

Branch Name:	Signal Processing and Communication
Program Code:	ET214
Course Name:	Pattern Recognition and Machine Learning Practical
Course Code:	2ET2140203P
Pre-requisite Course:	Basics Knowledge of Linear algebra, probability, statistics, programming.

Course Objectives:

1. The goal of this course is with the increased availability of data from varied sources there has been increasing attention paid to the various data driven disciplines such as analytics and machine learning.
2. In this course we intend to introduce some of the basic concepts and techniques of pattern recognition and machine learning.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	SEE		CCE		SEE		CCE						
	L	T	P	Total	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-			10	25	10	25	50

Subject Contents				
Sr. No	Topic	Total Hours	Weight (%)	
1	HandsonsessioninRorPythonlearnfollowingDatastructure:List, Dictionary, Dataframe, Numpy/scipy packageinPython.	2	8	
2	ImplementLinearRegression	2	8	
3	ImplementLogisticRegression	2	8	
4	ImplementSVMClassifier	2	8	
5	ImplementKNNClassifier	4	18	
6	StudyandImplementK-FoldcrossvalidationandROC	4	18	
7	ImplementBPNNClassifier	2	8	
8	StudyandImplement Various Ensemblemethodofclassifier:Bagging,Boosting,Stacking	2	8	
9	ImplementvariousClusteringalgorithm	2	8	
10	Study and Implement Various Dimensionality techniquelikePCAandLDA	4	8	

List of Reference Books:

1. “Pattern Recognition and Machine Learning”, Christopher M. Bishop, Springer, 2006

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom’s Taxonomy Level
CLO1	Understand basics Classification and clustering	1 Remembering 2 Understanding
CLO2	Learn representation of patterns and classes and the proximity measures	2 Understanding 5. Evaluate
CLO3	Learn dimensionality reduction	4 Analyze
CLO4	Learn supervised and unsupervised learning	3 Applying

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1					L	M						H	H	M	L	
CLO2	H		M	M	L					L		H		M	L	
CLO3		M	H		L									H		L
CLO4	H	M			L			L					L		M	H

H: High, M: Medium, L: Low