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Math 864 — Spring, 2005

Geometric Topology

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MWF 3–4,   C208 Wells Hall

Professor: T. Parker

Office: A-346 Wells Hall   Office hours: Monday, Weds, Friday 12 – 1
   353-8493   and by appointment
   parker@math.msu.edu

Recommended Background: A knowledge of linear algebra, pointset topology, and the basic facts about functions of several real variables at the level of an undergraduate real analysis course. This course does *not* require knowledge of the tools of algebraic topology (homology and homotopy groups) which are introduced in Math 868-869.

Goals: Differential topology is the study of the global properties of manifolds. It is an appealing subject because many fascinating facts can be uncovered and developed using only the tools of advanced calculus. The aim of this course is to explore the subject of topology without a lengthy development of algebraic machinery.

Text: *Differential Topology* by V. Guillemin and A. Pollack. Two other beautiful books will be helpful at times: *Topology from a Differential Viewpoint* and *Morse Theory*, both by John Milnor.

Expectations and Grades: Homework will be assigned daily and collected weekly. There will be midterm exam (date to be announced), some quizzes, and a take-home Final Exam. Grades will be computed using the weighting:

  25 %   Midterm Exam and Quizzes
  25 %   Final Exam
  50%   Homework

Important dates:

- Friday, Jan 14:   Close of computer/telephone enrollment and the last day to change Credit/ No Credit and Visitor grading options.
- Monday Jan 17 No class — Martin Luther King Day.
- Friday, Feb. 4: Last day to drop a course and receive a 100% refund.
- Weds March 2: Last day to drop a course with no grade reported.
- Mon. March 7 – Fri. March 11: No classes — Spring Break.
- Fri, April 29: Last class.