Spring 2017 Math 172: Lebesgue Integration and Fourier Analysis

Instructor: Yu Gu

This is a course on Lebesgue integral and Fourier analysis. Topics include Lebesgue measure on Euclidean space, Lebesgue integration, $L^p$ spaces, the Fourier transform and series, applications to partial differential equations and probability.

(1) **Time**: TTh 9:00AM-10:20AM

(2) **Place**: Math building 380D

(3) **Reference books**: Stein and Shakarchi: Real Analysis, Fourier Analysis.

(4) **Office hours**:
   - TBA or by appointment yg1@stanford.edu

(5) **Prerequisite**: Math 171 or Math 115.

(6) **Contents to cover** (subject to change):
   - Lebesgue measure
   - Lebesgue integral
   - Differentiation and convolution
   - Fourier series and Fourier transform
   - Applications to PDE/probability

(7) **Homeworks**: assigned approximately every week. Late homeworks are not accepted.

(8) **Grades**: 25% homework+35% midterm (May 4th in class)+40% final