

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING LAB

Course Code	23ME3652	Year	III	Semester	II
Course Category	Professional Core	Branch	ME	Course Type	Theory
Credits	1.5	L-T-P	0-0-3	Prerequisites	nil
Continuous Internal Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course outcomes: At the end of the course, the student will be able to:

CO	Statement	BTL	expt
CO1	Describe the functionality and purpose of various Python libraries commonly used in machine learning	L2	1,2
CO2	Apply programming skills to implement regression methods using Python	L3	3,4,5
CO3	Develop Python code for various types of neural networks, such as Feedforward, CNN, and RNN	L3	6,7,8
CO4	Implement machine learning algorithms like Decision Tree, Naïve Bayes, and SVM using Python	L3	9,10,11
CO5	Analyze and evaluate the performance of autoencoders through implementation and result	L4	12

Contribution of Course outcomes towards achievement of programme outcomes & Strength of correlations (High:3, Medium: 2, Low:1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO 1	3	2	1		2						1	3	2
CO 2	3	2	1		2						1	3	2
CO 3	3	2	1		2						1	3	2
CO 4	3	2	1		2						1	3	2
CO 5	3	2	1		2						1	3	2

Syllabus		
Unit	Contents	Mapped CO
1	Learning of Python libraries – Numpy, Pandas, Matplotlib, Seaborn and TensorFlow	CO1
2	Numerical examples on Python libraries	CO1
3	Data Preprocessing and data cleaning using Python	CO2
4	Write a program for Linear regression	CO2
5	Write a program for Logistic regression	CO2

6	Write a program for ANN	C03
7	Write a program for CNN	C03
8	Write a program for RNN	C03
9	Write a program to build a Decision tree	C04
10	Write a program to build a Naïve Bayes classifier	C04
11	Write a program for SVM	C04
12	Write a program for Auto-encoder	C05

Learning Resources	
Textbook(s):	
<ol style="list-style-type: none"> 1. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, 2/e, Pearson Education, 2010. 2. Tom M. Mitchell, Machine Learning, McGraw Hill, 2013. 	
References:	
<ol style="list-style-type: none"> 3. Ethem Alpaydin, Introduction to Machine Learning (Adaptive Computation and Machine Learning), The MIT Press, 2004 4. Elaine Rich, Kevin Knight and Shivashankar B. Nair, Artificial Intelligence, 3/e, McGraw Hill Education, 2008 5. Dan W. Patterson, Introduction to Artificial Intelligence and Expert Systems, PHI Learning, 2012. 	
Online Learning Resources:	
Note: Databases can be taken from https://www.kaggle.com/datasets	

Course coordinator

HOD