Faculty of Management Studies

Master of Business Administration (Integrated) (Sem.-II)

In Effect from Academic Year 2023-24

Branch Name:	MANAGEMENT
Program Code:	MS301
Course Name:	Quantitative Methods for Business - II
Course Code:	2MS3010201T
Pre-requisite Course:	Commerce & Trade, Business. Forms of Business, Economics, Industry

Course Objectives:

The student gets knowledge about the scope and application of operations research in business and industry.

1) Exposes the student to use of various scientific tools and models.
2) To get knowledge about various decision making through operation research models.
3) To familiarize with the software in business problem solving.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
				Theory (Marks)		Practical (Marks)		
Lecture (L)	Tutorial (T)	Practical (P)	Credit	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	Total (Marks)
4	-	-	4	60	40	-	-	100

Subject Contents:

Sr No.	Topic	Total Hours	Weightage (%)
1	**Linear Programming – I:** Introduction of Operation Research, Meaning and Uses of Linear Programming, Mathematical Formulation of Liner Programming, Problem for Two Variables, Important Terms Used in Linear Programming, Solution of Liner Programming Problems By Graphical Method	9	20
2	**Linear Programming-II:** Introduction of Simplex Method, Slack Variable, Surplus Variable, Incoming Variable, Pivot Column, Pivot Row, Outgoing Variable, Solution of Liner Programming Problems By Simplex Method	9	20
3	**Transportation Problems:** Formulation of Transportation Problem, Its Initial Basic Feasible Solution by North-West Corner Rule, Matrix Minima (Least Cost Method, Vogel's Approximation Method VAM), and Optimum Solution by Modified Distribution Method, Degeneracy and Its Resolution	9	20
4	**Assignment Problems:** Meaning, Assignment Problem with Restriction, Unbalanced Assignment Problem, Maximization Problems and Its Optimum Solution by Hungarian Method	9	20
5	**Time Series Analysis** Definitions, Applications and Techniques of Time Series **Set Theory** Sets and Subsets, Unions and Intersections, Complements, Indexed Families of Sets, Cartesian Product of two Sets, relations, Partitions and Equivalence Relations, Functions, Images and Inverse Images of Sets, Composition of Functions, Finite & Infinite Sets	9	20

Text Books:

Sr. No.	Books
1	Business Statistics by Dean and Foster, Pearson India.
2	Business Mathematics by D.C. Sancheti and V.K. Kapoor, Sultan Chand & Sons
3	Business Statistics for Contemporary decision making by Ken Black, John Wiley

Reference Books:

Sr. No.	Books
1	Business Statistics by Kapoor and Gupta, Sultan Chand & Sons
2	Business Statistics by J K Sharma, Pearson publication
3	Introduction to Operations Research by Hillier & Lieberman, Tata McGraw Hill Publication
4	Operation research and statistical analysis by P. K. Gupta and Manmohan, Sultan Chand & Sons
5	Operation Research By S. D. Sharma, Kedar Nath & Co
6	Introduction to Operations Research by H.A. Taha, PHI Publications

List of Open Source Software/learning website:

1. http://www.managementstudyguide.com/planning_function.htm
2. https://swayam.gov.in/

LAB/Practical

1. Expert talk from Managers can be arranged for students to understand Assignment and transport related problem.
2. Students should work collaboratively to discuss and solve problems.

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand transportation problems in supply distribution management.	2 Understanding
CLO2	Enable the students to generate mathematical models of business scenarios	6 Create
CLO3	The student should have the ability to analyze the business situations.	4 Analyze
CLO4	To enable the use of statistical, graphical, and algebraic techniques wherever relevant.	3 Applying
CLO5	Analyze statistical data to support fact-based decision making.	4 Analyze
CLO6	To comprehend the decision-making process under uncertainty using statistical tools.	6 Create

Mapping of CLOs with Pos & PSOs

Course	Program Outcomes(POs)								Program Specific Outcomes(PSOs)	
Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CLO1	M		H						H	
CLO2		H	M			M			M	
CLO3		H	M	L				M		H
CLO4	M				M				M	
CLO5	H		H			M	M			H
CLO6				M		H		H		H

H: High, M: Medium, L: Low