

# Math 731, Fall 2012

**Dr. Sarah Raynor**

**Textbook:** Topology, James R. Munkres, second edition

**Office:** Manchester 343

**Office Extension:** 4466

**Office Hours:** Tuesdays and Thursdays, 3:30-5:00pm and Fridays 3:00-4:00pm. You are also welcome to drop by my office anytime that I am in.

**Email:** raynorsg@wfu.edu

**Course Website:** <http://www.wfu.edu/~raynorsg/math731.html>

**Course:** This course is a first course in topology, the mathematical study of shapes and deformations. I will assume that you have had a good course in advanced calculus. We will spend the first two weeks of the course reviewing fundamentals (Ch. 1 of Munkres). If this review is insufficient for you, it will be your responsibility to make sure you learn the chapter. The main part of the course will be the study of point-set topology, comprising chapters 2 and 3 of Munkres. As time permits, we will discuss other topological topics, such as surfaces and knots.

In this course you will be introduced to several highly abstract mathematical concepts, which underly mathematical research in topology, geometry, and analysis. We will develop your intuition by working problems, and you will study the construction of rigorous proofs.

**Assignments:** There will be no graded homework in this course. However, I will suggest problems from the book for every section that we discuss, and I expect that you will attempt to complete them to the best of your ability. I will be available to discuss these problems outside of class, and I also encourage you to discuss them with your classmates. I may occasionally ask you to be prepared to discuss a particular question or problem in class. You may (and should!) turn in your homework for comments and corrections. You may turn in as many drafts of each problem as you like.

**Evaluation:** There are four components of your final grade:

1. There will be two take-home exams during the term, which are worth 20% of your grade each. I have tentatively scheduled these exams to be due **September 28** and **November 5**. Please let me know ASAP if these times will be an issue for you.
2. There will be a cumulative in-class final exam at **2:00pm on Tuesday, December 11**, worth 35% of your grade.
3. There will be a verbal communication component worth 15% of your grade. You may choose between a prepared presentation on a topic we agree on, or a 20 minute oral examination. We will discuss this further in class as the semester progresses.
4. Your positive participation in class will be worth 10% of your grade.

**The Honor Code:** At Wake Forest, we expect you to behave as honorable citizens of the class, the university, and the world as a whole. When you complete an assignment with your name on it, you are representing that everything you are turning in is your own work. That means that you do not copy from other students, textbooks, or websites. You do not obtain the main ideas of a proof from someone else unless I have explicitly permitted you to do so.

The honor code is a token of our respect for you as members of the academic community. When one person cheats, it diminishes the experiences of everyone else in the program, both faculty members and students. Please, respect yourselves, each other, and me, and turn in only your own personal work. If at any time I become aware of cheating or plagiarism in this course, I will submit the information to the honor council. The format of any future assignments may also be affected, for the entire class.