GANPAT UNIVERSITY

FACULTY OF MANAGEMENT STUDIES

Programme	MBA	Branch/Spec.	Tech MBA (MBA Technology Management)
Semester	III	Version	2.0.0.0
Effective from Academic Year	2025-26	Effective for the Batch admitted in	January 2025
Course Code	**IIIA05MAM**	Course Name	**Machine Learning for Managers**

Teaching Scheme						Examination Scheme (Marks)			
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	0		3	Theory	60	40	100
Hours	3	0	0		3	Practical			

Pre-requisites

Course Outcomes

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

CO1	Explain foundational concepts of machine learning, statistical principles, and predictive modeling relevant to managerial decision-making.
CO2	Apply data preprocessing techniques, feature engineering, and algorithm selection methods to prepare high-quality datasets for ML models.
CO3	Build and interpret supervised machine learning models—including logistic regression, decision trees, neural networks, and SVM—using SAS Viya.
CO4	Evaluate, compare, and refine machine learning models using appropriate performance metrics and model assessment frameworks.
CO5	Deploy machine learning models in business contexts and utilize SAS Viya tools for implementing end-to-end ML workflows.

Theory Syllabus

Unit	Content	Hrs.
1	Predictive Modeling Using Logistic Regression ▪ Introduction to predictive modeling. ▪ Categorical associations. ▪ Logistic regression model. ▪ Model deployment. Statistical Foundations of Machine Learning ▪ Overview of machine learning. ▪ Data pre-processing for machine learning models. ▪ Model evaluation, estimation, and post-training tasks.	12
2	Getting Started with Machine Learning and SAS Viya ▪ Machine learning in business decision making. ▪ Supervised prediction: preparing the data and building the initial model. ▪ A closer look at SAS Viya.Data Preprocessing and Algorithm Selection ▪ Exploring the data and replacing incorrect values. ▪ Extracting features. ▪ Transforming inputs. ▪ Selecting features. ▪ Best practices in data preparation. Selecting an algorithm.	12
3	Decision Trees and Ensembles of Trees ▪ Building a default decision tree model. ▪ Modifying the model: tree structure. ▪ Modifying the model: recursive partitioning.	12

	▪ Modifying the model: pruning. ▪ Building and modifying ensembles of trees. Neural Networks ▪ Building a default neural network model. ▪ Modifying the model: network architecture. Modifying the model: network learning and optimization.	
4	Support Vector Machines ▪ Building a default support vector machine model. ▪ Modifying the model: methods of solution. ▪ Modifying the model: kernel function.	12
5	Model Assessment and Deployment ▪ Model assessment and comparison. ▪ Model deployment. Additional Nodes Exploring additional nodes in Model Studio	12
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Practical, assignments and tutorials are based on above syllabus.		
Text Books		
1	Machine Learning for Managers by Paul Geertsema	
Reference Books		
1	Machine Learning for Business Analytics: Concepts, Techniques, and Applications by Galit Shmueli, Peter C. Bruce, Kuber R. Deokar, and Nitin R. Patel	
2	Artificial Intelligence for Managers by Rahul De	
3	Machine Learning: For Business Applications by Pratyush Banerjee, Supriti Mishra, and Shivashankar Chari	
4	Artificial Intelligence and Machine Learning in Business Management: Concepts, Challenges, and Case Studies by Sandeep Kumar Panda, Vaibhav Mishra, R. Balamurali, and Ahmed A. Elngar	
5	Artificial Intelligence and Machine Learning for Business by Namita Mishra and A. V. Senthil Kumar	
6	Prediction Machines: The Simple Economics of Artificial Intelligence by Ajay Agrawal, Joshua Gans, and Avi Goldfarb	
7	Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World by Marco Iansiti and Karim R. Lakhani	
8	AI in Practice: How 50 Successful Companies Used AI and Machine Learning to Solve Problems by Bernard Marr	
ICT/MOOCs Reference		
1	Coursera: AI For Everyone — Andrew Ng (deeplearning.ai)	
2	Udemy: Machine Learning A-Z™: Hands-On Python & R In Data Science	

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	2	1	2	1	1	3	3	3	2	1
CO2	3	2	1	2	1	1	1	3	3	2	3	1
CO3	3	2	2	1	2	1	2	3	3	2	3	1
CO4	3	2	2	1	2	2	1	3	3	2	3	1
CO5	3	2	3	2	2	2	2	3	3	3	3	1