

# Math 712, Fall 2011

**Dr. Sarah Raynor**

**Textbook:** An Introduction to Measure Theory, by Terence Tao.

**Office:** Manchester 343

**Office Hours:** I will be available Mondays, Wednesdays, and (usually; travel-permitting) Fridays from 1-4pm. You are also welcome to drop by my office anytime that I am in.

**Email:** raynorsg@wfu.edu

**Course Website:** <http://www.wfu.edu/~raynorsg/math712.html>

**Course:** This course will be an introduction to measure theory. We will begin by reviewing Jordan measure and the closely related Riemann integral. We will then introduce Lebesgue measure on Euclidean space and the corresponding Lebesgue integral. We will discuss important concepts of convergence and the main convergence theorems. Time permitting, we will discuss abstract measure spaces and differentiation further. I expect to cover most of Sections 1.1-1.4 of the text and as much of Sections 1.5-1.6 as time allows.

**Assignments:** There will be no graded homework in this course. However, I will suggest problems for you to work from every topic that we discuss, and I expect that you will attempt to complete them to the best of your ability. I will be available to discuss these problems outside of class, and I also encourage you to discuss them with your classmates. We will be discussing homework problems and lecture material as a group, so you should come to each class prepared to participate.

**Evaluation:** There are 3 components of your final grade:

1. There will be three take-home exams during the term, which are worth 20% of your grade each.
2. There will be a cumulative oral final exam, which will be worth 30% of your grade.
3. Your positive participation in the class will be worth 10% of your grade.

I have tentatively scheduled the take home exams for the weekends of September 30, November 4, and December 9. Please let me know immediately if these dates will be a problem for you.