



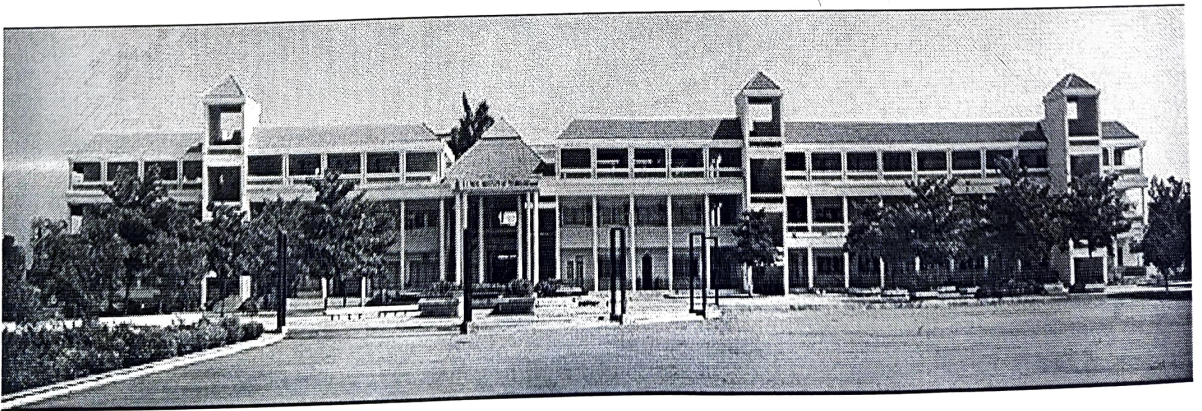
Shirpur Education Society's

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

Course Structure and Syllabus

Honors Degree Program in Computational Finance
Computer Science and Engineering (Data Science)

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 Computational Finance(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)				
								[A]						[B]
Sem-IV														
1	H1	RCP23DCH1251	Financial Market and Risk Analysis	3			25	15	15	15	60	100	3	3
Total				3			25			15	60	100	3	

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Dean Academics/Dy. Director

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Prof. Dr. J. B. Patil
Director



**Honors Degree Program in
Computational Finance
Semester - IV**

Program: Computer Science & Engineering (Data Science)	S. Y. B.Tech.	Semester: IV
Financial Market and Risk Analysis (RCP23DCH1251)		

Prerequisite: Basic Mathematics

Course Objective(s):

1. To provide an understanding of various financial institutions, their functions, as well as to introduce various financial instruments and their associated risks.
2. Measurement, analysis and managing the risk using advanced techniques.
3. To introduce risk exposure in money markets, capital markets, and forex markets.

Course Outcomes:

CO	Course Outcomes	Blooms Level	Blooms Description
CO1	Explain the structures, functions, and operations of financial institutions and markets	L2	Understand
CO2	Identify and evaluate various financial instruments and assess the risks associated with them.	L3	Apply
CO3	Assess the risk in money markets, capital markets and forex markets.	L2	Understand



Financial Market and Risk Analysis (RCP23DCH1251) Course Contents

- Unit-I** 07 Hrs.
- Introduction to Financial Instruments:**
Money, equity, debt instruments, foreign exchange and their risk structure. Introduction to crypto currency (or contemporary currency)
- Unit-II** 10 Hrs.
- Money Market Instruments and Structure of Risk:**
Interest rate and valuation: present value and future value computation, annuity valuation, loan amortization, capital recovery and sinking fund factory, money market instruments and structure of their risk and returns.
- Equity Market and Risk Matrix:**
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.
- Unit-III** 08 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-IV** 08 Hrs.
- Debt Market, Structure of Risk and Return:**
Risk and Return of Debt instruments, types of bonds, term structure for interest rates, yield curve, spot rate and forward rate, duration and convexity of yield curve.
- Unit-V** 09 Hrs.
- International Finance:**
Foreign exchange market, determination of foreign exchange rate, purchasing power parity theory, interest rate parity, Fisher effects, international Fisher effect.
- Foreign Exchange Risk:**
Currency derivatives, currency quotes, triangular currency arbitrage, exchange rate exposure.



Text Books:

1. Jimmy Skoglund, Wei Chen, "Financial Risk Management", Wiley Publication, 2015.
2. Bharti. V. Pathak, "The Indian Financial System," Pearson Publication, 2018.

Reference Books:

1. Saunders. A. and Cornett M, "Financial Markets and Institutions" ,McGraw Hill Education,2014.
2. Hull. J. C," Options, "Future and other Derivatives", PHL publication 2013.
3. Brealey, Myers, Allen, "Principals of Corporate Finance", McGraw Hill, 2020.

Weblinks:

1. Financial Instruments:
<https://corporatefinanceinstitute.com/resources/wealth-management/financial-instrument/>
2. NPTEL course in Financial Institution and Markets: <https://nptel.ac.in/courses/110105121>

