MATH 460, Winter 2008

Algebraic Topology

Instructor: Paul Goerss Lunt 206, office phone 491-8544.
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Office hours: MWF afternoons

Course Time: MWF Lunt 102 at 11AM and problem sessions
Text: Hatcher *Algebraic Topology*
The two-quarter course covers essentially Chaps 2 – 4, with supplementary material. The first quarter will cover the following topics, with basic homological algebra threaded throughout:

1. Simplicial complexes; Δ-complexes
2. Homology of simplicial complexes; the Zig-zag lemma
3. Singular homology
4. Long exact sequences, homotopy invariance, and compact support
5. Mayer-Vietoris, excision, and subdivision
6. CW complexes and CW homology; the homology of projective space
7. Simplicial approximation; the Lefschetz fixed point theorem
8. Homological algebra and the universal coefficient theorem
9. Eilenberg-Zilber and Künneth Theorems: the homology of a product

Homework: Homework will be collected roughly every other week, starting with January 14. In the other weeks, I hope to have problem sessions.

The Evaluation Component – Grades: In addition to the homework there will be a final exam on Tuesday March 18. The homework and final will have equal weight in the final grade.