UCLouvain

lfopa2007

2025

Traitement de données quantitatives

6.00 credits	30.0 h + 15.0 h	Q1

This learning unit is not open to incoming exchange students!

Teacher(s)	De Clercq Mikaël ;Parmentier Michaël ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	The aim of this course is to provide basics skills and knowledge about quantitative data analysis both for descriptive and inferential statistics.
Learning outcomes	**At the end of this learning unit, the student is able to :** The learning outcomes G4, and to a lesser extent, G2 (G26 & G27) are pursued by this course. At the end of this course, the students should be able to: - Translate a concrete issue into a research question that fit quantitative data analysis (G41). - Identify the different existing variable types (G43). 1 - Select, apply and interpret descriptive statistics in a concrete research context (G43). - Understand the underlying reasoning of inferential statistics. - Select apply and interpret inferential statistics (essentially bivariate procedure) in a concrete research context (G44) - Critically evaluate research endorsing a quantitative design (G45).
Evaluation methods	The assessment method is both an individual written exam (15/20) and a collective statistical report (5/20) The final mark will be based upon these two assessment methods. Yet, it is required to achieve these two evaluations in order to satisfy to the requirement of the course. The achievement of the course won't be obtained if the student fails one of the two evaluations. In that specific case, a failure mark will be automatically attributed to the student. In the case of a final failure to the course, the validation of one of the two assessement will be automaticaly postpone to the next academic year.
Teaching methods	The course is divided into 30hours of lecture course and 15hours of practical exercises. The practical exercises sessions aim at facilitating the development of interpretative and selection skills about descriptive and inferential statistical methods. Both lecture course and practical exercises allows students to get used to the use of statistical software.
Content	Descriptive statistics : - Nominal variables : mode - Ordinal variables : median, interquartile range - Continuous variables : mean, variance, standard deviation. Inferential statistics: knowledge - Population and sample - Inferential test procedure - Effect size Inferential statistics (statistical tests): - Chi-square & Cramers V. - Spearman & Pearsons correlations. - Simple & multiple linear regression. - T-test & one-way Anova. Critical reading: - Understanding of the most used statistical terms and icons in empirical literature. - Diagrams, tables and indices interpretation. - Critical distance with traditional manipulation of statistical information. - Awareness of the limitations of the statistical tools.

Inline resources	https://moodleucl.uclouvain.be/course/view.php?id=7548
Bibliography	Bressoux, P. (2008). Modélisation statistique appliquée aux sciences sociales. Bruxelles: De Boeck Université. Dancey, C. et Reidy J. (2007). Statistiques sans maths pour psychologues. Bruxelles : De Boeck. Howell, D. (2008). Méthodes statistiques en sciences humaines. Bruxelles : De Boeck.
Other infos	For the completion of this assignment, the use of generative Artificial Intelligence (AI) tools is authorized solely to revise or improve the format of the text, and not to contribute to the content. Students are reminded that information sources must be systematically cited in accordance with bibliographic referencing standards, including the use of AI. Students remain responsible for the content of their work, regardless of the sources used in appendix to the report. To enable verification of compliance with these instructions, students must retain records of any interactions they may have had with any content generation tool they may have used until their results are announced. As a reminder, any use of generative Artificial Intelligence tools contrary to what is authorized may result in the implementation of the irregularity procedure provided for in Articles 107 et seq. of the General Regulations for Studies and Assessments, and may lead to academic sanctions. The work may possibly be the subject of an oral defense. One or two themes of the report are adressing the question of ecological transition and sustainable development.
Faculty or entity in charge	EDUC

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Advanced Master in University and Higher Education Pedagogy (shift schedule)	EDUC2MC	6		