GITAM INSTITUTE OF MANAGEMENT (GIM)
Gandhi Institute of Technology and Management (GITAM)
(Declared as Deemed to be University u/s 3 of UGC Act. 1956)
Visakhapatnam – 45.

Course Code: MAN 327	**Course Title: Machine Learning**	
Semester: V	**Course Type: Core**	**Credits: 3**
Home Programme(s): BBA (Business Analytics)		**Batch: 2020 – 23**
Course Leader:		

Course description and learning outcomes

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed.

Learning Objectives

- Understand different categories of Machine Learning
- Understand different algorithms in Machine Learning

On successful completion of this course, students will be able to:

CO	Course Outcome	Assessment
CO1	Understand the concepts of Machine Learning	A1
CO2	Use a tool to implement Supervised Learning Algorithms	A2, A3,A4
CO3	Use a tool to implement Unsupervised Learning Algorithms	A2, A3, A4
CO4	Understand how ANN works	A2, A3, A4
CO5	Understand different applications of Machine Learning	A2

Course outline and indicative content

Unit – I: (10 sessions) (CO1, L2) Introduction to Machine Learning: Basics of Machine Learning, Categories of Machine Learning, Steps in Machine Learning, The Machine Learning process, Train and Test Data

Unit – II: (10 sessions) (CO2, L3, L4, L5) Supervised Learning: Linear Regression, Logistic Regression, Decision Trees, Naïve Bayes Algorithm, K Nearest Neighbour (KNN), Random Forest, Rule based learning: Apriori Algorithm

Unit – III: (10 sessions) (CO3, L3, L4, L5) Unsupervised Learning: Clustering - K-Means Clustering, Anomaly Detection, Expectation – Maximization (EM) algorithm, Introduction to Semi Supervised and Reinforcement Learning

Unit – IV: (10 sessions) (CO4, L3, L4, L5) Introduction to Deep Learning : Concept, Artificial Neural Networks: Basic Structure of ANN, Types of ANN, Defining and Training of ANN

Unit – V: (10 sessions) (CO5, L3, L4, L5) Applications of Machine Learning: Sales and Marketing, Financial Services, Social Media Management, Self Driving Cars, Fraud Detection

Assessment methods

Task		Task type	Task mode	Weightage (%)
A1	Quiz	Individual		10

A2	Assignments / Lab Tasks / Written Test/Coursera Groups* or Individual	Individual / Group		20
A3	Record Work	Individual		10
A4	Lab Exam	Individual		60

Mapping Cos – Blooms Levels – Assessment Tools

Knowledge dimension / Cognitive dimension	L1. Remember	L2. Understand	L3. Apply	L4. Analyze	L5. Evaluate	L6. Create
Factual Knowledge						
Conceptual Knowledge		CO1 (A1)				
Procedural Knowledge			CO2(A3) CO3(A3) CO4(A3)	CO2(A2) CO3(A2) CO4(A2) CO5(A2)	CO2(A4) CO3(A4) CO4(A4)	
Meta Cognitive Knowledge						

Learning and teaching activities

Classroom Lectures, Problem solving exercises, Demonstration, Lab Sessions

Teaching and learning resources

Textbooks, Ebooks, Reference Materials, Web resources, Computer Lab, Data Mining Tool

CO PO Mapping

This is to map the level of relevance of the Course Outcome (CO) with Programme Outcome (PO). 0= No Relevance; 1= Low Relevance; 2= Medium Relevance; 3= High Relevance

CO PO Mapping	PO1	PO2	PO3	PO4	PO5	PO6	Sum
CO1	1	1	2	2	2	3	11
CO2	1	1	2	2	2	3	11
CO3	1	1	2	2	2	3	11
CO4	1	1	2	2	2	3	11
CO5	1	1	2	2	2	3	11
Target Level Max.	5	5	10	10	10	15	55

Program Outcomes

1	Ability to understand the business problems with their knowledge in different functional areas of management.
2	Integrate with structured, semi – structured and unstructured data.
3	Utilize the tools such as Microsoft Excel, SPSS, R, Weka and Tableau to solve business analytics

	problems.
4	**A**bility to apply analytics techniques to analyze and interpret the data.
5	Incorporate the descriptive, predictive and prescriptive analytics.
6	Evaluate the necessary skills and understanding to take up advanced topics in the area of analytics and thus enhance their career prospects.