UCL Université catholique de Louvain

LSTAT2040

2013-2014

Statistical analysis

5.0 credits	30.0 h + 15.0 h	2q

Teacher(s) :	El Ghouch Anouar ; Van Keilegom Ingrid ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	General presentation of the statistical model. Sufficient statistic and exponential family. Theory of point estimation: use for sufficiency and completeness. Construction of estimators: maximum likelihood method, asymptotic equivalence. Construction of confidence regions: exact and asymptotic regions. Theory of hypothesis tests: Neyman-Pearson lemma, likelihood ratio tests, Rao statistic, Wald statistic. Applications to the exponential family models, and to problems encountered in the first cycle course.
Aims :	Second cycle course of general education in mathematical statistics. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Other infos :	Support: - Von Sachs R., Analyse statistique, syllabus of MATH 2440, Institut de statistique, UCL, Louvain-la-Neuve, 2000. - Montfort A., Cours de statistique mathématique, Economia, Paris, 1982. - Lehmann E.L., Casella G., Theory of point estimation, 2nd edition, Springer, 1988. - Lehmann E.L., Testing statistical hypothesis, 2nd edition, Springer, New York, 1997.
Cycle and year of study :	> Master [120] in Mathematics > Bachelor in Information and Communication > Bachelor in Philosophy > Bachelor in Pharmacy > Bachelor in Computer Science > Bachelor in Economics and Management > Bachelor in Motor skills : General > Bachelor in Human and Social Sciences > Bachelor in Sociology and Anthropology > Bachelor in Political Sciences: General > Bachelor in Mathematics > Bachelor in Biomedicine > Bachelor in Engineering > Bachelor in Religious Studies > Certificat universitaire en statistique > Master [120] in Mathematical Engineering > Master [120] in Statistics: General > Master [120] in Statistics: Biostatistics
Faculty or entity in charge:	LSBA