

I>Course Content:

Semester	III Core
Subject	Derivatives and Risk Management
Course Code	MMSFC305 (RGCMS)
Credits	4
Duration	40

Learning Objective:

1	To understand the concepts related to derivatives markets and gain in-depth knowledge of functioning of derivatives markets.
2	To learn the derivatives pricing and application of strategies for financial risk management.
3	To acquaint learners with the trading, clearing and settlement mechanism in derivatives markets.

Prerequisites if any	Financial management, mathematics and statistics.
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Module

Sr. No.	Content	Activity	Course Outcomes
1.	Introduction to Derivatives Economic functions of derivatives, application of derivatives – for risk management and speculation (Leveraging), basic terms and properties of options, futures and forwards.	Classroom discussion	MMSFC305.1
2.	Forwards and Futures Pricing and valuation - futures and forwards, Risk management using futures, introduction to currencies, commodity and interest rate futures.	Classroom discussion and problem solving	MMSFC305.1
3.	Mechanics and Properties of Options Co-relation with underlying assets, boundary conditions for options, Put-call parity and its interpretation, synthetic options and risk free arbitrage.	Classroom discussion and problem solving	MMSFC305.2
4.	Option Trading Strategies Directional strategies (Bull call spread, Bear put spread, Ladder, Ratio spreads), Non-directional strategy (butterfly, condor), Volatility based strategies (Straddle, Strangle, Calendar Spread), Hedging strategies	Classroom discussion/problem solving/drawing graph and live trading	MMSFC305.2

	(Protective put, covered call).		
5.	Introduction to Options Valuation Binominal Model for valuation, risk neutral probabilities and their interpretation, binomial model's application for American options where the underlying pays the dividend, Black and Scholes Model, log – normal distribution, interpreting the B & S formula, seeing options sensitivity to different variable.risk, warrants and convertibles, bond valuation	Classroom discussion and problem solving	MMSFC305.3
6.	Risk Management Options sensitivity to the underlying, volatility, strike price, interest rate, time to expiration. Scenario analysis. Risk management using Greeks- Delta, Theta, Vega and Gamma risks of options, understanding options Greeks for various trading strategies (volatility and directional spreads), delta / dynamic hedging and relating the cost of Delta.	Classroom discussion	MMSFC305.3
7.	Options Volatility Historical and implied volatility, volatility smile, term structure of volatility, some advance models of volatility estimation, value at risk, historical simulation, model building approach, stress testing and back testing.	Classroom discussion and problem solving	MMSFC305.4
8.	Trading, Clearing and Settlement in Derivatives Markets Meaning and concept, SEBI guidelines, Trading mechanism, learning mechanism-role of NSCCL, settlement mechanism, types of settlement, accounting and taxation aspect of derivatives trade.	Classroom discussion	MMSFC305.4

II>Course Outcomes

Code	Course Outcome	Cognition
MMSFC305.1	Apply the basics of derivatives market and valuation of forwards and futures	Apply
MMSFC305.2	Apply the mechanics of options and pay-off of strategies	Apply
MMSFC305.3	Apply the concept of valuation of options and option greeks	Apply
MMSFC305.4	Understand volatility and the process of trading, clearing and settlement	Understand

Text books

Sr. No.	Books
1	Redhead Keith, Financial Derivatives - An introduction to futures, forwards, options and swaps
2	Yadav Surendra S, Jain PK, Foreign exchange markets: understanding derivatives and other instruments
3	Hull John C. - Options, Futures and other derivatives

Reference Books

Sr. No.	Books
1	Bhaskar P Vijaya, Mahapatra B - Derivatives simplified: An introduction to risk management
2	Bhalla V K - Financial derivatives (risk management)