

5.0 credits	30.0 h + 20.0 h	1q
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Teacher(s) :	Lefèvre Nathalie ; Van Keilegom Ingrid ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<p>Descriptive statistics :</p> <ul style="list-style-type: none"> <li>- graphic and numeric tools to summarize the available information about one or two qualitative and/or quantitative variables: frequency tables, bar charts, distribution functions, histograms, box-plots, means, variances, standard deviations, correlation coefficients (Pearson, Kendall and Spearman), X-Y graphs, etc.</li> </ul> <p>Probability :</p> <ul style="list-style-type: none"> <li>- definition of probability, basic combinatory calculation, formulas for basic probability calculation, independence, conditional probability, Bayes' theorem, discrete and continuous random variables, uniform, binomial and normal distribution, central limit theorem</li> </ul> <p>Statistical inference :</p> <ul style="list-style-type: none"> <li>- notions of estimation, confidence interval and hypothesis tests. Inference on the means and variances of one or two normal populations and one or two proportions.</li> </ul>
Aims :	<p>This course presents the basic concepts of probability and statistics useful in the field of psychology. By the end of the course, the students will be able to :</p> <ul style="list-style-type: none"> <li>- understand and explain the concepts covered in class</li> <li>- recognize the kind of method to use for a given problem</li> <li>- use each tool and apply it in various situations</li> <li>- follow a systematic procedure to resolve an open problem, from the choice of method, its application and validation to the interpretation of the results obtained</li> <li>- have a good understanding of the fields of application of statistics in psychology and of the situations they will encounter</li> </ul> <p><i>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".</i></p>
Content :	<p>Content</p> <p>The course has three parts.</p> <p>First, the basic techniques of descriptive statistics are covered. This relates particularly to graphic and numerical tools to summarize the available information in terms of one or two qualitative and/or quantitative variables.</p> <p>Second, the basic concepts of probability theory are introduced e.g. formulas for probability calculation, concepts of independence and conditional probability, Bayes' theorem, discrete and continuous random variables, central limit theorem etc.</p> <p>Third, the final part will present the basic concepts of statistical inference: notions of estimation, confidence interval and hypothesis tests are explained and applied to the inference on the means and variances of one or two normal populations and on one or two proportions.</p> <p>Methods</p> <p>Lectures and exercises. The exercises are in small groups and are supervised by assistants.</p>
Other infos :	<p>Prerequisites : none</p> <p>Assessment : written examination.</p> <p>Support : theory manual, exercise manual and transparencies from lectures</p>

<p>Cycle and year of study :</p>	<ul style="list-style-type: none"> <li>&gt; <a href="#">Preparatory year for Psychology</a></li> <li>&gt; <a href="#">Preparatory year for Master in Family and Sexuality Studies</a></li> <li>&gt; <a href="#">Preparatory year for Master in Linguistics</a></li> <li>&gt; <a href="#">Bachelor in Ancient and Modern Languages and Literatures</a></li> <li>&gt; <a href="#">Bachelor in Information and Communication</a></li> <li>&gt; <a href="#">Bachelor in Philosophy</a></li> <li>&gt; <a href="#">Bachelor in Pharmacy</a></li> <li>&gt; <a href="#">Bachelor in Ancient languages and Literatures : Classics</a></li> <li>&gt; <a href="#">Bachelor in Computer Science</a></li> <li>&gt; <a href="#">Bachelor in Psychology and Education: General</a></li> <li>&gt; <a href="#">Bachelor in Modern Languages and Literatures: German, Dutch and English</a></li> <li>&gt; <a href="#">Bachelor in Economics and Management</a></li> <li>&gt; <a href="#">Bachelor in French and Romance Languages and Literatures : General</a></li> <li>&gt; <a href="#">Bachelor in Motor skills : General</a></li> <li>&gt; <a href="#">Bachelor in Human and Social Sciences</a></li> <li>&gt; <a href="#">Bachelor in Modern Languages and Literatures : General</a></li> <li>&gt; <a href="#">Bachelor in Sociology and Anthropology</a></li> <li>&gt; <a href="#">Bachelor in Political Sciences: General</a></li> <li>&gt; <a href="#">Bachelor in History of Art and Archaeology : General</a></li> <li>&gt; <a href="#">Bachelor in Ancient Languages and Literatures: Oriental Studies</a></li> <li>&gt; <a href="#">Bachelor in History</a></li> <li>&gt; <a href="#">Bachelor in Biomedicine</a></li> <li>&gt; <a href="#">Bachelor in Mathematics</a></li> <li>&gt; <a href="#">Bachelor in Religious Studies</a></li> <li>&gt; <a href="#">Certificat universitaire en statistique</a></li> </ul>
<p>Faculty or entity in charge:</p>	<p>PSP</p>