

Institute of Statistics



STAT3100 Mathematical statistics

[30h] 6 credits

This course is taught in the 1st semester

Teacher(s): Jean-Marie Rolin
Language: English
Level: Third cycle

Aims

This course is the sequel of MATH 2440 "Analyse statistique". Its objective is to provide to students who intend to obtain a doctor degree the necessary basic tools in order to perform statistical research.

Main themes

1. Asymptotic Theory in Parametric Inference : M-and Z-Estimators, Contiguity and Local Asymptotic Normality.
2. U-Statistics.
3. Empirical Processes
4. Von Mises Differentiable Statistical Function : Nonparametric M-Estimators.
5. Functional Delta Method

Content and teaching methods

Content :

1. Asymptotic Theory in Parametric Inference : M-and Z-Estimators, Contiguity and Local Asymptotic Normality.
2. U-Statistics.
3. Empirical Processes
4. Von Mises Differentiable Statistical Function : Nonparametric M-Estimators.
5. Functional Delta Method

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

References

- Serfling R.J. " Approximation Theorems of Mathematical Statistics, Wiley (1980)
- van de Vaart A.W. " Asymptotics Statistics ", Cambridge (1998)

Programmes in which this activity is taught

MAPA3DA Diplôme d'études approfondies en mathématique
STAT3DA Diplôme d'études approfondies en statistique

Other credits in programs

STAT3DA	Diplôme d'études approfondies en statistique	(6 credits)	
STAT3DA/E	diplôme d'études approfondies en statistique (statistique et économétrie)	(6 credits)	
STAT3DA/M	Diplôme d'études approfondies en statistique (méthodologie de la statistique)		Mandatory
STAT3DA/P	diplôme d'études approfondies en statistique (pratique de la statistique)	(6 credits)	