

MATH 220A : TOPOLOGY

California State University, Sacramento · Department of Mathematics & Statistics

Point Set Topology; continuity; compactness; connectedness.

CATALOG DESCRIPTION

Point set topology, continuity, compactness, connectedness. **Graded:** Graded Student. **Units:** 3.0.

PREREQUISITES

Math 130B, Fall only.

COURSE OUTLINE

I. Topological Spaces (5 Weeks)

- A. Basis for topology
 - 1. Topological space
- B. Open sets, closed sets
 - 1. Limit points
- C. Continuous functions
- D. Order topology
- E. Product topology
- F. Metric topology
- G. Quotient topology

II. Connectedness and Compactness (3 Weeks)

III. Countability and Separation Axioms (4 Weeks)

- A. 1st and 2nd countable
- B. T_0 , T_1 , Hausdorff, regular, etc.
- C. Urysohn Lemma

IV. Metrization Theorems and Dynamic Topology (3 Weeks)

- A. Mappings
- B. Completely regular spaces
- C. Extension Theorems
- D. Urysohn Metrization theorem ¹
- E. Compactifications ¹

¹Optional