



Subject: Artificial Intelligence in Fintech- MBAFT13510

Type of course: Major (Core)

Prerequisite:

A foundational understanding of finance and basic concepts of artificial intelligence and machine learning.

Rationale:

This subject equips the students with critical knowledge and skills to leverage AI technologies for innovative solutions and competitive advantage in the financial industry.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P		Theory Marks		Practical Marks		CA	
			ESE	MSE	V	P	ALA		
03	00	02	04	60	30	10	20	30	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE – End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA-Active Learning Activities.

Course Content:

Sr. No	Course content	Hrs.	% Weightage
1	<p>Introduction to Artificial Intelligence in Fintech</p> <ul style="list-style-type: none"> • Overview of AI and its relevance in Fintech • Historical evolution of AI in the financial sector • Key AI technologies: Machine Learning, Deep Learning, Natural Language Processing, and Robotic Process Automation • Current trends and future prospects of AI in Fintech • Ethical and regulatory considerations in AI applications 	15	25



2	Machine Learning Applications in Finance <ul style="list-style-type: none"> • Introduction to Machine Learning: Supervised, Unsupervised, and Reinforcement Learning • Predictive analytics and risk management • Fraud detection and prevention using AI • Algorithmic trading and investment strategies • Credit scoring and loan approval processes 	15	25
3	Natural Language Processing and AI-driven Customer Service <ul style="list-style-type: none"> • Basics of Natural Language Processing (NLP) • Chatbots and virtual assistants in financial services • Sentiment analysis for market prediction • Customer feedback analysis and personalized financial advice • Case studies of successful NLP applications in Fintech 	15	25
4	Advanced AI Applications and Future Trends <ul style="list-style-type: none"> • Blockchain and AI integration for secure transactions • Robo-advisors and their impact on wealth management • AI in insurance: underwriting, claims processing, and personalized policies • Fintech startups leveraging AI and innovative business models • Future trends: Quantum computing, AI ethics, and sustainability in Fintech 	15	25

Sr. No	Practical's	Unit no	App hours
1	Introduction to Basic Python for Finance: Learn basic Python syntax and its applications in finance.	1	5
2	Exploring AI Tools in Fintech: Use pre-built AI tools to analyze financial data and make predictions (e.g., using automated AI platforms like Google AutoML).	4	4
3	Implement sentiment analysis using NLP: Implement sentiment analysis of using social media platforms that forecasts financial news by using different models of Natural Language Processing (NLP)	3	4
4	Build a Digital Wallet: Create a basic digital wallet application using tools like Python and Flask, or explore no-code platforms. Implement features like transaction history and user authentication.	2	5
5	Basic Algorithmic Trading Concepts: Analyze a simple pre-built trading strategy using historical data with guided instructions.	2	4
6	Customer Feedback Analysis: Work with pre-collected customer feedback data to understand how AI personalizes financial advice.	3	4
7	Use of Chatbot : Implement different machine learning models to develop a chatbot that gives personalized financial advice.	3	4
	Total		30

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	Poster Making: Students will make poster on a chart paper on the topic “Human VS Artificial Intelligence”. Upload PDF on the GMIU Web portal.	10
2	Fraud Detection Software: Students have to list any 5 Fraud Detection Software and their features. Upload PDF on the GMIU Web portal.	10
3	Uses of Chat bots: Students will state top uses of Chat bots and virtual assistants in Indian banking. Upload PDF on the GMIU Web portal.	10
Total		30

Suggested Specification table with Marks (Theory):60

Distribution of Theory Marks (Revised Bloom’s Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	20%	30%	10%	10%	10%

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 the foundational concepts and significance of AI in the Fintech industry.
CO2	Apply machine learning techniques to various financial services and analyze their impact.
CO3	Implement NLP techniques to enhance customer interaction and service in the financial sector.
CO4	Explore advanced AI applications and predict future trends impacting the Fintech landscape.



Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of 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, Virtual Laboratory

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 laboratory.

Reference Books:

- [1] Chopra, S. (2020). Machine Learning for Finance: Principles and Practice for Financial Insiders. Packt Publishing.
- [2] Treleaven, P., & Batrinca, G. (2017). Algorithmic Regulation: Automating Financial Compliance Monitoring and Regulation Using AI. Journal of Financial Transformation, 45, 29-39.
- [3] Finnerty, J. D., & Ma, Y. (2022). Artificial Intelligence in Asset Management: Framework and Strategies. Wiley.
- [4] Diniz, E., de Albuquerque, J. P., & Cernev, A. K. (2021). Financial Technologies and the Digital Economy: Implications for Market Structures and Competitive Dynamics. Palgrave Macmillan.

