UCLouvain

lecge1224

2020

Economics and Management Statistics

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).

5 credits	30.0 h + 15.0 h	Q2

Teacher(s)	Heuchenne Cédric ;
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	Part 1: Basic methods of statistical analysis. After an introduction to statistical models (population and sampling models), students are shown how statistical sampling distributions form the basis for inferencing. These properties make it possible to check the precision of specific estimators, to construct confidence intervals and to check the risks of error in a hypothesis testing procedure. Part 2: Application to some standard problems. In this part, the basic methods taught in Part 1 are adapted to analyzing useful application issues in Economics and Management: Variance analysis (comparison of several averages); inter-variable relation modelling (linear models); Studies of categorical variables including an inter-variable independence test. Students will also be introduced, through simple examples, to the maximum likelihood estimation method, which is particularly useful in the more complex models analysed in later Econometrics courses. We consider finally the problem of poor specification of the model and the case a non-linear regression.
Aims	1 The aim of this course is to introduce the types of reasoning and basic methods used in statistical analysis, and examine how they are used to solve simple statistical problems in the field of Economics and Management. This course also aims to teach the core subject-matter developed in the Statistics and Econometrics courses which students will take later in their degree course. By the end of the course students should be able to understand basic mechanisms of statistical inferencing and provide practical solutions to standard problems of estimation, confidence interval construction and hypothesis-testing on averages, variances and proportions. They should also be able to model inter-variable relations using simple linear regression models, with a basic introduction to multivariate aspects. - - - - *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.** First session evaluation 1) If the student passes a test during the courses (random tests during the courses), he gets a grade for the continuous evaluation that corresponds to 25% of the final first session grade, the other 75% corresponding to the final written exam (MCQ) schedulded during the exams first session. 2) If the student does not pass any test (the student is not selected) during the courses, 100% of his final grade (MCQ) correspond to the final written exam schedulded during the exams first session. Second session evaluation 100% of the final second session grade correspond to the final written exam (MCQ) schedulded during the exams second session. NB: In case of a change in sanitary conditions towards an orange or red code, the continuous assessment can be organized remotely (depending on the color code) via a computer software provided to the teachers and students by the university. The technical conditions for this software-related assessment will be specified to you once the state authorities have made decisions about the sanitary conditions for the universities according to the evolution. In case of a change in health conditions towards an orange or red code, the written examination may take place remotely (depending on the color code) via a computer software provided to the teachers by the university. The technical conditions for this remote examination will be specified to you once the state authorities have made decisions about the health conditions for universities according to the evolution. The weighting for the final grade described above will not be changed.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** See the introduction of the course LECGE1224 on moodle. Face-to-face and distance teachning/ distance teachning only if needed

Content	Content : Statistical model and sampling distribution, point and interval estimation, hypothesis testing, linear model (including matrix rating), Methods of Estimation including Maximum likelihood, Properties estimators, Inference in the simple regression, non linear regression Method: The course comprises: - lectures (on the basis of videos watched by the students before the lesson, the teacher re-introduces the concepts before beginning the debate with the students who annswer questions they prepared before the lesson -independent problem solving-), - practical exercise sessions (the teacher gives students applications/problems and suggests ways of solving them).
Inline resources	Course LECGE1224 on moodle.
Bibliography	Mathematical Statistics with Applications, 7ème édition. Wackerly, Mendenhall, Scheaffer.
Other infos	Prerequisite: LECGE1114 Statistics in Economics and Management I or equivalent course.
Faculty or entity in charge	ESPO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Mineure en statistique et science des données	MINDATA	5		
Bachelor in Philosophy, Politics and Economics	PPE1BA	5	LECGE1114	
Bachelor in Economics and Management	ECGE1BA	5	LECGE1114	
Minor in Economics	MINECON	5		