

Course code	Course Title	L	T	P	C
BCSE209P	Machine Learning Lab	0	0	2	1
Pre-requisite	Nil	Syllabus version			
		1.0			
Course Objectives					
<ol style="list-style-type: none"> 1. To teach the theoretical foundations of various learning algorithms. 2. To train the students better understand the context of supervised and unsupervised learning through real-life examples. 3. To understand the need for Reinforcement learning in real – time problems. 4. Apply all learning algorithms over appropriate real-time dataset. 5. Evaluate the algorithms based on corresponding metrics identified. 					
Course Outcome					
<ol style="list-style-type: none"> 1. At the end of this course, student will be able to: 2. Understand, visualize, analyze and preprocess the data from a real-time source. 3. Apply appropriate algorithm to the data. 4. Analyze the results of algorithm and convert to appropriate information required for the real – time application. 5. Evaluate the performance of various algorithms that could be applied to the data and to suggest most relevant algorithm according to the environment. 					
Indicative Experiments					
1.	Linear & Multiple Linear Regression				
2.	Naïve Bayes classifier				
3.	Decision trees – ID3 & CART				
4.	Logistic regression				
5.	Support Vector Machines – Linear & Non-linear				
6.	Single & Multilayer Perceptron				
7.	K-NN, K-Means & K-mode clustering				
8.	Random – forest				
9.	Adaboost, XGboost				
10.	Principal component analysis				
11.	Self – Organizing maps				
12.	Q-Learning				
Total Laboratory Hours					30 hours
Mode of Evaluation: CAT / Mid-Term Lab/ FAT					
Recommended by Board of Studies		09-05-2022			
Approved by Academic Council		No. 66	Date	16-06-2022	