



College of Arts,
Science &
Commerce (Autonomous)

RISE WITH EDUCATION

NAAC REACCREDITED - 'A' GRADE

SIES College of Arts, Science and Commerce, (Autonomous)

Affiliated to University of Mumbai

Syllabus under NEP effective from June 2024

Department of Mathematics

Programme: B.Com.

Sem: III and IV

Class: SYBCom

Open Elective

Course Title

Business Mathematics - I, II

Choice Based Credit System (CBCS)

with effect from the academic year 2024-25

This Open Elective course is offered to students of BCom in semester III and IV. The assessment will be in Continuous Internal Assessment mode (CIA)

Name of Programme: Name of Department: Mathematics					
Type of course: Open Elective					
Evaluation Pattern: Continuous Internal Assessment					
Course Name	Semester	Course Code	Credits	L/P/T (per week)	Marks
Business Mathematics 1	III	SIUMTOE211	2	1L, 1T	50
Business Mathematics 2	IV	SIUMTOE221	2	1L, 1T	50
1 Tutorial per batch per week					

Course Name: Business Mathematics 1		Course Code: SIUMTOE211		Credits: 2	
Type: Open Elective		Class: SYBcom		Semester: III	
Expected Course Outcomes					
On completion of this course, students will be able to:					
<ol style="list-style-type: none"> 1. Identify linear equalities and inequalities and plot them. 2. Formulate and solve Linear Programming problems, identify feasible region 3. Apply various methods to compute return on investment, Annual growth rate, depreciation 					
Pre-requisites:	Plotting of straight lines, simple and compound interest, annuity				
Unit 01	Graphs, Linear Programming (10 hours)				
	Tabulation, Line graphs, Bar Graphs and Pie-charts. Linear equations and inequalities, Plotting straight lines and regions, Formulation of an LPP, Solving an LPP.				
Unit 02	Returns, Growth and Depreciation (10 hours)				
	Return on Investment, Nominal and Effective rate of return, Compound Annual Growth Rate(CAGR), Depreciation and methods of computing depreciation like Linear and Reducing Balance Method.				

Tutorial Sessions		1 tutorial per batch per week	(10 hours)
Tutorial	Topic		
01	Tabulating the given data, drawing and interpreting line, bar and pie charts		
02	Plotting of linear equations and inequalities		
03	Formulating an LPP and Solving an LPP using graphical method.		
04	Computing return on Investment using Nominal and Effective rate of return		
05	Problems on Compound Annual Growth Rate(CAGR)		
06	Computing depreciation using Linear and Reducing Balance Method.		

Course Name: Business Mathematics 2		Course Code: SIUMTOE221	Credits: 2
Type: Open Elective		Class: SYBcom	Semester: IV
Expected Course Outcomes			
On completion of this course, students will be able to:			
<ol style="list-style-type: none"> 1. Tabulate Transportation problem, define types of matrices 2. Formulate Transportation problem and find initial solution using Least cost method and Vogel's approximation method, calculate determinant of given matrix, find inverse of matrix using adjoint method 3. Solve a system of equations and Leontief I-O model. 			
Pre-requisites:	Linear Programming Problems		
Unit 01	Transportation Problems (10 hours)		
	Transportation problem as a special case of LPP, Mathematical formulation of a transportation problem, Initial solution by North West corner rule, Least cost method and Vogel's approximation method (VAM).		
Unit 02	Matrices and Applications (10 hours)		
	Types of Matrices, Algebra of Matrices, Determinants, Finding inverse using Adjoint Method, Applications like solving a system of equations and Leontief I-O model. [Suggestion: solving system of linear equations using cramer's rule]		

Tutorial Sessions		1 tutorial per batch per week	(10 hours)
Tutorial	Topic		
01	Formulating a Transportation Problem, Initial Solution by NWC Rule		
02	Initial Solution by Least Cost Method		
03	Initial Solution by VAM		
04	Algebra of Matrices		
05	Determinants and inverses		
06	Applications: Solving a system, Leontief I-O model		

References:

1. Sharma J.K., Operations Research Theory and Applications, Trinity Press, 6th Edition
2. Sharma J.K., Quantitative Techniques in Management, Macmillan Publications. (Online edition)
3. Sancheti, D. C, Kapoor V. K, Business mathematics, S Chand and Co., New delhi, 1995
4. Mariappan, P, Mathematics for modern management (Business mathematics), Chennai New Century Book House Private Limited, 2004
5. Mathematics of Economics and Business Frank Werner and Yuri N. Sotskov
(free open source online version: [Mathematics of Economics and Business](#))

