

VASAVI COLLEGE OF ENGINEERING (Autonomous)

ACCREDITED BY NAAC WITH 'A++' GRADE

IBRAHIMBAGH, HYDERABAD – 500 031

Department of Computer Science & Engineering**FUNDAMENTALS OF MACHINE LEARNING**

Stream- Artificial Intelligence & Machine Learning

(OPEN ELECTIVE-IV)

(COMMON for CIVIL, ECE, EEE & MECH)

SYLLABUS FOR B.E VI SEMESTER

L:T:P (Hrs./week): 3:0:0	SEE Marks : 60	Course Code: U23OE620CS
Credits : 3	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVE	COURSE OUTCOMES <i>On completion of the course, students will be able to</i>
To formulate machine learning problems corresponding to an application.	1. Explain the basics machine learning. 2. Prepare the data for learning 3. Select the feature and transform it . 4. Classify the data using classification models 5. Solve problems using Unsupervised learning models

CO-PO and CO-PSO mapping															
CO	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2		2	1									1		2
CO2	2	2	2	2	2								1		3
CO3	3	2	3	2	2								2		3
CO4	3	2	2	2	1								2		3
CO5	3	2			2								2		3

UNIT I:

Introduction to Machine Learning: Introduction, types of Human learning, types of learning, Problems not to be solved by Machine learning , applications of machine learning , Issues in machine learning,

UNIT II:

Preparing to Model : Introduction, Machine Learning Activities, Basic Data types in machine learning , Exploring Structures of Data.

T. Ashikahel.

UNIT III:

Basics of Feature Engineering: Introduction, feature transformation: feature Construction .

UNIT IV:

Supervised Learning – Classification: Introduction, Example of supervised learning, classification model, classification learning steps, common classification algorithms: KNN and Decision Tree, **Regression :** Introduction , Simple Linear regression.

UNIT V:

Unsupervised Learning – Introduction, Unsupervised vs supervised learning, Application of Unsupervised Learning , types of Clustering techniques, Partitioning methods, k-medoids.

Learning Resources:

1. Saikat Dutt, Subramanian Chandramouli, Amit Kumar Das, -Machine Learning, Pearson Education
2. Tom Mitchell, —Machine Learning||, McGraw-Hill Science, First edition.
3. Christopher Bishop, —Pattern Recognition and Machine learning||, Springer(2006).
4. Stephen Marsland,||Machine Learning –an algorithmic perspective||, CRC Press.
5. Daniela witten, Trevor Hastie Robert Tibshirani and Gareth James, —An introduction to statistical Learning with applications in R, Springer 2013
6. https://onlinecourses.nptel.ac.in/noc18_cs26/preview
7. <https://www.coursera.org/learn/machine-learning>

The break-up of CIE: Internal Tests + Assignments + Quizzes

1	No. of Internal Tests	:	<div style="border: 1px solid black; padding: 5px; display: inline-block;">2</div>	Max. Marks for each Internal Test	:	<div style="border: 1px solid black; padding: 5px; display: inline-block;">30</div>
2	No. of Assignments	:	<div style="border: 1px solid black; padding: 5px; display: inline-block;">3</div>	Max. Marks for each Assignment	:	<div style="border: 1px solid black; padding: 5px; display: inline-block;">5</div>
3	No. of Quizzes	:	<div style="border: 1px solid black; padding: 5px; display: inline-block;">3</div>	Max. Marks for each Quiz Test	:	<div style="border: 1px solid black; padding: 5px; display: inline-block;">5</div>

Duration of Internal Tests : 1 Hour 30 Minutes