Gyanmanjari
Innovative University

Subject: AI in Fintech – BBAFT16324

Type of course: Major (Core)

Prerequisite:

Students should have basic knowledge of Fintech and AI.

Rationale:

This course aims to equip students to understand the applications of Artificial Intelligence in financial technologies and also analyze its role in enhancing efficiency, decision-making, and risk management in the fintech sector.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks			Total Marks
CI	T	P	C	SEE	CCE		
					MSE	ALA	
4	0	0	4	100	30	70	200

Legends: CI-Classroom Instructions; T – Tutorial; P - Practical; C – Credit; SEE - Semester End Evaluation; MSE- Mid Semester Examination; V – Viva; CCE-Continuous and Comprehensive Evaluation; ALA- Active Learning Activities.

4 Credits * 25 Marks = 100 Marks (each credit carries 25 Marks)

SEE 100 Marks will be converted in to 50 Marks

CCE 100 Marks will be converted in to 50 Marks

It is compulsory to pass in each individual component.

Course Content:

Sr. No	Course content	Hrs	% Weightage
1	**Introduction to AI/ML and their role in FinTech** • Overview of AI, ML, and Deep Learning • Data types in finance (structured/unstructured) • Financial data sources and preprocessing • Supervised and Unsupervised Learning techniques • Key ML algorithms: Regression, Decision Trees, Clustering, Neural Networks • Use cases in financial forecasting and classification	15	25
2	**AI Applications in Financial Services** • Robo-advisors: principles and working models • AI in asset and wealth management • Algorithmic and high-frequency trading • AI in credit scoring and loan underwriting • Fraud detection and anti-money laundering (AML) using AI • Case studies of AI-led FinTech firms (e.g., Zest AI, Upstart, Betterment)	15	25
3	**AI in Financial Regulation, Risk & Compliance** • Introduction to algorithmic regulation and compliance automation • Real-time monitoring systems and AI-based regulatory alerts • AI in KYC (Know Your Customer) and AML processes • Managing AI risks: model risks, operational risks • Overview of regulatory sandboxes and legal frameworks • Explainability (XAI) and auditability of AI systems	15	25
4	**Strategic Implications and the Future of AI in FinTech** • Competitive dynamics in the digital financial economy • Disruption of traditional banking models through AI • Platformization and open banking with AI • Ethical AI: transparency, accountability, and bias mitigation • Future of work in financial services (AI and job displacement) • Strategic AI adoption roadmap for FinTech firms	15	25

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**Fintech App Review:** Students will download or explore any one fintech app and write 5 points on how AI features (chatbots, fraud detection, recommendations) are used in it. They will upload the PDF on GMIU Web Portal.	10
2	**Case Study on AI in Banking:** Students will find one short article or news about how AI is used in banking (fraud detection, credit scoring, chatbots) and summarize it in 5–6 lines. They will upload the PDF on GMIU Web Portal.	10
3	**Field Visit – Bank/Fintech Outlet:** Students will visit a nearby bank branch or fintech service provider and ask about one AI-based service they use (e.g., chatbot, digital KYC, ATM security). They will write a short note in PDF and upload on GMIU Web Portal.	10
4	**AI-powered Payment Security:** Students will write 5 points on how AI helps in making digital payments more secure (OTP, fraud alerts, unusual transaction detection). They will upload the PDF on GMIU Web Portal.	10
5	**Comparison of Traditional vs AI Lending:** Students will compare traditional loan approval with AI-based loan approval in 4–5 points (speed, accuracy, risk assessment, documentation). They will upload the PDF on GMIU Web Portal.	10
6	**Future of AI in Fintech – Idea Writing:** Students will imagine one new way AI can improve fintech services in the future (example: personal finance advisor, automated savings, AI fraud shield) and describe the idea in 5–6 lines. They will upload the PDF on GMIU Web Portal.	10
7	**Attendance**	10
	Total	70

Suggested Specification table with Marks (Theory): 100

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	40%	40%	0%	10%	10%	0%

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

	After learning the course, the students should be able to:
CO1	Understand how financial data is structured and used in ML models
CO2	Evaluate benefits and risks of AI adoption in financial services
CO3	Identify legal and ethical concerns related to AI in finance
CO4	Assess strategic impact of AI on financial institutions

Instructional Method:

The course delivery method will depend upon the requirement of content and the needs of students. The teacher, in addition to conventional teaching methods by black board, may also use any tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction. Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses. The internal evaluation will be done on the basis of Active Learning Assignment.

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in the laboratory.

Reference Books:

[1] Hilpisch, Y. (2020). Artificial intelligence in finance: A Python-based guide. O'Reilly Media.
[2] Diniz, E., de Albuquerque, J. P., & Cernev, A. K. (2021) – Financial Technologies and the Digital Economy (Palgrave)
[3] Chopra, S. (2020) – Machine Learning for Finance (Packt)
[4] Treleaven, P., & Batrinca, G. (2017) – Algorithmic Regulation, Journal of Financial Transformation
[5] Finnerty, J. D., & Ma, Y. (2022) – Artificial Intelligence in Asset Management (Wiley)