19ES1401 - AI TOOLS

Course Category:	Engineering Sciences	Credits:	2
Course Type:	Theory	Lecture-Tutorial-Practical:	2-0-0
Prerequisites:	Nil	Continuous 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**.**	K2
CO2	**Summarize** various machine learning methods.	K4
CO3	**Identify** different machine learning applications.	K1
CO4	**Compare** Machine Learning & Deep Learning and **Outline** basic Deep Learning Algorithm.	K4
CO5	**Make use of** Deep Learning Concepts for various Applications.	K3

Contribution of Course Outcomes towards achievement of Program Outcomes

	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
Avg.	**2**	**2**	**2**	**2**		**1**						**2**	**2**	**2**

1- Low **2-Medium** **3-High**

Course Content

UNIT-1	**Introduction to Artificial Intelligence:** What is AI, Foundations of AI, Goals of AI, and Applications of AI.	**CO1**
UNIT-2	**Machine Learning: Definition, Learning Methods:** Supervised Learning, Unsupervised Learning, Semi-Supervised Learning, Reinforcement Learning.	**CO2**
UNIT-3	**Machine Learning Applications:** Computer vision, Speech Recognition, Natural Language Processing, Decision Making process.	**CO3**
UNIT-4	**Deep Learning:** Basics of Deep Learning, Machine Learning Vs Deep Learning, Fundamental Deep Learning Algorithm-Convolution Neural Network (CNN).	**CO4**
UNIT-5	**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, Pearson, 3rd Edition. **(Unit-1)** 2. Machine Learning A Probabilistic Perspective, Kevin P. Murphy, The MIT Press **(Unit-2&3)** 2. Deep Learning (Adaptive Computation and Machine Learning series), MIT Press, 2017. **(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 https://emerj.com/ai-sector-overviews/machine-learning-healthcare-applications/