UCLouvain

lbir1315

2020

Probability and statistics II

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

3 credits	22.5 h + 22.5 h	Q1

Teacher(s)	Bogaert Patrick ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes	Introduction to statistics - Common methods for point estimation - Confidence interval for a mean and a variance - Hypothesis testing and inference - Linear models and regression.
Aims	a. <u>Contribution of this activity to the learning outcomes referential :</u> 1.1, 2.1 b. <u>Specific formulation of the learning outcomes for this activity</u> A the end of this activity, the student is able to : 1 · Name, describe and explain the theoretical concepts underlying the statistical inference approach and the theoretical models that are used in this framework; · Connect the deductive approach of probability theory to the inductive approach of statistical inference by clearly identifying the probabilistic models that are subject to this inference; · Translate mathematically textual statements if an inferential problem in statistics by using a rigorous mathematical and appropriate statistical models and by relying on appropriate theoretical tools and estimation methods; · Solve an applied problem by using a sound approach that relies on a correct use of well identified models and relevant tools of the inferential statistical framework; · Validate the internal consistency of the mathematical expressions and results based on data at hand and logical constraints that are induced by the statistical framework; - - - - *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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Evaluation: Open book written examination (only with the original material). The examination is composed of exercises to be solved. Its duration is about 3 hours.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Regular courses and supervised practical exercises
Content	The course will complete the basic notions already presented during the course LBIR 1212 - Probability & Statistics (I). The student will be able to use the most classical estimation and inference methods for one or two means or variances, as well as for the most classical linear models. Few exercises will be devoted to the use of computer software in order to illustrate the various concepts.
Inline resources	Moodle
Other infos	The course does not require specific material that would be considered as mandatory.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Data Science : Statistic	DATS2M	3		
Minor in Statistics, Actuarial Sciences and Data Sciences	MINSTAT	3		
Bachelor in Bioengineering	BIR1BA	3	LBIR1212	