

# Measure Theory and probability



ECTS  
4 crédits



Hourly volume  
45h

## Introducing

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### Objectives

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We will introduce the modern notion of integration established by H. Lebesgue at the beginning of the 20th century. At the end of the course, the student will be able to (among other things):

- show that a given function is measurable and integrable in the Lebesgue sense;
- use the notion of measure;
- switch a limit (or a derivative) and an integral sign;
- understand the various concepts of convergence (almost everywhere,  $L_p$ , etc);
- discuss the belonging of a given function in  $L_p$ ;
- use Cauchy-Schwarz and Hölder's inequalities;
- compute a convolution product.

## Practical info

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### Location(s)

 Toulouse