

Branch Name:	Artificial Intelligence & Data Science
Program Code	ET108
Semester/Year:	Semester V/ Third Year
Course Name:	Data Visualization and Modelling Practical
Course Code:	2ET1080501P
Pre-requisite:	Working knowledge of Programming Language, DBMS, JavaScript and HTML

Course Objectives:

1. The graphical depiction of data is known as data visualization, and it is used to effectively and dynamically communicate insights to clients, customers, and stakeholders in general.
2. It is a means to condense your findings and present them in away that makes them easier to read and can be used to spot pattern sort rends.
3. This course will teach you how to design engaging charts and visuals that will appeal to your audience while also increasing their usefulness.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme(Marks)								Total (Marks)
					Theory(Marks)				Practical(Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

Sr. No	List of Practical	Content Hours
1.	To study about Mat plot lib.	2
2.	To study about Line Plots and Area Plots.	2
3.	To study about Histograms and Bar Charts.	2
4.	To study about Pie Charts, Box Plots.	2
5.	To study about Waffle Charts, Word Clouds, and Regression Plots.	2
6.	To study about various Data Visualization tools.	2
7.	Installation of Power BI and plotting various charts	2
8.	Installation of Tableau and plotting various charts.	2
9.	Prepare Various graphs in tableau using datasets.	2
10.	Design Dashboard using Tableau.	2

11.	Advanced Visualizations with Seaborn: Heatmaps and Pair Plots.	2
12.	Designing Bullet Graphs and Sparklines.	2

List of Reference Books:

1. Core Python Programming - Second Edition, R. Nageswara Rao, Dreamtech Press., 1 January 2018
2. Communicating Data with Tableau by Ben Jones, O'Reilly Media, Inc., June 2014
3. Beautiful Visualization: Looking at Data through the Eyes of Experts (Theory in Practice) by Julie Steele, O'Reilly Media, Inc., June 2010.
4. Practical Tableau by Ryan Sleeper, O'Reilly Media, Inc., April 2018
5. Data Visualization with Python and JavaScript by Kyran Dale, O'Reilly Media, Inc, December 2022

Course Learning Outcomes(CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Use the concepts and techniques of discrete mathematics for theoretical computer science.	3 Applying 4 Analyzing
CLO2	Identify different formal languages and their relationship.	5Evaluating
CLO3	Classify and construct grammars for different languages and vice-versa.	4Analyzing 2Understanding
CLO4	Build finite automata, push down automata and turing machine.	3Applying
CLO5	Analyze various concepts of undecidability and Computable Function and Discuss analytically and intuitively for problem-solving situation.	2Understanding

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes(POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4
CLO1	H	M	L		H	M			M	L	M		H	M	L	L
CLO2	M	H	M	L	M	H		L	H	M	L		M	M	M	M
CLO3	L	H	M	H	L	H	H		M	H	L	L	H	M	H	L
CLO4	M	L	M	H	M	L		H	L	M			H	M		
CLO5	M	H	L	M	H		L		H		M		M	L		

H: High, M: Medium, L: Low