UCLouvain

wfarm2177

2025

Biostatistics

The version you're consulting is not final. This course description may change. The final version will be published on 1st June.

3.00 credits	20.0 h + 10.0 h	Q2

Teacher(s)	Elens Laure ;
Language :	French
Place of the course	Bruxelles Woluwe
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 objective of this course is to give a basic knowledge in the statistical data processing related with the biomedical domain. The course also deals with how computer software, in particular JMP (SAS) can be used to present and analyze data.
Learning outcomes	**At the end of this learning unit, the student is able to :** 1 This course is designed to introduce the students to the statistical and methodological issues applied to problems in the biomedical sciences and to avoid the common pitfalls in data analysis.
Content	IIntroduction to statistical methodology. Summarizing and presenting data in tables and graphs - Extract and organize electronically stored data - Produce useful graphical and numerical summaries Univariate statistics - Descriptive aspect (median, standard deviation, variance, interval of confidence) - Validation aspect (test on normality of distribution, discordance tests on outliers, precision, accuracy) - Significance tests: type 1 and type 2 errors - Capability analysis Bivariate analysis: one-way and two-way ANOVA - Descriptive aspect: multiple box-plot, means or medians - Validation aspects: normal distribution of residuals, detection of outliers. - Significance tests: type 1 (t test, Tukey test or Dunnett test) and type 2 (power test). Linear regression model - Parameter determination. - Validation aspect: limit of detection and quantification. - Inverse prediction Non-linear regression - Kinetic models - Michaelis-Menten and Hill models - Pharmacokinetic models - Dissolution models Multivariate statistical methods: Logistic regression and ROC curves Survival analysis Exercises with statistical software (JMP) - exercises (exercises, solutions to exercises, tables of statistics). - Connections with clinical and biomedical applications.
Faculty or entity in charge	FARM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Biomedicine	SBIM1BA	3	WFARM1247	🔍
Master [120] in Pharmacy	FARM2M	3		🔍
Master [120] in Computer Science and Engineering	INFO2M	3		🔍
Master [120] in Computer Science	SINF2M	3		🔍