
DERIVATIVES

Course Curriculum

DERIVATIVES

This course covers financial derivatives such as forward contracts, futures contracts, options, swaps and other recently created derivatives. It follows pragmatic approach and discusses both the derivative markets and the derivative products and their use. The emphasis of the course is on the successful execution of financial strategies using derivatives as product. It focuses on practical understanding of how the derivative markets function, how the derivative products are used and why they are used and how they are usually priced.

Learning Objectives (LO)

- To enable candidates to have a detailed understanding of the main characteristics of financial derivatives and their relationships with the underlying assets;
- To be able to use of these instruments in a wide range of hedging , trading and arbitrage purposes;
- To understand how to control the risks of financial derivatives and derivatives portfolios.
- To demonstrate a knowledge of the regulatory framework for financial derivatives;
- To demonstrate a detailed understanding of the valuation principles and models for derivatives
- To be able to design alternative derivatives strategies that would be appropriate for different situations and describe the advantages and disadvantages of each;

Papers and Syllabus

The course for Derivatives shall be comprised of the following four modules

MODULE 1

1. Financial derivatives an introduction

1.1 Derivative markets

1.1.1 Past and present

1.1.2 Difference between exchange traded and OTC derivatives

1.2 Derivative instruments

1.2.1 Concept and definition

1.2.2 Purpose and criticism

1.2.3 Basics about forwards, futures, options and swaps

1.3 Hedgers, arbitrageurs and speculators

2. Forward market and products

2.1 Structure and role of global forward market

2.2 Concept, characteristics and definition

2.3 Types of forward contracts

2.3.1 Equity forward

2.3.2 Currency forward

2.3.3 Bond and interest rate forward

2.3.4 Forward rate agreement

2.4 Valuation of forward

2.5 Generic valuation principles

2.6 Valuation of individual product

2.7 Hedging using forwards

2.8 Credit risk and forward contracts

3. Future Market and products

- 3.1 Structure and role of global future market including leading future exchanges
- 3.2 Concept, characteristics and definition
- 3.3 Trading mechanism and concept of margins (IM, MTM, MM)
- 3.4 Future vs. forward
- 3.5 Types of future contracts
 - 3.5.1 Stock future
 - 3.5.2 Index future
 - 3.5.3 Currency future
 - 3.5.4 Interest rate future
 - 3.5.5 Commodity future
- 3.6 Valuation of future
 - 3.6.1 Generic valuation principles-cost of carry model
 - 3.6.2 Valuation of individual future product
- 3.7 Basis risk
- 3.8 Daily settlement price and Final settlement price
- 3.9 Hedging
- 3.10 Arbitrage
- 3.11 Speculations

MODULE 2

4. Option market and products

- 4.1 Structure and role of global option market including OTC and leading option exchanges
- 4.2 Concept, characteristics and definition
- 4.3 Option terminologies
 - 4.3.1 Call option
 - 4.3.2 Put option
 - 4.3.3 American and European option
 - 4.3.4 Option writer and buyer
 - 4.3.5 Option premium including intrinsic value and time value
 - 4.3.6 Strike price
 - 4.3.7 ITM, ATM and OTM
 - 4.3.8 Option payoff
- 4.4 Trading mechanism and concept of margins
- 4.5 Future vs option
- 4.6 Types of options
 - 4.6.1 Stock option
 - 4.6.2 Index option
 - 4.6.3 Currency option
 - 4.6.4 Commodity option
 - 4.6.5 Options on futures
 - 4.6.5 Interest rate options
- 4.7 Put -Call Parity

- 4.8 Valuations of options
 - 4.8.1 Factors affecting option valuation
 - 4.8.2 Binomial model (portfolio replicating and risk neutral approach)
 - 4.8.3 BSOPM
- 4.9 Upper and lower limit of option prices
- 4.10 Exercising an option vs closing out
- 4.10 Hedging
- 4.11 Arbitrage
- 4.12 Option Greeks (delta, gamma, theta, Vega, rho)
- 4.13 Delta hedging
- 4.14 Option strategies (spreads, straddles and strangles)

5. Exotic option

- 5.1 Types of exotic option
 - 5.1.1 Bermuda option
 - 5.1.2 Forward start option
 - 5.1.3 Compound option
 - 5.1.4 Barrier option
 - 5.1.5 Chooser option
 - 5.1.6 Basket option
 - 5.1.7 Binary option
 - 5.1.8 Look back option
 - 5.1.9 Asian option
- 5.2 Hedging and pricing of exotic option

MODULE 3

6. Swaps

- 6.1 Structure and role of global option market including OTC and leading option exchanges
- 6.2 Concept, characteristics and definition
- 6.3 Types of swaps
 - 6.3.1 Interest rate swap (IRS)
 - 6.3.2 Currency swap
 - 6.3.3 Equity swap
 - 6.3.4 Other types of swaps
- 6.4 valuation of swap
- 6.5 Swaption
- 6.6 credit risk and swap
- 6.7 strategies and applications of swaps

7. Credit Derivatives

- 7.1 The basic concept
- 7.2 role and structure of credit derivatives
- 7.3 Types of credit derivative
 - 7.3.1 CDS (credit default swap)
 - 7.3.2 TRS (total return swap)
 - 7.3.3 CSO (credit spread option)
 - 7.3.4 CLN (Credit link notes)
 - 7.3.5 CDO (collateralized debt obligations)

8. Other Derivatives

- 8.1 Weather derivatives
- 8.2 Energy derivatives
- 8.3 Insurance derivatives

MODULE 4

9. **Accounting of derivative instruments**
10. **Taxation of derivative instruments**
11. **Learning from derivative mishaps**
12. **Derivatives Risk Management**
 - 12.1 Market Risk
 - 12.2 Credit Risk
 - 12.3 Liquidity Risk
 - 12.4 Operational Risk
 - 12.5 Enterprise Risk
 - 12.6 VAR
13. **Regulatory framework for derivatives**
14. **Guidelines of RBI, FEDAI, FIMMDA and SEBI**
15. **International Swaps and Derivatives Association Master Agreement**

Duration of the Course:

400 Hours as follows	
Self Study	300 hours
Class room teaching	50 hours
Case Study in Groups	50 hours

Fee of the Course

Rs. 25,000 including the evaluation fee