



GUJARAT TECHNOLOGICAL UNIVERSITY
 Syllabus for Integrated Master of Business Administration, 9th Semester
Functional Area Specialization: Finance
Subject Name: Financial Derivatives
Subject Code: 2597121

With effective
 from academic
 year 2020-21

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"> • <i>Describe</i> the characteristics of financial derivatives and their role in managing market risk.
Critical thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI)	<ul style="list-style-type: none"> • <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. • <i>Interpret</i> pricing derivative instruments and hedge market risk based on numerical data and current market trends.
Global Exposure and Cross-Cultural Understanding (GECCU)	<ul style="list-style-type: none"> • <i>Comprehend</i> latest developments in financial derivative products. • <i>Analyze</i> the influence of the differences among international markets on swaps.
Social Responsiveness and Ethics (SRE)	<ul style="list-style-type: none"> • <i>Evaluate, synthesize</i> and <i>communicate</i> the ethical implications of financial risk management policies and practices to an intended audience.
Effective Communication (EC)	<ul style="list-style-type: none"> • <i>Justify</i> the use of particular strategies for hedging / speculation.
Leadership and Teamwork (LT)	<ul style="list-style-type: none"> • <i>Simulate</i> hedging strategies using financial derivatives.

LO – PO Mapping: Correlation Levels:

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

Sub. Code: 4539222	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)
I	<p>Introduction to risk management: (Only theory)</p> <ul style="list-style-type: none"> • Defining and managing risk • Upside and downside risks • Commodity price risk • Interest rate risk • Approaches to risk management <p>Introduction to derivatives:</p> <ul style="list-style-type: none"> • Defining derivatives and derivative markets • Spot v/s Derivatives markets • Forward, Futures, Options, Swaps • Uses of derivatives <p>Derivatives Market:</p> <ul style="list-style-type: none"> • International and Indian derivatives market • Derivative exchanges • Trading system and types of traders • Trading process, online trading • Clearing and settlement system • Regulatory framework of derivatives market in India. 	10	18
II	<p>Forward Contracts:</p> <ul style="list-style-type: none"> • Meaning, purpose, advantages and problems • Pricing of commodity forward contracts (Theory and numerical). • Interest rate forwards (Theory and numerical). 	10	18



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



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

A	Internal Evaluation	(Internal Assessment- 50 Marks)
	• Continuous Evaluation Component	30 marks
	• Class Presence & Participation	10 marks
	• Quiz	10 marks
B	Mid-Semester examination	(Internal Assessment-30 Marks)
C	End –Semester Examination	(External Assessment-70 Marks)

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 st



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2	Rajiv Srivastava	Derivatives & Risk Management	Oxford University	2014 / 2 nd
3	R. Madhumathi, M. Ranganatham	Derivatives & Risk Management	Pearson	2014 / 2 nd
4	John C. Hull	Fundamentals of Futures and Options Market	Pearson	2016 / 8 th
5	Verma	Derivatives & Risk Management	Tata McGraw hill	2008
6	Vohra & Bagri	Futures and Options	McGraw Hill	2017 / 2 nd
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 st

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