Math 534A
Geometry and Topology
TH 12:30-1:45 PM, MATH 501
Fall 2010

Instructor: David Glickenstein   **Office:** Math 715
Phone: 621-2463   **Email:** glickenstein@math.arizona.edu

Teaching Assistant: T. Danny Maienschein   **Office:** MTL 120Q
Phone: 621-2138   **Email:** tdm@math.arizona.edu

Course homepage: http://math.arizona.edu/~glickenstein/math534

Office Hours: TBA

Textbook: Introduction to Smooth Manifolds, by John M. Lee, published by Dover.

Supplementary material: *Calculus on Manifolds* by Spivak, *A Comprehensive Introduction to Differential Geometry Vol. 1* by Spivak, *Topology and Geometry* by Bredon, *Manifolds, Tensor Analysis and Applications* by Abraham, Marsden, and Ratiu, *An Introduction to Differentiable Manifolds and Riemannian Geometry* by Boothby.

Homework: Homework will be assigned on a regular basis, usually every 1-2 weeks. You are encouraged to turn in typed homework, though it is not required. There are some resources for using LaTex on the website. You are encouraged to work in groups, but be sure to give credit to those you work with!

Exams: There will be two in-class exams and a final (not take-home). Since you are preparing for a qualifying exam, these exams are VERY important, as they give you practice answering problems in a test setting.

Tentative approximate schedule

No guarantees.

Chapter	Topic
1	Topological and smooth manifolds
2	Smooth maps
7	Inverse/Implicit function theorem
3	Tangent vectors
4	Vector fields
5	Vector bundles
6	Cotangent bundle
11	Tensors
12	Differential forms
14	Integration and Stokes' theorem