

Math 306: Topology

2009

Topology, Baker, Chapters 1-6, 8Dr. Roland Minton, Trexler 270-C, 375-2358,
minton@roanoke.edu**office hours** 10M, 10T, 11W, 2Thwww.roanoke.edu/staff/minton/ccourse.html

Course Objectives: *Continue to learn mathematics!* Topology is a theoretical, proofs-oriented course that develops strong critical thinking skills. Given precise definitions of familiar calculus concepts, what deductions can we draw from them without allowing preconceptions to lead us astray? The material is actually used in graduate-level applied courses, but our focus is on our thinking skills.

Intended Learning Outcomes: At the end of the course, successful students will be able to

- Construct a valid proof that proceeds efficiently from hypotheses to conclusion
- Identify properties of sets and functions in the context of different topologies
- Construct a topology from a given set of basic sets
- Identify homeomorphisms and be able to explain what it means for topological spaces to be homeomorphic

Attendance Policy: Regular attendance is expected. You must keep up with definitions! You are responsible for everything done in class, through your attendance and sharing class notes with classmates. If you miss a class, you must e-mail or call me before class is over and explain why.

If you have two unexplained absences, you will be dropped from the course.

Technology: We will use our brains extensively. No electronic devices other than calculators are allowed in a test situation.

Academic Integrity: The college policy is fully supported. Tests and quizzes are closed notes, closed book. Homework assignments will be discussed in class, and you may always ask me for help. **Do not** collaborate on homework.

Study problems, homework and quizzes: Problems from each section of the book will be assigned, typically in two stages. You will be asked to work several problems that are not to be turned in. These will indicate the types of problems you will see on tests. In addition, you will often be asked to turn in designated problems. These are due at the beginning of class. Late homework is not accepted. If you miss class, get a friend to turn in your homework for you. From time to time, definition quizzes will be given. To understand class discussions, you must know your definitions!

Co-Curricular: During the course of the semester, you must attend at least two approved co-curricular events offered by the math department. For each, write a one- or two-paragraph description of the event, due within a week of the event. A sample will be provided.

Tests: There will be three tests and a final exam. Each test will cover all material discussed since the previous test. Anticipated test dates are (W) 9/23, (F) 10/30 and (F) 11/20. The exam is Thursday, December 10, 2:00-5:00.

Make-ups: In case of sickness or scheduling conflicts, get in touch with me ASAP.

Grading: Homework and co-curricular count 24%. The final counts 16%. Each test counts 20% of the final average. Grades may be curved up based on participation, one unusually low test score or other extenuating circumstance.

A: 93-100 A-: 90-92 B+: 87-89 B : 83-86 B-: 80-82 C+: 77-79 C: 73-76 C-: 70-72

D+: 67-69 D: 63-67 D-: 60-62 F: 59 and below