AI TOOLS

Course Code	19ES1401	Year	II	Semester	II
Course Category	Engineering Sciences	Branch	ME	Course Type	Theory
Credits	2	L – T – P	2 – 0 – 0	Pre-requisites	Mathematics – I, IV Programming Languages
Continuous Internal Evaluation	30	Semester End Evaluation	70	Total Marks	100

Course Outcomes		Levels
After successful completion of the course, the student will be able to		
CO1	Understand the Fundamentals of Artificial Intelligence and its Applications.	L2
CO2	Summarize various machine learning methods.	L2
CO3	Identify different machine learning applications.	L3
CO4	Compare Machine Learning & Deep Learning and Outline basic Deep Learning Algorithm.	L2
CO5	Make use of Deep Learning Concepts for various Applications.	L3

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3-High, 2: Medium, 1: Low)														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3												2	
CO2	3						2						2	1
CO3	3					2	2						2	1
CO4	3	3				2	1		2	2			2	1
CO5	3					1	2						2	

Syllabus		
Unit No.	Contents	Mapped COs
I	**INTRODUCTION TO ARTIFICIAL INTELLIGENCE:** What is AI, Foundations of AI, Goals of AI, and Applications of AI.	CO1
II	**MACHINELEARNING:** Definition, Learning Methods: Supervised Learning, Unsupervised Learning, Semi-Supervised Learning, Reinforcement Learning.	CO1, CO2
III	**MACHINE LEARNING APPLICATIONS:** Computer vision, Speech Recognition, Natural Language Processing, Decision Making process.	CO1, CO2, CO4
IV	**DEEP LEARNING:** Basics of Deep Learning, Machine Learning vs Deep Learning, Fundamental Deep Learning Algorithm-Convolution Neural Network (CNN).	CO1, CO3
V	**DEEP LEARNING APPLICATIONS:** Computer vision, Speech Recognition, Natural Language Processing, Decision Making process.	CO1, CO3

Learning Recourse(s)
Text Book(s)

1. Artificial Intelligence: A Modern Approach, Stuart Russell and Norvig, Third Edition, 2015, Pearson Education. **(Unit-1)**
2. Machine Learning: A Probabilistic Perspective, Kevin P. Murphy, 2012, MIT Press **(Unit-2&3)**
3. Deep Learning (Adaptive Computation and Machine Learning series), Ian Goodfellow, Yoshua Bengio, Aaron Courville, Francis Bach, 2017, MIT Press. **(Unit-4&5)**

e-Resources & other digital material

1. https://swayam.gov.in/nd1_noc19_cs52/preview
2. https://swayam.gov.in/nd1_noc19_cs85/preview
3. https://emerj.com/ai-sector-overviews/machine-learning-healthcare-applications/