Subject Code	Subject Name	Credits
26CS604	MACHINE LEARNING	4

Course Objectives

1. To introduce students to basic concepts and techniques of machine learning
2. To understand the various models employed in machine learning
3. To look into various classification problems

Learning Outcomes

After the completion of the course, the graduate will be able to

1. To learn the various techniques and algorithms associated with machine learning

Unit 1 - Introduction to Machine Learning and Decision Theory (12 Hrs.)

Introduction - Supervised Learning - Bayesian Decision Theory - Parametric Methods - Multivariate Methods

Unit 2 - Advanced Machine Learning Techniques (12 Hrs.)

Dimensionality Reduction - Clustering - Nonparametric Methods - Decision Trees.

Unit 3 - Machine Learning Models and Classification Techniques (12 Hrs.)

Linear Discrimination - Multilayer Perceptrons - Local Models - Kernel Machines - Bayesian Estimation

Unit 4 - Probabilistic and Reinforcement Learning Techniques (12 Hrs.)

Hidden Markov Models - Graphical Models - Combining Multiple Learners - Reinforcement Learning.

Unit 5 - Model Training (12 Hrs.)

Classification – How to train a Model – Different Model Combinations

References:

1. Alpaydin, Ethem. Introduction to machine learning. MIT press, 2020.
2. Russell, Rudolph. Machine Learning: Step-by-Step Guide To Implement Machine Learning Algorithms with Python. 2018.