



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Syllabus for Master of Business Administration (Part Time), 4th Semester**  
**Specialization: Finance Management (FM)**  
**Subject Name: Financial Derivatives**  
**Subject Code: 5549912**

**1. Learning Outcomes:**

Learning Outcome Component	Learning Outcome (Learner will be able to)
Business Environment and Domain Knowledge (BEDK)	<ul style="list-style-type: none"> <li>• <i>Describe</i> the characteristics of financial derivatives and their role in managing market risk.</li> </ul>
Critical thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI)	<ul style="list-style-type: none"> <li>• <i>Calculate</i> the futures and options price with cost of carry, binomial and BS Models on real time data from Exchanges &amp; analyze them with current market price.</li> <li>• <i>Interpret</i> pricing derivative instruments and hedge market risk based on numerical data and current market trends.</li> </ul>
Global Exposure and Cross-Cultural Understanding (GECCU)	<ul style="list-style-type: none"> <li>• <i>Comprehend</i> latest developments in financial derivative products.</li> <li>• <i>Analyze</i> the influence of the differences among international markets on swaps.</li> </ul>
Social Responsiveness and Ethics (SRE)	<ul style="list-style-type: none"> <li>• <i>Evaluate, synthesize and communicate</i> the ethical implications of financial risk management policies and practices to an intended audience.</li> </ul>
Effective Communication (EC)	<ul style="list-style-type: none"> <li>• <i>Justify</i> the use of particular strategies for hedging / speculation.</li> </ul>
Leadership and Teamwork (LT)	<ul style="list-style-type: none"> <li>• <i>Simulate</i> hedging strategies using financial derivatives.</li> </ul>

**LO – PO Mapping: Correlation Levels:**

**1 = Slight (Low); 2 = Moderate (Medium); 3 = Substantial (High), “-“= no correlation**

Sub. Code: 5549912	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
LO1: <i>Describe</i> the characteristics of forward and futures contracts and understand their pricing mechanisms.	3	1	-	2	1	-	-	3	3
LO2: <i>Calculate</i> the futures and options price with cost of carry, binomial and BS Models on real time data from Exchanges & analyze them with current market price.	2	2	3	-	1	-	-	1	2
LO3: <i>Interpret</i> pricing derivative instruments and hedge market risk based on numerical data and current market trends.	1	2	3	-	1	-	-	1	2
LO4: <i>Comprehend</i> latest developments in financial derivative products.	1	2	1	2	3	2	-	1	1
LO5: <i>Analyze</i> the influence of the differences among international markets on	1	2	1	2	3	2	-	1	1



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swaps.									
LO6: <i>Evaluate, synthesize and communicate</i> the ethical implications of financial risk management policies and practices to an intended audience.	2	-	2	3	-	-	3	1	-
LO7: <i>Justify</i> the use of particular financial derivative instruments and strategies for hedging / speculation.	3	-	-	3	-	2	-	2	1
LO8: <i>Simulate</i> hedging strategies using financial derivatives.	2	2	2	3	-	3	-	-	1

**2. Course Duration:** The course duration is of **40 sessions of 60 minutes each.**

**3. Course Contents:**

Module No:	Contents	No. of Sessions	70 Marks (External Evaluation)
<b>I</b>	<p><b>Introduction to risk management: (Only theory)</b></p> <ul style="list-style-type: none"> <li>• Defining and managing risk</li> <li>• Upside and downside risks</li> <li>• Commodity price risk</li> <li>• Interest rate risk</li> <li>• Approaches to risk management</li> </ul> <p><b>Introduction to derivatives:</b></p> <ul style="list-style-type: none"> <li>• Defining derivatives and derivative markets</li> <li>• Spot v/s Derivatives markets</li> <li>• Forward, Futures, Options, Swaps</li> <li>• Uses of derivatives</li> </ul> <p><b>Derivatives Market:</b></p> <ul style="list-style-type: none"> <li>• International and Indian derivatives market</li> <li>• Derivative exchanges</li> <li>• Trading system and types of traders</li> <li>• Trading process, online trading</li> <li>• Clearing and settlement system</li> <li>• Regulatory framework of derivatives market in India.</li> </ul>	10	18
<b>II</b>	<p><b>Forward Contracts:</b></p> <ul style="list-style-type: none"> <li>• Meaning, purpose, advantages and problems</li> <li>• Pricing of commodity forward contracts (<b>Theory and numerical</b>).</li> <li>• Interest rate forwards (<b>Theory and numerical</b>).</li> </ul>	10	18



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	<p><b>Future Contracts:</b></p> <ul style="list-style-type: none"> <li>• Meaning, difference between forward and future contracts</li> <li>• Specifications of future contracts</li> <li>• Closing the position (<b>Theory and numerical</b>).</li> <li>• Margins and marking-to-market (<b>Theory and numerical</b>).</li> <li>• Cost of Carry Models (<b>Theory and numerical</b>).</li> <li>• Price quotes, settlement price, open interest</li> <li>• Types of orders</li> </ul> <p><b>Hedging, Speculation and Arbitrage using Futures:</b></p> <ul style="list-style-type: none"> <li>• Basis risk. Factors affecting basis risk</li> <li>• Single stock futures and Stock Index Futures (<b>Theory and numerical</b>).</li> <li>• Commodity futures (<b>Theory and numerical</b>).</li> </ul>		
<b>III</b>	<p><b>Fundamentals of Options:</b></p> <ul style="list-style-type: none"> <li>• Options issued by corporations (introduction)</li> <li>• Meaning of options contract, options terminologies</li> <li>• Moneyness in options (ITM, ATM, OTM) (<b>Theory and numerical</b>).</li> <li>• Factors affecting Options premium</li> <li>• Exchange traded options</li> </ul> <p><b>Call and Put options. (Theory and numerical).</b></p> <p><b>Options Trading Strategies:</b></p> <ul style="list-style-type: none"> <li>• Uncovered</li> <li>• Covered</li> <li>• Spread</li> <li>• Combination</li> </ul> <ul style="list-style-type: none"> <li>• <b>Put-Call Parity: (Theory and numerical).</b></li> <li>• Risk free security</li> <li>• Put-call relationship</li> </ul> <ul style="list-style-type: none"> <li>• <b>Binomial Options Pricing Model: (Theory and numerical).</b></li> <li>• Binomial Options Pricing model for call and put options</li> <li>• Single period and two-period binomial options pricing model</li> </ul>	10	17
<b>IV</b>	<ul style="list-style-type: none"> <li>• <b>Black-Scholes Options Pricing model: (Theory and numerical).</b></li> <li>• Stock price behaviour</li> <li>• Assumptions in Black-Scholes model</li> <li>• Black-Scholes model for pricing call and put options</li> </ul> <p><b>Greeks in Options (only theory):</b></p> <ul style="list-style-type: none"> <li>• Risks in options trading</li> </ul>	10	17



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	<ul style="list-style-type: none"> <li>Characteristics of options hedging</li> <li>Greeks in options hedging: delta, gamma, theta, vega, rho.</li> </ul> <p><b>SWAPS (Only theory):</b></p> <ul style="list-style-type: none"> <li>Swaps: meaning, types, terminologies</li> <li>Forward swaps</li> <li>Swaptions</li> <li>Equity swaps</li> <li>Commodity swaps</li> <li>Cross Currency Interest Rate Swaps</li> </ul>		
V	<p><b>Practical:</b></p> <ul style="list-style-type: none"> <li>Analysing Various Derivative Contract Specifications from Exchanges.</li> <li>Mark to Market Margin Calculation on Real time data from Exchanges.</li> <li>Understanding the trading and settlement process and other documentary requirements at Brokers' office to open the trading account.</li> <li>Calculating the futures and options price with cost of carry, binomial and BS Models on real time data from Exchange &amp; analysing them with current market price.</li> <li>Forming of different futures and options trading strategies with the real time data from Exchange.</li> <li>Forming of hedging with real time data from commodities and currency Exchanges.</li> </ul>	---	(30 marks CEC)

**4. Pedagogy:**

- ICT enabled Classroom teaching
- Case study
- Practical / live assignment
- Interactive class room discussions

**5. Evaluation:**

Students shall be evaluated on the following components:

	<b>Internal Evaluation</b>	<b>(Internal Assessment- 50 Marks)</b>
<b>A</b>	<ul style="list-style-type: none"> <li>Continuous Evaluation Component</li> </ul>	30 marks
	<ul style="list-style-type: none"> <li>Class Presence &amp; Participation</li> </ul>	10 marks
	<ul style="list-style-type: none"> <li>Quiz</li> </ul>	10 marks
<b>B</b>	<b>Mid-Semester examination</b>	<b>(Internal Assessment-30 Marks)</b>
<b>C</b>	<b>End –Semester Examination</b>	<b>(External Assessment-70 Marks)</b>

**6. Reference Books:**

No.	Author	Name of the Book	Publisher	Year of Publication / Edition
1	Sundaram Janakiramanan	Derivatives and Risk Management	Pearson Education	2011 / 1 <sup>st</sup>



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2	Rajiv Srivastava	Derivatives & Risk Management	Oxford University	2014 / 2 <sup>nd</sup>
3	R. Madhumathi, M. Ranganatham	Derivatives & Risk Management	Pearson	2014 / 2 <sup>nd</sup>
4	John C. Hull	Fundamentals of Futures and Options Market	Pearson	2016 / 8 <sup>th</sup>
5	Verma	Derivatives & Risk Management	Tata McGraw hill	2008
6	Vohra & Bagri	Futures and Options	McGraw Hill	2017 / 2 <sup>nd</sup>
7	David A. Dubofsky, Thomas W. Miler	Derivatives: Valuation and Risk Management	Oxford University Press	Latest Edition
8	A. Maheshwari, D. Chugh	Financial Derivatives	Pearson	2012 / 1 <sup>st</sup>

Note: Wherever the standard books are not available for the topic appropriate print and online resources, journals and books published by different authors may be prescribed.

**7. List of Journals/Periodicals/Magazines/Newspapers / Web resources, etc.**

1. Indian Journal of Finance
2. International Journal of Financial Markets and Derivatives
3. Business Standard
4. The Economic Times
5. Financial Express
6. NSE & BSE, SEBI, FMC, RBI Websites
7. ICFAI journal of Derivative Market
8. Business Today
9. Business India
10. Business World
11. Finance India
12. Treasury Management
13. Financial Risk Management