

## Stochastic Calculus

**ECTS : 6**

**Volume horaire : 45**

### Description du contenu de l'enseignement :

The course consists of four parts, each occupying roughly 6 hours:

- Preliminaries (Gaussian processes, Brownian motion, martingales, local martingales, variation, quadratic variation)
- Stochastic integration (Isometry extension, Wiener integral, Ito integral, martingale property)
- Stochastic differentiation (Itô processes, Itô's Formula, Girsanov's Theorem)
- Stochastic differential equations (existence and uniqueness, Markov property, generator, connections with PDEs).

### Compétence à acquérir :

This course is a practical introduction to the theory of stochastic calculus, with an emphasis on examples and applications rather than abstract subtleties. [Click here for more information](#)

### Mode de contrôle des connaissances :

Final written exam, in class.

### Bibliographie, lectures recommandées :

[Click here for more information](#)