

Branch Name:	Computer Engineering (Software Engineering)
Program Code:	ET203
Course Title:	Intelligent Systems & Machine Learning Practical
Course Code:	2ET2030102P
Pre-requisite Course:	-

Course Objectives:

Computational Intelligence is the successor to Artificial intelligence, offering special benefits in its applications in certain areas like classification, Regression, Robotics, etc. Examples of Computational Intelligence are nature-inspired methods, fuzzy systems, as well as various probabilistic methods under uncertainty. After the course the students will be able to conceptually understand the important terms and algorithms of Computational Intelligence, such that they would be able to choose appropriate methods for a given task.

Teaching and Examination Scheme:

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

Course Contents:

Unit	Details	Contact Hours
1	a. Demonstrate the practical implementation aspects using suitable Machine learning algorithms for below problems. 1. Credit card fraud detection 2. Product recommendation or customer segmentation 3. Sentiment analysis	6
2	a. Study about Applications of Artificial Neural Networks b. Apply Artificial Neural Networks for verifying the signatures.	4
3	a. Study about Supervised Machine, Unsupervised Learning Applications b. Implement the house price prediction using supervised learning c. Provide the practical solution for "Finding the customer segment" using Unsupervised learning.	6
4	a. To study about various swarm optimization techniques b. Study about Swarm Application.	4
5	a. Study about Artificial Immune System and It's Applications b. Case Study about Application of Artificial Immune System in Structural Health Monitoring.	4
6	a. Apply Fuzzy logic system for the following Field of finance and banking system. 1. Fund management. 2. Stock market predictions. 3. Fraud Prevention.	6

Reference Books:

1. Practical Machine Learning by Sunila Gollapudi, Packt Publishing
2. Handbook on Swarm Intelligence: Concepts, Principles and Applications by Bijaya Ketan Panigrahi, Yuhui Shi, and Meng-Hiot Lim (Eds.), Springer

Course Outcomes:

At the end of the course, students will be able to:

Course Outcomes	Description	Bloom's Taxonomy Level
CO1	Implementation of Machine Learning Algorithms	Applying (3)
CO2	Understanding the Artificial Neural Networks	Understanding (2)
CO3	Understanding Supervised Machine, Unsupervised Learning	Understanding (2)
CO4	Understanding of Artificial Immune System	Understanding (2)
CO5	Applying Fuzzy Logic System	Applying (3)

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3	PS O4
CLO1	H	M	M		M											
CLO2	H	M			M							L				
CLO3	H	M	M		M											
CLO4	M	M	M		M							L				

H: High, M: Medium, L: Low