

- Course: OE
Business Mathematics

Semester: I	Credits: 2	Subject Code:OE1-12307	Lectures: 30
--------------------	-------------------	-------------------------------	---------------------

Course Outcomes:
At the end of this course, the learner will be able to:
<ul style="list-style-type: none"> ● CO1- Recall, comprehend and associate mathematical tools in evaluating real world problems ● CO2- Relate and apply the properties of matrices to solve a linear system of business problems ● CO3- Formulate and implement the concept of LPP and Assignment to make business related decisions. ● CO4- Develop the ability to solve numerical problems

Unit 1: Matrices and Determinants	15
<ul style="list-style-type: none"> ● Determinants up to order 3 ● Definition of Matrix, Order of a Matrix ● Types of Matrices ● Transpose of a Matrix ● Singular and Non-Singular Matrices ● Algebra of Matrices ● Minors and Cofactors ● Adjoint of a Matrix ● Inverse of a Matrix using Adjoint Method(up to order 3) ● Solution of system of Linear Equations using the Coefficient Matrix(up to order 2) ● Problems based on the above all concepts ● Internal Assessment 	

Unit 2: Linear Programming Problem and Assignment Problem	15
<ul style="list-style-type: none"> ● Definition of Linear Inequation, Solution and Graphical Representation of In-equations in one and two variables ● Meaning of LPP ● Components of LPP- Objective function, Decision Variables, Constraints, Non-negative constraints) ● Mathematical formulation of LPP and its graphical solution(Feasible region, Optimal feasible region) ● Definition of Assignment Model and mathematical formulation of Assignment Model ● Hungarian method for solution of assignment problems 	



Board of Studies	Department	Name	Signature
Chairperson (HoD)	Mathematics and Statistics	Dr. Deepa Krishnamurthy	<i>Deepa</i> 13/4/21


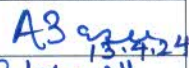
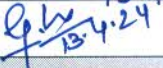
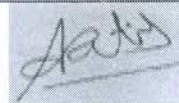


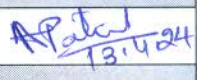
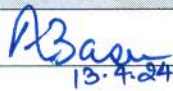
- Variations in assignment problems-Minimisation, Maximisation, objective, Unbalanced problem, Prohibited assignment, Multiple Optimal Solution
- Problems based on the above all concepts

Recommended Text Books:

- Rayarikar A. V. and Dixit P. G., *Business Mathematics*, Nirali Prakashan, June 2010.

Reference Books:

- Dikshit Amarnath ,*Business Mathematics* ,Jitendra Kumar Kain – Himalaya Publishers
- Bari, *Business Mathematics*, New Literature Publishing Co
- V.K Kapoor ,*Operations Research*, Sultan Chand & Sons
- S.D Sharma, *Operations Research*, Sultan Chand & Sons.hitale Ranjeet, *Statistical and Quantitative Methods*, Nirali Prakashan,2009
- Sharma J K,,*Operations Research, Theory and Applications*, Macmillan Publishers, 2009
- Taha Hamdy A, *Operations Research, An Introduction* , Pearson; 2004
- Sharma S.D, *Operations Research*, Kedar Nath Ram Nath& Co Publishers; 2003
- Chakravorty& Ghosh, *Linear Programming*, Mansi Press, 2003
- Mohindra J P, *ABC of Mathematics*, Modern Publication, 2005
- Rao A B, *Basic Mathematics*, Himalaya Mumbai, 2005
- Zameruddin Qazi, Bhambri Vijay K, *Business Mathematics*, Vikas Publishing, New Delhi, 2009

Board of Studies	Name	Signature	
Chairperson (HoD)	Dr. Deepa Krishnamurthi		
Faculty	Prof.Amrita Basu		
Faculty	Prof. Geetika Bhati		
Subject Expert (Outside SPPU)	Dr. Avinash Patil		
Subject Expert (Outside SPPU)	Dr. Prashant Malavadar		
VC Nominee (SPPU)	Dr. Manish Agalave		
Industry Expert	Ms. Amruta Patil		
Alumni	Ms. Janhavi Katkar		



Board of Studies	Department	Name	Signature
Chairperson (HoD)	Mathematics and Statistics	Dr. Deepa Krishnamurthy	