MATH 310 – TOPOLOGY

Semester:	Fall 2005		
Instructor:	Alex Degtyarev	**Phone:**	x 2135
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Assistant:			
Exams & Grading:	2 Midterms (25 pts each)		
	• **1st Midterm**	$\sim 5^{\text{th}}$ week	
	• **2nd Midterm**	$\sim 10^{\text{th}}$ week	
	Final exam (35 pts)		
	• **Final Exam**	Finals week	
	Homework ($\sim$ 15 pts)		
Course Schedule:	Wednesday 10:40–11:30 am	Room SAZ-20	
	Friday 13:40–15:30 am	Room SAZ-20	
Office Hours:	Wednesday 9:40–10:30 am		
	Friday 10:40–11:30 am		
Textbook:	James R. Munkres, *Topology*: *A First Course*. (Prentice-Hall, NY, 1975)		
Supplementary:	D. B. Fuks, V. A. Rokhlin, *Beginner's Course in Topology*. (Springer-Verlag, 1984)		

Tentative course contents

- Metric spaces; notion of continuity; open and closed sets.
- Topological spaces: fundamental properties, continuous maps.
- Sequential vs. topological definitions.
- Topological constructions: subspaces, sums, products, quotient spaces.
- More subtle topological properties:
  - connectedness and path connectedness; connected components;
  - countability axioms;
  - compactness and sequential compactness; compactification;
  - separation axioms.
- Urysohn lemma; Tietze extension theorem; metrizability.
- Notion of homotopy and homotopy equivalence.
- Path homotopies; the fundamental group; applications.
- Covering spaces.
- The fundamental group of a CW-complex (if time permits).
- Compact surfaces (if time permits).