University of Kerala

Descipline	Mathematics				
Cours Code	UK1DSCMAT109				
Course Title	Mathematics for Social Sciences - I				
Type of Course	DSC				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical	Total Hours per week
	4	4	-	-	4
Pre-requisites	Matrices				
Course Summary	This is a brief introductory course on matrices, system of linear equations and LPP				

Detailed Syllabus

Module	Unit	Contents	Hrs
I		**Matrices**	**12**
	1	Ordered pairs, Cartesian products, Relations	
	2	Functional Relations and Functions	
	Chapter 1: Sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.14, 1.15,1.16, 1.17 of Text [1]		
II		**Linear Equations**	**12**
	3	Equations and identities -Linear and quadratic equations	
	4	Solution of equations, Solutions of quadratic equations, Solution of simultaneous equations	
	Chapter 3: Section 3.1 of Text [1].		
III		**Linear Programming**	**12**
	5	Introduction, Basic assumptions, The general linear Programming Problem (For two variables only)	

Module	Unit	Contents	Hrs
	6	Feasible and basic feasible solutions, multiple optimal solutions, Problems with no feasible solution (simple problems only)l Geometry of Linear Programming Problem (Graphical Solution)	
	18: Section 18.1, 18.2, 18.4, 18.5 of Text [1]		
IV	**Functions and Curves**		**12**
	7	Demand functions and curves	
	8	Total Revenue curve, Cost Curves.	
	Chapter 4: Appendix of Text [1]		
V	**Suggestions for teacher designed module**		**12**
	For internal assessment examinations only.		
	9	Properties of Sets; Three or more sets: Venn Diagram Applications of Linear Equations Concept of degeneracy in an LPP Production functions, Marginal Product Curves	
	These topics can be found on Chapters 1: Section 1.9, 1.10; Chapter 3: Section 3.1; Chapter 18: Section 18.6; Chapter 4: Appendix of Text [1]		

Textbook

1. B.C. Mehta, G.M.K. Madnani, Mathematics for Economics. Sultan Chand & Sons, 1976.

References

1. Agarwal B.M, Business Mathematics and Statistics, Vikas Publishing House,New Delhi, 2009.
2. Allen, R.G.D., Mathematical Analysis for Economists, New Delhi: AITBS Publishers, 2008.
3. Yamane, Taro, Mathematics for Economists: An Elementary Survey. New Delhi: Prentice Hall of India, 2012.

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)	Assignment (As)
CO 1	Understand the concepts of sets, ordered pairs, relations and functions	PSO1, PO1, 2, 3, 4, 7	R, U	F,C	L	
CO 2	Solve linear and quadratic equations	PSO3, PO1, 2, 3, 6, 7, 8	U	P	L	
CO 3	Analyze and interpret solutions of linear programming problems using graphical method	PSO4, PO1, 2, 3, 4, 5, 6, 7, 8	An	P	L	
CO 4	Create Diagrams to represent Demand Functions, Total Revenue and Cost Functions	PSO5, PO1, 2, 3, 4, 5, 6, 7, 8	An	C	L	

(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	3	1	3	-	-	1	
CO2	-	-	3	-	-	-	2	3	2	-	-	1	3	2
CO3	-	-	-	-	3	-	3	2	1	2	2	2	3	1

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

Assessment Rubrics

- Quiz/Assignment/Discussion/Seminar
- Midterm Exam