

MATH 993: Theorems on Regularity and Singularity of Energy Minimizing Maps  
Professor Marianne Korten  
Fall 2007-Spring 2008

This is a continuation of my Fall 2007 Math 992 course.

I will continue to follow the book "Theorems on Regularity and Singularity of Energy Minimizing Maps", by Leon Simon, Birkhauser, 1996.

It is based on lecture notes taken by Norbert Hungerbuhler from lectures taught at ETH Zurich by Leon Simon. The lectures are a self-contained introduction to the basic regularity theory for energy minimizing/harmonic maps, including recent developments concerning the structure of the singular set and asymptotics on approach to the singular set. Specialized knowledge in partial differential equations or the geometric calculus of variations is not required; a good background in mathematical analysis would be adequate preparation.

These techniques have many applications (among them to variational calculus, PDEs, Free Boundary problems and Geometric Analysis). I especially love Leon Simon's approach to the subject.

Prerequisite for the course is Math 821, or instructor permission. For more details about the course, please see Professor Korten.