

MATHEMATICS 145A

INTRODUCTION TO TOPOLOGY- I

Text: *Topology, 2nd edition*, by J. Munkres

Elementary point set topology with special emphasis on the properties of metric spaces.

TOPICS	SUGGESTED NO. OF 50 MIN. CLASSES
Basic definitions and examples.....2 (§§ 12, 13, 18) Topological spaces, basic and subbasic open sets, continuous functions.	
Topologies associated to other structures.....1 (§§ 14, 20) Order and metric topologies , topologies on the real line and the Cartesian plane.	
Constructions on topological spaces.....1 (§§ 15, 16) Product and subspace topologies.	
Closed subsets and limit points.....1 (§§ 17, 21) Closed sets, limit points, closure, interiors, dense subsets.	
Countability properties.....1 (§ 30) The Lindelöf property, second countability, separability.	
Compactness.....1 (§§ 26 through Theorem 26.5, 27) Definitions and basic consequences, the Heine-Borel Theorem.	
Connectedness.....1 (§§ 23, 24 through Theorem 24.3) Definitions, basic consequences, connected subsets of the reals, the Intermediate Value Theorem.	