

## 20ES1601 - AI TOOLS

Course Category:	Engineering Sciences	Credits:	3
Course Type:	Theory	Lecture-Tutorial-Practical:	3-0-0
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	<b>Understand</b> the Fundamentals of Artificial Intelligence and its Applications.	K2
CO2	<b>Summarize</b> various machine learning methods.	K4
CO3	<b>Identify</b> different machine learning applications.	K1
CO4	<b>Compare</b> Machine Learning & Deep Learning and <b>Outline</b> basic Deep Learning Algorithm.	K4
CO5	<b>Make use of</b> 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	<b>Introduction to Artificial Intelligence:</b> What is AI, Foundations of AI, Goals of AI, and Applications of AI.	CO1
UNIT-2	<b>Machine Learning: Definition, Learning Methods:</b> Supervised Learning, Unsupervised Learning, Semi-Supervised Learning, Reinforcement Learning.	CO2
UNIT-3	<b>Machine Learning Applications:</b> Computer vision, Speech Recognition, Natural Language Processing, Decision Making process.	CO3
UNIT-4	<b>Deep Learning:</b> Basics of Deep Learning, Machine Learning Vs Deep Learning, Fundamental Deep Learning Algorithm-Convolution Neural Network (CNN).	CO4
UNIT-5	<b>Deep Learning Applications:</b> Computer vision, Speech Recognition, Natural Language Processing, Decision Making process.	CO5

### Learning Resources

<b>Text Books</b>	<ol style="list-style-type: none"> <li>Artificial Intelligence: A Modern Approach Stuart Russell and Norvig, Pearson, 3rd Edition. <b>(Unit-1)</b></li> <li>Machine Learning A Probabilistic Perspective, Kevin P. Murphy, The MIT Press <b>(Unit-2&amp;3)</b></li> <li>Deep Learning (Adaptive Computation and Machine Learning series), MIT Press, 2017. <b>(Unit-4&amp;5)</b></li> </ol>
<b>e-Resources&amp; other digital material</b>	<ol style="list-style-type: none"> <li><a href="https://swayam.gov.in/nd1_noc19_cs52/preview">https://swayam.gov.in/nd1_noc19_cs52/preview</a></li> <li><a href="https://swayam.gov.in/nd1_noc19_cs85/preview">https://swayam.gov.in/nd1_noc19_cs85/preview</a> <a href="https://emerj.com/ai-sector-overviews/machine-learning-healthcare-applications/">https://emerj.com/ai-sector-overviews/machine-learning-healthcare-applications/</a></li> </ol>