# 15 MMCC 201 Topology (3-1-0)

**Module –I : (14 Hours)**

Countable and uncountable set, Infinite sets and the Axiom of choice, Well-ordered sets. Topological spaces, Basis and sub basis for a topology, The order, product and subspace topology, closed sets and limit points. Continues function and homeomorphism, Metric topology, Connected spaces, connected subspaces of the real line, Components and local connectedness.

**Module –II : (14 Hours)**

Compact spaces, Basic properties of compactness, Compactness and finite intersection property, Compact subspaces of the real line, Compactness in metric spaces, Limit point compactness, Sequential compactness and their equivalence in metric spaces, Local compactness and one point compactification.

**Module –III : (12 Hours)**

First and second countable spaces, Lindelo"f space, Separable spaces, separable axioms, Hausdorff, Regular and normal spaces. The Urysohn lemma, completely regular spaces,    The Urysohn metrization theorem, Imbedding theorem, Tietn extension Theorem, Tychonoff theorem, Stone-Cech campactification.

**Text Book :**

 1. Topology, J.R. Munkhres, 2e, Pearson Education, 2000.

   Chapter:  1(7,9,10),2(excluding section 22), 3, 4 (excluding section 36), 5.

**Reference  Book :**

 1.  Introduction to general Topology, by K.D.Joshi, Wiley Eastern Ltd., 1983.
 2.  Foundation of General Topology, by W.J. Pervin, Academic Press, 1964.