

<b>Course title: Derivatives and Risk Management</b>				
<b>Course code:</b> PPM 123	<b>No. of credits:</b> 2	<b>L-T-P distribution:</b> 28-0-0	<b>Learning hours:</b> 28	
<b>Pre-requisite course code and title (if any):</b>				
<b>Department:</b> Department of Business & Sustainability				
<b>Course coordinator(s):</b> Dr. Rajiv Seth		<b>Course instructor(s):</b> Dr. Rajiv Seth		
<b>Contact details:</b> rajiv.seth@teriuniversity.ac.in				
<b>Course type:</b> Elective		<b>Course offered in:</b>		
<b>Course description</b>				
<p>Risk is all pervasive. For business the various kinds of risk relate to price, interest rates, foreign exchange rates, credit etc. Of late tactical management of these risks has gained prominence especially with advent of derivative products. The course concerns with tactical management of these risk through investment in financial assets.</p>				
<b>Course objectives</b>				
<p>The objective of this course is to familiarise the participants with the various instruments available for risk management. It covers rather simpler instruments such as options, futures, swaps, and credit derivatives. Besides discussing the pricing of these instruments and hedging principles the course would also aim at introduction of some complex instruments such as options on futures and swaps etc</p>				
<b>Learning Objectives</b>				
<p>As the subject is of practical utility and significance, the course would be conducted in an interactive manner. To stimulate the thought process the participants are requested to read any financial newspaper daily and present/seek views on the subject/article of their interest. Conceptual framework of the subject shall be covered adequately through lectures/power point presentations.</p>				
<b>Course contents</b>				
<b>Module</b>	<b>Topic</b>	<b>L</b>	<b>T</b>	<b>P</b>
1	forwards and futures, Trading and Settlement, Margins, Marking to Market, Open Interest	2	0	0
2	<b>Commodity Futures</b> Hedging, Speculation, Arbitrage with commodity futures, Pricing of forward and futures, Normal Backwardation Convergence, Basis risk, optimal hedge ratio <b>Chapter 3</b>	2	0	0
3	<b>Currency Forwards and Futures</b> Foreign Exchange Markets, and Rates, Hedging with Forwards, Non Deliverable Forwards, Currency Futures, Pricing Currency Futures, Hedging, Speculation, and Arbitrage with Currency Futures <b>Chapter 5</b>	2	0	0
4	<b>Stock and Index Futures</b> Trading of Index Futures, Pricing, Risk Adjustment, Hedging, Speculation, and Arbitrage with Index Futures <b>Chapter 4</b>	2	0	0
5	<b>Options</b> Basics of call and put options, Their payoffs, Intrinsic value and time value, American and European options, At the money, out of money and in the money options, Bounds to option pricing,	2	0	0

	Arbitrage based price limits, Put call parity Chapter 8 & 9			
6	<b>Option Pricing</b> Binomial Option Pricing model <b>Chapter 10</b> <b>Chapter 12 &amp; 13</b>	2	0	0
7	<b>Option Pricing</b> Risk Neutral valuation, Black Scholes option pricing model and assumptions, Interpretation of Black Scholes model.	2	0	0
8	<b>Option Trading Strategies</b> Straddle, Strangle, Butterfly, Bull and Bear spread, Ratio spread, Box spread, Condor, Synthesizing with options <b>Chapter 12</b>	2	0	0
9	<b>Exotic Options</b> Introduction (definitions, payoff and applications) to Forward Start option, Digital Option, Chooser Option, Barrier option, Shout option, Asian option, Compound option <b>Chapter 13</b>	2	0	0
10	<b>Option Greeks (Option Sensitivities)</b> Delta, Theta, Gamma, Delta Hedging <b>Chapter 11</b>	2	0	0
11	<b>Swaps</b> Forward Rate Agreement, Currency Swaps, Interest Rate Swaps, Applications of swaps, Cancellation and Valuation of Swap <b>Chapters 6 and 7</b>	2	0	0
12	<b>Interest Rate Derivatives</b> <b>(Black's Model and applications)</b> Caps, Floor, Collars, Swaptions, Options on Bonds, Options on futures, Interest rate futures <b>Chapter 15</b>	4	0	0
		28	0	0
<b>Evaluation criteria</b> <ul style="list-style-type: none"> <li>• Class Participation 10%</li> <li>• Project 30%</li> <li>• Mid Term Test 20%</li> <li>• End Term Examination 40%</li> </ul>				
<b>References:</b> <b>Text:</b> <b>Derivatives and Risk Management</b> By Rajiv Srivastava, Oxford University Press <b>References:</b> 1. <b>Options, Futures, and Other Derivatives</b> , 7 <sup>th</sup> Edition By John C Hull, (Pearson Education)  2. <b>Futures Options and Swaps</b> By Robert Kolb (Blackwell Publishing)				

### **3. Financial Derivatives**

By Keith Redhead (Prentice Hall of India)

### **4. Derivatives; An Introduction**

By Robert A Strong (Thomson South Western)

### **5. An Introduction to Derivatives and Risk Management**

Don Chance Thompson South Western

#### **Additional information (if any)**

#### **Modules**

Sessions plan as above would be followed with following module objectives:

#### *An overview of risk and derivatives:*

The objective of the session is to draw distinction between various kinds of risks that a firm is exposed to. Some of these risks are manageable with derivative instrument. The session on Introduction to derivatives is intended to provide an overview of derivatives, their characteristics and misconceptions about them.

#### *Forwards and Futures:*

These sessions are aimed at introducing the terminology of forwards and futures, their applications of hedging for variety of underlying assets such as commodities, currencies, stocks and interest rates. This would also cover the pricing principles and methods of trading, settlement etc. Separate sessions for commodities, currencies and stock indices would deal extensively with the examples of hedging, speculation and arbitrage.

#### *Options:*

Sessions on options are aimed at developing an understanding about the complex nature of the derivative. The objective is to familiarize the participants with the various ways to value options. Hedging using options would be discussed in details with suitable real life applications. Trading strategies with options would deliberate upon how the combination of options can be used to achieve the desired risk profiles of different classes of investors. Sessions on exotic options would concentrate on how the parameters of options can be modified to suit the individual needs of hedging and cost associated with them.

#### *Swaps and Interest Rate Derivatives:*

These sessions are useful for the sectors such as banking, construction and infrastructure that are sensitive to broad economic factors and interest rate structures and changes in them. The tools of managing the interest rate risk would be introduced with emphasis on swaps and interest rate futures.

#### **Student responsibilities**

#### **Course Reviewer:**

Mr P.S.Narayan

*Ecoeye, Social and Community Initiatives, Wipro*

Mr Brij Sethi

*Ecoeye, Social and Community Initiatives, Wipro*

Mr Rakesh Sharma

*Strategy & Business Development, Philips Electronics India Limited*

Mr Pawan Deep Singh

*Strategy & Business Development, Philips Electronics India Limited*