STAT-F421 | 2023-2024

# 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