lstat2020
2019

Statistical softwares and basic statistical programming

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

4 credits	15.0 h + 15.0 h	Q1

Teacher(s)	Bugli Céline ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	Main themes: - Steps of a statistical data analysis with a statistical software - Classes of statistical software - Statistical graphics: main classes of graphics and efficient use - Basic statistical analysis with "point and click" statistical software. Data cleaning. - Programming in the R language. - Programming in SAS.
Aims	1 At the end of this course, the students will have gain a critical view of the different classes of statistical software available on the market and basic culture on statistical algorithms and graphics. They will also be able to realise basic statistical analysis with different software (SAS, R, Excel, SPSS, JMP) and write programs in the R and SAS programming languages. - - - - *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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Two MANDATORY programming jobs in SAS and R. Computer-based examination: Solving basic statistical case studies with SAS Enterprise Guide and SPSS (or JMP) software, SAS programming and R. Please note that the required work must be carried out during the first quarter of the year according to a schedule that will be communicated to you at the beginning of the course. In the event of failure to submit a work, the student will have 0 on his first pass of the exam. However, with the teacher's permission, he or she may be able to take an additional question to catch up on his or her score from the second time he or she passes the exam. His request to re-score the work should be made BEFORE the start of the examination session and will only be considered if the work has not been returned or is missed (less than 50%).
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** The course consists of lectures with demonstrations of statistical software and software use exercises sessions designed to give the student maximum autonomy: each student works at his own pace on the basis of evolving documents.
Content	Lecture: Steps in statistical analysis of computer data. Introduction to the different classes of statistical software. Graphical presentation of data. Introduction to statistical software, Introduction to the use of the computer room. Case studies of data set analysis using basic statistical methods. Generation of random numbers. Numerical problems encountered in regression. Introduction to R and SAS. Communication between different software and languages (R, SAS, Python, etc...). Exercises: SAS and R programming exercises. Case studies with SPSS or JMP software.
Inline resources	Site Moodle: https://moodleucl.uclouvain.be/course/view.php?id=7551
Other infos	SCORES Students enrolled in both parts of the course must pass both parts to pass the course. If the score of one of the 2 parties is less than 50%, this score will be used as the total score for the course. The points awarded to projects depend on your success in the programming questions during the exam: Project score on 1.25 if your project score > 2*scores programming questions of the exam Project score on 2.5 if your project score # 2*scores programming questions of the exam
Faculty or entity in charge	LSBA

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Forests and Natural Areas Engineering	BIRF2M	4		🔍
Approfondissement en statistique et sciences des données	LSTAT100P	4		🔍
Minor in Statistics, Actuarial Sciences and Data Sciences	LSTAT100I	4		🔍
Master [120] in Chemistry and Bioindustries	BIRC2M	4		🔍
Master [120] in Biomedical Engineering	GBIO2M	4		🔍
Master [120] in Agricultural Bioengineering	BIRA2M	4		🔍
Master [120] in Data Science : Statistic	DATS2M	3		🔍
Master [120] in Mathematical Engineering	MAP2M	4		🔍
Master [120] in Statistic: Biostatistics	BSTA2M	4		🔍
Certificat d'université : Statistique et sciences des données (15/30 crédits)	STAT2FC	4		🔍
Master [120] in Mathematics	MATH2M	3		🔍
Master [120] in Statistic: General	STAT2M	4		🔍
Master [120] in Environmental Bioengineering	BIRE2M	4		🔍