liepr1026

2021

Statistics

3.00 credits	15.0 h + 15.0 h	Q2

Teacher(s)	Bugli Céline ;
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	The course comprises theoretical lectures and exercise sessions: 1. Brief recall on one- and two-dimensional descriptive statistics 2. Inferential statistics: populations and samples, probabilities, variables, theoretical distributions, confidence intervals (means, variance, proportion), hypothesis testing based on sample means (Student t-test, analysis of variance, analysis of covariance, multiple comparisons), proportions (chi square, phi, contingency), correlations/regressions (significance, comparison, linearity), adjustment tests (chi square, KS), non-parametric tests (comparison of independant and dependant groups). 3. Application to capacity tests: classification of tests, quality of tests, validity and reproducibility.
Learning outcomes	**At the end of this learning unit, the student is able to :**
	1	At the end of the course the successful student will be able to use the techniques of inferential statistics within the framework of his/her research. The course focuses on the most frequently used statistical methods. The underlying mathematical developments are limited to a strict minimum and replaced by intuitive reasoning and concrete examples, especially via practical exercise sessions.
Evaluation methods	The evaluation is carried out by means of a written exam consisting of a part A with MCQ questions (with 6 suggested answers and one expected correct answer) and a part B with open questions. In the final grade, part A is worth 10/20 and part B is worth 10/20.
Teaching methods	Lectures and supervised exercises. The modalities foreseen will evolve according to the health situation.
Content	This course includes lectures and exercises. It contains a brief overview of the concepts of one- and two-dimensional descriptive statistics as seen in thecourse of 11 BAC "Comprehension et traitement de données". It focuses mainly on the basic issues of statistical inference: population and sample probabilities, random variables, distribution theory, confidence intervals (mean, proportion), hypothesis tests related to means (student t, analysis of variance), proportions (1 or 2 proportion test, chi-square test), correlation/regression study (regression straight line calculation, slope test), adjustment tests (chi-square, Shapiro-Wilks), some non-parametric tests (comparison of independent and dependent groups), repeated measurement ANOVA.
Inline resources	Site Moodle:https://moodleucl.uclouvain.be/course/view.php?id=9254
Other infos	Pre-requisite: Comprehension et traitement de données (LIEPR1003) Evaluation: Written Support : power point Supervision: Titular professors and teaching assistants Others: Exercise sessions + solutions to problems
Faculty or entity in charge	FSM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Physiotherapy and Rehabilitation	KINE1BA	3	LIEPR1003	🔍
Master [120] in Motor Skills: Physical Education	EDPH2M	3		🔍
Master [120] in Motor Skills: General	MOTR2M	3		🔍