PVP SIDDHARTHA INSTITUTE OF TEHNOLOGY, KANURU, VIJAYAWADA
(AUTONOMOUS)
INFORMATION TECHNOLOGY

MACHINE LEARNING

Course Code	19IT4601E	**Year**	III	**Semester**	II
Course Category	PC	**Branch**	IT	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	DATA MINING
Continuous Internal Evaluation :	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes		**Blooms Taxonomy Level**
Upon successful completion of the course, the student will be able to		
CO1	Apply the different learning algorithms.	**L2**
CO2	Analyze the learning techniques for given dataset	**L3**
CO3	Evaluate a model using machine learning to solve a problem	**L5**

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2												2	2
CO2		3											2	2
CO3			3	3	3								2	2

Syllabus		
Unit No	**Contents**	**Mapped CO**
I	**Introduction**: Well Posed Learning Problems, Designing a Learning system, Perspectives and Issues in Machine Learning Concept Learning: Concept Learning as search, Find-S, Version Spaces and Candidate Elimination Algorithm, Inductive bias. Decision Tree Learning: Decision Tree Representation, Decision Tree Learning Algorithm, Hypothesis Space Search.	**CO1,CO2, CO3**
II	**Evaluating Hypothesis**: Motivation, Estimating hypothesis accuracy, Basics of sampling theorem, General approach for deriving confidence intervals, Difference in error of two hypothesis, Comparing learning algorithms.	**CO1,CO2, CO3**
III	**Bayesian Learning**: Bayes Theorem and Concept Learning, Maximum Likelihood, Minimum Description Length Principle, Bayes Optimal Classifier, Gibbs Algorithm, Naïve Bayes Classifier, Bayesian Belief Network, EM Algorithm.	**CO1,CO2, CO3**
IV	**Instance Based Learning**: K-Nearest Neighbor Learning, Locally Weighted Regression, Radial Basis Functions, Case Based Reasoning, Lazy and Eager learning.	**CO1,CO2, CO3**
V	**Learning Set of Rules**: Sequential covering algorithms, Learning Rule Sets, Learning First Order Rules, Learning Sets of First Order Rules, Induction as Inverted Deduction, Inverting Resolution.	**CO1,CO2, CO3**

Learning Resources
Text books
1. Machine Learning M M. Mitchell Indian Edition Mc Graw Hill 2013
References
1.Introduction to Machine Learning with Python Andreas C Muller & Sarah Guido First Shroff Publishers 2019 2.Thoughtful Machine learning Mathew Kirk First Shroff Publishers 2019
e-Resources and other Digital Material
1.Hands-On Machine Learning With Scikit-learn and Tensorflow Aureliene Geron First Oreilly 2017 https://www.kaggle.c om/general/95287 2.The Elements of Statistical Learning Trevor Hastie, Robert Tibshirani, Jerome H. Friedman Second ---- 2009 https://web.stanford.edu/~hastie/Papers/ES LII.pdf