



Shirpur Education Society's

R. C. Patel Institute of Technology, Shirpur
(An Autonomous Institute)

Course Structure and Syllabus

Honors Degree Program in FinTech

Artificial Intelligence and Machine Learning

With effect from Year 2025-26



Shahada Road, Near Nimzari Naka, Shirpur, Maharashtra 425405
Ph: 02563 259 802, Web: www.rcpit.ac.in

Honors Degree Program in FinTech (w.e.f. 2025-26)

Sr	Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme					Total	Credit	
				L	T	P	Continuous Assessment (CA)				ESE			
							TA	Term Test 1 (TT1)	Term Test 2 (TT2)	Average of (TT1 & TT2)				
Sem-IV														
1	H2	RCP23AH2251	Foundation of Finance	3			25	15	15	15	60	100	3	3
Sem-V														
2	H2	RCP23AH2301	Quantitative Finance	3			25	15	15	15	60	100	3	3
Sem-VI														
3	H2	RCP23AH2351	Econometric Modelling and Financial Analytics	3			25	15	15	15	60	100	3	4
	H2	RCP23AH2351L	Econometric Modelling and Financial Analytics Laboratory			2	25				25	50	1	
4	H2	RCP23AH2352	Intelligent Trading Systems & Risk Analytics	3			25	15	15	15	60	100	3	4
	H2	RCP23AH2352L	Intelligent Trading Systems & Risk Analytics Laboratory			2	25				25	50	1	
Sem-VII														
5	H2	RCP23AH2401	Decentralized Systems	4			25	15	15	15	60	100	3	4
Total				16		4	175			75	350	600		18

Prepared by:
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BOS Chairman

Prof. S. P. Shukla
C.O.E.

Prof. Dr. P. J. Deore
Dean Academics/Dy. Director

Prof. Dr. J. B. Patil
Director



**Honors Degree Program in FinTech
Artificial Intelligence and Machine
Learning
Semester - IV**



Program: Honors Degree Program in FinTech Artificial Intelligence and Machine Learning	S. Y. B.Tech	Semester: IV
Foundation of Finance (RCP23AH2251)		

Course Objectives:

1. Understand the structure and functioning of financial systems, markets, and instruments, with a focus on the Indian context. in the field of computer graphics.
2. Understand the core principles of finance theory including time value of money, risk return trade-off, and diversification.
3. Gain knowledge of financial instruments, markets (money, equity, debt, forex, commodities, crypto), and their functioning.
4. Conduct financial statement analysis to assess corporate financial health using standard tools and indicators.

Course Outcomes:

CO	Course Outcomes	Blooms Level	Blooms Description
CO1	Describe the components and functions of financial systems and structure and functioning of key financial markets and instruments.	L2	Understand
CO2	Apply concepts of time value of money and evaluate the risk-return tradeoff of financial instruments using CAPM and diversification principles.	L3	Apply
CO3	Differentiate between various market instruments including equity, debt, money markets, and cryptocurrency.	L2	Understand
CO4	Evaluate company performance using financial statements and identify potential red flags through ratio and forensic analysis.	L5	Evaluate



Foundation of Finance (RCP23AH2251)

Course Contents

Unit-I

04 Hrs.

Introduction to Financial Systems, Markets and Instruments:

Functions and organization of Financial systems, overview of Indian Financial System.

Introduction to Money markets, Equity Markets, Debt instruments, Foreign exchange and their risk structure. Introduction to Crypto currency (or contemporary currency).

Unit-II

08 Hrs.

Introduction to Finance Theory:

Introduction to Finance Theory: Time value of money: (Present Value and Future Value, Compounding and Discounting, Annuities (Ordinary and Due), Perpetuities

Risk and return: Return Measures, Risk Measures, Risk Return Trade off, Capital Asset Pricing Model (CAPM), Types of Risks, Diversification Principle

Unit-III

08 Hrs.

Money Markets: money market instruments and structure of their risk and returns.

Equity Markets: Stocks, Ordinary and Preferential Stocks, primary and secondary stock market, initial public offering (IPO), public equity and private equity, stock market index, market participants, trading risk in equity market.

Debt instruments: types of bonds, term structure for interest rates, yield curve

Unit-IV

05 Hrs.

Financial Markets and Products:

Structures and functions of financial institutions, structure and mechanics of over – the – counter (OTC) and exchange markets, Spot market, Commodity market, Foreign exchange market, Corporate bonds and mortgage-based-securities.

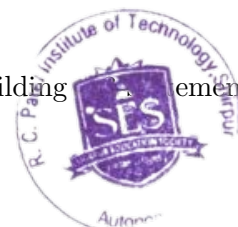
Unit-V

10 Hrs.

Financial Statement Analysis: Balance Sheet, Income Statement, Cash Flow Statement, Interrelation and adjustments, Liquidity, profitability, Ratio Analysis, leverage, efficiency, DuPont analysis,

Financial Health Indicators: Working capital analysis, Earnings quality, Red flags and forensic accounting basics

Forecasting & Modelling: Revenue and expense projections, Building element model, Sensitivity & scenario analysis.



Unit-VI

04 Hrs.

Financial Statement Analysis Using Python and Advanced Excel

Text Books:

1. M.Y. Khan, “Indian Financial System”, 11th Edition, McGraw-Hill Education, 2020.
2. I. M. Pandey, “Financial Management”, 11th Edition, Vikas Publishing House Pvt Ltd, 2018.
3. M.Y. Khan, P. K. Jain, “Financial Management Text, Problems and Cases”, 8th Edition, McGraw Hill Education, 2019.
4. K. R. Subramanyam, “Financial Statement Analysis”, 11th Edition, McGraw-Hill Education, 2019.

Reference Books:

1. Richard A. Brealey, Stewart C. Myers, Franklin Allen, “Principles of Corporate Finance”, 13th Edition, McGraw-Hill Education, 2020.
2. Steve Bell, “Quantitative Finance for Dummies”, 1st Edition, Wiley, 2016.
3. Mark S. Joshi, “The Concepts and Practice of Mathematical Finance”, 2nd Edition, Cambridge University Press, 2008.
4. Yves Hilpisch, “Python for Finance: Mastering Data-Driven Finance”, 2nd Edition, O’Reilly Media, 2018.
5. Marcos López de Prado, “Machine Learning for Asset Managers”, 1st Edition, Cambridge University Press, 2020.
6. Aswath Damodaran, “Applied Corporate Finance”, 4th Edition, Wiley, 2014.

Web Links:

1. <https://www.quantstart.com/articles/>
2. <https://quantpedia.com/>
3. <https://pages.stern.nyu.edu/~adamodar/>
4. <https://aswathdamodaran.blogspot.com/>

Online Courses:

- Finance Theory:
<https://ocw.mit.edu/courses/15-401-finance-theory-i-fall-2008/>



- Finance and Capital Markets:

<https://www.khanacademy.org/economics-finance-domain/core-finance>

<https://archive.nptel.ac.in/courses/110/105/110105121/>

- Introduction to Corporate Finance:

<https://www.coursera.org/learn/wharton-finance>

https://onlinecourses.nptel.ac.in/noc21_mg93/preview

