INTRODUCTION TO DIFFERENTIAL GEOMETRY  
L15480  
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National Cheng-Kung University, Taiwan  

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Schedule

Tuesday 10:30-12am and Thursday 11:30am-1pm. Room: Math building 3177.

Course Outline

This term we will focus on Riemannian geometry. The material that will be covered in the course includes the following:

1. Differentiable manifolds  
2. Riemannian metric  
3. Parallel transport and Connections  
4. Geodesics: geodesic flow, minimizing properties  
5. Curvature: Sectional, Ricci, scalar curvature  
6. Jacobi field  
7. The second fundamental form  
8. Variations of energy

If times permits, an introduction of Morse theory will be given.

Grading

There will be one final exam. Assignments will be given during the semester.

Office hours

Walk-in or by appointment.

Suggested reading
1. Jurgen Jost, *Riemannian Geometry and Geometric Analysis*
2. do Carmo, *Riemannian Geometry*
4. Jeff Cheeger and David Ebin, *Comparison Theorems in Riemannian Geometry*