



# INSTITUTE OF AERONAUTICAL ENGINEERING (Autonomous)

Dundigal, Hyderabad -500 043

## MASTER OF BUSINESS ADMINISTRATION

### COURSE INFORMATION SHEET

Course Title	FINANCIAL DERIVATIVES			
Course Code	CMB421			
Programme	MBA			
Semester	IV			
Course Type	PROFESSIONAL ELECTIVE-VI			
Regulation	IARE-R16			
Course Structure	Lectures	Tutorials	Practicals	Credits
	3	1	-	4
Course Coordinator	Mr. M Ramesh, Assistant Professor, MBA			
Course Faculty	Mr. M Ramesh, Assistant Professor, MBA			

#### I. COURSE OVERVIEW:

This course helps to analyze derivatives, such as forwards, futures, and options. These instruments have become extremely popular investment tools over the past several decades, as they allow one to tailor the amount and kind of risk one takes, be it risk associated with changes in interest rates, exchange rates, stock prices, commodity prices, inflation, weather, etc. They are used by institutions as well as investors, sometimes to hedge (reduce) unwanted risks, sometimes to take on additional risk motivated by views regarding future market movements.

#### II. COURSE PRE-REQUISITES:

Level	Course Code	Semester	Prerequisites	Credits
PG	CMB404	III	Security Analysis And Portfolio Management	3

#### III. MARKS DISTRIBUTION:

Subject	SEE Examination	CIA Examination	Total Marks
Financial Derivatives	70 Marks	30 Marks	100

#### SEMESTER END EXAMINATION (SEE):

The SEE is conducted for 70 marks of 3 hours duration. The syllabus for the theory courses is divided into FIVE units and each unit carries equal weight age in terms of marks distribution. The question paper pattern is as follows: Two full questions with 'either' 'or' choice will be drawn from each unit. Each question carries 14 marks.

#### CONTINUOUS INTERNAL ASSESSMENT (CIA):

CIA is conducted for a total of 30 marks, with 25 marks for Continuous Internal Examination (CIE) and 05 marks for Quiz / Alternative Assessment Tool (AAT).

**CONTINUOUS INTERNAL EXAMINATION (CIE):**

The CIE exam is conducted for 25 marks of 2 hours duration consisting of two parts. Part–A shall have five compulsory questions of one mark each. In part–B, four out of five questions have to be answered where, each question carries 5 marks. Marks are awarded by taking average of marks scored in two CIE exams.

**QUIZ / ALTERNATIVE ASSESSMENT TOOL (AAT):**

The AAT include seminars, assignments, term paper, open ended experiments, micro projects, five minutes video and MOOCs.

**IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:**

√	CHALK & TALK	X	QUIZ	√	ASSIGNMENTS	X	MOOCs
√	LCD / PPT	√	SEMINARS	X	MINI PROJECT	X	VIDEOS
X	OPEN ENDED EXPERIMENTS						

**V. ASSESSMENT METHODOLOGIES – DIRECT:**

√	CIE EXAMS	√	SEE EXAMS	√	ASSIGNMENTS	√	SEMINARS
X	LABORATORY PRACTICES	X	STUDENT VIVA	X	MINI PROJECT	X	CERTIFICATION
X	TERM PAPER						

**VI. ASSESSMENT METHODOLOGIES – INDIRECT:**

√	ASSESSMENT OF COURSE OUTCOMES (BY FEEDBACK, ONCE)	√	STUDENT FEEDBACK ON FACULTY (TWICE)
X	ASSESSMENT OF MINI PROJECTS BY EXPERTS		

**VII. COURSE OBJECTIVES (COs):**

The course should enable the students to:

- I. Demonstrate knowledge and understanding of how forward contracts, futures contracts, swap and options work, how they are used and how they are priced.
- II. Explain put call parity for European options and explain how put call parity is related to arbitrage and construction of synthetic options
- III. Develop a theoretical framework within which all derivatives can be analyzed and valued and provide a comprehensive analysis on the properties of options and futures
- IV. Understand the basic types of derivatives, their payoff functions, their developments, and the economic roles they play in the financial markets

**VIII. COURSE LEARNING OUTCOMES (CLOs):**

Students, who complete the course, will have demonstrated the ability to do the following:

S. No	Description
CCMB421.01	Provides the opportunity to build the general taxonomy of financial derivatives and to develop intuitions, critical thinking and problem solving skills.
CCMB421.02	Understand the design and pricing of a forward rate agreement; understand the payoff of a Eurodollar futures; understand the design of swaps and how to determine the swap rate by
CCMB421.03	Understand the application of option pricing theory in the area of financial engineering and corporate finance

CCMB421.04	Calculate and interpret the prices of synthetic call option, synthetic put option, synthetic bond, and synthetic underlying stock.
CCMB421.05	Apply the Black-Scholes option formula for the price of a European option and its Greeks. Understand the idea of delta-hedging
CCMB421.06	Understanding of the basic building blocks of hedging, and some of the tools and strategies available to banks for measuring and hedging the various risks to which they are
CCMB421.07	Demonstrate critical thinking, analytical and problem solving skills in the context of derivatives pricing and hedging practice.
CCMB421.08	Provide participants with an in-depth knowledge of the structure and mechanics of the derivatives market/products, as well as the tools needed to price these instruments.
CCMB421.09	Develop innovative skills by structuring solutions to manage the risk exposure of financial assets of the company and compare the VAR in various portfolios and interpret the difference creatively and critically.
CCMB421.10	Calculate the derivatives of functions given as parametric equations and interpret their meanings geometrically and physically
CCMB421.11	Provide practical and simple investment and corporate financial management strategies using derivatives in a manner this will allow students to apply these concepts and skills.
CCMB421.12	Apply the general pricing theory to value new kinds of derivative instruments And are able to communicate their knowledge both written and orally.
CCMB421.13	Develop analytical, problem solving, planning, communication, interpersonal and creative skills in swaps contract in derivatives
CCMB421.14	Discover the arbitrage opportunities by analyzing historical and recent data and test the effectiveness of hedging portfolio in different kinds of scenarios.
CCMB421.15	Understand the working of commodity exchanges in commodity derivatives market and their governance, regulatory structures
CCMB421.16	Demonstrate the ability to develop interpersonal skills relevant to swaps in managing the risk and pricing the swaps
CCMB421.17	Acquire the knowledge and develop capability to development of models for valuing derivatives based upon the mathematics of stochastic calculus.

#### IX. HOW PROGRAM OUTCOMES ARE ASSESSED:

Program Outcomes		Level	Proficiency assessed by
<b>PO1</b>	Ability to apply management fundamentals in practical world.	H	Lectures, Exercises.
<b>PO2</b>	An ability to identify, formulate and solve managerial problems.	S	Exercises.
<b>PO3</b>	Demonstrate abilities such as initiative taking and innovative thinking in their acts.	S	Assignments
<b>PO4</b>	An ability to function in multi-disciplinary teams.	S	--
<b>PO5</b>	To inculcate zeal of self learning.	N	Exercises.
<b>PO6</b>	Enhancing entrepreneurship abilities so that the students are induced to undertake independent ventures.	N	--
<b>PO7</b>	Enhancing knowledge of contemporary issues.	N	--
<b>PO8</b>	An ability to understand professional and ethical responsibility.	N	--
<b>PO9</b>	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	N	.
<b>PO10</b>	An ability to communicate effectively.	S	Seminars
<b>PO11</b>	An ability to understand the impact of managerial solutions in a global, economic, environmental and societal context.	N	--

<b>Program Outcomes</b>		<b>Level</b>	<b>Proficiency assessed by</b>
<b>PO12</b>	Recognition of the need for and an ability to engage in life-long learning.	S	Assignments
<b>N= None</b>		<b>S= Supportive</b>	<b>H = Highly Related</b>

**X. HOW PROGRAM SPECIFIC OUTCOMES ARE ASSESSED:**

<b>Program Specific Outcomes</b>		<b>Level</b>	<b>Proficiency assessed by</b>
<b>PSO1</b>	Able to utilize the knowledge of management practices in innovative, dynamic and challenging environment in the organizations..	S	Lectures
<b>PSO2</b>	Create value through identifying customer needs and implementing integrated production and distribution of goods, services and information..	S	Guest lectures.
<b>PSO3</b>	Can develop capacity to adapt and innovative to solve problems, to cope with unforeseen events and to manage in unpredictable environments.	N	--
<b>PSO4</b>	An understanding of social awareness and environmental wisdom along with ethical responsibility to have a successful career and to sustain passion and zeal for real world applications using optimal recourses as an entrepreneur	S	Assignments
<b>N - None</b>		<b>S - Supportive</b>	<b>H - Highly Related</b>

**XI. SYLLABUS:**

<b>UNIT – I</b> <b>INTRODUCTION TO DERIVATIVES:</b> Development and growth of derivative markets, types of derivatives uses of derivatives, fundamental linkages between spot & derivative markets, the role of derivatives market, uses and misuses of derivatives.
<b>UNIT – II</b> <b>FUTURE AND FORWARD MARKET:</b> Structure of forward and future markets, mechanics of future markets hedging strategies, using futures, determination of forward and future prices, interest rate futures currency futures and forwards
<b>UNIT – III</b> <b>BASIC OPTION STRATEGIES:</b> Options, distinguish between options and futures, structure of options market, principles of option pricing,  Option pricing models: the binomial model, the Black-Scholes Merton model. Basic option strategies, advanced option strategies, trading with options, hedging with options, currency options.
<b>UNIT – IV</b> <b>COMMODITY MARKET DERIVATIVES:</b> Introduction, types, commodity futures and options, swaps commodity exchanges multi commodity exchange, national commodity derivative exchange role, functions and trading.
<b>UNIT – V</b> <b>SWAPS:</b> Concept and nature, evolution of swap market, features of swaps, major types of swaps, interest rate swaps, currency swaps, commodity swaps, equity index swaps, credit risk in swaps, credit swaps, using swaps to manage risk, pricing and valuing swaps

**TEXT BOOKS:**

1	John C Hull, Options, Futures and other derivatives”, Pearson, 2012.
2	Robert A Strong,” Derivatives An Introduction”, Thomson, 2012
3	Dubofsky, Miller,” Derivatives Valuations and Risk Management”, Oxford,2012

**REFERENCES:**

1	Don M. Chance, Robert Brooks," Derivatives and Risk Management Basic", Cengage, 2012.
2	Sundaram Das," Derivatives Principles and Practice", McGraw Hill, 2012.

**XII. COURSE PLAN:**

The course plan is meant as a guideline. There may probably be changes.

<b>Lecture No.</b>	<b>Learning Objectives</b>	<b>Topics to be covered</b>	<b>Reference</b>
1-2	Acquire knowledge of derivative markets	Development and growth of derivative markets	T1 - 1.1 to 1.5
3-4	Understand the impact of derivatives	Types of derivatives and uses of derivatives	T1 - 1.7
5-7	Analyze the relationship among derivatives	fundamental linkages between spot & derivative markets	T1 – 2.1 to 2.6
8-9	Understand the role of derivatives	the role of derivatives market	T1 – 2.8
10-11	Identify the uses and misuses of derivatives	Uses and misuses of derivatives.	T1- 3.7 to 3.8
12-14	Acquire knowledge of forward and future markets	Structure of forward and future markets	T1 - 3.5 to 3.9
15-16	Explain the mechanism of future market	mechanics of future markets	T1 – 4.1 to 4.9
17-18	Discuss the need of futures in risk management	hedging strategies using futures	T1 – 5.1 to 5.2
19-21	Identify the methods in pricing of forwards and futures	determination of forward and future prices	T1 – 5.3 to 5.5
22-24	Understand the various types of futures and forwards	Interest rate futures currency futures and forwards.	T1- 5.3 to 5.5
25-26	Understand the concept of options	Options, distinguish between options and futures	T1-5.3 to 5.5
27-30	Acquire knowledge of options market	structure of options market, principles of option pricing,	T1 - 6.1 to 6.5
31-34	Analyze the pricing models of options	the binomial model, the black-Scholes Merton model	T1 - 5.7 to 5.8
35-36	Understand the different strategies in options	Basic option strategies, advanced option strategies	T1 - 6.1, 6.3
37-38	Understand the risk management with options	Trading with options, hedging with options, currency options.	T2 - 7.1 to 7.2
39-42	Understand the concept of commodity derivatives	Introduction, types, commodity futures and options	T2 - 7.3, 7.4
43-45	Analyze the various commodity exchanges in derivatives	Multi commodity exchange role, functions and trading.	T1 - 6.1 to 6.8

46-47	Acquire the knowledge of swap market	Concept and nature, evolution of swap market and features of swaps	T2 - 8.3, 8.4
48-51	Understand the different types of swaps	interest rate swaps, currency swaps, commodity swaps, equity index swaps	T1 - 7.1 to 7.6
51-53	Apply swaps in hedging against risk	Credit risk in swaps, credit swaps, using swaps to manage risk, pricing and valuing swaps.	T2 - 9.2, 9.8

### XIII. GAPS IN THE SYLLABUS - TO MEET INDUSTRY / PROFESSION REQUIREMENTS:

S. NO	DESCRIPTION	PROPOSED ACTIONS	RELEVANCE WITH POs	RELEVANCE WITH PSOs
1	Derivatives complicated in many aspects of the accounting, regulating, and statistical reporting of financial transactions.	Seminars / NPTEL	PO 1, PO 2, PO 5	PSO 2
2	Risk management tool for hedging against fluctuations in foreign currency	Seminars / Guest Lectures / NPTEL	PO 2, PO 5, PO 9	PSO 1

### XIV. MAPPING COURSE OBJECTIVES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

Course Objectives	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4
I	S	-	-	-	S	-	-	-	-	-	-	S	-	-	-	S
II	-		-	-	-	-	S	-		-	S	-	-	-	S	-
III	-	-	-	-	S	-	-	-	S	-	-	-		-	-	-
IV	-	S	-	-	-	-	-	-		-	-	-	S	-	S	-

S= Supportive

H = Highly Related

### XV. MAPPING COURSE LEARNING OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

Course Learning Outcomes	Program Outcomes (Pos)												Program Specific Outcomes (PSOs)			
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4
CAEC002.01	S	S	-	-	-	-	-	-	-	-	-	S	S	-	-	-
CAEC002.02	S		-	-	-	S	-	-	S	S	-	S	S	-	-	S
CAEC002.03	-	S	-	-	-	-	S	-	S	-	-	-	-	S	-	-
CAEC002.04	-	-	-	-	S	-	-	-	-	S	-	S	S	-	-	-
CAEC002.05	-	-	-	-	S	-	-	S	-	S	-	-	-	-	S	-
CAEC002.06	-	S	-	-	-	-	-	-	-		S	-	S	-	-	-
CAEC002.07	S	S	-	-	S	-	S	-	S	-	-	S		S	-	-
CAEC002.08	S	S	-	-	-	-	-	-	-	-	-	S	S	-	-	-

CAEC002.09	-	-	-	-	S	-	-	-	S	-	-	-	S	-	-	-
CAEC002.10	S	-	-	-	-	-	-	-	S	S	-	-	S	-	-	-
CAEC002.11	-	H	-	-	-	S	-	-	-	-	-	-	-	-	-	S
CAEC002.12	H	-	-	-	-	-	-	-	S	S	-	-	S	-	S	-
CAEC002.13	S	S	-	-	-	-	-	-	-	S	-	S	-	-	-	-
CAEC002.14	-	-	-	-	S	-	-	S	-	-	-	S	-	-	S	-
CAEC002.15	-	-	-	-	-	-	-	-	-	S	-	-	S	-	-	-
CAEC002.16	-	-	-	-	S	-	S	-	-	-	-	-	-	-	S	-
CAEC002.17	-	-	-	-	S	-	-	-	-	S	-	S	S	-	S	-

**S= Supportive**

**H = Highly Related**

#### **XVI. DESIGN BASED PROBLEMS (DP) / OPEN ENDED PROBLEM:**

- I. How do you cooperate and seek all venues in order to fix the global economic, commercial, financial and monetary system in forex market
- II. Discuss the role of internal oversight/auditing to participate effectively and efficiently in guaranteeing the appropriate application of international accounting standards.
- III. How can you Seek to harmonize the methods of measurement and disclosure of financial statements with all honesty and transparency by economic and financial institutions to assist in making the right decisions as this would stimulate healthy competition and reduce time, effort and cost.

**HOD, MASTER OF BUSINESS ADMINISTRATION**