DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING - DATA SCIENCE

Lesson Plan &Work-done Diary for AY: 2025-26, EVEN Semester

Course with Code: Machine Learning lab - BCSL606					Faculty: Dr. Anitha D B			Semester & Section: 6A	
Class No.	**Batch**	**Date planned (DD/MM)**	**Topics to be covered**	**TLP Planned**	**Class No.**	**Date of Conduction (DD/MM)**	**Topics Covered**	**TLP Executed**	**Remarks if any deviation**
1.	B1		Introduction to Python, Jupyter Notebook, create a Notebook, Accessing of data set in Notebook	Jupyter Notebook					
	B2								
	B3								
2.	B1		**Program1**: Develop a program to create histograms for all numerical features and analyze the distribution of each feature. Generate box plots for all numerical features and identify any outliers. Use California Housing dataset.	Jupyter Notebook					
	B2								
	B3								
3.	B1		**Program2:** Develop a program to Compute the correlation matrix to understand the relationships between pairs of features. Visualize the correlation matrix using a heatmap to know which variables have strong positive/negative correlations. Create a pair plot to visualize pairwise relationships between features. Use California Housing dataset	Jupyter Notebook					
	B2								
	B3								
4.	B1		**Program3:** Develop a program to implement Principal Component Analysis (PCA) for reducing the dimensionality of the Iris dataset from 4 features to 2.	Jupyter Notebook					
	B2								
	B3								

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5	B1		For a given set of training data examples stored in a .CSV file, implement and demonstrate the Find-S algorithm to output a description of the set of all hypotheses consistent with the training examples	Jupyter Notebook					
	B2								
	B3								
6	B1		Develop a program to implement k-Nearest Neighbour algorithm to classify the randomly generated 100 values of x in the range of [0,1]. Perform the following based on dataset generated. 1. Label the first 50 points $\{x_1,\ldots,x_{50}\}$ as follows: if $(x_i \leq 0.5)$, then $x_i \in$ Class1, else $x_i \in$ Class1 2. Classify the remaining points, $x_{51},\ldots,x_{100}$ using KNN. Perform this for k=1,2,3,4,5,20,30	Jupyter Notebook					
	B2								
	B3								
7	B1		Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment and draw graphs	Jupyter Notebook					
	B2								
	B3								
8	B1		Develop a program to demonstrate the working of Linear Regression and Polynomial Regression. Use Boston Housing Dataset for Linear Regression and Auto MPG Dataset (for vehicle fuel efficiency prediction) for Polynomial Regression	Jupyter Notebook					
	B2								
	B3								

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9	B1		Develop a program to demonstrate the working of the decision tree algorithm. Use Breast Cancer Data set for building the decision tree and apply this knowledge to classify a new sample	Jupyter Notebook						
	B2									
	B3									
10	B1		Develop a program to implement the Naive Bayesian classifier considering Olivetti Face Data set for training. Compute the accuracy of the classifier, considering a few test data sets	Jupyter Notebook						
	B2									
	B3									
11	B1		Develop a program to implement k-means clustering using Wisconsin Breast Cancer data set and visualize the clustering result	Jupyter Notebook						
	B2									
	B3									
12	B1		Lab IA	Jupyter Notebook						
	B2		Lab IA							
	B3		Lab IA							
13			Revision	Jupyter Notebook						

	Activity	Planned	Actual	Remarks
1	Theory Classes + Practical Classes	0+24P		
2	Assignments/ Quizzes/ Self-study/Programs	-		
3	Tutorials/ Extra classes	-		
4	Internal Assessments	2		
5	ICT based Teaching(% of usage in Curriculum)	100%		
	Planning		**Execution**	
	Faculty Signature:		Faculty Signature:	
	HoD Signature:		HoD Signature:	