GANPAT UNIVERSITY

FACULTY OF MANAGEMENT STUDIES

Programme	MBA	Branch/Spec.	Innovation, Entrepreneurship and Venture Development (Minor Specialization - Fintech, Investment Banking and Artificial Intelligence)
Semester	IV	Version	2.0.0.0
Effective from Academic Year	2026-27	Effective for the Batch admitted in	January 2026
Course Code	IVA02ATR	Course Name	AI Innovations in Treasury and Risk Management

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	Students will be able to analyze the structure and functions of modern treasury management systems, emphasizing the integration of fintech innovations and digital financial instruments.
CO2	Students will be able to examine the principles and frameworks of financial risk management, focusing on how emerging technologies enhance risk identification and mitigation.
CO3	Students will be able to apply AI-driven analytics and quantitative models to measure, monitor, and control financial risks in dynamic market environments.
CO4	Students will be able to evaluate the role of technology in Asset-Liability Management (ALM) and design strategies to maintain liquidity, profitability, and regulatory compliance.
CO5	Students will be able to formulate and implement digital and AI-enabled risk-hedging strategies using advanced fintech tools and algorithmic solutions.

Theory Syllabus

Unit	Content	Hrs.
1	Treasury Management: Scope and function of treasury management, Financial forecasting, Short term financial planning, Financial markets and instruments, Long term funds, Internal treasury controls, Tax planning and management, Managing bankruptcy, Banking relationships, Managing investor relationships, Current developments. Risk Management: Risk: Definition : Risk Process- Risk Organization, Key Risks – Interest Rate Risk, Market Risk, Currency Risk, Credit Risk, Liquidity Risk, Legal and operational Risk	14
2	Risk Measurement and Control Frameworks: Concepts of risk exposure and quantification in financial operations, AI-enabled risk modeling and predictive analytics for identifying market, credit, and liquidity risks, Risk Management and Mitigation Policies: Design and implementation in a digital ecosystem. Risk Immunization Strategies: Techniques for minimizing interest rate and currency exposure, Setting and Monitoring Exposure Limits with delegated accountability through digital dashboards and analytics tools: Open Position Limits, Asset Position Limits, Deal Size and Counterparty Limits, Individual Dealer Limits, Stop-Loss and Escalation Controls. AI and Data Analytics in Risk Control: Use of machine learning models for real-time risk monitoring and scenario analysis, Automation of compliance reporting using RegTech tools, Predictive dashboards for early warning and decision support.	14
3	Foundations of Asset Liability Management: Objectives and importance of ALM in financial institutions and corporate treasury, Components of ALM in a multi-currency balance sheet environment, Impact of globalization, digital payments, and fintech platforms on ALM	9

	practices. ALM Organization and Governance: Structure and role of the Asset Liability Committee (ALCO), Policy framework for liquidity and interest rate risk management, Integration of AI-driven dashboards and real-time monitoring tools for decision support, Designing risk management policies and procedures aligned with digital treasury operations. Performance and Capital Management: Risk-Adjusted Return on Capital (RAROC) and its application in AI-based performance analytics, Capital Adequacy Norms and Basel III compliance in fintech-enabled financial environments, Role of automation and RegTech solutions in capital and liquidity reporting.	
4	ALCO Analytical Techniques and Tools: Gap Analysis for interest rate and liquidity risk measurement, Simulation Models and scenario analysis using AI and statistical forecasting tools, Duration Analysis and sensitivity modeling for interest rate risk assessment, . Application of linear regression and other statistical methods for internal control and predictive risk management. Digital Transformation in ALM: Role of fintech innovations in integrating ALM with enterprise risk management systems, Cloud-based ALM platforms, predictive analytics, and API-driven treasury operations.	9
5	Risk Hedging: Instruments and Mechanisms. Overview of Forward, Futures, and Options as hedging instruments, Application of AI algorithms in derivative pricing and strategy optimization, Hedging Strategies and Arbitrage Opportunities in fintech-driven markets, Simulation-based decision-making for portfolio hedging. Regulatory and Global Standards: Understanding Basel II & III Frameworks and their implications for AI-assisted risk management, Compliance challenges and fintech solutions for regulatory adherence, Position management and derivative product governance through digital platforms ducts.	14
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Practical, assignments and tutorials are based on above syllabus.		
Text Books		
1	Treasury and Foreign Exchange Management Handbook. ICFAI Press.	
Reference Books		
1	Indian Institute of Banking and Finance (IIBF). Risk Management. Macmillan.	
2	Indian Institute of Banking and Finance (IIBF). Treasury Management: The Practitioner's Guide. Macmillan.	
3	Bhaskaran, R. An Introduction to Fund and Investment Management in Banks. Bankers Institute of Rural Development, Lucknow.	
4	Indian Institute of Banking and Finance (IIBF). Bank Financial Management. Macmillan.	
5	Bagchi, S.K. Credit Risk Management. Jaico Publishing House, Mumbai.	
6	Rose, Peter S. Commercial Bank Management. 5th Edition. McGraw-Hill/Irwin, Texas A&M University, College Station.	
7	Chance, Don M. Introduction to Derivatives and Risk Management. Thomson Learning, New Delhi	
ICT/MOOCs Reference		
1	Coursera: AI in Finance – New York University (NYU Stern)	
2	Udemy: Financial Risk Management with Machine Learning & Python	

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PSO 1	PSO 2	PSO 3	PSO 4
CO1	3	3	-	-	-	-	2	2	1	2	3	3	-
CO2	3	3	-	-	-	2	2	2	1	2	3	3	2
CO3	3	3	2	--	-	2	2	3	2	3	3	3	2
CO4	3	3	2	-	-	3	2	2	3	3	3	3	3
CO5	3	3	2	-	-	2	3	3	3	3	3	3	2