size Text tables Mark Labels	Changing default field appearance	Interacting with the viewer - Filtering data, Basics of filtering,	Numeric calculations, String Manipulations,	Exporting Worksheet Data
S5 - S6	SLO-1	Laboratory-3: Basic Tableau Design Flow	Laboratory-9: Customizing your view of the data	Laboratory-15: Scatter plot	Laboratory-21: Custom Background Images	Laboratory-27: Webpage
	SLO-2					
	SLO-1	Laboratory-4: Choosing Mark Types	Laboratory-10: default field Assignments	Laboratory-16: Bubble Chart	Laboratory-22: Interactive filtering	Laboratory-28: Dashboards Actions
	SLO-2					
S7	SLO-1	Choosing shapes	Using Hierarchies , Groups and Sets	Quick filtering , Parameters – Creating parameters Displaying a parameters – Using a parameter in a worksheet	Logic Constructs, Creating Binned fields Table Calculations	Exporting Worksheet Image Exporting Dashboards Images

	SLO-2	Formatting Options	Extracting data, Data Blending Moving from text to production databases	Worksheet Actions – Filter Actions Highlight Actions	Reference Lines, Bands & Distributions Trend Lines	Using Tableau Reader Publishing to the Web
S8-S9	SLO-1	Laboratory-5: cross tab	Laboratory-11: Tree map	Laboratory-17: text table	Laboratory-23: Maps options Web map Services	Laboratory-29: Tiled Placement
	SLO-2	Laboratory-6: Box Plot	Laboratory-12: Saving and Sharing Metadata	Laboratory-18: URL Actions	Laboratory-24: Printing to PDF format	Laboratory-30: Date calculations

Learning Resources	1. George Peck," Tableau 8 : The Official Guide ",First edition, McGraw Hill Professional, 2013.,	1. Website: www.tableaureferenceguide.com

Learning Assessment									
	Bloom's Level of Thinking	Continuous Learning Assessment (100% weightage)							
		CLA – 1 (20%)		CLA – 2 (20%)		CLA – 3 (30%)		CLA – 4# (30%)	
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember Understand	10%	10%	10%	10%	10%	10%	10%	10%
Level 2	Apply Analyze	20%	20%	20%	20%	20%	20%	20%	20%
Level 3	Evaluate Create	20%	20%	20%	20%	20%	20%	20%	20%
	Total	100%		100%		100%		100 %	

CLA – 4 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.

Course Designers		
Experts from Industry	**Experts from Higher Technical Institutions**	**Internal Experts**
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