(3-0-0; ——) **Measure and Integration** MATH-426*

This course is intended to introduce students to the Lebesque integral and its applications in particular to probability theory.

Textbook: *Real Analysis*, 3rd Edition
by H. L. Royden (MacMillan)

Prerequisite: MATH-328* *or* equivalent.

Instructor: J. Mingo

Evaluation:

Four written assignments	75%
Classroom presentation	25%

Outline:

- The measure of a set
- The Lebesque integral
- Convergence theorems
- General measures
- Product measures and Fubini's theorem
- Random variables and their distributions
- Independence of random variables
- The central limit via Fourier transforms