

## **LTCC Basic Course**

**Title: Measure Theory**

**Basic Details:**

- Core Audience: 1<sup>st</sup> year, all areas
- Course Format: **Extended:** 5 x 2hr lectures

**Course Description:**

- Keywords: measures and measurability, Lebesgue, functions, integration, sigma algebras
- Syllabus: We cover the basic structure of measures, starting with the algebra of sets on which a measure is defined. We explore the concept of outer measure and its most common application, the Lebesgue measure on Euclidean space. We end the course by applying measure to functions and their integration, including the monotone and dominated convergence theorems.
- Recommended reading: Donald L. Cohn, Measure Theory; Terrence Tao, An Introduction to Measure Theory; Paul Halmos, Measure Theory; M.E. Munroe, Introduction to Measure and Integration
- Prerequisites: none

**Format:**

- Five discussion/problem sheets
- Electronic lecture notes, but the lectures will follow the Cohn book
  - 10 hours of lectures

**Lecturer Details:**

- Lecturer: Robert Samuel Simon
- Lecturer home institution: LSE
- Lecturer e-mail: R.S.Simon@lse.ac.uk