

## Mathematics 650 — Real Analysis

**Textbook:** , Malcolm Adams, Victor Guillemin *Measure Theory and Probability*, 1996 Edition

### Contents:

Measure Theory is the basis of many aspects of modern real analysis. The course gives an introduction to measure theory, Lebesgue integration and applications to classical  $L^p$  spaces, Fourier Analysis and Probability Theory. Topics include sigma-rings and sigma-fields, measurability, measurable functions, the Lebesgue integral, the theorems of monotone and dominated convergence, and Fubini's Theorem. Special emphasis is given to probability measures.