MACHINE LEARNING AND DATA SCIENCES LAB

III-B.Tech.-II-Sem. **L T P C**
Subject Code: CS-PCC-325 **- - 2 1**

Course Outcomes: Upon completion of the course, the students will be able to

1. illustrate the implementation procedures for the machine learning algorithms
2. demonstrate the ID3 Classification algorithms
3. analyze k-Means clustering on different datasets
4. apply predictive algorithms on live data
5. identify the regression algorithms to solve real world problems

CO – PO Mapping				
POs	**PO4**	**PO5**	**PO6**	**PO8**
CO1	3	3	2	2
CO2	3	3	3	2
CO3	3	3	3	3
CO4	3	3	3	3
CO5	3	3	3	3
3-Strong; 2-Medium; 1-Weak				

LIST OF EXPERIMENTS

1. Implement and demonstrate the FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples. Read the training data from a .CSV file.
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.
3. Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment and draw graphs.
4. Apply EM algorithms to cluster a set of data stored in a .CSV file. Use the same data set for clustering using k-Means algorithm. Compare the results of these two algorithms and comment on the quality of clustering.
5. Write a program to implement k-Nearest Neighbor algorithm to classify the iris data set. Print both correct and wrong predictions.
6. Implementing Back propagation algorithm and test the same using appropriate data sets.
7. Write a program to do sentiment analysis of live tweets.
8. Write a program to predict the eligibility of a customer for loan disbursement.
9. Write a program to predict the quality of water.
10. Write a program to predict the winning team in IPL matches.

Micro-Projects: Student must submit a report on one of the following Micro–Projects before commencement of second internal examination.

1. Diagnose crop disease with Machine Learning.
2. Recurrence of prostate cancer using Machine learning for survival analysis.
3. Develop a system to find out duplicate data.
4. Develop a system to analyze buying behavior of a customer.
5. Develop a system to study sentiment of users on twitter.
6. Develop a predictive model to study the employee satisfaction in an organization.
7. Develop a predictive model to study the rainfall of your society.
8. Develop a predictive model to study Fake News on Facebook.
9. Analyze election data.
10. Do linear regression on housing prices and do a forecasting model of how much house prices would increase.

Reference:

1. Machine Learning and Data Sciences Lab Manual, Department of CSE, CMRIT, Hyd.