

# Topics in probability theory

## Lecturer

Yves-Caoimhin SWAN (Coordinator)

## Course mnemonic

STAT-F421

## ECTS credits

5 credits

## Language(s) of instruction

English

## Course period

Second term

## Campus

Plaine

## Course content

The content changes regularly, according to the students' profiles and interests. This year I plan to cover the following topics:

- > Simulation of uni and multi variate probability distributions
- > Bayesian probability
- > MCMC (Gibbs sampler, ...)

## Objectives (and/or specific learning outcomes)

After this course, a student will be able to

- > get familiar with a non-standard topic in probability
- > appreciate certain aspects of modern research in probability

## Teaching method and learning activities

Lectures (theory)

## Contribution to the teaching profile

- > Learning some advanced notions in some fields of probability and statistics

## References, bibliography and recommended reading

A selection of recent research papers, to be fixed during the course

## Course notes

Université virtuelle

## Other information

### Place(s) of teaching

Plaine

### Contact(s)

Yvik Swan

<Yvik.Swan@ulb.be>

## Evaluation method(s)

Oral examination

### Evaluation method(s) (additional information)

The exam is an oral test. It might also consist in an oral presentation.

It is organized in June (and, if needed, in August/September).

### Main language(s) of evaluation

English

### Other language(s) of evaluation, if applicable

French

## Programmes

### Programmes proposing this course at the faculty of Sciences

MA-MATH | **Master in Mathematics** | finalité Research/unit 1 and finalité Research/unit 2, MA-STAT | **Master in Statistics : General** | finalité Research General/unit 1 and MS-BGDA | **Specialized Master in data science, Big data** | unit U

### Programmes proposing this course at the Solvay Brussels School of Economics and Management

MA-ECOE | **Master in Economics : Econometrics** | finalité Research in Economics and statistics/unit 2 and MS-BGDA | **Specialized Master in data science, Big data** | unit U

### Programmes proposing this course at the Brussels School of Engineering

MS-BGDA | **Specialized Master in data science, Big data** | unit U