Differential Equations and Applied Math Seminar

Dr. Ray Treinen, Texas State University

11am-12pm October 6th, 2017

333 Derrick Hall

Title: Γ-convergence topics IV

Abstract: We continue our study of integral problems on Lebesgue spaces. We will prove the following results. First, a so called relaxation in Lebesgue spaces, which says that under certain conditions that a functional $F : L^p(a, b) \to [0, \infty]$ given by

$$F(u) = \int_a^b f(u) \, dt$$

has a weakly -lower semicontinuous envelope given by

$$\mathbb{F}(u) = \int_a^b f^{**}(u) \, dt,$$

where f^{**} is the convex lower semicontinuous envelope of f.

Next, we will show that a sequence of such (F_j) Γ-converges to some F in a sense if and only if (f_j^{**}) Γ-converges to some f.

We are mostly following the book by Andrea Braides.

Interested faculty and graduate students are encouraged to attend.