STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
COURSE PLAN (November 2024 – April 2025)

Department   : **Mathematics**

Name of the Faculty   : **Dr. V. Jude Annie Cynthia**

Course Title   : **Topology**

Course Code   : **23MT/PC/TO24**

Shift   : **I**

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	describe the concepts of topological spaces	**K1**
CO2	understand the characterizations of topological spaces	**K2**
CO3	apply results on limit points, continuity, completeness, compactness and connectedness with topological spaces	**K3**
CO4	analyse the relation between various topological spaces	**K4**
CO5	assess the applications of the spaces under study in calculus and analysis	**K5**

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Nov 18 – 25, 2024 (Day Order 1-6)	1	**Topological Spaces** 1.1 Topological Spaces 1.2 Basis for a Topology	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning & Slip Test

Date	Module	Topic	Cognitive Level	Hours	CO	Pedagogy	Assessment
Nov 26- Dec 3, 2024 (Day Order 1 to 6)	1	**Topological Spaces** 1.3 The Product Topology on X×Y 1.4 The Subspace Topology 1.5 Closed Sets and Limit Points	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Dec 4-11, 2024 (Day Order 1 to 6)	1 2	**Topological Spaces** 1.5 Closed Sets and Limit Points **Continuous Functions and Metrizable spaces** 2.1 Continuous Functions	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Dec 12-19, 2024 (Day Order 1 to 6)	2	**Continuous Functions and Metrizable spaces** 2.1 Continuous Functions 2.2 The Product Topology	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	**III Component-1** Quiz (15 marks)
Dec 20, 2024 (Day Order 1)	2	**Continuous Functions and Metrizable spaces** 2.2 The Product Topology	K1-K5	1	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Jan 3 – 7, 2025 (Day Order 3 to 6)	2 3	**Continuous Functions and Metrizable spaces** 2.3 The Metric Topology **Connectedness** 3.1 Connected Spaces	K1-K5	3	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Jan 8 – 17, 2024 (Day Order 1 to 6)	3	**Connectedness** 3.1 Connected Spaces 3.2 Connected Subspaces of the Real Line	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning & Slip Test

Jan 18 - 23, 2025	C.A. Test - I (UNIT 1 & 2)						
Jan 24 -31, 2025 (Day Order 1 to 6)	3	**Connectedness** 3.2 Connected Subspaces of the Real Line 3.3 Components and Local Connectedness	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Feb 3-8, 2025 (Day Order 1 to 6)	3 / 4	**Connectedness** 3.3 Components and Local Connectedness **Compactness** 4.1 Compact Spaces	K1-K5	4	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Feb 10– 18, 2025 (Day Order 1 to 4)	4	**Compactness** 4.1 Compact Spaces 4.2 Compact Subspaces of the Real Line	K1-K5	3	CO1-5	Lecture, Discussions and Problem Solving	Questioning
Feb 19- 26, 2025 (Day Order 1-6)	4 / 5	**Compactness** 4.3 Limit Point Compactness **Countability and Separation Axioms** 5.1 The Countability Axioms	K1-K5	4	CO1-5	Interactive Teaching & Problem Solving	Questioning & Slip Test
Feb 27- Mar 6, 2025 (Day Order 1 to 6)	5	**Countability and Separation Axioms** 5.2 The Separation Axioms 5.3 Normal Spaces	K1-K5	4	CO1-5	Interactive Teaching & Problem Solving	**III Component-2** Test (20 marks)

Mar 7 – 11, 2025 (Day Order 1 to 3)	5	**Countability and Separation Axioms** 5.3 Normal Spaces 5.4 The Urysohn Lemma	K1-K5	2	CO1-5	Interactive Teaching & Problem Solving	Questioning
Mar 12 –17, 2025		**C.A. Test - II (UNIT 3 & 4)**					
Mar 18 – 20, 2025 (Day 4 to 6)	5	**Countability and Separation Axioms** 5.4 The Urysohn Lemma 5.5 The Urysohn Metrization Theorem	K1-K5	2	CO1-5	Interactive Teaching & Problem Solving	Questioning & Slip Test
Mar 21 - 28, 2025 (Day Order 1 to 6)	5	**Countability and Separation Axioms** 5.5 The Urysohn Metrization Theorem 5.6 The Tietz Extension Theorem	K1-K5	4	CO1-5	Interactive Teaching & Problem Solving	**III Component-3** Assignment (15 marks)
Mar 29- April 2, 2025 (Day Order 1 to 3)		**REVISION**					