MATH 234B, WINTER 2000

RIEMANNIAN GEOMETRY I

Course Outline

Instructor: Viktor Ginzburg
AS 353C, ginzburg@math.ucsc.edu
Office hours: Tu 2:00-3:30pm; We 12:00-1:30pm
Phone: 459-2218

Meetings: MW 10:00-11:45, AS 360

Text: *A comprehensive introduction to DIFFERENTIAL GEOMETRY*, vol. I, II
by Michael Spivak
Third edition, 1999, Publish or Perish, Inc.

Exams: There will be one take-home midterm and a take-home final. Homework assignments will be an integral part of the course.

Syllabus. This is the second course in the geometry sequence. Some familiarity with differential manifolds and differential forms is a prerequisite for this course.

The topics to be covered in this course are Riemannian metrics, geodesics, the exponential map; an introduction to Lie groups and Lie algebras; connections and parallel transport on Riemannian manifolds and in vector bundles; surfaces; the curvature tensor; the Gauss–Bonnet theorem.