Math 5378, Differential Geometry
Spring 2008

Lecturer	Tyler Lawson
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Objectives. The goal of this course is to introduce the basic ideas of differential geometry, focusing on curves and surfaces in space. The main topics include: the basic theory of curves, Frenet formulas, the basic theory of surfaces, curvature, geodesics, and the Gauss-Bonnet theorem.

Prerequisites. This course requires a good working knowledge of multivariable calculus (Math 2263 or equivalent), linear algebra, and differential equations (Math 2243 or equivalent).

Class time. The lectures for this course are MWF from 1:25 pm to 2:15 pm in Vincent Hall 311.

Textbook. The text for this course is *Differential Geometry of Curves and Surfaces*, by Manfredo P. Do Carmo.

Evaluation. Your grade for this course will consist of the following components.

- Homework 30%

- Tests 15% each

- Final Exam 40%

Homework. There will be weekly problem sets handed in during class each Wednesday. A few problems from each problem set will be selected for grading. Your lowest problem set score will be dropped from your final grade.

Late homework will be docked by 20% per day (or portion thereof) up to a maximum of 60%.

Differential geometry is a subject that involves both pure theory and detailed computation; it is not recommended that you put off your assignments until the last minute!

Collaboration and cheating. You are allowed (and encouraged) to work with other students while trying to understand the homework problems. However, the homework that you hand in should be your work alone.

Tests. There will be two 1-hour tests, taken during normal lecture time. These count equally towards your final grade. They will be held on Wednesday, May 5 and Wednesday, April 30. If you *cannot* take one of these exams, please contact me as soon as possible to make other arrangements.

Final exam. The final exam will be held in Vincent Hall 311 (the same room as the course) on Saturday, May 17 from 10:30am to 12:30pm.

Important dates.

- March 5: Test 1.

- March 17-21: Spring break, no classes.

- April 30: Test 2.

- May 17: Final exam. Note that this is a Saturday.