

Topology
Math 451, Fall 2015
1:00-1:50 MWF, Bouillon 106

Instructor: Dr. Fassett

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Text: Topology Without Tears, by Sidney Morris

Course Description: This course is the first in a three-course sequence introducing students to a mathematically rigorous study of topology. The majority of our time will be spent on point set topology.

Course Goals: The main goal of the course is for students to learn how to read, understand, present, and write rigorous mathematical proofs in an abstract setting. In addition, a less measurable goal is for students to be rewarded for their efforts toward mathematical rigor and abstraction by being exposed to concepts and examples that present the richness inherent in the study of topology.

Course Policies:

Class Participation: Daily classes will be a mixture of lecture, discussion, and student presentation of assigned problems. Meaningful contributions are expected. This can take the form of presenting an assigned problem or participating in class discussions. There should be plenty of time to share your thoughts, understandings, and questions.

Class Presentation: Much of the course will consist of you and your peers explaining proofs and solutions to exercises. Each presentation will receive a score with the understanding that a proof will generally count more than a non-proof. If more than one student volunteers for a particular problem then I will try to pick the student with the fewest presentations.

Homework: Problems from each section will be assigned and selected problems will be turned in for grading. You are encouraged to work together on homework but each student must turn in his or her own write-up.

Exams: There will be an in-class midterm exam and a take-home final exam. You cannot pass the course without taking the final exam.

Course Grade: Course grades will be assigned according to the following:

Class Participation/Presentations	25%
Homework	25%
Midterm Exam	25%
Final Exam	25%

Students with special needs or disabilities that may affect their ability to access information or material presented in this course are encouraged to contact the Director of Disability Support Services at 963-2171 (TTD 963-2143).

General Comments: I have been very careful in trying to select a text that is readable yet rigorously presents the richness of topology. I expect you to take advantage of the thorough explanations by reading the text in detail. You may find it helpful to write comments in the text that fill in the gaps or highlight questions you would like to address during class.

Many of the problems you will work on will take several attempts over a period of several days. You may even find yourself waking-up in the middle of the night thinking about a particular problem. Be

persistent, keep up, work together, and enjoy yourself. After all, this is how the material you will be studying was developed.

I assume everyone has experience writing logically and grammatically correct proofs. As we move along in the course our expectations of each other's proof writing abilities will increase.

Don't worry about making mistakes. A wrong answer is still a contribution as it shows what cannot be done. Generally, it is difficult to fix an error while you are at the board. If the correction doesn't "pop right in" then make a graceful exit, perhaps by saying something like "Well, I need to think about this some more." We want to encourage a free exchange of ideas so avoid please avoid any harsh criticism.