INTRODUCTION TO DIFFERENTIABLE MANIFOLDS **MATH 536** Section 001

Spring 2011 MW 8:30-9:45 rm 352 SMLC
Instructor: Charles Boyer Office Hours: MW 10:00-11:30; Other times by appointment.
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Required Text: Jeffrey Lee *Manifolds and Differential Geometry*

Optional Text: John Lee *Introduction to Smooth Manifolds*

About the Course:

Manifold theory, with its emphasis on global geometry, has become much more important in many branches of both pure and applied mathematics in the last quarter of a century. It is the backbone of any further study in differential geometry, and it has now reached the status of being a standard course in the graduate curriculum. It is good preparation for the geometry part of the Geometry/Topology qualifying exam in our graduate program. Thus, the purpose of this course is to provide the student with the foundations for the study of modern differential geometry. It is assumed that the student has a basic understanding of linear algebra, group theory, advanced calculus, and point set topology and elementary homotopy theory through the fundamental group. I will review some basic topological notions as we need them in the course.

I hope to be able to cover the material in Lee's book up through Stokes Theorem on manifolds, but skipping Chapter 4 on Curves and Hypersurfaces in Euclidean Space. Chapters 5 and 6 will be touch on sparringly according to our needs. I also have some old notes that I follow, and part of which I may distribute as supplemental reading.

Grading Policy: I will make weekly homework assignments each Wednesday which will be collected on the following Monday. The homework assignments will also be posted on my webpage. There will be both a midterm and final exam.

Qualified students with disabilities needing appropriate academic adjustments should contact me as soon as possible to ensure your needs are met in a timely manner. Handouts are available in alternative accessible formats upon request.