MAT 460/5422
Introduction to Topology
Course Credit: 3 semester hours

PREREQUISITES: Mat 301

COURSE DESCRIPTION: An introduction to metric spaces and topological spaces. Additional topics include continuous functions, separation axioms, connectedness and compactness.

RATIONALE: Topology is an area of mathematics that has many applications. This course is offered as an elective course for mathematics majors and minors and is highly recommended for students considering graduate school.

LEARNING OBJECTIVES: Attached

OUTLINE OF TOPICS:

Metric spaces
Topological spaces
Continuous functions
Separation axioms
Connectedness
Compactness

METHODS OF INSTRUCTION: Various instructional procedures are used including lecture, exams, questions and answers, class discussions, problem solving, etc.

REQUIRED PRACTICES: Students are expected to do daily homework assignments from problems assigned from textbook. They are expected to attend class, participate in problem solving and class discussions, ask questions, and keep a notebook of homework problems as well as class notes.

INSTRUCTIONAL MATERIALS: Text: Crump W. Baker, Introduction to Topology, 1997 edition

ATTENDANCE: Class attendance is extremely important in this course. (Note in the attendance policy of the university, students may receive a lowered grade because of excessive absences.) The responsibility for missed work rests entirely with the student.

ACADEMIC INTEGRITY: Students are expected to be honest. Dishonesty, such as cheating or plagiarism, will not be tolerated. Tests and other materials handed in by the student are assumed to be the student's own work. Refer to the following web site: http://www.mc.edu/publications/policies/academic/219.wpd .

SPECIAL ACCOMODATIONS: If a student needs special accommodations due to learning, physical, psychological, or other disabilities, please contact Dr. Amy Christian in the Counseling and Career Development Center.

Graduate students work additional problems and may be asked to make presentations to the class.

MISSISSIPPI COLLEGE ACADEMIC POLICIES:
Students should consult the Mississippi College policy manual located at http://www.mc.edu/resources/publications/policies/ for official information regarding:

- Class attendance - Policy 2.10
- Grading - Policy 2.15
- Cheating - Policy 2.19
- Counseling and Career Services - Policy 2.25
- Research - Policy 2.27
- Counseling and Testing Center - Policy 2.34

Students who may require accomodation due to a documented handicap should follow the procedures located at
http://www.mc.edu/about/offices/counseling/disabilities/

The Generic Grading Scale for this course is A = 90-100, B = 80-89, C = 70-79, D = 60-69. Individual instructors are free to choose a different grading scheme so students should consult their section's particular syllabus for the official grading scale to be utilized.

Tutoring Hours:
Hours and location for the departmental tutoring center are posted at http://www.mc.edu/academics/academic-tutoring/ .

MAT 460
Learning Objectives

The student will be able to state, apply, analyze, and solve problems in these areas:

Chapter 1: Preliminary Topics
- Topology
- Sets
- Extended Set Operations
- Functions
- Images and Inverse Images of Sets

Chapter 2: Topological Spaces
- Open Subsets of the Real Numbers