Math 876: Differential Topology
Spring 2008

Instructor:	Prof. Ricardo Castano-Bernard
Schedule:	TBA
Office Hours:	by appointment
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Course Description: Differential topology deals with the extension of differential calculus to *manifolds*. Smooth manifolds are topological spaces that are locally modeled on the Euclidean space.

Topics that will be covered in this course include:

1. smooth manifolds, functions on manifolds and their derivatives;
2. maps between manifolds: diffeomorphisms, immersions, embeddings, inverse function theorem;
3. differential equations & vector fields, tangent bundles, orientability, Frobenius theorem;
4. tensor bundles, differential forms & integration on manifolds, Stokes theorem.
5. de Rham cohomology

Problem-solving is an important part of this course, so I intend to spend quite a few lectures encouraging the discussion of homework problems in a seminar-like fashion.