

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
COURSE PLAN June - November 2024

Department : MATHEMATICS
Name of the Faculty : DR. ARPUTHA CHRISTY K
Course Title : MATHEMATICS FOR COMMERCE (A&F)
Course Code : 23MT/AC/MT35
Shift : II

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	Analyze and examine the problem relating to the application of matrices, differentiation, integration and optimization	K4
CO5	Evaluate solution to the problems relating to matrices, equations, differentiation, integration and linear programming problem	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 19 – 26, 2024 (Day Order 1 - 6)	1	Unit 1: Matrices 1.1 Types of Matrices 1.2 Characteristic Equation of a matrix 1.3 Cayley-Hamilton Theorem (Without proof)	K1-K5	5	CO1-5	Lecture and Problem Solving	Questioning
Jun 27 – July 4, 2024 (Day Order 1 - 6)	1	Unit 1: Matrices 1.4 Eigen Values and Eigen Vectors 1.5 Diagonalization of 3x3 matrices with distinct eigen values	K1-K5	5	CO1-5	Lecture and Problem Solving	Slip Test
July 5 – 12, 2024 (Day Order 1 - 6)	1&2	Unit 1: Matrices 1.4 Eigen values and Eigen vectors 1.5 Diagonalization of 3x3 matrices with distinct eigen values Unit 2: Theory of Equations 2.1 Formation and Solution of Equation with Imaginary and Irrational Roots	K1-K5	5	CO1-5	Lecture and Problem Solving	III Component Test-1 (1.4) & Assignment (15 + 5 Marks)

July 15 – 23, 2024 (Day Order 1 - 6)	2	Unit 2: Theory of Equations 2.2 Relation between Roots and Coefficients 2.3 Solution of Equations under given conditions	K1-K5	5	CO1-5	Lecture and Problem Solving	Questioning
July 24 – 31, 2024 (Day Order 1 - 6)	2	Unit 2: Theory of Equations 2.4 Symmetric Functions of the Roots of an equation in terms of its Coefficients 2.5 Reciprocal Equations	K1-K5	5	CO1-5	Lecture and Problem Solving	Questioning
Aug 1 – 5, 2024 (Day Order 1 - 3)	2	Unit 2: Theory of Equations 2.5 Reciprocal Equations	K1-K5	2	CO1-5	Lecture and Problem Solving	Questioning
Aug 6 – 10, 2024	C.A. Test – I (Test Portions Unit I and II)						
Aug 12 – 14, 2024 (Day Order 4-6)	3	Unit 3: Numerical Methods Algebraic and Transcendental Equations 3.1 The Bisection Method	K1-K5	3	CO1-5	Lecture and Problem Solving	Questioning

Aug 16 – 23, 2024 (Day Order 1-6)	3	Unit 3: Numerical Methods Algebraic and Transcendental Equations 3.2 Newton-Raphson Method Simultaneous Equations Simultaneous Equation 3.3 Gaussian Elimination Method 3.4 Gauss-Jordan Elimination Method	K1-K5	5	CO1-5	Lecture and Problem Solving	Questioning
Aug 27 – Sep 3, 2024 (Day Order 1-6)	3	Unit 3: Numerical Methods Simultaneous Equation 3.5 Gauss-Jacobi Method 3.6 Gauss-Seidel Iteration Method	K1-K5	5	CO1-5	Lecture and Problem Solving	Questioning
Sep 4 – 11, 2024 (Day Order 1-6)	4	Unit 4: Numerical Differentiation and Numerical Integration 4.1 Derivatives using Newton's forward difference formula 4.2 Derivatives using Newton's backward difference formula	K1-K5	5	CO1-5	Lecture and Problem Solving	III Component Test-2 (4.1 and 4.2) (20 Marks)

Sep 12 - 20, 2024 (Day Order 1-6)	4	Unit 4: Numerical Differentiation and Numerical Integration 4.3 Trapezoidal Rule 4.4 Simpson's one-third rule	K1-K5	5	CO1-5	Lecture and Problem Solving	Questioning
Sep 23 - 26, 2024 (Day Order 1-4)	4&5	Unit 4: Numerical Differentiation and Numerical Integration 4.5 Simpson's three-eighth rule Unit 5: Linear Programming Problem 5.1 General L.P.P	K1-K5	3	CO1-5	Lecture and Problem Solving	Questioning
Sep 27 – Oct 3, 2024	C.A. Test – II (Test Portions Unit 3,4,)						
Oct 4 – 5, 2024 (Day 5 & 6)		Unit 5: Linear Programming Problem 5.1 General L.P.P	K1-K5	2	CO1-5	Lecture and Problem Solving	Questioning
Oct 7 - 15, 2024 (Day Order 1 to 6)		Unit 5: Linear Programming Problem 5.2 Canonical and Standard form of L.P.P 5.3 The Simplex Algorithm	K1-K5	5	CO1-5	Lecture using PPT and Problem Solving	III Component Test-3 (10 Marks) (Unit 5.1,5.2 and 5.3)

<p>Oct 16 - 22, 2024 (Day Order 1 to 6)</p>		<p>Unit 5: Linear Programming Problem</p> <p>5.3 The Simplex Algorithm</p> <p>5.4 The Big-M method</p>	<p>K1-K5</p>	<p>5</p>	<p>CO1-5</p>	<p>Lecture and Problem Solving</p>	<p>Questioning</p>
<p>Oct 23 - 24, 2024 (Day Order 1 to 2)</p>	<p>REVISION</p>						