

**ST. JOSEPH'S COLLEGE (AUTONOMOUS),  
BENGALURU**

Syllabus for B. A/B.Sc. (Honors) Mathematics

Name of the Degree Program : B.A./B.Sc.  
Discipline Course : Mathematics  
Starting Year of Implementation: 2021-22

**SEMESTER – I**  
**Mathematics Open Elective-II**  
**(For Students of any other stream)**  
**Pre-requisite :10<sup>th</sup> Std. Mathematics**

<b>MATOET 1.1(B): Business Mathematics</b>	
Teaching Hours: 3 Hours/Week	Credits: 3
Total Teaching Hours: 42 Hours	Max. Marks: 100 (S.A.- 70 + I.A.-30)

Course Learning Outcomes: This course will enable the students to

- Translate the real-world problems through appropriate mathematical modelling.
- Explain the concepts and use equations, formulae and mathematical expressions and relationship in various context.
- Finding the extreme values of functions.
- Analyze and demonstrate the mathematical skills required in mathematically intensive areas in economics and business problems.

**Unit-I: Algebra** – Simple Linear Equations, Quadratic Equations, simultaneous equations in 2 variables, application problems. 14Hours

**Unit - II: Matrices**- Definition of a matrix, types of matrices and algebra of matrices. Calculation of values of determinants upto third order, Adjoint and inverse of a square matrix, solution of a system of linear equations having unique solution and involving not more than three variables. Examples on commercial mathematics. 14 Hours

**Unit - III: Percentage, Ratio & Proportions**- Percentage-Definition, Calculation of percentage, Ratios-Types of Ratios-Duplicate, Triplicate & Sub-duplicate of a ratio. Proportions-Definition & properties-cross product property & reciprocal property, united proportions-continued proportion-compound proportions, examples on commercial mathematics. 14 Hours

Reference Books:

1. Basic Mathematics, Allen R.G.A, Macmillan, New Delhi.
2. Mathematics for Economics, Dowling, E.T.,  
Schaum's Series, McGraw Hill, London.
3. Quantitative Techniques in Management, Vohra, N.D., Tata  
McGraw Hill, New Delhi.
4. Business Mathematics, Soni R.S., Pitamber Publishing House, Delhi