Faculty of Sciences

MAT1322   Measure theory

[22.5h+15h exercises] 3 credits

This course is not taught in 2005-2006
This course is taught in the 1st semester
Language: French
Level: First cycle

Aims

The objective of the course is to introduce the notion of abstract measure space and the corresponding Lebesgue integral, then to rediscover, in this new language, the convergence theorems introduced in the first analysis courses : Fatou's lemma, Lebesgue dominated convergence, etc. After this course, students will be able to use those new tools in the context of the analysis and probability courses.

Main themes

Borel-Sieltjes measures.
Measurable functions
Integrability and integrals
Convergence theorems
Radon-Nikodym theorem
Fubini theorem
Lp spaces and their dual
Representation theorem of Riesz-Markov.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisite : MAT 1221: Mathematical analysis 3