UCLouvain

lstat2012

2021

Probabilités: Concepts de base pour l'analyse statistique

3.00 credits	15.0 h + 15.0 h	Q1

Teacher(s)	Pircalabelu Eugen ;
Language :	French
Place of the course	Louvain-la-Neuve
Learning outcomes	
Evaluation methods	Face-to-face, written exam of 3 hours, closed book with the possibility of using a pocket calculator and a brief standard formulary (the same for all students) that lists for well known distribution families: the moment generating function, the expected value, the variance and the probability function. The list is available in the main reference (Wackerly et al. 2007) and is distributed to students together with probability tables from the same reference. The exam consists of theoretical questions and exercises to be solved and counts for 70% of the final grade. A 'test dispensatoire' (non-compulsory) will be organized in the beginning of the semester and an evaluation (compulsory) before the regular exam session will be organized at the end of the class. These two forms of evaluation have an equivalent complexity as the exam in the regular exam session and are organized in a similar fashion. During the semester, the student must hand-in 3 compulsory assignments (short, 1 to 2 pages maximum per assignment), counting for 30% of the final grade. The homework is to be solved individually or in groups of 2. A grade will be awarded per group. The exact evaluation methods could be adapted according to the constraints linked to the sanitary conditions in force at the time of the exam sessions.
Teaching methods	The class consists of lectures (15h) and exercises sessions (15h). The classes and the TP are intended to be face to face. Teaching language: French.
Content	The class is focused on the presentation of key probabilistic concepts such as: • Events • Marginal and conditional probability • Bayes Theorem • Discrete and continuous random variables • Distribution and density functions • Classical distributional models • Moments • Random vectors • Limit theorems
Inline resources	Moodle website of the class: LSTAT2012 - Probabilités: Concepts de base pour l'analyse statistique https://moodleucl.uclouvain.be/course/view.php?id=12678.
Bibliography	• Wackerly, D.D., Mendenhall, W. et Scheaffer, R.L. (2007). Mathematical Statistics with Applications, 7th Ed., International student edition, Brooks-Cole. • Rice J.A. (2007). Mathematical Statistics and Data Analysis 3rd Ed., Duxbury Press. • 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.
Other infos	Prerequisite courses: LSTAT2011; LSTAT2012; LSTAT2013.
Faculty or entity in charge	LSBA

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Minor in Statistics, Actuarial Sciences and Data Sciences	MINSTAT	3		
Certificat d'université : Statistique et sciences des données (15/30 crédits)	STAT2FC	3		
Master [120] in Data Science : Statistic	DATS2M	3		