MATH 992: Theorems on Regularity and Singularity of Energy Minimizing Maps
Professor Marianne Korten
Summer 2007 & Fall 2007

I will 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.

I'm looking forward to working on this material. 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.

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