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	**IIIA03AEB**	Course Name	**AI Enabled Big Data Platforms**

Teaching Scheme						Examination Scheme (Marks)			
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	4	0	0		4	Theory	60	40	100
Hours	4	0	0		4	Practical			

Pre-requisites

Course Outcomes

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

CO1	Analyze the symbiotic relationship between AI, Big Data, and cloud platforms, and articulate their combined value proposition to solve complex business problems.
CO2	Evaluate the key components and strategic choices in designing a modern data platform architecture from a managerial perspective.
CO3	Formulate business cases and identify high-impact applications of AI on big data platforms across various industries and business functions.
CO4	Assess the critical governance, ethical, and organizational challenges in managing data as a strategic asset and leading data-centric teams.

Theory Syllabus

Unit	Content	Hrs.
1	The Foundations of AI and Big Data, The evolution of data from business intelligence to AI, The 5 V's of Big Data (Volume, Velocity, Variety, Veracity, Value) in today's context, Demystifying AI for managers (AI vs. Machine Learning vs. Deep Learning), The fundamental synergy: why AI needs big data and why big data is more valuable with AI, The role of cloud computing as the enabler of this convergence, The business case for investing in a unified data and AI platform.	12
2	The Modern Data Platform Architecture, The conceptual data pipeline (Ingest, Store, Process, Analyze), Differentiating data warehouses, data lakes, and the modern data lakehouse concept, Key architectural components explained (e.g., object storage, distributed processing, real-time streaming), The strategic choice between build vs. buy, On-premise vs. cloud vs. hybrid cloud strategies, The role of major cloud providers (AWS, Azure, GCP) and their platform offerings, Understanding data catalogs and metadata management for discoverability.	12
3	Business Applications and Value Creation, Customer 360 and hyper-personalization in marketing, Predictive maintenance and supply chain optimization in operations, Fraud detection and algorithmic trading in finance, Natural Language Processing (NLP) for sentiment analysis and chatbots, Computer Vision applications in retail and manufacturing, Dynamic pricing and recommendation engines, Identifying opportunities for competitive advantage through unique data and AI models.	12
4	Governance, Ethics, and Security of Data Platforms, Introduction to Data Governance and its importance, Ensuring data quality, lineage, and mastering, Data privacy regulations and their impact on platform design (GDPR, CCPA), The managerial challenge of AI ethics, bias, and fairness, Data security strategies for platforms holding sensitive information, Frameworks for managing data access and entitlements, The concept of Data as a Product.	12
5	Leading a Data-Driven Organization, Building and structuring data and analytics teams (data scientists, engineers, analysts), Fostering a data-driven culture across the organization, Measuring the ROI of data and AI initiatives, The concept of MLOps (Machine Learning	12

	Operations) for managing the AI lifecycle, Emerging trends: Real-time analytics, data fabrics and data mesh architectures, The impact of Generative AI on data platforms, The future role of the Chief Data Officer (CDO).	
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Practical, assignments and tutorials are based on above syllabus.		
Text Books		
1	Competing on Analytics: The New Science of Winning by Thomas H. Davenport and Jeanne G. Harris	
Reference Books		
1	Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking by Foster Provost and Tom Fawcett	
2	Big Data: A Revolution That Will Transform How We Live, Work, and Think by Viktor Mayer-Schönberger and Kenneth Cukier	
3	Prediction Machines: The Simple Economics of Artificial Intelligence by Ajay Agrawal, Joshua Gans, and Avi Goldfarb	
4	The AI Advantage: How to Put the Artificial Intelligence Revolution to Work by Thomas C. Davenport	
5	Platform Revolution: How Networked Markets Are Transforming the Economy—and How to Make Them Work for You by Geoffrey G. Parker, Marshall W. Van Alstyne, and Sangeet Paul Choudary	
6	Data-Driven: Creating a Data Culture by DJ Patil and Hilary Mason	
7	Everybody Lies: Big Data, New Data, and What the Internet Can Tell Us About Who We Really Are by Seth Stephens-Davidowitz	
8	Infonomics: How to Monetize, Manage, and Measure Information as an Asset for Competitive Advantage by Douglas B. Laney	
9	Designing Data-Intensive Applications: The Big Ideas Behind Reliable, Scalable, and Maintainable Systems by Martin Kleppmann (Note: Recommended for managers to read the introductory chapters for conceptual understanding, not the deep technical details).	
10	The Goal: A Process of Ongoing Improvement by Eliyahu M. Goldratt (A classic on systems thinking, applicable to data pipelines).	
11	The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios by Steve Wexler, Jeffrey Shaffer, and Andy Cotgreave	
ICT/MOOCs Reference		
1	Coursera: Big Data Specialization — University of California San Diego	
2	Udemy: Apache Spark with Scala – Hands On with Big Data! — Frank Kane	

	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	2	2	1	2	3	3	3	2	1
CO2	3	3	2	1	2	1	1	3	3	3	3	1
CO3	3	2	2	2	2	1	3	3	3	2	3	1
CO4	2	2	3	2	2	3	1	2	2	2	2	3