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| **WORK PLAN (Odd Semester Jan-April 2021)**  Paper Name: Machine Learning  Course: B.Sc.(H) Computer Science ( VIth Semester)  Teacher Name: Dr. Nidhi Arora | | |
| **S.No.** | **Month** | **Content** | |
| 1 | Jan 2020 | Introduction  Concept of Machine Learning, Applications of Machine Learning, Key elements of Machine Learning, Supervised vs. Unsupervised Learning, Statistical Learning: Bayesian Method, The Naive Bayes Classifier  Softwares for Machine Learning and Linear Algebra Overview Plotting of Data, Vectorization, Matrices and Vectors: Addition, Multiplication, Transpose and Inverse using available tool such as MATLAB/R Language.  Practical Lab for R | |
| 2 | Feb 2020 | Prediction using Linear Regression, Gradient Descent, Linear Regression with one variable, Linear Regression with multiple variables, Polynomial Regression, Feature Scaling/Selection.  Practical Exercises on Linear Regression  Assignment 1 | |
| 3 | March 2020 | Logistic Regression Classification using Logistic Regression, Logistic Regression vs. Linear Regression, Logistic Regression with one variable and with multiple variables.  Regularization Regularization and its utility: The problem of Overfitting, Application of Regularization in Linear and Logistic Regression, Regularization and Bias/Variance.  Practical Exercises on Logistic Regression and Regularisation  Assignment 2 | |
| 4 | April 2020 | Neural Networks : Introduction, Model Representation, Gradient Descent vs. Perceptron Training, Stochastic Gradient Descent, Multilayer Perceptrons, Multiclass Representation, Backpropagation Algorithm.  Practical excersises on Neural networks | |