19BSM803 - Topology									
Teaching Scheme					**Examination Scheme**				
L	**T**	**P**	**C**	**Hrs/Week**	**Theory**			**Practical**		**TotalMarks**
					MS	**ES**	**IA**	**LW**	**LE/Viva**	
3	1	--	4	4	25	50	25	--	--	100

OBJECTIVES

1. To gain the difference of Metric Space in Real Analysis and in terms of Topology
2. To demonstrate the analytical capability of the applications of set theory in terms of topological structures
3. To study, understand and apply the knowledge of finding the topological properties of known sets.
4. To develop math skills for the conceptual understanding of connectedness and compactness in topological aspects

SYLLABUS

Unit-I	**09**
Topological spaces: Definition and examples, Open and close sets in topological spaces, Usual topology and S - topology on R, Comparison of topologies, Neighborhood.	
UNIT II	**10**
Cluster points, Closure and interior points of a set, Definition and examples of a door space and dense set, Continuity in a topological space and homeomorphism.	
UNIT III	**10**
Definition and examples of connected and disconnected spaces, Connectedness in R , Relative topology , Connected subspaces, Open cover, Compact space .	
UNIT IV	**10**
Compactness in R1; R2 and metric space, Properties of compact spaces, Definition and examples of T0; T1; T2 - space, Hausdorff property of a metric space.	
UNIT-V	**13**
Useful NPTEL lectures Link: (1) https://nptel.ac.in/courses/111106054/	
APPROXIMATE TOTAL	**52 Hours**
OUTCOMES	
1. Understand the connection between Real Analysis and Topology 2. Describe and understand the different topological terminologies 3. Get a clear view of the necessity of studying topological problems and will try to explore how it's connected with geometry as well 4. Enhancement of the knowledge of "Ti" axioms to build strong fundamentals in order to understand more advanced topological results	
TEXTS AND REFERENCES	

1. J. R. Munkres, "Topology", 2nd Edition, PHI
2. Simmons, G.F., "Introduction to Topology and Modern Analysis', Krieger Publishing Company
3. S. Kumaresan, "Topology of Metric Spaces", Narosa Publication