University of Kerala

Discipline	Mathematics				
Course Code	UK2MDCMAT101				
Course Title	Business Mathematics				
Type of Course	MDC				
Semester	II				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours per week
	3	3			3
Pre-requisites	Basic algebra				
Course Summary	The course covers methods for finding simple interest and compound interest using different period of compounding concepts like index numbers, time series, trend arc - introduced and different ways for finding these are dealt in detail.				

Detailed Syllabus

Module	Unit	Contents	Hrs
I	**Basic Mathematics of Finance**		**9**
	1	Nominal rate of Interest and effective rate of interest, Continuous Compounding, force of interest, compound interest calculations at varying rate of interest (Chapter 8: Sections: 8.1, 8.2, 8.3, 8.4. 8.5, 8.6, 8.7, 8.9 of text [1])	
II	**Depreciation and discounting**		**9**
	2	Present value, interest and discount, Nominal rate of discount, effective rate of discount, force of discount, Depreciation (Chapter 8: Sections: 8.1, 8.2, 8.3, 8.4. 8.5, 8.6, 8.7, 8.9 of text [1])	

Module	Unit	Contents	Hrs
III	**Index numbers**		**9**
	3	Definition, types of index numbers, methods of construction of price index numbers, Laspeyer's price index number (Chapter 6 :Sections: 6.1, 6.3, 6.4, 6.5, 6.6, 6.8, 6.16, 6.17 (Unit II) of Text [1]	
IV	**Time Series**		**9**
	4	Definition of Time Series, Components of Time Series, Analysis of Time Series, Measurement of Trend- Free hand Method (Chapter 7: Sections: 7.1, 7.2, 7.4 (Unit II) of Text [1])	
V	**Teacher designed module - suggested topics**		**9**
	For internal assessment examinations only.		
	5	Paasche's price index number Fisher ideal index number Advantages and limitations of index numbers Measurement of Trend – Semi Average Method Method of Least Squares.	
	These topics can be found on Chapters 6 and 7 of Text [1]		

Textbook

1. B M Agarwal, Business Mathematics and Statistics, Vikas Publishing House, New Delhi, 2009.

References

1. Alpha C Chiang, Kevin Wainwright, Fundamental methods of Mathematical Economics, 4th Edition, Mc-Graw Hill, 2005.

2. Qazi Zameeruddin, et al., Business Mathematics, Vikas Publishing House, New Delhi, 2009.

Course Outcomes

CO No.	Upon completion of the course the graduate will be able to	PO/PSO	Cognitive Level	Knowledge Category	Lecture(L) Tutorial (T)	Practical (P)
CO 1	Define Index Numbers and find index numbers from a given data using various methods.	PSO1, PO1, 2, 3, 4, 5, 6, 7	U, E	L	C	
CO 2	Define Time Series, components of Time Series and related concepts.	PSO1, PO1, 2, 3, 4, 5, 6, 7	U	L	C	
CO 3	Solve problems related to simple and compound interest using varying periods of compounding.	PSO2, PO1, 2, 3, 4, 5, 6, 7	Ap, E	L	P	
CO 4	Use mathematical tools to analyse time series and measure trend	PSO2, PO1, 2, 3, 4, 5, 6, 7	E, Ap, An	L	P	

(R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create)
(F-Factual, C-Conceptual, P-Procedural, M-Metacognitive)

Mapping of CO with PSOs and POs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	2	1	2	1	2	3	1	2	1	2	1	-
CO2	3	2	2	1	2	1	2	1	1	3	1	1	1	-
CO3	2	3	2	2	1	1	2	3	1	1	1	2	-	-
CO4	1	3	2	1	1	1	2	3	1	1	1	2	-	-

(- -Nill, 1-Slightly/Low, 2-Moderate/Medium, 3-Substantial/High)

Assessment Rubrics

- Quiz/Assignment/Discussion/Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics

	Internal Examination	Assignment	Project Evaluation	End Semester Exam
CO1	✓	✓		✓
CO2	✓	✓		✓
CO3	✓	✓		✓
CO4	✓	✓		✓