

Mathematics 140, Spring 2017

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Metric Differential Geometry

Lectures: TuTh 11:00A-12:30P 70 Evans

Office Hours: TuTh 12:30A-2:00P 803 Evans

Prerequisites: *Math 104*

Text: Richard S. Millman and George D. Parker, *Elements of Differential Geometry*, Prentice-Hall Inc.

This class will be an introduction to the mathematical theory of curves and surfaces. The main topics are:

1. Frenet-Serret formula, isoperimetric inequality.
2. Local theory of surfaces in Euclidean space, first and second fundamental forms.
3. Gaussian and mean curvature.
4. Gauss's Theorema Egregium, geodesics, parallelism, the Gauss-Bonnet Theorem.
5. Manifolds and linear connections.

Grading:

Homework 10 points, Midterm 35 points, Final exam 55 points.

Make sure you can make the Midterm and Final exam; check the schedule now to see that it is acceptable to you. It is not possible to have make-up exams.

Midterm: Thursday, March 2, in Class 11am-12:30pm.

Final Exam: Thursday, May 11, 8-11am.