STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 – April 2025

Department	: Mathematics
Name/s of the Faculty	: Dr. Benazir Obilia.X.A (3hours) & Dr. Arputha Christy K (2 hours)
Course Title	: VECTOR SPACES AND LINEAR TRANSFORMATIONS
Course Code	: 19MT/MC/VL64
Shift	: II

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6) (3 hours+2 hours)	**Unit 1 Vector Spaces** 1.1 General Vector Spaces and Subspaces **Unit 4 Coordinate Representations** 4.1 Coordinate Vectors	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Nov 26- Dec 3, 2024 (Day Order 1 to 6) (3 hours+2 hours)	**Unit 1 Vector Spaces** 1.2 Linear Combinations **Unit 4 Coordinate Representations** 4.2 Change of Basis	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Dec 4-11, 2024 (Day Order 1 to 6) (3 hours+2 hours)	**Unit 1 Vector Spaces** 1.3 Linear Dependence and Independence **Unit 4 Coordinate Representations** 4.3 Matrix Representations of Linear Transformations	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Dec 12-19, 2024 (Day Order 1 to 6) (3 hours+2 hours)	**Unit 1 Vector Spaces** 1.4 Properties of Bases **Unit 4 Coordinate Representations** 4.4 Importance of Matrix Representation	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning & III Component-2 Test-(15 marks)
Dec 20, 2024 (Day Order 1) (1 hour)	**Unit 2 Vector Spaces (contd.)** 2.1 Rank	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning

Jan 3 – 7, 2025 (Day Order 3 to 6) (3 hours)	**Unit 2** **Vector Spaces (contd.)** 2.2 Orthonormal Vectors and Projections **Unit 4 Coordinate Representations** 4.5 Diagonalization of Matrices	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Jan 8 – 17, 2024 (Day Order 1 to 6) (3 hours+2 hours)	**Unit 2** **Vector Spaces (contd.)** 2.2 Orthonormal Vectors and Projections **Unit 4 Coordinate Representations** 4.6 Diagonalization of Symmetric Matrices - Orthogonal Diagonalization	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Jan 18 - 23, 2025	**C.A. Test – I (Unit 1 & 4 (section 4.1-4.5))**			
Jan 24 - 30, 2025 (Day Order 1 to 6) (3 hours+2 hours)	**Unit 2** **Vector Spaces (contd.)** 2.3 Gram-Schmidt Orthogonalization Process **Unit 4 Coordinate Representations** 4.7 Diagonal Matrix Representation of a Linear Operations	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Feb 3-8, 2025 (Day Order 1 to 6) (3 hours+2 hours)	**Unit 2** **Vector Spaces (contd.)** 2.4 Kernel, Range and the Rank-Nullity Theorem **Unit 5** **Inner Product Spaces** 5.1 Inner Product	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning & III Component-3 ASSIGNMENT - (10 marks)
Feb 10– 18, 2025 (Day Order 1 to 4) (4 hours)	**Unit 2** **Vector Spaces (contd.)** 2.4 Kernel, Range and the Rank-Nullity Theorem **Unit 5** **Inner Product Spaces** 5.2 Norm of a Vector	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Feb 19- 26, 2025 (Day Order 1-6) (3 hours+2 hours)	**Unit 3** **Transformations** 3.1 Matrix Transformations, Rotations and Dilations **Unit 5** **Inner Product Spaces** 5.3 Orthogonal Vectors	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning

Feb 27- Mar 6, 2025 (Day Order 1 to 6) (3 hours+2 hours)	**Unit 3** **Transformations** 3.1 Matrix Transformations, Rotations and Dilations (contd.) **Unit 5** **Inner Product Spaces** 5.3 Orthogonal Vectors (contd.)	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Mar 7 – 11, 2025 (Day Order 1 to 3) (2 hours+1 hour)	**Unit 3** **Transformations** 3.2 One-to-One Transformations and Inverse Transformations **Unit 5** **Inner Product Spaces** 5.4 Approximation of Functions and Coding Theory	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Mar 12 –17, 2025	**C.A. Test – II (Unit 2 & 5 section5.1-5.4)**			
Mar 18 – 20, 2025 (Day 4 to 6) (1 hour+1 hour)	**Unit 3** **Transformations** 3.2 One-to-One Transformations and Inverse Transformations(contd.) **Unit 5** **Inner Product Spaces** 5.4 Approximation of Functions and Coding Theory (contd.)	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
Mar 21 - 28, 2025 (Day Order 1 to 6) (3 hours+2 hours)	**Unit 3** **Transformations** 3.3 Transformations and Systems of Linear Equations **Unit 5** **Inner Product Spaces** 5.5 Least Squares Curves	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning & III Component-3 Test (25 marks)
Mar 29- April 3, 2025 (Day Order 1 to 3) (2 hours+1 hour)	**Unit 3** **Transformations** 3.3 Transformations and Systems of Linear Equations (contd.) **Unit 5** **Inner Product Spaces** 5.5 Least Squares Curves (contd.)	Lecture	Williams Gareth, Linear Algebra with Applications 6 th Edition. New Delhi: Narosa, 2008.	Questioning
	REVISION			