



STAT3100 Mathematical statistics

[30h] 6 credits

This course is taught in the 1st semester

Teacher(s): Johan Segers
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)

Other credits in programs

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)	(6 credits)	Mandatory
STAT3DA/P	diplôme d'études approfondies en statistique (pratique de la statistique)	(6 credits)	