

6.00 credits

30.0 h + 15.0 h

Q1

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	<p><b>At the end of this learning unit, the student is able to :</b></p> <p>The learning outcomes G4, and to a lesser extent, G2 (G26 &amp; G27) are pursued by this course. At the end of this course, the students should be able to:</p> <ul style="list-style-type: none"> <li>- Translate a concrete issue into a research question that fit quantitative data analysis (G41).</li> <li>- Identify the different existing variable types (G43).</li> <li>1 - Select, apply and interpret descriptive statistics in a concrete research context (G43).</li> <li>- Understand the underlying reasoning of inferential statistics.</li> <li>- Select apply and interpret inferential statistics (essentially bivariate procedure) in a concrete research context (G44)</li> <li>- Critically evaluate research endorsing a quantitative design (G45).</li> </ul>
Evaluation methods	<p>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.</p> <p>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.</p> <p>In the case of a final failure to the course, the validation of one of the two assesement will be automatically postpone to the next academic year.</p>
Teaching methods	<p>The course is divided into 30hours of lecture course and 15hours of practical exercises.</p> <p>The practical exercises sessions aim at facilitating the development of interpretative and selection skills about descriptive and inferential statistical methods.</p> <p>Both lecture course and practical exercises allows students to get used to the use of statistical software.</p>
Content	<p>Descriptive statistics :</p> <ul style="list-style-type: none"> <li>- Nominal variables : mode</li> <li>- Ordinal variables : median, interquartile range</li> <li>- Continuous variables : mean, variance, standard deviation.</li> </ul> <p>Inferential statistics: knowledge</p> <ul style="list-style-type: none"> <li>- Population and sample</li> <li>- Inferential test procedure</li> <li>- Effect size</li> </ul> <p>Inferential statistics (statistical tests):</p> <ul style="list-style-type: none"> <li>- Chi-square &amp; Cramers V.</li> <li>- Spearman &amp; Pearsons correlations.</li> <li>- Simple &amp; multiple linear regression.</li> <li>- T-test &amp; one-way Anova.</li> </ul> <p>Critical reading:</p> <ul style="list-style-type: none"> <li>- Understanding of the most used statistical terms and icons in empirical literature.</li> <li>- Diagrams, tables and indices interpretation.</li> <li>- Critical distance with traditional manipulation of statistical information.</li> <li>- Awareness of the limitations of the statistical tools.</li> </ul>
Inline resources	<a href="https://moodleucl.uclouvain.be/course/view.php?id=7548">https://moodleucl.uclouvain.be/course/view.php?id=7548</a>

Bibliography	<p>Bressoux, P. (2008). Modélisation statistique appliquée aux sciences sociales. Bruxelles: De Boeck Université.</p> <p>Dancey, C. et Reidy J. (2007). Statistiques sans maths pour psychologues. Bruxelles : De Boeck.</p> <p>Howell, D. (2008). Méthodes statistiques en sciences humaines. Bruxelles : De Boeck.</p>
Other infos	<p>The use of AI (ChatGPT...) is strictly forbidden for the generation of text. The only authorized use is for language correction. Whenever the student uses the help of an AI, it has to be explicitly mentioned in the text and the student has to provide the prompts used into appendix.</p> <p>One or two themes of the report are addressing the question of ecological transition and sustainable development.</p>
Faculty or entity in charge	EDEF

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		