

Faculty of Psychology and Education Sciences



PSP1180 Statistics applied to psychology 1

[30h+20h exercises] 5 credits

This course is taught in the 1st semester

Teacher(s): Ingrid Van Keilegom
Language: French
Level: First cycle

Aims

This course presents the basic concepts of probability and statistics useful in the field of psychology. At the end of the course, the students will be able :

- to understand and to explain the concepts studied
- to recognise the kind of method to be used for a given problem
- to use each tool and to apply it in various situations
- to follow a systematic process to resolve a problem, from the choice of the method, its application, its validation up to the interpretation of the obtained results
- to have a good view of the fields of application of statistics in psychology and of the situation he will have to face
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Main themes

Descriptive statistics:

- graphic and numeric tools to summarise the available information about one or two qualitative and/or quantitative variables: frequency tables, bar charts, histograms, distribution, box-plots, mean, variance, standard deviation, correlation coefficients (Pearson, Kendall and Spearman), X-Y graphs, etc.

Probability:

- 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

Statistical inference:

- notions of estimation, confidence interval and hypothesis tests. Inference on the means and variances of one or two normal populations and on one or two proportions.

Content and teaching methods

Content: the course is constituted by three parts. In the first one, the basic technics of descriptive statistics are treated: graphic and numeric tools to summarise the available information about one or two qualitative and/or quantitative variables. In the second part, the basic concepts of the probability theory are introduced : formulas for probability calculation, concepts of independence, of conditional probability, Bayes theorem, discrete and continuous random variables, central limit theorem#
 - the last 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.

Methods: Lectures and exercises. The exercises are in small groups and are guided by assistants.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Written exam

Course outline on the theory, course outline with exercises, transparents of the lectures

Programmes in which this activity is taught

ESP3DS	Diplôme d'études spécialisées en santé publique
ESP3DS/ST	Diplôme d'études spécialisées en santé publique (santé au travail)
SEX1EP	Année de formation préparatoire à la licence en sciences de la famille et de la sexualité

Other credits in programs

COMU11BA	Première année de bachelier en information et communication (4 credits)	
PSP11BA	Première année de bachelier en sciences psychologiques et de l'éducation (5 credits)	Mandatory