SEMESTER IV

FINANCIAL MODELING

Programme: M.Com (Applied Finance) **Max Marks: 100**
Course Code: P20/COM/DSC/403/P **Max Hours:90**
Type of course: DSC **Hours per week: 6 hrs**
No. Of Credits: 4

Course Objective:

The objective of this course is to enable students to present management information and key performance indicators in a concise understandable and decision oriented manner and also gain expertise in spreadsheet functions and tools to build efficient models and use of scenario analysis.

Course Outcomes:

CO1: To explain what financial models are
CO2: To use various inbuilt functions of EXCEL to prepare a model**.**
CO3: To prepare a model using various different methods of visual presentation
CO4: To present a model using various different methods of visual presentation
CO5: To participate in financial planning of an organisation by helping them in preparation of various models**.**
CO6: To use forecasting technique to make various models.
CO7: To assess various business scenarios available for a business situation
CO8: To prepare a sensitivity report.
CO9: To present all they do in getting a dynamic model ready and usable
CO10: To document all they do in getting a dynamic model ready and usable

MODULE I – INTRODUCTION: (18 Hrs)

Concept of financial Modeling- difference between spread sheet and model-types and purposes of financial model-skills required for a good modeller- best practices in spread sheet design-tool selection-

Excel for financial modeling:

Excel basics- - Excel features-financial – logical- statistical - mathematical, lookup reference. Custom formatting- shortcuts- array functions - pivot tables analysis – Tool pak-nested-cell references -named ranges-working with dates-linking external file- Useful windows keyboard shortcuts for financial modellers

MODULE II - BUILDING AND PRESENTING A MODEL: (18 Hrs)

Attributes of a good model- documenting excel model-debugging excel model- error avoidance strategies -using formula auditing tools for debugging-learning modeling using excel-graphic and written presentation-chart types-bubble and waterfall charts-charting with two different axes

MODULE III - USES OF FINANCIAL MODELLING: (18 Hrs)

Basic financial forecasting- Forecasting Models: Review of forecasting methods; financial "drivers"; Adding forecasts to the case models. Depreciation- project finance- bond calculation-capital budgeting-BEP-variance-cash flow-cost of capital-(simple models building exercises)

MODULE IV - RISK MANAGEMENT, STRESS TESTING AND SCENARIO ANALYSIS AND SENSITIVITY ANALYSIS: (18 Hrs)

Risk analysis and management- Risk Techniques: Risk and multiple answers- Scenario techniques - advanced financial functions- adding sensitivity to the case model- Advanced scenario methods- Composite methods.

Understanding stress testing and scenario analysis and sensitivity analysis- difference between scenario- sensitivity and what if analysis-overview of scenario tools-advanced conditional formatting- model review and checklist **(theory)**

MODULE V - MANAGEMENT REPORTING AND MODEL COMPLETION: (18 Hrs)

Management Reporting: Requirement to consolidate and summarize data- consolidating data from different sources- spread sheet report managers- pivot tables- Techniques for summarising data- producing a management analysis. Model Completion: Model review- rebuilding an inherited- removing redundant assumptions and source data –auditing a financial model-Documentation- Final audit.

Suggested readings

1. Alastair Day, Mastering Financial modeling in Microsoft Excel; Pearson, India Edition
2. Danielle Stein Fairhurst ,Using excel for business analysis, Wiley finance
3. Ragnar Lavas Et al ,Financial Modeling and Asset valuation with Excel; Routledge
4. S Benninga Financial Modeling, MIT Press.
5. Building Financial Models, John Tjia ,McGraw-Hill.

Practicals

1. Using excel functions with emphasis on array, pivot, nesting, goal seek
2. Simple chart creation, understanding erroneous models, audit tool usage, simple bubble and waterfall charts.
3. Depreciation- project finance- bond calculation-capital budgeting-BEP-variance-cash flow-cost of capital-Investment analysis-option pricing- decision tree-company valuation-(simple models building exercises).
4. Sensitivity analysis in a model
5. Preparing a report.

FINANCIAL MODELING

MODEL QUESTION PAPER

COURSE CODE: P20/COM/DSC/403/P **MAX.MARKS: 60**
TIME: 2 ½ HRS

SECTION - A

I. Answer the following **5 M**

A. **Say true or false Any <u>FIVE</u>**

1. Basic Accounting knowledge is essential for becoming a good modeler.
2. Spreadsheet and model are the same.
3. A financial model need not be robust
4. Financial modeling is the task of building an abstract representation of a real world financial situation.
5. Hard coding is one of the best modeling practices.
6. Layout and design is an important part of the model build.

B. Name the appropriate excel function/formula Any <u>FIVE</u> **5 M**

1. Converts all letters in a text string to lowercase
2. Returns the number of characters in a text string
3. Returns the specified number of characters from the start of a text string
4. Joins several text strings into one text string
5. Replaces part of a text string with a different text string.
6. Returns the serial number of the date that is the indicated number of months before or after the start date.

C. Choose the correct option/s (Any 5) **5 M**

1. Shortcut that copies the far left cell across the range

   a. CTRL +R

   b. CTRL +P

   c. Shift +D

   d. Shift +B

2. Shortcut to highlight a row

a. SHIFT +space bar
b. CTRL +spacebar
c. CTRL +HOME
d. CTRL +END

3. …… chaining links throughout the entire model instead of linking to the source.

a. Daisy
b. Rosy
c. EXCEL
d. VBA

4. The chart type that fits best for trend and functional relation

a. Line
b. Pie
c. Bar
d. Radar

5. Combination of two or more formulas is called

a. Index
b. Match
c. Index & Match
d. Nesting

6. Returns value_if_error if expression is an error and the value of the expression itself otherwise

a. Error
b. Value #
c. If error
d. Range

SECTION -B

II. Answer any <u>THREE</u> **3 x 15 = 45 M**

II. Amrita Corp provides the following information for their Umbrella business. How will you stress test and present consolidated results to the management inorder to understand various situations and take better financial decision

* In the peak season the Umbrellas can be sold for RS 535per umbrella and the material will cost RS 439 per umbrella. The number of umbrellas that can be sold in this period is 2725

* In the period of lesser demand the Umbrellas can be sold for RS 495per umbrella and the material will cost RS 409 per umbrella. The number of umbrellas that can be sold in this season is 2500

  In the off season due to fall in demand the Umbrellas can be sold for RS 395per umbrella and the material will cost RS 339 per umbrella. The number of umbrellas that can be sold in this season is 1275

  Other expenses are as follows:

	₹
MachineCharge	15,000.00
Wages	16,000.00
Travel	25,000.00
Allowance	10,000.00
Salaries	56,000.00
Food	19,000.00

III. You are considering purchasing an empty block upon which you are considering developing a residential villa. Create a property development feasibility model based on following information. **15 M**

The assumptions are:

* The land will cost	₹ 43,00,000.00
* Council contribution fees will be	₹ 7,50,000.00
* The properties that we develop will be	5000 sft
* Building cost per sft will be	₹ 1,500.00
* The selling price per sft for the property will be	₹ 3,000.00
Sales commission to the estate agent will be	2.5% of sales price

Various Scenarios	Building cost per sft	*The selling price per sft for the property will be
Best Case	₹ 1,250.00	₹ 3,300
Base Case	₹ 1,500.00	₹ 3,000
Worst Case	₹ 1,750 .00	₹ 2,700

IV. Prepare a flexible budget from the following information for 75% &100% **15 M**

At 80% capacity

	Variable cost (per unit)	Fixed cost
No Of units	800 units	
Wages	₹ 2.00	
Consumable stores	₹ 1.50	
Maintainence	₹ 1.00	₹ 500.00
Power and fuel	₹ 1.00	₹ 1,000.00
Depreciation		₹ 4,000.00
Insurance		₹ 1,000.00

V. Discounting rate 20% **15 M**

Year	Cash outflow (In Lakhs)	Cash Inflow (In Lakhs)
0	210	
1	0	70
2	0	70
3	0	80
4	0	90
5	0	60

1. Prepare a dynamic model to calculate pay back period
2. Calculate IRR
3. Calculate NPV