INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal, Hyderabad -500 043

MASTER OF BUSINESS ADMINISTRATION

COURSE DESCRIPTOR

Course Title	**FINANCIAL MODELING**				
Course Code	CMB420				
Programme	MBA				
Semester	IV				
Course Type	Professional Elective-V				
Regulation	IARE - R16				
Course Structure	**Theory**			**Practical**	
	Lectures	**Tutorials**	**Credits**	**Laboratory**	**Credits**
	3	0	3	-	-
Chief Coordinator	Ms. P. Bindu Madhavi, Assistant Professor.				
Course Faculty	Ms. G. Joseph mary, Assistant Professor. Ms. P. Bindu Madhavi, Assistant Professor.				

I. COURSE OVERVIEW:

This course introduces the excel in finance; a financial model is simply a tool that's built in Excel to forecast a business' financial performance into the future. The forecast is typically based on the company's historical performance and requires preparing the income statement, balance sheet, cash flow statement and supporting schedules. The output of a financial model is used for decision making and performing financial analysis, whether inside or outside of the company. The main objective is to give proper awareness for student to learn how to calculate and manage the raising capital, making acquisitions, Growing the business, Selling or divesting assets and business units, Budgeting and forecasting, capital allocation and valuing a business. This course is presented to students by power point projections, lecture notes, course handouts, assignments, objective and subjective tests.

II. COURSE PRE-REQUISITES:

Level	Course Code	Semester	Prerequisites	Credits
PG	CMB002	I	Financial Accounting and Analysis	3
	CMB101	I	IT Applications for Business Lab	2

III. MARKS DISTRIBUTION:

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

IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:

✔	Chalk & Talk	✘	Quiz	✔	Assignments	✘	MOOCs
✔	LCD / PPT	✔	Seminars	✘	Mini Project	✔	Videos
✘	Open Ended Experiments						

V. EVALUATION METHODOLOGY:

The course will be evaluated for a total of 100 marks, with 30 marks for Continuous Internal Assessment (CIA) and 70 marks for Semester End Examination (SEE). Out of 30 marks allotted for CIA during the semester, marks are awarded by taking average of two CIA examinations or the marks scored in the make-up examination.

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 weightage 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. There could be a maximum of two sub divisions in a question.

The emphasis on the questions is broadly based on the following criteria:

50 %	To test the objectiveness of the concept.
50 %	To test the analytical skill of the concept OR to test the application skill of the concept.

Continuous Internal Assessment (CIA):
CIA is conducted for a total of 30 marks (Table 1), with 25 marks for Continuous Internal Examination (CIE), 05 marks for Alternative Assessment Tool (AAT).

Table 1: Assessment pattern for CIA

Component	Theory		Total Marks
Type of Assessment	CIE Exam	AAT	
CIA Marks	25	05	30

Continuous Internal Examination (CIE):
Two CIE exams shall be conducted at the end of the 8th and 16th week of the semester respectively. 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.

Alternative Assessment Tool (AAT):
Marks shall be awarded considering the average of two assignments /seminars for every course. The AAT may include seminars, assignments, term paper, open ended experiments, five minutes video and MOOCs.

VI. HOW PROGRAM OUTCOMES ARE ASSESSED:

Program Outcomes (POs)		Strength	Proficiency assessed by
PO1	Managerial Skills: Apply knowledge of management theories and practices to solve business problems.	2	Assignment
PO2	Decision-making Skills: Foster Analytical and critical thinking abilities for data based decision making.	3	Assignment
PO4	Communication Skills: Ability to understand, analyze and communicate global, economic, legal and ethical aspects of business.	2	Seminars
PO6	Entrepreneurial Skills: Ability to demonstrate the skills and evaluate issues related to entrepreneurship and to develop as entrepreneurs	2	Seminars
PO8	Technology Skills: Inculcate and develop technical skills to face the competitive world successfully.	3	Assignment

3 = High; 2 = Medium; 1 = Low

VII. COURSE OBJECTIVES :

The course should enable the students to:	
I	Understand the basic features and functions in excel.
II	Apply models in different areas of finance including investments.
III	Emphasize the concepts of corporate finance and derivatives.
IV	Identify the risk which can be built in the model to enhance decision making process.
V	Gain knowledge in the advantage of financial modeling using VBA.

VIII. COURSE OUTCOMES (COs):

CO Code	CO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
CMB420.01	CO 1	Ability to understand the financial modeling in excel, understanding advanced features of excel database functions in excel, creating charts, using forms and control tool box .	PO6,PO8	3
CMB420.02	CO 2	Understand the finance functions present in excel by creating dynamic models.	PO 4,PO6	2
CMB420.03	CO 3	Create an awareness for students about the present scenario of manager and sensitivity analysis features.	PO2	3
CMB420.04	CO 4	Examine different statistical distributions used in simulation generating random numbers that follow a particular distribution, building models in finance using simulation.	PO1,PO4	2
CMB420.05	CO 5	Use excel sheet to prepare common size statements directly from trial balance and	PO2,PO8	3

CO Code	CO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
		also forecasting the financial statements.		
CMB420.06	CO 6	Analyze the risk in project appraisal, simulation in project appraisal; excel in valuation, determination of value drivers, discontinued cash flow valuation, risk analysis in valuation	PO2	3
CMB420.07	CO 7	Determine efficient portfolio, creating dynamic portfolios, portfolio insurance and fixed income portfolio management using excel.	PO6	2
CMB420.08	CO 8	Demonstrate the excel in derivatives black and schools model, Greeks in excel, real options valuation and building a mega model.	PO1,PO8	3
CMB420.09	CO 9	Categorize how to make decision rules, message box and input box, debugging in excel for preparing financial statements .	PO2	3
CMB420.10	CO 10	Interpret the recording and editing macros, subroutines and functions in excel.	PO6	2
CMB420.11	CO 11	Explain how to design an advanced financial models using visual basic application user forms.	PO8	3

3 = High; 2 = Medium; 1 = Low

IX. MAPPING COURSE LEARNING OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES :

Course Outcomes	Program Outcomes (POs)							
	PO 1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1						2		3
CO 2				2		2		
CO 3		3						
CO 4	2			2				
CO 5		3						3
CO 6		3						
CO 7						2		
CO 8	2							3
CO 9		3						
CO 10						2		
CO 11								3

3 = High; 2 = Medium; 1 = Low

X. ASSESSMENT METHODOLOGIES – DIRECT

CIE Exams	PO1, PO2, PO4, PO6, PO8	SEE Exams	PO1, PO2, PO4, PO6, PO8	Assignments	PO1,PO2, PO8	Seminars	PO4,PO6
Laboratory Practices	-	Student Viva	-	Mini Project	-	Certification	-

Term Paper	-						

XI. ASSESSMENT METHODOLOGIES - INDIRECT

✔	Early Semester Feedback	✔	End Semester OBE Feedback
✘	Assessment of Mini Projects by Experts		

XII. SYLLABUS

UNIT-I	**UNDERSTANDING THE BASIC FEATURES OF EXCEL**
Introduction to modeling, introduction to excel, understanding advanced features of excel database functions in excel, creating charts, using forms and control toolbox, understanding finance functions present in excel, creating dynamic models.	
UNIT-II	**SENSITIVITY ANALYSIS USING EXCEL**
Scenario manager, other sensitivity analysis features, simulation using excel different statistical distributions used in simulation generating random numbers that follow a particular distribution, building models in finance using simulation.	
UNIT-III	**EXCEL IN ACCOUNTING:**
Preparing common size statements directly from trial balance, forecasting financial statements using excel**,** analyzing financial statements by using spreadsheet model**,** excel in project appraisal, determining project viability**.** Risk analysis in project appraisal**,** simulation in project appraisal**;** excel in valuation, determination of value drivers**,** discontinued cash flow valuation**,** risk analysis in valuation.	
UNIT-IV	**EXCEL IN PORTFOLIO THEORY:**
Determining efficient portfolio, creating dynamic portfolios, portfolio insurance, fixed income portfolio management using excel, excel in derivatives black and scholes model in excel, Greeks in excel, real options valuation, building a mega model	
UNIT-V	**UNDERSTANDING SUBROUTINES AND FUNCTIONS AND BUILDING SIMPLE FINANCIAL MODELS USING SUBROUTINES AND FUNCTION**
Recording and editing macros, subroutines and functions, decision rules, message box and input box, debugging, designing advanced financial models using visual basic application user forms, other advanced features, actual model building.	
Text Books:	
1. Simon Benninga, Financial Modeling, MIT press, 4th edition, 2014. 2. Chandan Sengupta, Financial Modeling using Excel and VBA, Wiley, 3rd edition, 2004.	
Reference Books:	
1. S.Christian Albright, VBA for Modelers, Thomson/ Brooks-Cole, 2nd edition, 2007. 2. Chandan Sengupta, Financial Analysis and Modeling Using Excel and VBA, Wiley, 2nd edition, 2004. 3. John Walkenbach, Excel 2013 Power Programming with VBA, Microsoft, 3rd edition, 2013.	

XIII. COURSE PLAN:

The course plan is meant as a guideline. Probably there may be changes.

Lecture No	Topics to be covered	Course Outcomes (COs)	Reference

Lecture No	Topics to be covered	Course Outcomes (COs)	Reference
1-4	Introduction to modeling, introduction to excel, understanding advanced features of excel database functions in excel	CO1	T1:22.5 R1:2.3
5-7	Creating charts, using forms and control toolbox, understanding finance functions present in excel, creating dynamic models.	CO1	T1:22.5 R1:2.4
8-9	Scenario manager and other sensitivity analysis features	CO2	T1:22.6 R1:2.6
10-12	Simulation using excel different statistical distributions used in simulation generating random numbers that follow a particular distribution	CO3	T1:22.7 R1:4.4
13-14	Building models in finance using simulation. Preparing common size statements directly from trial balance	CO3	T1:22.7 R1:4.10
15-18	Forecasting financial statements using excel**,** analyzing financial statements by using spreadsheet model	CO4	T1:22.8 R1:4.15
19-21	Excel in project appraisal ,determining project viability**.** Risk analysis in project appraisal	CO4	T1:22.9 R1:5.4
22-23	Simulation in project appraisal. Excel in valuation, determination of value drivers	CO5	T1:22.9 R1:5.8
24-25	Discontinued cash flow valuation**,** risk analysis in valuation.	CO5	T1:23.10 R1:6.8
26-27	Determining efficient portfolio ,Creating dynamic portfolios, portfolio insurance, fixed income portfolio management using excel.	CO5	T1:23.10 R1:6.13
28-29	Excel in derivatives black and schools model in excel, Greeks in excel	CO6	T1:23.9 R1:7.5
30-31	Recording and editing macros, subroutines and functions, decision rules.	CO7	T1:23.10 R1:7.5
32-35	Message box and input box, debugging, real options valuation, building a mega model. other advanced features.	CO8	T1:23.10 R1:8.1
36-39	Designing advanced financial models using visual basic application user forms.	CO8	T1:23.1 R1:9.2
40-43	Subroutines and functions, decision rules, message box and input box, debugging.	CO9	T1:23.1 R1:9.4
44-48	Recording and editing macros, actual model building.	CO10	T1:23.1 R1:9.9

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

S No	Description	Proposed actions	Relevance with POs
1	Markowitz Model and Sharp Single Index Model, Portfolio Investment Process, Calculation of Beta and Alpha .	Seminars	PO1, PO4
2	PV Model in Excel, Bonds Yield and Measures, Duration in Excel, Bond Value Theorem in Excel .	Guest Lectures	PO 2,PO8
3	Comparable Company Analysis: Selecting comparable companies, Spreading comparable companies, Analyzing the valuation multiples, Concluding and understanding value	Guest Lectures	PO2, PO6, PO8

Prepared by:
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