GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Master of Business Administration, 3rd Semester
Subject Name: Financial Derivatives
Subject Code: 1539504

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)	• *Describe* the characteristics of financial derivatives and their role in managing market risk.
Critical thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI)	• *Calculate* 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. • *Interpret* pricing derivative instruments and hedge market risk based on numerical data and current market trends.
Global Exposure and Cross-Cultural Understanding (GECCU)	• *Comprehend* latest developments in financial derivative products. • *Analyze* the influence of the differences among international markets on swaps.
Social Responsiveness and Ethics (SRE)	• *Evaluate*, *synthesize* and *communicate* the ethical implications of financial risk management policies and practices to an intended audience.
Effective Communication (EC)	• *Justify* the use of particular strategies for hedging / speculation.
Leadership and Teamwork (LT)	• *Simulate* 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: *Describe* the characteristics of forward and futures contracts and understand their pricing mechanisms.	3	1	-	2	1	-	-	3	3
LO2: *Calculate* 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: *Interpret* pricing derivative instruments and hedge market risk based on numerical data and current market trends.	1	2	3	-	1	-	-	1	2
LO4: *Comprehend* latest developments in financial derivative products.	1	2	1	2	3	2	-	1	1
LO5: *Analyze* the influence of the differences among international markets on swaps.	1	2	1	2	3	2	-	1	1

LO6: *Evaluate*, *synthesize* and *communicate* the ethical implications of financial risk management policies and practices to an intended audience.	2	-	2	3	-	-	3	1	-
LO7: *Justify* the use of particular financial derivative instruments and strategies for hedging / speculation.	3	-	-	3	-	2	-	2	1
LO8: *Simulate* 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	**Introduction to risk management: (Only theory)** • Defining and managing risk • Upside and downside risks • Commodity price risk • Interest rate risk • Approaches to risk management **Introduction to derivatives:** • Defining derivatives and derivative markets • Spot v/s Derivatives markets • Forward, Futures, Options, Swaps • Uses of derivatives **Derivatives Market:** • 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	**Forward Contracts:** • Meaning, purpose, advantages and problems • Pricing of commodity forward contracts **(Theory and numerical).** • Interest rate forwards **(Theory and numerical).** **Future Contracts:** • Meaning, difference between forward and future contracts	10	18

	• 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 **Hedging, Speculation and Arbitrage using Futures:** • Basis risk. Factors affecting basis risk • Single stock futures and Stock Index Futures **(Theory and numerical).** • Commodity futures **(Theory and numerical).**		
III	**Fundamentals of Options:** • 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 **Call and Put options. (Theory and numerical).** **Options Trading Strategies:** • Uncovered • Covered • Spread • Combination • **Put-Call Parity: (Theory and numerical).** • Risk free security • Put-call relationship • **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	• **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 **Greeks in Options (only theory):** • Risks in options trading • Characteristics of options hedging • Greeks in options hedging: delta, gamma, theta, vega, rho.	10	17

	SWAPS (Only theory): • Swaps: meaning, types, terminologies • Forward swaps • Swaptions • Equity swaps • Commodity swaps		
V	**Practical:** • 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 / 1st
2	Rajiv Srivastava	Derivatives & Risk Management	Oxford University	2014 / 2nd
3	R. Madhumathi, M. Ranganatham	Derivatives & Risk Management	Pearson	2014 / 2nd

4	John C. Hull	Fundamentals of Futures and Options Market	Pearson	2016 / 8th
5	Verma	Derivatives & Risk Management	Tata McGraw hill	2008
6	Vohra & Bagri	Futures and Options	McGraw Hill	2017 / 2nd
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 / 1st

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