

**Business Mathematics**

**Semester I**

**Subject Code: BB11505**

**Lectures (Lects.): 48**

**OBJECTIVES:**

The syllabus aims in equipping students with an understanding of the business world and solutions to its complexities by:

- 1) acquiring knowledge of the concept of shares and share market.
- 2) understanding the applications of matrices in daily life and business.
- 3) using L.P.P , Transportation and Assignment and its application in business.
- 4) understanding the concept and application of Permutations and Combinations in business.

**Unit 1 : Shares and Dividend**

**No. of**

**Lects. 6**

- Concept of shares, Stock Exchange
- Face Value , Market Value
- Dividend , Equity Shares , Preferential Shares , Bonus Shares
- Problems based on all above concepts

Prof. Deepak Gujar

Prof. Ketki Kher

Mrs. Ashwini Chavan

Ms. Pritika Kawade

Prof. Stella Ambrose

Prof. Ritu Bhargava

Prof. Gitanjali Phadnis

Prof. Vrushali Paranjpe



**Unit 2 : Matrices and Determinants**

**No. of  
Lects.**

**10**

- Definition of a Matrix, Types of Matrices
- Algebra of Matrices
- Determinant , Adjoint of a Matrix , Inverse of a Matrix using Adjoint Method ( Upto 3<sup>rd</sup> order )
- Solution of Linear System of equations using inverse of the coefficient matrix ( Upto 3<sup>rd</sup> order )
- Problems based on all above concepts

**Unit 3 : Linear Programming Problem( L.P.P )**

**No. of  
Lects.**

**8**

- Meaning of L.P.P .
- Formulation of L.P.P
- Solution of an L.P.P. by Graphical Method

Prof. Deepak Gujar

Prof. Ketki Kher

Mrs. Ashwini Chavan

Ms. Pritika Kawade

Prof. Stella Ambrose

Prof. Ritu Bhargava

Prof. Gitanjali Phadnis

Prof. Vrushali Paranjpe



<b>Unit 4 : Transportation Problem ( T.P. )</b>	<b>No. of Lects. 6</b>
<ul style="list-style-type: none"><li>• Statement and meaning of T.P</li><li>• Methods of finding initial basic feasible solution by:<ul style="list-style-type: none"><li>i) North West Corner Rule</li><li>ii) Matrix Minimum Method</li><li>iii) Vogel's Approximation Method</li></ul></li><li>• Simple numerical problems based on above methods</li></ul>	
<b>Unit 5 : Assignment Problem and Sequencing</b>	<b>No. of Lects. 10</b>
<ul style="list-style-type: none"><li>• Mathematical formulation of an Assignment Problem</li><li>• Hungarian Method for solution of Assignment Problem</li><li>• Special cases – i) Maximization in Assignment Problem ii) Unbalanced Assignment Problem</li><li>• Sequencing Problem – Processing n jobs through two machines and through three machines</li></ul>	

Prof. Deepak Gujar

Prof. Ketki Kher

Mrs. Ashwini Chavan

Ms. Pristika Kawade

Prof. Stella Ambrose

Prof. Ritu Bhargava

Prof. Gitanjali Phadnis

Prof. Vrushali Paranjpe

**Unit 6 : Permutations and Combinations**

**No. of  
Lects. 8**

- Definition and formulae of Permutations and Combinations
- Fundamental Principle of Counting,
- Factorial Notation
- Elementary problems on Permutations and Combinations

**Recommended Text Books:**

- 1) Business Mathematics by Dikshit Amarnath
- 2) Business Mathematics by Bari
- 3) Business Mathematics by Shaikh Anwar
- 4) Operations Research by V.K Kapoor
- 5) Operations Research by S.D Sharma

Prof. Deepak Gujar

Prof. Ketki Kher

Mrs. Ashwini Chavan

Ms. Pritika Kawade

Prof. Stella Ambrose

Prof. Ritu Bhargava

Prof. Gitanjali Phadnis

Prof. Vrushali Paranjpe