Lecture Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim, Goa.

Name of Faculty: Prajyot Maruti Patil	**Subject:** Topology	
Paper code: MAT-5004	**Program: M.Sc.**	**Division:**
Academic year: 2025-26	**Semester: II**	**Total Lectures: 60**

Course Objectives:

1. **To prepare students to handle courses involving topology and geometry including complex analysis, functional analysis and several variable calculus**

Expected Course Outcome:

1) Display familiarity and knowledge of Topological Spaces, Metric Spaces, Homeomorphisms and associated concepts.
2) Demonstrate proofs to establish truths related to Topological Spaces, Metric Spaces, Homeomorphisms and associated concepts.
3) Choose the appropriate procedures and modify then if needed to solve method-based problems in Topology.
4) Analyse and solve unseen problems in Topology and invent mathematically precise arguments to justify their solutions.

Student Learning Outcome:

1. Display familiarity and knowledge of Topological Spaces also analyse and solve unseen problems in Topology.

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
December	01/12/2025	06/12/2025	St. Francis Xaviers Feast 03	Topological Spaces, Basis		Smart Board	James Munkres, Topology and Introduction,
December	08/12/2025	13/12/2025	04	Sub-basis, Order topology		Smart Board PDF	James Munkres, Topology and Introduction,
December	15/12/2025	20/12/2025	Liberation Day 03	Product topology on XxY			James Munkres, Topology and Introduction,
December	22/12/2025	23/12/2025	04	Subspace topology		Data projector	James Munkres, Topology and Introduction,
January	02/01/2026	03/01/2026	04	Closed sets and limit points			James Munkres, Topology and Introduction,
January	05/01/2026	10/01/2026	04	Continuous functions			James Munkres, Topology and Introduction,
January	12/01/2026	17/01/2026	04	the product topology		Smart Board	James Munkres, Topology and Introduction,
January	19/01/2026	24/01/2026	04	Metric topology, The Quotient Topology			James Munkres, Topology and Introduction,
January	26/01/2026	31/01/2026	04 Republic	Connected Spaces, Connected Subspaces of $\mathbb{R}$		Smart Board PDF	James Munkres, Topology and

Month	Start Date	End Date	Lectures/Holiday	Topic		Teaching Aid	Reference
			Holiday				Introduction,
February	02/02/2026	07/02/2026	04	Components and Local Connectedness			James Munkres, Topology and Introduction,
February	09/02/2026	14/02/2026	04	Compact Topological Spaces		Smart Board	James Munkres, Topology and Introduction,
February	16/02/2026	21/02/2026	04	Compact Subspaces of $\mathbb{R}$			James Munkres, Topology and Introduction,
February	23/02/2026	28/02/2026	04	Limit Point Compactness		Smart Board	James Munkres, Topology and Introduction,
March	02/03/2026	07/03/2026	03 Holi	Local Compactness		Smart Board	James Munkres, Topology and Introduction,
March	09/03/2026	14/03/2026	04	Countability Axioms,			James Munkres, Topology and Introduction,
March	16/03/2026	21/03/2026	03 Gudi Padva / Id-Ul Fitr	Separation Axioms, Hausdorff Spaces			James Munkres, Topology and Introduction,
March	23/03/2026	28/03/2026	03 Ram Navami	Regular Spaces, Normal Spaces.		Smart Board	James Munkres, Topology and Introduction,
March-April	30/03/2026	04/04/2026	02				

* Assessment Rubrics

Component	Max Marks
ISA 1	15
Mid Term Exam	30
ISA 3	15
Practical	Nil
Project	Nil
Semester End Exam	40