MATH 540 Topology I

1. <u>Catalog Description</u>

    MATH 540 Topology I   **4 units**

    Prerequisite: <u>MATH 412</u> or graduate standing in Mathematics. Corequisite: <u>MATH 481</u> or graduate standing in Mathematics.

    Introduction to general topological spaces with emphasis on surfaces and manifolds. Open and closed sets, continuity, compactness, connectedness. Quotient spaces. 4 lectures. Not open to students with credit in <u>MATH 440</u>.

2. <u>Required Background or Experience</u>

    Math 412 and concurrent enrollment in or completion of Math 481.

3. <u>Learning Objectives</u>

    The student should:

    a. Develop facility with basic topological spaces and surfaces.
    b. Be able to define and use the concepts of continuity, compactness, and connectedness.
    c. Understand and be able to construct spaces using the quotient topology.

4. <u>Text and References</u>

    To be chosen by the instructor.

5. <u>Minimum Student Materials</u>

    Paper, pencils and notebook.

6. <u>Minimum University Facilities</u>

    Classroom with ample chalkboard space for class use.

7. <u>Content and Method</u>

Topic	Lectures
a. Introduction to topological spaces, surfaces	8
b. Continuity	8
c. Compactness and connectedness	12
d. Identification spaces	8
Total	36

Method

The instructor will lecture and assign problems for homework and class discussion. Students may be assigned topics and problems for presentation to the class.

8. Methods of Assessment

Exams, homework, and possibly student presentations.