

Math 465/565 Syllabus
Introduction to General Topology
FALL 2009

Instructor:

Lawrence Roberts
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Office Hours:

M 3:00 pm– 4:00 pm (topology only)
T 11:00 am– 12:00 pm
R 3:30 pm– 4:30 pm

Course Website: <http://www.bama.ua.edu/~lproberts/math465.Fall09.html>

Prerequisite: Math 380

Text:	Principles of Topology	Author:	Fred H. Croom
Publisher:	Thompson	Credit:	3 hours

Course Description: General Topology begins by abstracting two concepts familiar to a first semester calculus student – open sets and continuous functions. Upon developing some basic properties of topological spaces we enter into two topics which are ubiquitous in many mathematical disciplines – compactness and connectedness. Other topics will be discussed – as time permits.

Course Objectives: At the end of this course students should be able to

- 1) describe the ways in which mathematicians have formalized “nearness” through the definitions of metric and topological spaces
- 2) define the way in which these structures govern notions such as convergence of sequences, continuous functions, etc.
- 3) apply the notions of homeomorphism and topological invariance.
- 4) define and understand the implications of a space being compact and/or connected, and prove various consequences of these properties.
- 5) construct topological spaces, and be familiar with many examples.
- 6) write more rigorous proofs.

The following chapters will be covered.

Chapter 3: Metric Spaces
Chapter 4: Topological spaces
Chapter 5: Connectedness
Chapter 6: Compactness

Material from the following chapters will be discussed – as time permits

Chapter 7: Product and Quotient Spaces

Chapter 8: Separation Axioms

Grades: Grades will be determined from homework, two examinations, and a comprehensive final exam. The homework/attendance will count 50%, the final will count 30%, and each exam will count 10%. Attendance is expected, but will only be recorded if it becomes a problem (in the instructor's opinion). Homework will be assigned each week and collected the following week. Graduate students will be required to work every problem on each assignment; undergraduates will be required to work a subset of each assignment (although everyone is welcome to do all the problems). In addition, as part of their homework grade, graduate students will write a short paper (5—10 pages) summarizing a topic in general topology (more details and topics will be forthcoming). Letter grades will be assigned according to the following table:

[95,100) A+	[80,85) B+	[65,70) C+
[90, 95) A	[75,80) B	[60,65) C
[85, 90) A-	[70,75) B -	[55,60) C-

Any grade below 55 will be considered failing.

Disability Access Statement: "To request accommodations, please contact the Office of Disability Services at 348-4285. After initial arrangements are made with that office, contact your professor."

Academic Misconduct: All students in attendance at the University of Alabama are expected to be honorable and to observe standards of conduct appropriate to a community of scholars. The University expects from its students a higher standard of conduct than the minimum required to avoid discipline. Academic misconduct includes all acts of dishonesty in any academically related manner and any knowing or intentional help or attempt to help, or conspiracy to help, another student in such dishonesty. This includes, but is not limited to, cheating, plagiarism, fabrication of information, misrepresentation, and abetting any of the above. The Academic Misconduct Disciplinary Policy will be followed in the event that academic misconduct occurs.

Schedule:

August 26: Last day to add or change a section, or drop without receiving a W

September 7: Labor Day – No class!

September 24: EXAM #1

October 8: Mid-semester break – No class!

October 28: Last day to drop with a W

November 5: EXAM #2

November 25-27: Thanksgiving Break

December 8: 8:00 am – 10:30 am Final Exam