



Nadar Saraswathi College of Engineering and Technology,
Vadapudupatti, Theni - 625 531
 (Approved by AICTE, New Delhi and Affiliated to Anna University,
 Chennai)

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Course Plan (Lab)

For the Academic Year 2023 - 24 (Odd/Even Semester)

Staff Name	VIGNESH L.S	Dept. / Designation	AP/AI&DS	Strength	21
Course/Branch	B.Tech./AI & DS	Year / Semester	II/IV	Credit	2
Course Code/ Subject Code/ Choice	<i>C409/AL3461</i>	Subject Name	Machine Learning Lab		

I. Instructional Objective (5) :

IO1 : To understand the data sets and apply suitable algorithms for selecting the appropriate features for analysis.

IO2 : To learn to implement supervised machine learning algorithms on standard datasets and evaluate the performance.

IO3 : To experiment the unsupervised machine learning algorithms on standard datasets and evaluate the performance.

IO4 : To build the graph based learning models for standard data sets.

IO5 : To compare the performance of different ML algorithms and select the suitable one based on the application.

II. Pre Requisites: Should have the basic knowledge of Artificial Intelligence.

Course Outcomes (5): At the end of the course, the student should be able to:

CO's	Outcomes	Bloom's Taxonomy
C409.1	Apply suitable algorithms for selecting the appropriate features for analysis.	BT1
C409.2	Implement supervised machine learning algorithms on standard datasets and evaluate the performance.	BT4
C409.3	Apply unsupervised machine learning algorithms on standard datasets and evaluate the performance.	BT4
C409.4	Build the graph based learning models for standard data sets.	BT1,BT4
C409.5	Assess and compare the performance of different ML algorithms and select the suitable one based on the application.	BT1,BT4

III. CO-PO, PSO Correlation Matrix: (3- > Strong, 2- > Moderate, 1 - >| Low)

CO-PO,PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
C307.1	3	1	3	3	-	-	-	-	1	1	1	3	2	2	1	3	-
C307.2	2	2	1	3	1	-	-	-	3	2	3	1	1	1	2	3	-
C307.3	2	1	3	1	-	-	-	-	2	3	2	1	2	1	1	3	-
C307.4	2	2	3	1	-	-	-	-	1	3	2	1	2	1	2	3	-
C307.5	3	3	1	3	1	-	-	-	1	3	2	3	3	3	2	3	-

IV. E-Learning Resources

EL1 : www.lsisreviving.weebly.com

V. No. of Students/Batch :

S.No	Students Register Number	Total No of Students	Batch Number
1	921022243001 to 921022243005 921022243008 to 921022243023	21	1

VI. Lab Location: DENNIS LAB

VII. Method of Evaluation (Considered for CO Assessment) :

CO Assessment Direct									
CO Evaluation Internal :									CO Eval Ext
Int 1,2/ Mod 1,2	Unit / CAT	Case Study	Assign.,	Seminar	Quiz	GD	RP	Project/Lab	University
Yes	No	No	No	No	Yes	NA	NA	Yes	Yes
CO Assessment Indirect									
Course Exit Survey								Yes	

VIII. Co Attainment analysis:

Target Competence Threshold (Level)	Model Exam – 25 %		Lab Experiments -75 %	
	Internal Exam**	If Class average is less than 75% - Threshold is 50%	If Class average is 75% and above - Threshold is 75%	
	University Exam**	If Class average is less than 70% - Threshold is 50%	If Class average is 70% and above - Threshold is 70%	
Benchmark & Attainment Level	70% Students Got More Than Target Competence Level			3
	60% Students Got More Than Target Competence Level			2
	50% Students Got More Than Target Competence Level			1
	If Students Below 50% of Target			Not Met
CO Attainment Calculations	Attainment Scores in Scale of 3			
	Direct Attainment of COs	= 0.8 * CO attainment (Direct) + 0.2 * CO attainment (In-Direct)		
	Overall Attainment of CO	= 0.5 * CO attainment (Internal Overall) + 0.5 * CO attainment (University)		
PO Individual Attainment Calculations	= Overall Attainment of CO *(Average of CO-PO Mapping Score of Individual POs / 3)			
PSO Individual Attainment Calculations	= Overall Attainment of CO *(Average of CO-PSO Mapping Score of Individual PSOs / 3)			

IX. Experiment Plan:(Cyclic Order: Yes/ No)

S. No.	Topic	CO	BTL	Cumulative Periods
1	For a given set of training data examples stored in a .CSV file, implement and demonstrate the Candidate-Elimination algorithm to output a description of the set of all hypotheses consistent with the training examples.	CO1	BT1	7
2	Write a program to demonstrate the working of the decision tree based ID3 algorithm. Use an appropriate data set for building the decision tree and apply this knowledge to classify a new sample.	CO2	BT4	14
3	Build an Artificial Neural Network by implementing the Backpropagation algorithm and test the same using appropriate data sets.	CO2	BT4	21
4	Write a program to implement the naïve Bayesian classifier for a sample training data set stored as a .CSV file and compute the accuracy with a few test data sets.	CO2	BT4	28

5	Implement naïve Bayesian Classifier model to classify a set of documents and measure the accuracy, precision, and recall.	CO2	BT4	34
6	Write a program to construct a Bayesian network to diagnose CORONA infection using standard WHO Data Set.	CO2	BT4	40
7	Apply EM algorithm to cluster a set of data stored in a .CSV file. Use the same data set for clustering using the k-Means algorithm. Compare the results of these two algorithms.	CO3 CO5	BT1,BT4	46
8	Write a program to implement k-Nearest Neighbour algorithm to classify the iris data set. Print both correct and wrong predictions.	CO3	BT1,BT4	53
9	Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select an appropriate data set for your experiment and draw graphs.	CO4	BT1,BT4	60

X. Content Beyond Syllabus :

Course Code & Title	Syllabus of content beyond syllabus	Total Number of contact hours				Contributing COS	Contributing POs & PSOs
		Lecture (L)	Tutorial (T)	Practical (P)	Total Hours		
Basic Applications	Python tools installation & ML related applications			3			

XI. Model Practical Test :

No.	Tentative Date	Portion	Total	Appear	Pass	%
1						
2						
3						