MATH-455 **Combinatorial statistics**

Abbé Emmanuel

Cursus	Sem.	Type
Computational science and Engineering	MA1, MA3	Opt.
Ing.-math	MA1, MA3	Opt.
Mathématicien	MA1, MA3	Opt.

Language of teaching	English
Credits	5
Session	Winter
Semester	Fall
Exam	During the semester
Workload	150h
Weeks	14
Hours	**4 weekly**
Courses	2 weekly
Exercises	2 weekly
Number of positions	

Summary

The class will cover statistical models and statistical learning problems involving discrete structures. It starts with an overview of basic random graphs and discrete probability results. It then covers topics such as reconstruction on trees, stochastic block models, and spectral graph theory.

Content

- thresholds
- random graphs basics
- random trees
- broadcasting on trees
- stochastic block models and community detection
- spectral graph theory

Assessment methods

Pendant le semestre, écrit
Dans le cas de l'art. 3 al. 5 du Règlement de section, l'enseignant décide de la forme de l'examen qu'il communique aux étudiants concernés.

Prerequisite for

Some knowledge in probability and statistics