Lesson Plan

Program:MBASemester:OddCourse Code:**KMBN IT02**.   **Course Name:Ai and Machine Learning for Business**

Course Objectives

(CO1): To understand the need of Machine Learning & Statistics for solving various problems

(CO2): To understand the basic concepts of supervised and unsupervised learning.

(CO3): To apply regression analysis on the data Available

(CO4): To design appropriate machine learning and apply on real world problems

(CO5): To optimize different Machine Learning & Deep learning Techniques.

Session Duration:60 minutes

Participants:

Entry level knowledge and skills of students

       i.   Statistical analysis and computing.

      ii.   Data Visualization and strong Communication Skills

Equipment required in Classroom/ Laboratory/ Workshop

       i.   Projector

      ii.   White board

Assessment Schemes

S. No.	Criteria	Marks (150)
1	**AKTU End Term Examination**	**100**
2	**Internal Evaluation Scheme**	**50**
2(a)	**Class Tests**	**30**
2(a)(i)	Class Test-I	15
2(a)(ii)	Class Test-II	15
2(b)	**Teacher Assessment (Continuous Evaluation)**	**20**
2(b)(i)	Attendance	5
2(b)(ii)	Case Study/Topic Based Presentation	5
2(b)(iii)	*GD	10
	*MCQ Based Assignment	2

Course Outcomes (starting with action-oriented observable and measurable verb)

(CO1): To understand the need of Machine Learning & Statistics for solving various problems.

(CO2): To understand the basic concepts of Supervised and unsupervised learning.

(CO3): To apply regression analysis on the data available.

(CO4): To design appropriate machine learning and apply on real world problems.

(CO5): To optimize different Machine Learning & Deep Learning Techniques.

L. No.	Topics	Sub Topics	Date of implementation	Pedagogy	CO-Covered	Faculty Sign	HoD's Remark with Date
Unit - 1							
1.	Artificial Intelligence for Business Planning	Introduction and Data sources for AI, Knowledge acquisition		Improved Lectures	CO1		
2.	Artificial Intelligence for Business Planning	Knowledge representation, History of ML		Improved Lectures	CO1		
3.	Artificial Intelligence for Business Planning	Framework for building ML System KDD process mode		Improved Lectures	CO1		
4.	Artificial Intelligence for Business Planning	Data Science Vs Machine Learning		Improved Lectures	CO1		
Unit - 2							
5.	Supervised Learning and Application	Introduction to classification Linear Regression		Improved Lectures	CO2		
6.	Supervised Learning and Application	Metrics for evaluating linear model, Multivariate regression		Improved Lectures	CO2		
7.	Supervised Learning and Application	Logistic Regression, Support Vector Machine		Improved Lectures	CO2		

8.	Supervised Learning and Application	Model Evolution Application of supervised learning in multiple domains		Improved Lectures	CO2		
9.	Supervised Learning and Application	Application of Supervised learning in multiple domains		Improved Lectures	CO2		
10.	Supervised Learning and Application	Application of supervised learning in solving business problems and aspiring		Improved Lectures	CO2		
11.	Supervised Learning and Application	Customer relationship management		Improved Lectures	CO2		
12.	Supervised Learning and Application	Sales and marketing		Improved Lectures	CO2		
Unit - 3							
13.	Unsupervised Learning Algorithms	Clustering		Improved Lectures	CO3		
14.	Unsupervised Learning Algorithms	Hierarchical Clustering		Improved Lectures	CO3		
15.	Unsupervised Learning Algorithms	Partitioning clustering -K means clustering		Improved Lectures	CO3		
16.	Unsupervise	Density Based		Improved	CO3		

	d Learning Algorithms	Method DBSAN		Lectures		
17.	Unsupervised Learning Algorithms	OPTICS Applications of unsupervised learning in multiple domains		Improved Lectures	CO3	
18.	Unsupervised Learning Algorithms	Association rules		Improved Lectures	CO3	
19.	Unsupervised Learning Algorithms	Introduction Large Item sets		Improved Lectures	CO3	
20.	Unsupervised Learning Algorithms	Apriori Algorithms		Improved Lectures	CO3	
Unit - 4						
21.	Artificial Neural Network & Deep Learning	Perception model		Improved Lectures	**CO4**	
22.	Artificial Neural Network & Deep Learning	Multilayer perception		Improved Lectures	**CO4**	
23.	Artificial Neural Network & Deep Learning	Gradient descent		Improved Lectures	**CO4**	
24.	Artificial Neural Network & Deep Learning	The Delta rule		Improved Lectures	**CO4**	
25.	Artificial Neural Network & Deep	Multilayer network		Improved Lectures	**CO4**	

	Learning						
26.	Artificial Neural Network & Deep Learning	Backpropagation Algorithm		Improved Lectures	**CO4**		
27.	Artificial Neural Network & Deep Learning	Backpropagation Algorithm		Improved Lectures	**CO4**		
Unit - 5							
28.	**Control System**	Introduction concept of convolution neural Network		Improved Lectures			
29.	**Control System**	Types of layers		Improved Lectures	**CO5**		
30.	**Control System**	Concept of Convolution layers		Improved Lectures	**CO5**		
31.	**Control System**	Training of Network		Improved Lectures	**CO5**		
32.	**Control System**	Training of Network		Improved Lectures	**CO5**		
33.	**Control System**	Recent Application		Improved Lectures	**CO5**		
34.	**Control System**	Recent Application		Improved Lectures	**CO5**		
Revision							
35.	Unit-1				1		
36.	Unit-2				2		
37.	Unit-2				2		
38.	Unit-3				3		
39.	Unit-3				3		
40.	Unit-4				4		
41.	Unit-4				4		
42.	Unit-5				5		

Text Books:

Reference Books:

1. Artificial Intelligence for Business Leaders: Ajit Kr Jha
2. Machine Learning in Business: John C Hull

Suggested Readings
1. An Introduction to statistical Learning with Application in R: James, G Witten D(springer)
2. AI and Machine Learning: Was Rahman SAGE Publishing India

Journals:

1. Monostori, L. (2003). AI and machine learning techniques for managing complexity, changes and uncertainties in manufacturing. *Engineering applications of artificial intelligence*, *16*(4), 277-291.

2. Cioffi, R., Travaglioni, M., Piscitelli, G., Petrillo, A., & De Felice, F. (2020). Artificial intelligence and machine learning applications in smart production: Progress, trends, and directions. *Sustainability*, *12*(2), 492.