AI Tools

(Common to all)

Course Code	**19ES1301**	**Year**	II	**Semester**	I
Course Category	ES	**Branch**	EEE	**Course Type**	Theory
Credits	2	**L-T-P**	2-0-0	**Prerequisites**	-
Continuous Internal Evaluation:	30	**Semester End Evaluation:**	70	**Total Marks:**	100

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

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	2												1	2
CO2	2	2											2	2
CO3	2	2		2									2	3
CO4	2	2											2	2
CO5	2	2	2	2		1						2	2	3

Syllabus		
Unit No.	Contents	Mapped CO
I	**Introduction to Artificial Intelligence:** What is AI, Foundations of AI, Goals of AI, and Applications of AI.	CO1
II	**Machine Learning: Definition, Learning Methods:** Supervised Learning, Unsupervised Learning, Semi-Supervised Learning, Reinforcement Learning.	CO2
III	**Machine Learning Applications:** Computer vision, Speech Recognition, Natural Language Processing, Decision Making process.	CO3
IV	**Deep Learning:** Basics of Deep Learning, Machine Learning Vs Deep Learning, Fundamental Deep Learning Algorithm- Convolution Neural Network (CNN).	CO4

V	**Deep Learning Applications:** Computer vision, Speech Recognition, Natural Language Processing, Decision Making process.	CO5

Learning Resources
Text Books
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/