Introduction to Topology
MATH-4040
Fall 2010

Instructor: Mark H. Holmes
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Office Hours: MTr 3-4:30
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Approximate Schedule

Week 1	Introduction
Weeks 2, 3	Topological Spaces
Weeks 4, 5	Interior, Closure, and Boundary
Weeks 6, 7	New Topologies
Midterm	
Weeks 8, 9	Continuity
Weeks 10, 11	Connectedness
Weeks 12, 13	Compactness
Weeks 14, 15	Knots
Final	

Course Web-site: http://eaton.math.rpi.edu/faculty/Holmes/Courses/Topology/Fall10/

Text: *Introduction to Topology* by Adams and Franzosa

Additional References
Topology (2nd edition) by Munkres
Topology for Analysis by Wilansky
Essential Topology by Crossley

Grading: Homework: 55%, Midterm: 20%, Final: 25%

Difficulty Level and Pre-requisites
This course will require abstract thinking, which requires mathematical maturity and familiarity with proof techniques, logic, and basic set theory. Very little time will be spent reviewing these background skills and concepts. Foundations of Analysis or other course with abstraction and proofs is recommended before attempting this course.

Course Objectives
We will briefly discuss Chapter 0 and the try to cover most of the sections in chapters 1-5, 6-7, and 12. In addition to getting a solid grounding on the core material in these

sections, it is anticipated that students will gain the following:

- An improved ability to think and reason about abstract mathematics
- Improved skills at writing mathematical proofs
- A sense of the visual and geometric roots of the topology
- A broad view of topology and its applications.

Activities

On most class days, there will be both lecture and group discussions. You will need to read the books to complete your understanding and to prepare for the class discussions.

Academic Integrity

Do not copy or cheat during exams. Before working together on the homework, you must think over the problems on your own. After you have found relevant definitions and theorems and considered several possible approaches to solving a problem, you may work with others. Before you write up your solutions you must separate and rethink and rewrite your assignments alone. You are not allowed to just copy from a shared set of notes. In no case, may you copy from someone else's homework or notes.

All the rules and policies in the Rensselaer handbook should be followed.

Grade Appeals

Due to the nature of proofs, you will need to make sense logically AND advance your argument towards the conclusion to get substantial partial credit. I will grant appeals if I have overlooked something. The appeal must be made within one week of the date the item is returned in class. It is important that you KEEP all the returned material for the entire semester as they will be needed for studying for the final exam, and they will be your only method for correcting any recording errors that may accidentally occur on my part.

Late Policies

Late homework is usually not accepted without a legitimate excuse. Missing an exam or a quiz without a legitimate excuse results in a grade of zero and cannot be made up. If you have an excuse, you should contact me as soon as possible and I may ask for verification.