

MAT 762 Algebraic Topology Fall 2011

Instructor, Address, and Email:

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Classes: Tu and Th, 11:00 – 12:20, 312 Carnegie

Office Hours: TBA

Text: Allen Hatcher, *Algebraic Topology*, Cambridge University Press, 2001

Electronic version available at <http://www.math.cornell.edu/~hatcher/AT/ATpage.html>

Course Description: The course is a continuation of MAT 761 and covers Chapters 3 and parts of Chapter 4 of Hatcher's book, as well as additional topics not contained in the book. After reviewing singular homology theory, the course will discuss

- Cohomology of a chain complex and universal coefficient theorem
- Singular cohomology groups of a topological space and cup product
- Poincaré duality and intersection product
- Applications and computations of cohomology
- Homotopy groups, results from homotopy theory, fiber bundles
- Selected topics from knot theory

If time permits, the course will also introduce other cohomology theories, such as Čech cohomology and de Rham cohomology.

Prerequisites: MAT 761

Homework: Homework will be collected on Thursdays at the beginning of the class.

You may collaborate with fellow students but, if so, each student should contribute equally, and the work you turn in should be your own, in your own words.

Examinations: There will be no midterm exam but perhaps a final exam.

Academic Integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. For more information and the complete policy, see <http://academicintegrity.syr.edu>.

Students with Disabilities: If you believe that you need accommodations for a disability, please inform the course instructor at the beginning of the semester and contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations.