

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI**

**COURSE PLAN (November 2024 – April 2025)**

**Department** : Mathematics  
**Name/s of the Faculty** : Dr. Sindiya Therese S  
**Course Title** : Mathematics for Commerce  
**Course Code** : 23MT/AC/MT45  
**Shift** : I

**COURSE OUTCOMES (COs)**

COs	Description	CL
CO1	recall and define the basic mathematical concepts on matrices, equations, differentiation, integration and linear programming problem	K1
CO2	understand and compare the concepts relating to matrices, polynomials, numerical methods and linear programming problem	K2
CO3	utilize suitable mathematical concepts and skills to solve problems including those in real life contexts	K3
CO4	analyse and examine the problem relating to the applications of matrices, differentiation, integration and optimization	K4
CO5	evaluate solutions to the problems related to matrices, equations, differentiation, integration and linear programming problem	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Nov 18 – 25, 2024 (Day Order 1-6)	1	<b>Unit 1: Matrices</b> 1.1 Types of Matrices 1.2 Characteristic Equation of a Matrix	K1- K5	5	CO1-5	Lecturing Problem solving Group Discussions	Slip Test
Nov 26- Dec 3, 2024 (Day Order 1 to 6)	1	<b>Unit 1: Matrices</b> 1.3 Cayley - Hamilton Theorem (without proof) 1.4 Eigen Values and Eigen Vectors	K1- K5	5	CO1-5	Lecturing Problem solving Group Discussions	Quiz
Dec 4-11, 2024 (Day Order 1 to 6)	1 & 2	<b>Unit 1: Matrices</b> 1.5 Diagonalization of 3×3 Matrices with Distinct Eigen Values <b>Unit 2: Theory of Equations</b> 2.1 Formation and Solution of Equation with Imaginary and Irrational Roots	K1- K5	5	CO1-5	Lecturing Problem solving Group Discussions	Quiz
Dec 12-19, 2024 (Day Order 1 to 6)	2	<b>Unit 2: Theory of Equations</b> 2.2 Relation between Roots and Coefficients 2.3 Solution of Equations under given Conditions	K1- K5	5	CO1-5	Lecturing Problem solving Group Discussions	Slip Test

Dec 20, 2024 (Day Order 1)	2	<b>Unit 2: Theory of Equations</b> 2.4 Symmetric Functions of the Roots of an Equation in terms of its Coefficients	K1- K5	1	CO1-5	Lecturing Problem solving Group Discussions	Quiz
Jan 3 – 7, 2025 (Day Order 3 to 6)	2	<b>Unit 2: Theory of Equations</b> 2.4 Symmetric Functions of the Roots of an Equation in terms of its Coefficients 2.5 Reciprocal Equations	K1- K5	3	CO1-5	Lecturing Problem solving Group Discussions Case Studies	Quiz
Jan 8 – 17, 2024 (Day Order 1 to 6)	2 & 3	<b>Unit 2: Theory of Equations</b> 2.5 Reciprocal Equations <b>Unit 3: Numerical Methods</b> <b>Algebraic and Transcendental Equations</b> 3.1 The Bisection Method	K1- K5	5	CO1-5	Lecturing Problem solving Group Discussions Case Studies	Slip Test
Jan 18 - 23, 2025	<b>C.A. Test – I (Unit 1 &amp; 2)</b>						
Jan 24 -31, 2025 (Day Order 1 to 6)	3	<b>Unit 3: Numerical Methods</b> <b>Algebraic and Transcendental Equations</b> 3.2 Newton - Raphson Method <b>Simultaneous Equations</b> 3.3 Gaussian Elimination Method	K1- K5	5	CO1-5	Lecturing Problem solving Group Discussions Case Studies	Slip Test

Feb 3-8, 2025 (Day Order 1 to 6)	3	<b>Unit 3: Numerical Methods Simultaneous Equations</b> 3.4 Gauss Jordan Elimination Method 3.5 Gauss Jacobi Iteration Method 3.6 Gauss Seidal Iteration Method	K1- K5	5	CO1-5	Lecturing Problem solving Group Discussions Case Studies	<b>Third Component for 20 marks (Unit 3 – Assignment)</b>
Feb 10– 18, 2025 (Day Order 1 to 4)	4	<b>Unit 4: Numerical Differentiation and Numerical Integration</b> 4.1 Derivatives using Newton’s forward difference Formula 4.2 Derivatives using Newton’s backward difference Formula	K1- K5	4	CO1-5	Lecturing Problem solving Group Discussions	Slip Test
Feb 19- 26, 2025 (Day Order 1-6)	4	<b>Unit 4: Numerical Differentiation and Numerical Integration</b> 4.3 Trapezoidal Rule 4.4 Simpson’s One Third Rule	K1- K5	5	CO1-5	Lecturing Problem solving Group Discussions	Quiz
Feb 27- Mar 6, 2025 (Day Order 1 to 6)	4 & 5	<b>Unit 4: Numerical Differentiation and Numerical Integration</b> 4.5 Simpson’s Three Right Rule <b>Unit 5: Linear Programming Problem</b> 5.1 General L.P.P.	K1- K5	5	CO1-5	Lecturing Problem solving	<b>Third Component for 30 marks (Unit 4 – Problem Assignment)</b>
Mar 7 – 11, 2025	5	<b>Unit 5: Linear Programming Problem</b> 5.2 Canonical and Standard Forms of L.P.P.	K1- K5	3	CO1-5	Lecturing	Quiz

(Day Order 1 to 3)		5.3 The Simplex Algorithm				Problem solving Group Discussions Case Studies	
Mar 12 –17, 2025	<b>C.A. Test – II (Unit 4 &amp; 5)</b>						
Mar 18 – 20, 2025 (Day 4 to 6)	5	<b>Unit 5: Linear Programming Problem</b> 5.3 The Simplex Algorithm	K1- K5	2	CO1-5	Lecturing Problem solving Case Studies	Slip Test
Mar 21 - 28, 2025 (Day Order 1 to 6)	5	<b>Unit 5: Linear Programming Problem</b> 5.4 The Big-M method	K1- K5	5	CO1-5	Lecturing Problem solving	Slip Test
Mar 29- April 2, 2025 (Day Order 1 to 3)	<b>REVISION</b>						