UCL Université catholique de Louvain

LSTAT2010

2015-2016

Mathematics for the statistician - Introduction to probability and statistics.

8.0 credits	30.0 h + 45.0 h	1q

Teacher(s) :	Van Keilegom Ingrid ; Bugli Céline (compensates Van Keilegom Ingrid) ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	PART I : Mathematics : Analysis of functions, limits, continuity, derivatives, integrals, matrix algebra. Part II : Probability : Event, probability and conditional probability, Bayes theorem, discrete and continuous random variables, particular laws, density function, distribution function, moments, random vector, limit theorems. PART III : Statistics : Point estimation, confidence interval and hypothesis testing with application to the case of normal population(s) or proportions.
Aims :	By the end of the course, the student will be familiar with the basis of mathematics, probability and statistics, necessary to start the courses of methodology and practice of statistics of the program. *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".*
Content :	Content PART I : Mathematics : Analysis of functions, limits, continuity, derivatives, integrals, matrix algebra. Part II : Probability : Event, probability and conditional probability, Bayes theorem, discrete and continuous random variables, particular laws, density function, distribution function, moments, random vector, limit theorems. PART III : Statistics : Point estimation, confidence interval and hypothesis testing with application to the case of normal population(s) or proportions. Teaching methods The course consists of lectures and exercise sessions.
Other infos :	Evaluation The evaluation consists of a written exam. Teaching materials The course notes will be distributed during the first lecture of the course. Others Professors : - Johan Segers, phone : 010/47 43 11, e-mail : lambert@stat.ucl.ac.be - Ingrid Van Keilegom, phone : 010/47 43 30, e-mail : vankeilegom@stat.ucl.ac.be References : Dowling, E.T. (1995), Mathématique pour l'économiste, McGraw-Hill, London. Droesbeke, J.-J. (1997). Eléments de Statistique. Editions de l'Université de Bruxelles & Editions Ellipses. Khuri, A (1993), Advanced calculus with applications in statistics, Wiley, New York. Wackerly D.D., Mendenhall W. and R.L. Scheaffer 5th Ed (1996) Mathematical Statistics with Applications, ITP, Duxbury Pres
Faculty or entity in charge:	LSBA

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
	STAT9CE	8	-	
	STAT2FC	8	-	